LINETRONIC TECHNOLOGIES

Linetronic Technologies

Laboratory and Process Analyzers

Catalogue 2026



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Analizzatori automatici

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NewLab 100
Cloud Point



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ASTM D5771
DIN 51597
EN 23015
EN 590
IP 444

Correlated:
ASTM D2500
ASTM D5772
ASTM D5773
IP 219
IP 445
IP 446
ISO 3015
JIS K2269

Cloud Point of Petroleum Products and Liquid Fuels.
This test method can determine the temperature of the test specimen at which wax crystals have formed sufficiently to be observed as a cloud with a resolution of 0.1 °C.

Measuring Cloud Point Principle
The sample is cooled down according to the methods while the clouds appearance is observed on the silver bottom of the test jar by means of an optical sensor.
The measurement is done by reflection on the silver bottom of the test jar via a fast light detector. The signal from light detector is traded by the LabLink software.
The dynamic measurement is performed regardless of the sample's colour.

Measuring Cloud Point Devices
Light pulsed emission on I.R spectrum through a coaxial fibber optic.

Measuring Temperature Probe
- Platinum resistance PT100 class A
- The PT100 is touching the bottom of the test jar.

Measuring Parameters
- Temperatures: in °C.
- Measuring range: +80°C … −80°C.
- Resolution: 0.06 °C.
- Accuracy: ± 0.1 °C.
- Repeatability / Reproducibility: as per standards methods or better.

Software Features
- New LabLink software able to manage up to 6 analytical heads simultaneously (stand alone).
- User friendly interface.
- All analytical parameters recorded.
- Customizable analysis parameters and methods.
- Customizable results report.
- Printable graphs and results.
- Self-identification of the typology of the analysers connected.

The software includes:
Analysis Menu
- Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference.
- Optional methods:
  · fast bath (to reduce the time of analysis);
  · T-sample – T-bath (Delta T constant);
  · cooling rate °C / h.
- Audible alarm and displayed messages (at the end of the analysis and in case of errors and/or malfunctions).

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs.
- Selectable value displaying: °C / Volt.

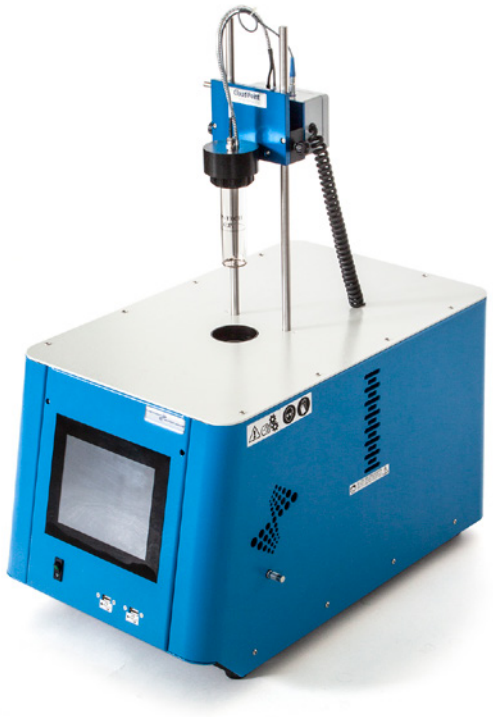
Calibration Menu
- Automatic calibration of each temperature probe.
- Last calibration date referred to each single probe displayed and relative data printable.
- Display of calibration diagram.
- Insertion of offset values.
- Standard and advanced calibration modes.

Data Utilities
- Fields for introduction of operator and product name.
- Archive viewer for files recall.
- All analysis stored in Excel® compatible format.
- Storage capacity for more than 60'000 analysis.
- LIMS compatible.

Integrated Touch Screen Panel PC
- TFT/LCD 12".
- Resolution 1024 × 768, 16.2 M colours.
- 2 USB ports for connection to an external printer and/or external PC.
- Storage capacity for more than 60'000 analysis.

NewLab 100
Cloud Point





NewLab 100 ST

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Test Jar
- Same dimensions and volume as described by the standard test methods.
- Product level mark.
- Small edge on the top in order to fix the glass cell to the analytical head.
- Silvered bottom with anti-scratch film protection.

Cooling System
- Integrated gas CFC free motor compressors.
  · Single stage (for temperatures up to -40°C / 1)
  · Double stage (for temperatures up to -80°C / 2)
- Equipped with an automatic energy power save system: after 15 minutes from the end of the analysis the cooling system goes in stand-by mode.

Safety Devices
- Pressure controller for 1st stage motor compressor.
- Pressure controller for 2nd stage motor compressor.
- Thermo-switch for each cooling / heating jacket.
- Motor compressors equipped with internal overload devices.

Electrical Supply
- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable
- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat resistant as per CENELEC directives.

Ambient Temperature
- Max 32 °C.
- H.R. 80%.

Dimensions and weight
- 1 test position:
  w 66 × d 60 × h 80 cm, 60 kg.
- 2 test positions:
  w 66 × d 60 × h 80 cm, 90 kg / 100 kg.
- 3 test positions:
  w 100 × d 60 × h 80 cm, 130 kg.
- 4 test positions:
  w 134 × d 60 × h 80 cm, 160 kg.
- 6 test positions:
  w 130 × d 75 × h 170 cm, 280 kg.

Spare Parts NewLab 100 SA
Suggested for 2 years operation.
- 5399: Fiber optic.
- 3399: PT100 product with connector Cloud Point.
- 1009: Test jar with silver bottom.
- 7315: O-ring for test jar.

Tools Required for Routine Calibration
Not needed for installation.
- 3013: Calibration decade box – PT100 simulator.
- 3102: Set of connectors and cables.

NewLab 100 ST
- Cooling system ST.
  · Integrated gas CFC free Stirling motor compressor.
  · For temperatures up to -110°C.
- Integrated Touch Screen Panel PC for ST.
  · TFT/LCD 8".
  · Resolution 1024 × 768.
- Measuring range: +55°C … -95°C.
- Resolution: 0.01 °C.
- Width: 34 cm.
- Depth: 60 cm.
- Height: 80 cm.
- Weight: 34 kg.
- Electrical supply :100~240 Vac 50/60 Hz.

Spare Parts NewLab 100 ST
Suggested for 2 years operation.
- 5399: Fiber optic.
- 3399: PT100 product with connector Cloud Point.
- 1009: Test jar with silver bottom.
- 7315: O-ring for test jar.

Tools Required for Routine Calibration
Not needed for installation.
- 3013: Calibration decade box – PT100 simulator.
- 3102: Set of connectors and cables.

NewLab 200
CFPP – Cold Filter Plugging Point

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ASTM D6371
IP 309
EN 116 - EN 16329
Correlated:
IP 419

Subject
Cold Filter Plugging Point of diesel, biodiesel and heating fuels.

Measuring CFPP Principle
The sample is cooled down according to the methods and when the preselected temperature is reached a vacuum of 20 mBar is automatically applied to the sample.
The product is sucked through the filter into the calibrated aspiration pipette.
If the sample takes more than 60 seconds to reach the upper barrier detector (during the aspiration phase), or it fails to return completely into the test jar before that the product has cooled by a further 1°C, the Cold Filter Plugging Point is reached.

Measuring CFPP Devices
- Aspiration pipette
- Filter assembly
- Light barrier

Measuring Temperature Probe
- Platinum resistance PT100 class A

Internal Vacuum Generator
- 1 × micro-pump of 350 mBar
- 1 × electronic pressure / vacuum regulator composed by: proportional valve, pressure / vacuum control sensor, regulator for reference vacuum generation at 20 mBar, vacuum stabilizer.

Measuring Parameters
- Temperatures: in °C
- Measuring range: +80°C … -80°C
- Resolution: 0.06 °C
- Accuracy: ± 0.1 °C
- Repeatability / Reproducibility: as per standards methods or better

Software Features
- Able to manage up to 6 analytical heads simultaneously (stand alone)
- User friendly interface
- All analytical parameters recorded
- Customizable analysis parameters and methods
- Customizable results report
- Printable graphs and results
- Self-identification of the typology of the analysers connected

The software includes:

Analysis Menu
- Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference
- Optional methods:
  · T-sample – T-bath (Delta T constant)
  · cooling rate °C / h
  · selectable bath steps
  · fast bath with selectable temperature
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions
- The parameters displayed and updated in real time are:
  · sample temperature
  · bath temperature
  · vacuum pressure
  · low level light value
  · up level light value
  · aspiration time
  · release time
  · intertime test
- Thanks to an istogram (graph) that shows the aspiration and release times it is possible to observe the behaviour of the sample during its cooling phase
- This feature is an excellent tools for the observation and evaluation of the additivations actions and behaviour

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / Volt
- Vacuum data displayed in mBars

Calibration Menu
- Automatic calibration of each temperature probe
- Automatic calibration of vacuum sensor
- Last calibration date referred to each single probe displayed and relative data printable
- Display of calibration diagram
- Insertion of offset values
- Standard and advanced calibration modes

Data Utilities
- Fields for introduction of operator and product name
- Archive viewer for files recall
- All analysis stored in Excel® compatible format
- Storage capacity for more than 60'000 analysis
- LIMS compatible

Integrated Touch Screen Panel PC
- TFT/LCD 12"
- Resolution 1024 × 768, 16.2 M colours
- 2 USB ports for connection to an external printer and/or external PC
- Storage capacity for more than 60'000 analysis

NewLab 200
CFPP – Cold Filter Plugging Point





NewLab 200 ST

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Cleaning pipette procedure
- By using a suitable cleaning liquid and pressing the relevant function button the analyser performs a cleaning sequence of 10 aspirations cycles
- Easy removing of aspiration pipette and filter assembly allows cleaning according to the methods

Test Jar
- Same dimensions and volume as described by the standard test methods
- Product level mark
- Small edge on the top in order to fix the glass cell to the analytical head

Cooling System
- Integrated gas CFC free motor compressors:
  · Single stage
  (for temperatures up to -40°C / 1)
  · Double stage
  (for temperatures up to -80°C / 2)
- Equipped with an automatic energy power save system. After 15 minutes from the end of the analysis the cooling system goes in stand-by mode.

Safety Devices
- Pressure controller for 1st stage motor compressor
- Pressure controller for 2nd stage motor compressor
- Thermostat for 2nd stage activation
- Thermo-switch for each cooling / heating jacket
- Motor compressors equipped with internal overload devices

Electrical Supply
- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable:
- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat resistant as per CENELEC directives

Ambient Temperature
- Max 35 °C
- H.R. ≤70%

Dimensions and weight
- 1 test position:
  w 66 × d 60 × h 80 cm, 60 kg
- 2 test positions:
  w 66 × d 60 × h 80 cm, 90 kg / 100 kg
- 3 test positions:
  w 100 × d 60 × h 80 cm, 130 kg
- 4 test positions:
  w 134 × d 60 × h 80 cm, 160 kg
- 6 test positions:
  w 130 × d 75 × h 170 cm, 280 kg

Spare Parts NewLab 200 SA
Suggested for 2 years operation.
- 1007: Calibrated glass cell for CFPP.
- 1020: Calibrated aspiration pipette for CFPP.
- 3402: Emitter Up (Red).
- 3403: Emitter Down (Blue).
- 3596: PT 100 product w/connector for CFPP.
- 5029: Filter with mesh.
- 6049: Stainless steel filter holder with 10 x mesh interchangeable.
- 7054: O-ring (small) for CFPP filter.
- 7055: O-ring (big) for CFPP filter.
- 7315: O-Ring for Test Jar.

Tools Required for Routine Calibration
Not needed for installation.
- 3013: Calibration decade box – PT100 simulator.
- 3102: Set of connectors and cables.

NewLab 200 ST
- Cooling system ST:
  · Integrated gas CFC free Stirling motor compressor
  · For temperatures up to -110°C
- Integrated Touch Screen Panel PC for /ST configuration:
  · TFT/LCD 8"
  · Resolution 1024 × 768
- Measuring range: +55°C … -95°C
- Resolution: 0.01 °C
- Width: 34 cm
- Depth: 60 cm
- Height: 80 cm
- Weight: 34 kg

Spare Parts NewLab 200 ST
Suggested for 2 years operation.
- 1007: CFPP calibrated glass cell for CFPP.
- 1020: Calibrated aspiration pipette for CFPP.
- 3402: Emitter Up (Red).
- 3403: Emitter Down (Blue).
- 3596: PT 100 product w/connector for CFPP.
- 5029: Filter with mesh.
- 6049: Stainless steel Filter holder with 10 x mesh interchangeable.
- 7054: O-ring (small) for CFPP filter.
- 7055: O-ring (big) for CFPP filter.
- 7315: O-Ring for Test Jar.

Tools Required for Routine Calibration
Not needed for installation.
- 3013: Calibration decade box – PT100 simulator.
- 3102: Set of connectors and cables.

NewLab 225
Filter Blocking Tendency

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ASTM D 2068
ASTM D 6426
IP 387

Determination of the filter blocking tendency (FBT) and filterability of middle distillate fuel oils and liquid fuels such as biodiesel and biodiesel blends. The three procedures and associated filter types are applicable to fuels within the viscosity range of 1.3 mm2 to 6.0 mm2/s at 40 °C.

Measuring Principle

A sample of the fuel to be tested is passed at a constant rate of flow (20 mL/min) through a glass fiber filter medium.
The pressure drop across the filter is monitored during the passage of a fixed volume of test fuel. If a prescribed maximum pressure drop is reached before the total volume of fuel is filtered, the actual volume of fuel filtered at the time of maximum pressure drop is recorded and used to obtain the automatic calculation result. Otherwise if the prescribe volume is filtered without reach the 105kPa pressure, the maximal pressure during the test is recorded and used to obtain the result.

Automatic Filter Blocking Tendency Analyser (FBT)

- Integrated cooling system equipped with Peltier module.
- Working temperature up to -5°C.
- Measuring device complete with support for filter, beakers, PT100 sensor class A, level sensor, pressure gauge, tubes and joints.
- Peristaltic pump 20 ml/min with in-line pressure sensor.
- Over pressure protection.
- Managed by a touch screen PC by means of the Lab-Link software running in Windows ambient.
  · LCD 12" touch screen with micro computer.
  · Resolution 1024 × 768 and 16M colours.
  · I/O ports: 2 × USB.
  · Storage capacity for more than 60'000 analysis.

Dimensions (cm)

- width 47
- depth 48
- height 60

Weight

- 17 kg

Power supply

- 220 Vac or 115 Vac 50/60 Hz

Max. Consumption

- 400 Watt

Consumables

- 7354: Glass fibre filters, 13 mm diameter, pack of 100 pcs.

Accessories / Other Methods:

- 7355: Kit for ASTM D2068 method B, composed by filter support, filter 1.6 um, filter taper housing, joint for connection, kit for 150 tests.
- 7365: Kit for ASTM D2068 method C, composed by filter support, filter 5 µm, filter Luer housing, joint for connection, kit for 150 tests.

Spare Parts:

- 17107: PT100 bath.
- 3007: HT Peltier.
- 3168: PT100 sample probe.
- 1165: 400 ml beaker.
- 15758: Glass cell lid.
- 17554: Level sensor.
- 15717: Luer lock filter support.
- LAB-225/008-16: Connection tube 6 × 4, 3 meters.

Tools Required for Routine Calibration:

- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.
- 2335: Pressure gauge double scale 0-200 kPa, 0-30 Psi, made in stainless steel, with ½" adapter and T connection.

Accessories / Liquid:

- 5499: Stainless steel forceps for manage the test filters.
- 7631: Verification fluid, 500 ml.

NewLab 226
LTFT – Low Temperature Flow Test

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ASTM D4539

Subject

This test method covers estimating the filterability of diesel fuels in some automotive equipment at low temperatures.
The Low Temperature Flow Test results are indicative of the low temperature flow performance of the test fuel in some diesel vehicles.
The test method is especially useful for the evaluation of fuels containing flow improver additives in a range of +10°C … -30°C.

Measuring LTFT principle

Up to 6 300 ml test vessels are cooled at a specified rate of 1°C/h and,at every °C of cooling, a vacuum of 20 kPa is applied to a filter assembly immersed in the first sample.
If the sample recovered in a graduated receiver vessel reaches the 180 ml in 60 sec. the analysis continues to the further 1°C test temperature (passed).
When the sample doesn't reach the 180 ml within the 60 sec. the test is failed.
The temperature of the last passing result test has to be recorded as minimum LTFT pass temperature.

NewLab 226/1
NewLab 226/2
Six Places Automatic LTFT Analyser
Low Temperature Filterability Test

- Internal built-in refrigeration unit.
- For cooling down to -45°C:
  NewLab 226/1, single stage compressor.
- For cooling down to -75°C:
  NewLab 226/2, double stage compressor.
- Dry bath aluminium block suitable for the accommodation of 6+1 sample beaker 300 ml made of glass.
- Integrated vacuum pump automatically activated for the 20 kPa by the integrated electronic vacuum controller and vacuum stabilizer (5 litre bottle).
- PT100 sensor for bath and PT100 sensor for sample temperature.
- Pressure detector for 180 ml receiver vessel.
- Single stage gas compressor CFC free (NewLab 226/1).
- Double stage gas compressor CFC free (NewLab 226/2).
- Cooling valve and bypass valve granting the slow cooling rate of 1°C /H.
- Heaters with over temperature protection cut-off.
- 6 × vacuum valves.
- Cabinet painted and mounted on 4 wheels for easy transportation.
- Integrated managing Panel PC.
  · TFT 12" touch screen, 2 Gb Ram.
  · 2 × USB, 1 × LAN 10/100 Mbps.
  · 262 K colours - 1024 × 768 resolution.
  · Storage capacity up to 60.000 analysis.
- LabLink operating software running in Windows ambient.
- ASTM D4539 application for run up to 6 test sample.
- Programmable 6 test temperature.
- Audible acoustic signal for alarms and end analysis.
- Diagnostic menu.
- Calibration menu.
- Results browser with data export operation and print.
- LIMS connection.
- 6 × filter assembly complete with filter and o-rings.
- 7 × 300 ml glass bottles.
- 6 × receiver vessel.
- 1 × 5 liter glass bottle (Vacuum stabilizer).
- O-rings, stoppers, tubing and clamps.
- 6 + 1 covers for samples beakers.
- 6 rubber covers for glass receivers.
- 12 × joints glass tubes.
- Vinyl tubes for the connections joints.

Dimensions

- Length 80.0 cm
- Width 80.0 cm
- Height 165.0 cm

Weight

- NewLab 226/1: 132 kg approx.
- NewLab 226/2: 175 kg approx.

Power supply

- 220 Vac 50/60 Hz or 115 Vac 50/60 Hz

Consumption

- NewLab 226/1: 2500 Watt
- NewLab 226/2: 3200 Watt

Inrush current

- NewLab 226/1: 8000 Watt
- NewLab 226/2: 9600 Watt

Tools Required for Routine Calibration

- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.

Spare Parts

- 3150: PT100 temperature sensors.
- 2412: 300 ml glass specimen vessel.
- 2413: 400 ml glass receiver vessel.
- 7431: Rubber stopper for receiver.
- 6004: Lid for specimen vessel.
- 2576: Glass tube for filter connection, vacuum side.
- 2577: Glass tube for receiver side.
- 2578: Glass straight tube for receiver beaker.
- 7334: Silicon tubing 2 m for connecting the glassware.
- 5851: Filter assembly.
- 7692: Filter, pack of 12 pcs.

NewLab 300
Pour Point



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CE

ASTM D97
ASTM D5853
ASTM D5950
ASTM D6074
ASTM D6158
IP 15
IP 441
ISO 3016
EN ISO 22995

Subject

Pour Point of petroleum products, crude oils, motor and engine oils, additives, lubricating oils, …

Measuring Pour Point Principle

According to the methods, the sample is cooled down at a specified rate and, at the prescribed temperature intervals, the mechanical arm of the analyser lifts the test jar from the cooling jacket and tilts it in order to bring it in horizontal position to test the flow of the product.
The sample movement is detected by the thermal probes (PT100 detection) placed above the sample surface which react if touched by the cooled sample.

Measuring Pour Point Devices

- Two PT100 detection probes placed on the surface of the product
- Mechanical moving arm bringing the test jar in horizontal position

Measuring Temperature Probe

- Platinum resistance PT100 class A

Measuring Parameters

- Temperatures: in °C
- Measuring range: -110°C … +100°C
- Range of analysis: -90°C … +60°C (300/2-SA)
- Resolution: 0.06 °C
- Accuracy: ± 0.1 °C
- Repeatability / Reproducibility: as per standards methods or better

Software Features

- New LabLink software able to manage up to 6 analytical heads simultaneously (stand alone)
- User friendly interface
- All analytical parameters recorded
- Customizable analysis parameters and methods
- Customizable results report
- Printable graphs and results
- Self-identification of the typology of the analysers connected

The software includes:

Analysis Menu

- Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference:
  · (internal) with sample pre-heating
  · (external) without sample pre-heating
- Optional methods:
  · T-sample – T-bath (Delta T constant)
  · cooling rate °C / h
  · selectable bath steps
  · fast bath
  · selectable tilt out test temperature
- Audible alarm and displayed messages (at the end of the analysis and in case of errors and/or malfunctions)

Diagnostic Menu

- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / Volt

Calibration Menu

- Automatic calibration of each temperature probe
- Last calibration date referred to each single probe displayed and relative data printable
- Display of calibration diagram
- Insertion of offset values
- Standard and advanced calibration modes

Data Utilities

- Fields for introduction of operator and product name
- Archive viewer for files recall
- All analysis stored in Excel® compatible format
- Storage capacity for more than 60'000 analysis
- LIMS compatible

NewLab 300
Pour Point



NewLab 300 ST

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CE

Integrated Touch Screen Panel PC
- TFT/LCD 12"
- Resolution 1024 × 768, 16.2 M colours
- 2 USB ports for connection to an external printer and/or external PC
- Storage capacity for more than 60'000 analysis

Test Jar
- Same dimensions and volume as described by the standard test methods
- Product level mark
- Small edge on the top in order to fix the glass cell to the analytical head

Cooling System
- Integrated gas CFC free motor compressors:
  · Single stage
  (for temperatures up to -40°C / 1)
  · Double stage
  (for temperatures up to -80°C / 2)
- Equipped with an automatic energy power save system. After 15 minutes from the end of the analysis the cooling system goes in stand-by mode.

Safety Devices
- Pressure controller for 1st stage motor compressor
- Pressure controller for 2nd stage motor compressor
- Thermostat for 2nd stage activation
- Thermo-switch for each cooling / heating jacket
- Motor compressors equipped with internal overload devices

Electrical Supply
- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable
- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat resistant as per CENELEC directives

Ambient Temperature
- Max 32 °C
- H.R. 80%

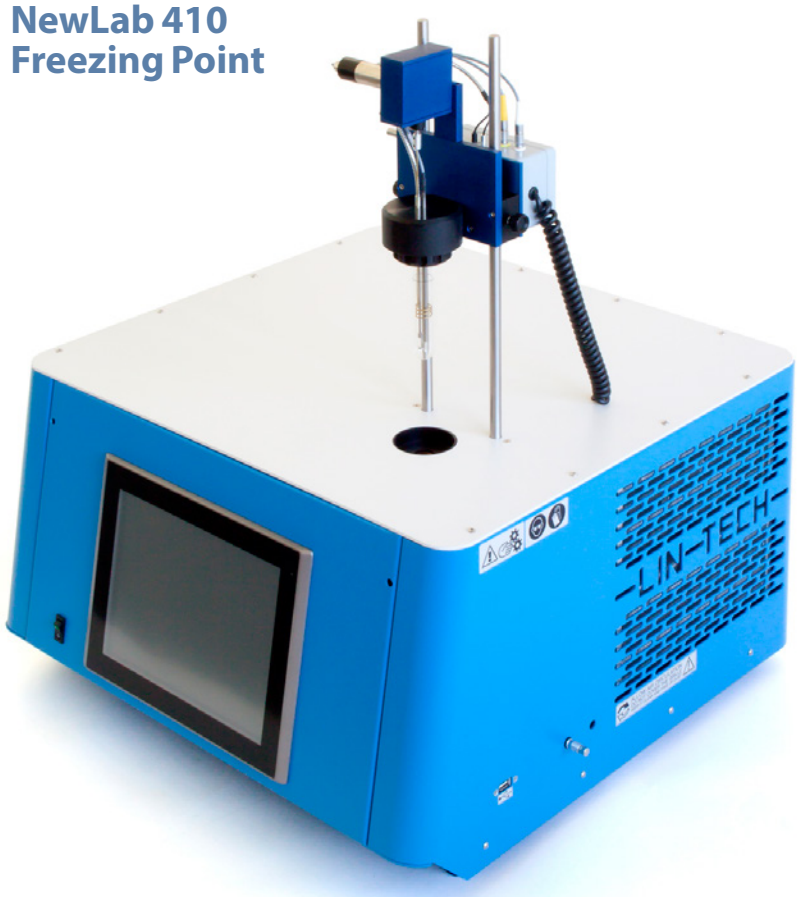
Dimensions and weight
- 1 test pos.: w 66 × d 60 × h 80 cm, 60 kg
- 2 test pos.: w 66 × d 60 × h 80 cm, 90 kg / 100 kg
- 3 test pos.: w 100 × d 60 × h 80 cm, 130 kg
- 4 test pos.: w 134 × d 60 × h 80 cm, 160 kg
- 6 test pos.: w 130 × d 75 × h 170 cm, 280 kg

Spare Parts
- 3747: PT100 product with connector Pour Point.
- 3145: PT100 detection Pour Point.
- 1008: Test jar for Pour Point.
- 7315: O-ring for test jar.

Calibration Tools
- 3013: Calibration decade box – PT100 simulator.
- 3102: Kit of connectors and cables.

NewLab 300 ST
- Cooling system ST.
  · Integrated gas CFC free Stirling motor compressor.
  · For temperatures up to -110°C.
- Integrated Touch Screen Panel PC for ST.
  · TFT/LCD 8".
  · Resolution 1024 × 768.
- Measuring range: +55°C … -95°C.
- Resolution: 0.01 °C.
- Width: 34 cm.
- Depth: 60 cm.
- Height: 80 cm.
- Weight: 34 kg.
- Electrical supply: 100~240 Vac 50/60 Hz.

NewLab 410
Freezing Point



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CE

ASTM D1655
ASTM D2386
IP 16

Correlated:
ASTM D852
ASTM D1493
ASTM D5901
ASTM D5972
ASTM D6660
ASTM D7153
ASTM D7154
IP 435
IP 528
IP 529
ISO 3013
JIS K2276
DEF STAN91-091

Subject
Freezing Point of aviation fuels, aviation gasoline, aviation turbine fuels, engine coolants, antifreeze products, brake fluids, …
Solidification Point of Benzene.
Solidification Point of Industrial Organic Chemicals.

Measuring Freezing Point Principle
According to the methods, the sample is cooled down and stirred. The solid hydrocarbon crystals formation are detected by means of a light beam throught fiber optic reflected thanks to a mirror. As soon as crystals are detected, the sample is warmed up until their complete disappearance.

Measuring Freezing Point Devices
- Light pulsed emission on I.R spectrum through a coaxial fibber optic
- Coaxial fibber optic equipped with a mirror

Measuring Temperature Probe
- Platinum resistance PT100 class A

Stirrer
- A micro-motor drives all the mechanical system
- 3 coils stirrer made of brass

Measuring Parameters
- Temperatures: in °C / °F
- Measuring range: -110°C … +100°C
- Range of analysis: -90°C … +55°C (410/2-SA)
- Resolution: 0.01 °C
- Accuracy: ± 0.1 °C
- Repeatability / Reproducibility: as per standards methods or better

Software Features
New LabLink software able to manage up to 6 analytical heads simultaneously (stand alone)
- User friendly interface
- All analytical parameters recorded
- Customizable analysis parameters and methods
- Results report
- Printable graphs and results - any Windows® compatible printer can be used

The software includes:

Analysis Menu
- Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference
- Optional methods:
  · special detection of contaminants
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / °F / Volt

Calibration Menu
- Automatic calibration of each temperature probe
- Last calibration date referred to each single probe displayed and relative data printable
- Display of calibration diagram
- Insertion of offset values
- Standard and advanced calibration modes up to 100 calibration points

Data Utilities
- Fields for operator and product name
- Archive viewer for files recall
- All analysis stored in Excel® compatible format and JPG image
- Storage capacity for more than 60'000 analysis
- LIMS compatible

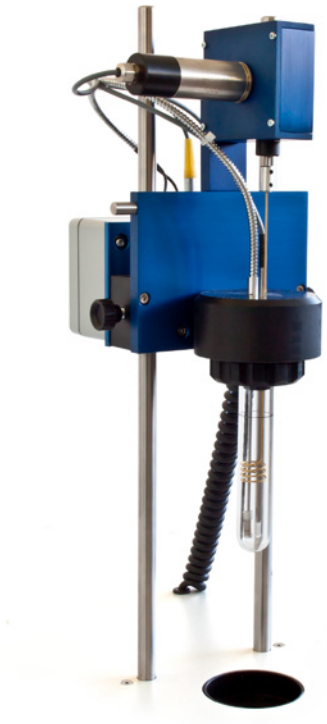
Integrated Touch Screen Panel PC
- TFT/LCD 12"
- Resolution 1024 × 768, 16.2 M colours
- 2 USB ports for connection to an external printer and/or external PC
- Storage capacity for more than 60'000 analysis

FP

NewLab 410
Freezing Point

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CE





NewLab 410 ST

Test Jar
- Same dimensions and volume as described by the standard test methods
- Product level mark at 25 ml
- Small edge on the top in order to fix the glass cell to the analytical head

Cooling System
- Insulated cooling jackets
- Integrated gas CFC free motor compressors:
  · Double stage
  (for temperatures up to -90°C / 2)
- Equipped with an automatic energy power save system. After 15 minutes from the end of the analysis the cooling system goes in stand-by mode.

Safety Devices
- Pressure controller for 1st stage motor compressor
- Pressure controller for 2nd stage motor compressor
- Thermostat for 2nd stage activation
- Thermo-switch for each cooling / heating jacket
- Motor compressors equipped with internal overload devices

Electrical Supply
- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable:
- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat

Ambient Temperature
- Max 35 °C
- H.R. ≤70%

Dimensions and weight
- 1 test pos.: w 66 × d 60 × h 80 cm, 60 kg
- 2 test pos.: w 66 × d 60 × h 80 cm, 90 kg / 100 kg
- 3 test pos.: w 100 × d 60 × h 80 cm, 130 kg
- 4 test pos.: w 134 × d 60 × h 80 cm, 160 kg
- 6 test pos.: w 130 × d 75 × h 170 cm, 280 kg

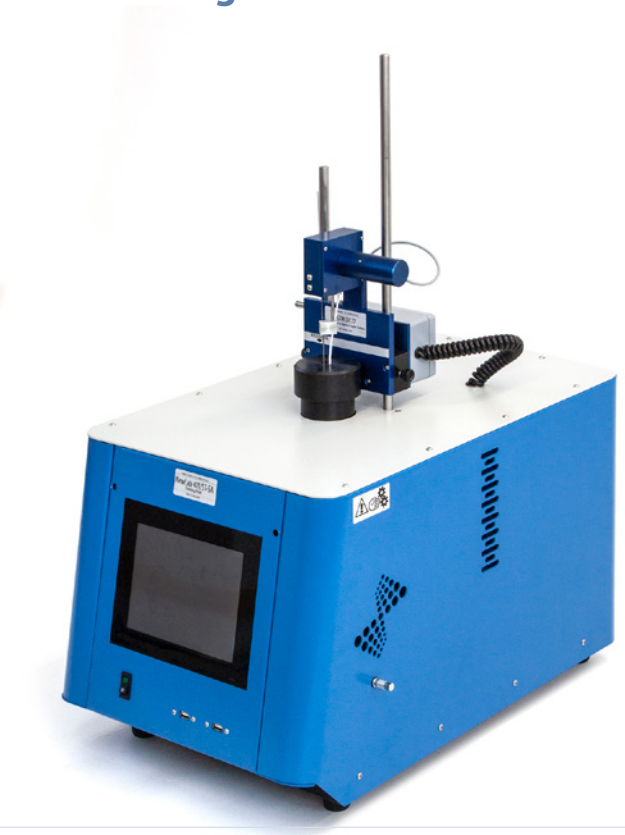
Spare Parts
- 1004: Removable glass cell.
- 7187: O-ring for test jar.
- 3596: PT100 product with connector.
- 7185: Stirrer.
- 5416: Fiber Optic.
- 2151: Mirror.

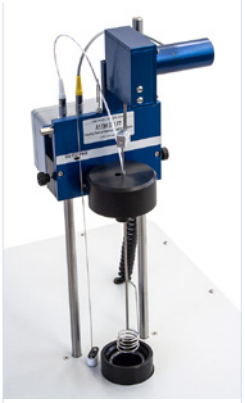
Calibration Tools
- 3013: Calibration decade box – PT100 simulator.
- 3102: Kit of connectors and cables.

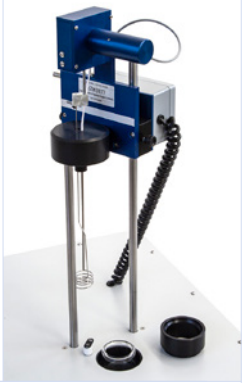
NewLab 410 ST
- Cooling system ST.
  · Integrated gas CFC free Stirling motor compressor.
  · For temperatures up to -110°C.
- Integrated Touch Screen Panel PC for ST.
  · TFT/LCD 8".
  · Resolution 1024 × 768.
- Measuring range: +55°C … -110°C.
- Resolution: 0.01°C.
- Width: 34 cm.
- Depth: 60 cm.
- Height: 80 cm.
- Weight: 34 kg.
- Electrical Supply: 100~240 Vac 50/60 Hz.

NewLab 411 ST
Freezing Point

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ASTM D1177
Freezing Point of engine coolants, antifreeze products.

Measuring Freezing Point Principle
According to the methods, the sample is cooled down and stirred. The solid hydrocarbon crystals formation are detected by means of a light beam throught fiber optic reflected thanks to a mirror. As soon as crystals are detected, the sample is warmed up until their complete disappearance.

Measuring Freezing Point Devices
- Light pulsed emission on I.R spectrum through a coaxial fibber optic
- Coaxial fibber optic equipped with a mirror

Measuring Temperature Probe
- Platinum resistance PT100 class A

Stirrer
- A micro-motor drives all the mechanical system
- 3 coils stirrer made of brass

Measuring Parameters
- Temperatures: in °C / °F
- Measuring range: +55°C up to -100°C
- Resolution: 0.01 °C
- Accuracy: ± 0.1 °C
- Repeatability / Reproducibility: as per standards methods or better

Software Features
- User friendly interface
- All analytical parameters recorded
- Customizable analysis parameters and methods
- Results report
- Printable graphs and results - any Windows® compatible printer can be used

The software includes:

Analysis Menu
- Standard method as per ASTM norm of reference
- Optional methods:
  · special detection of contaminants
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / °F / Volt

Calibration Menu
- Automatic calibration of each temperature probe
- Last calibration date referred to each single probe displayed and relative data printable
- Display of calibration diagram
- Insertion of offset values
- Standard and advanced calibration modes up to 100 calibration points

Data Utilities
- Fields for operator and product name
- Archive viewer for files recall
- All analysis stored in Excel® compatible format and JPG image
- Storage capacity for more than 60'000 analysis
- LIMS compatible

Integrated Touch Screen Panel PC
- TFT/LCD 8"
- Resolution 1024 × 768, 16.2 M colours
- 2 USB ports for connection to an external printer and/or external PC

Test Jar
- Same dimensions and volume as described by the standard test method ASTM D1177
- Small edge on the top in order to fix the glass cell to the analytical head

Cooling System
- Insulated cooling jackets
- Integrated gas CFC/HCFC free liquid helium motor compressor
- Equipped with an automatic energy power save system

Safety Devices
- Pressure controller
- Thermostat and thermo-switch

Electrical Supply
- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable:
- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat

Ambient Temperature
- Max 32 °C
- H.R. 80%

Dimensions and weight
- Width: 34 cm
- Depth: 60 cm
- Height: 80 cm
- Weight: 34 kg

Spare Parts
- 1210: Double tube 200 ml.
- 5235: Wire stirrer.
- 3596: PT100 product with connector.

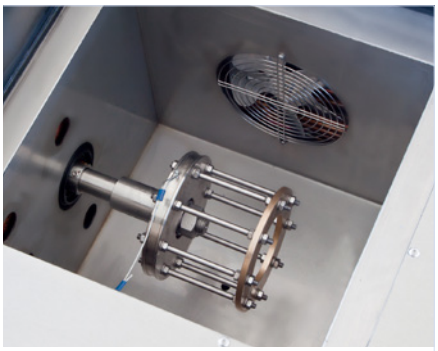
Calibration Tools
- 3013: Calibration decade box – PT100 simulator.
- 3102: Kit of connectors and cables.

NewLab 800
Low-temperature Torque

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CE





Newlab 800: Low-temperature Torque, testing chamber
Best raw materials and simplicity in construction, strong points that make it appreciated.

ASTM D1478
ASTM D4693

Subject

ASTM D1478: Low-temperature Torque of Ball Bearing Grease.
This test method covers the determination of the extent to which a grease retards the rotation of a slow-speed ball bearing by measuring starting and running torques at low temperatures, below -20°C (0°F).

ASTM D4693: Low-temperature Torque of Grease Lubricated Wheel Bearings.
This test method determines the extent to which a test grease retards the rotation of a specially-manufactured, spring-loaded, automotive-type wheel bearing assembly when subjected to low temperatures.
Torque values, calculated from restraining-force determinations, are a measure of the viscous resistance of the grease.
This test method was developed with greases giving torques of less than 35 N·m at 40°C.

Automatic Instrument for the Determination of Low-Temperature Torque of Greases

- Floor type instrument with steel structure painted with anti-epoxy products.
- Double stage refrigerating unit without CFC gases located in the bottom part of the structure - test cabin able to grant a working temperature of –73 °C.
- Internal double cabin made in stainless steel with high diffusion and homogeneity cooling system.
- Upper inspection door made in stainless steel with high insulation material.
- Geared motor, Ball-cage rotating at 1 rpm, digital dynamometer with easy connection system.
- Managed by a touch screen panel pc using Linetronic operating software running on Windows basis with following characteristic:
  · TFT/LCD 12";
  · 40 Gb HD;
  · 1024 × 768 resolution and 16 M colors;
  · 2 × USB ports;
  · Able to store more than 60'000 analysis.

Dimensions

- width 83 cm
- depth 75 cm
- height 142 cm

Weight

- 260 kg

Consumption

- 2500 Watt

Inrush Current

- 8000 Watt

Power Supply

- 220 Vac or 115 Vac 50/60Hz

Mandatory Accessories

- 16997: Mechanical mounting kit for performing analyzes according to ASTM D1478 standard including bearings for running tests.
- 16911: Mechanical mounting kit for performing analyzes according to ASTM D4693 standard including bearings for running tests.

Consumables

- 7056: ASTM D1478 Bearing LM11949/LM11910, pack of 3 pcs.
- 15765: ASTM D4693 tapered bearings, pack of 2 pcs.

Spare Parts

- 3800: Torque sensor ASTM D1478.
- 3799: Torque sensor ASTM D4693.
- 5804: Toothed belt.
- LAB-102-144: Torque wire.

CP+PP

NewLab 1300
Cloud and Pour Point



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CE

Cloud Point:
ASTM D5771
DIN 51597
EN 23015
EN 590
IP 444

Correlated:
ASTM D2500
ASTM D5772
ASTM D5773
IP 219
IP 445
IP 446
ISO 3015
JIS K2269

Pour Point:
ASTM D97
ASTM D5853
ASTM D5950
ASTM D6074
ASTM D6158
IP 15
IP 441
ISO 3016
EN ISO 22995

Subject

Cloud Point of petroleum products and biodiesel fuels.
Pour Point of petroleum products, crude oils, motor and engine oils, additives, lubricating oils, …

Measuring Principle

Cloud Point

The sample is cooled down according to the methods while the clouds appearance is observed on the silver bottom of the test jar by means of an optical sensor. The measurement is done by reflection on the silver bottom of the test jar via a fast light detector. The signal from light detector is traded by the LabLink software. The dynamic measurement is performed regardless of the sample's colour.

Pour Point

According to the methods, the sample is cooled down at a specified rate and, at the prescribed temperature intervals, the mechanical arm of the analyser lifts the test jar from the cooling jacket and tilts it in order to bring it in horizontal position to test the flow of the product.
The sample movement is detected by the thermal probes (PT100 detection) placed above the sample surface which react if touched by the cooled sample.

Measuring Cloud and Pour Point Devices

- Cloud: light pulsed emission on I.R spectrum through a coaxial fibber optic
- Pour: platinum resistance PT100 class A
- Pour: mechanical moving arm bringing the test jar in horizontal position

Measuring Temperature Probe

- Platinum resistance PT100 class A
- The Cloud Point PT100 is touching the bottom of the test jar

Measuring Parameters

- Temperatures: in °C
- Measuring range: +80°C … -80°C
- Resolution: 0.06 °C
- Accuracy: ± 0.1 °C
- Repeatability / Reproducibility: as per standards methods or better

Software Features

- New LabLink software able to manage up to 6 analytical heads simultaneously (stand alone)
- User friendly interface
- All analytical parameters recorded
- Customizable analysis parameters and methods
- Customizable results report
- Printable graphs and results
- Self-identification of the typology of the analysers connected

The software includes:

Analysis Menu

- Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference:
  · internal, with sample pre-heating, for Pour Point only
  · external, without sample pre-heating, for Pour Point only
- Optional methods:
  · fast bath, to reduce the time of analysis
  · T-sample – T-bath (delta T constant)
  · cooling rate °C / h
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions

Diagnostic Menu

- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / Volt

Calibration Menu

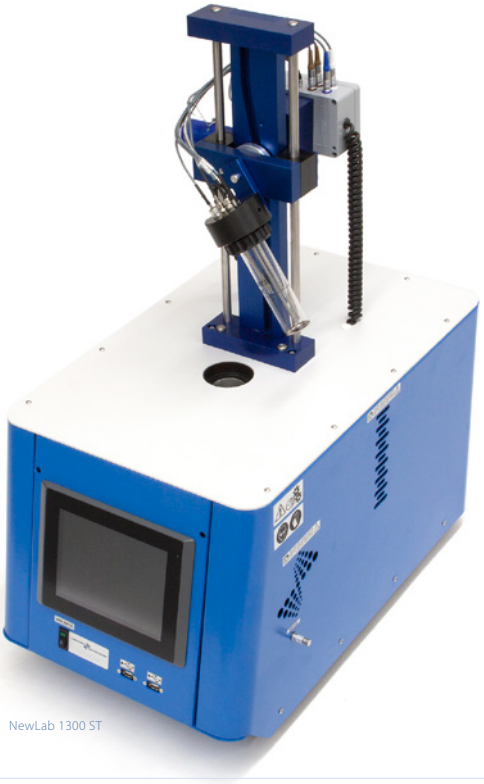
- Automatic calibration of each temperature probe
- Last calibration date referred to each single probe displayed and relative data printable
- Display of calibration diagram
- Insertion of offset values
- Standard and advanced calibration modes

Data Utilities

- Fields for operator and product name

CP+PP

NewLab 1300
Cloud and Pour Point



NewLab 1300 ST

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CE

- Archive viewer for files recall
- All analysis stored in Excel® compatible format
- Storage capacity for more than 60'000 analysis
- LIMS compatible

Integrated Touch Screen Panel PC

- TFT/LCD 12"
- Resolution 1024 × 768, 16.2 M colours
- 2 USB ports for connection to an external printer and/or external PC
- Storage capacity for more than 60'000 analysis

Test Jar

- Same dimensions and volume as described by the standard test methods
- Small edge on the top in order to fix the glass cell to the analytical head
- Silvered bottom with anti-scratch film protection

Cooling System

- Integrated gas CFC free motor compressors:
  · Single stage
  (for temperatures up to -40°C / 1)
  · Double stage
  (for temperatures up to -80°C / 2)
- Equipped with an automatic energy power save system.
  After 15 minutes from the end of the analysis the cooling system goes in stand-by mode.

Safety Devices

- Pressure controller for 1st stage motor compressor
- Pressure controller for 2nd stage motor compressor
- Thermostat for 2nd stage activation
- Thermo-switch for each cooling / heating jacket
- Motor compressors equipped with internal overload devices

Electrical Supply

- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable:

- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat resistant as per CENELEC directives

Ambient Temperature

- Max 32 °C
- H.R. 80%

Dimensions and weight

- 1 test pos.: w 66 × d 60 × h 80 cm, 60 kg
- 2 test pos.: w 66 × d 60 × h 80 cm, 90 kg / 100 kg
- 3 test pos.: w 100 × d 60 × h 80 cm, 130 kg
- 4 test pos.: w 134 × d 60 × h 80 cm, 160 kg
- 6 test pos.: w 130 × d 75 × h 170 cm, 280 kg

Spare Parts

- 5399: Optical fiber.
- 3399: PT100 product with connector Cloud Point.
- 3747: PT100 product with connector Pour Point.
- 3145: PT100 detection Pour Point.
- 1009: Test jar with silver bottom.
- 1008: Test jar for Pour Point.
- 7315: O-ring for test jar.

Calibration Tools

- 3013: Calibration decade box – PT100 simulator.
- 3102: Kit of connectors and cables.

NewLab 1300 ST

- Cooling system ST.
  · Integrated gas CFC free Stirling motor compressor.
  · For temperatures up to -110°C.
- Integrated Touch Screen Panel PC for ST.
  · TFT/LCD 8".
  · Resolution 1024 × 768.
- Measuring range: +55°C … -95°C.
- Resolution: 0.01 °C.
- Width: 34 cm.
- Depth: 60 cm.
- Height: 80 cm.
- Weight: 34 kg.
- Electrical supply: 100~240 Vac 50/60 Hz.

NewLab X

CFPP

FP

CP+PP





Analitical Head 1300 2.0

Analitical Head 410 2.0

Analitical Head 200 2.0

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CE

Methods

CFPP:
ASTM D6371
IP 309
EN 116
EN 16329

Correlated:
IP 419

Freezing Point:
ASTM D1655
ASTM D2386
IP 16

Correlated:
ASTM D1493
ASTM D5901
ASTM D5972
ASTM D6660
ASTM D7153
ASTM D7154
IP 435
IP 528
IP 529
ISO 3013
JIS K2276
DEF STAN91-091

Cloud Point
ASTM D5771
DIN 51597
EN 23015
EN 590
IP 444

Correlated:
ASTM D2500
ASTM D5772
ASTM D5773
IP 219
IP 445
IP 446
ISO 3015
JIS K2269

Pour Point
ASTM D97
ASTM D5853
ASTM D5950
ASTM D6074
ASTM D6158
IP 15
IP 441
ISO 3016
EN ISO 22995

Automatic Newlab X Bath

- Bench top instrument compact and solid structure painted with anti-epoxy products, include the refrigerator system (with Gas CFC free) and dedicated electronic board with the new Linetronic's **interchangeable head** system for use different analytical heads with a single cooling bath.
- Analytical head support made in aluminium and corrosion resistant plastics, automatic up-middle-down movement with locking system.
- Safety systems: Overheating alarm and protection, over-pressure protection system, head wrong position protection, Stand-by module for energy saving.
- Cooling Performance: able to grant working temperatures of -120°C …+55°C.
- Linetronic Management software running on 10" High-brightness TFT with resolution 1280 × 700:
  . Pre-setting for methods ASTM / IP / ISO;
  . Customizable analysis parameters;
  . Settable bath temperature and controlled by PT100 A Class with 0,1°C precision;
  . More than 60'000 analysis storage capacity;
  . 2 × USB for connecting: mouse, keyboard and software updates;
  . 1 x RJ45 Ethernet / Lims connection;
  . Integrated beeper for end-test notification.

Lightweight
- Only 17 Kg

Small footprint:
- Width 28 cm
- Depth 52 cm
- Height 50 cm

Power supply
- 220 or 115 Vac

- NewLab X must be equipped with one (at least) of the following analitical head →

Accessory Analitical Heads

Cold Filter Plugging Point
Analitical Head 200 2.0
- Analytical head made in aluminium and corrosion resistant plastics, automatic up-middle-down movement with locking system.
- Linetronic fixing system for glassware that allow an easy cleaning of all components.
- Integrated CFPP electronic board for manage and generate the vacuum.
- Glassware included: glass cell and aspiration pipette.
- PT100 temperature sensor.
- Filter holder with filter.

Freezing Point
Analitical Head 410 2.0
- Analytical head made in corrosion resistant plastics, automatic up-middle-down movement with locking system.
- Linetronic fixing system for glassware that allow an easy cleaning of all components.
- Integrated FP electronic board.
- Glassware included: Freezing glass cell.
- Fiber optic and PT100 sensor for Freezing Point temperature.
- Stirring motor and wire.
- Adapter for glassware.

Cloud and Pour
Analitical Head 1300 2.0
- Analytical head made in corrosion resistant plastics, automatic up-middle-down movement with locking system.
- Linetronic fixing system for glassware that allow an easy cleaning of all components.
- Integrated CPP electronic board.
- Glassware included: glass cell with silvered bottom.
- Fiber optic and PT100 sensor for Cloud Point temperature.
- PT100 sensors for Pour Point Detection and temperature.

OilLab 230
Filterability of Lubricating Oils

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1000462



3408



LT/DO-248000/N-20

ISO 13357 -1 -2

Procedure for the evaluation of the filterability of lubricating oils, particularly those designed for hydraulic applications, in the presence of water. The procedure only applies to mineral-based oils, since fluids manufactured from other materials (e.g. fire-resistant fluids) may not be compatible with the specified test membranes.

Automatic Instrument for Filterability of Lubricating Oils

- Bench top instrument with painted structure.
- Filter funnel with 47 mm filter support, made in stainless steel.
- Sample cylinder with tight closure, 350 ml capacity.
- Grounding system.
- Integrated pressure system with solenoid valve able to work up to 200 kPa.
- Integrated pressure sensor calibrated up to 260 kPa with deviation <0.1%.
- Filtrate monitoring system through a level sensor with precision 1 ml.
- Instrument is managed by dedicated electronics and by Windows®-based Linetronic Software with the following features:
  - High brightness 10"TFT/LCD touch screen with micro-computer board;
  - 1024 × 768 resolution and 16M colours;
  - I/O ports: 2 × USB for printer, mouse, keyboard;
  - Store capacity for more than 60'000 analysis;
  - Result export in .xls file;
  - Evaluate and overlap the results of 3 consecutive tests;
  - Automatic system for analysis interruption after 2 hours of test (as per method ISO 13357).
- Membrane filter 47 mm 0.8 µm, pack of 100 pcs.
- Glass cylinder with graduation 330 ml, for sampling.
- Glass cylinder 250 ml with further graduation at 10 and 300 ml, for test.
- Flat pliers for filters handling.
- Pack of 100 petrislide 47 mm for microscopic examination.
- Syringe 1 ml for adding liquids.

Power Supply

- 115 / 220 Vac 50/60 Hz

Spare Parts

- 7101: Membrane filter, pack of 100 pcs.
- 7309: Air filters for vacuum/compression system, pack of 10 pcs.
- 5670: Sample cylinder body made in stainless-steel with upper cover equipped with valve and quick connection, for test sample.
- 7379: Gaskets for sample cylinder, pack of 10 pcs.
- 2227: Glass cylinder with graduation 330 ml, for sampling.
- 2353: Glass cylinder 250 ml with further graduation at 10 and 300 ml, for test.

Accessories

- 1000462: Laboratory solvent dispenser
  - Wash capacity up to 1 lt.
  - Filter container made in stainless steel 25 mm diameter.
  - Pack of 100 pcs filter 0.45 µm, 25 mm diameter (P/n 5237).
  - Borosilicated glass flask.
  - PTFE High quality seal.
- 5237: Omnipore PTFE filters, 25 mm diameter, 0.45 µm, pack of 100 pcs.
- 1214: Glass bottle 500 ml capacity with screw cap, pack of 4 pcs.
- 3408: Overhead stirrer with digital display and RPM regulator, power supply 220 Vac, including:
  - Power cable;
  - Laboratory stand.
- LT/DO-248000/N-20: Mini-oven , 20 liters capacity, natural convection, for temperature from: +5 ambient up to +200°C.

OilLab 500
Ring and Ball

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CE

ASTM D36, ASTM E28
EN 1427
IP 58
ISO 4625
DIN 52011
NF T 66-008
AASHTO T53
JIS K2207

Subject
Softening point of bitumen, bituminous binders, hot coatings, tar, tall oil rosins, waxes, polymeric resins.

Measuring Ring-and-Ball Principle
The sample is heated in a liquid bath respecting the heating rate prescribed by the standards test methods. During this procedure the product gradually become softer and when the test ball fall a distance of 25 mm the softening point is determined.

Measuring Ring-and-Ball Devices
- Testing unit equipped with 2 steel balls, 9.5 mm diamenter, 3.5 gr.
- Mechanical ring holder and assembly, made of brass, support for 2 test rings, centering guide.
- Heating plate.
- Heat resistant glass Beaker, 800 ml capacity.
- Automatic falling ball detection system by video camera.

Measuring Temperature Probe
- Platinum resistance PT100 class A.

Measuring Parameters
- Temperatures: in °C.
- Measuring range: 0°C … +250°C.
- Analysis range: ambient up to +200° C.
- Resolution: 0.06 °C.
- Accuracy: ± 0.1 °C.
- Repeatability / Reproducibility: as per standards methods or better.

Integrated Touch Screen Panel PC
- TFT/LCD 8".
- Resolution 1024 × 768, 16.2 M colours.
- 2 USB ports for connection to an external printer and/or external PC.
- Storage capacity for more than 60'000 analysis.

Software Features
- All analytical parameters recorded.
- Customizable analysis parameters and methods.
- Customizable results report.
- Printable graphs and results.
- Self-identification of the typology of the analysers connected.

The software includes:

Analysis Menu
- Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference.
- Unknow sample.
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions.

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs.
- Selectable value displaying: °C / Volt.

Calibration Menu
- Automatic calibration. of each temperature probe.
- Last calibration date referred to each single probe displayed and relative data printable.
- Display of calibration diagram.
- Insertion of offset values.
- Standard and advanced calibration modes.

Data Utilities
- Fields for operator and product name.
- Archive viewer for files recall.
- All analysis stored in Excel® compatible format.
- LIMS compatible.

Heating
- Electrical heater 1200 W.
- Equipped with over temperature cut-out.
- Magnetic stirrer of approx. 250 rpm . for heating uniformity.

Cooling System
- Air forced ventilation fan.

Electrical Supply
- 220V ± 15% / 50 to 60 Hz.
- 115V ± 15% / 60 Hz.

Cord cable
- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat resistant as per CENELEC directives.

Ambient Temperature
- Max 35°C.
- H.R. 80%.

Dimensions
- Width 48 cm, depth 30 cm , height 52 cm.

Weight
- 25 kg.

Tools Required for Routine Calibration
- 3013: calibration decade box PT100 simulator.
- 3102: set of connectors and cables.

Spare Parts
- 5524: Stainless steel forceps with PVC handles, length 300 mm.
- 2376: Pyrex® jar.
- 5330: Shoulder ring ASTM D36 – E28 – EN1427, pack of 2 pcs.
- 5329: Ball centering guide ASTM D36 – E28 – EN1427, pack of 2 pcs.
- 5170: Balls pack of 10 pcs.
- 15539: Brass cage.
- 3056: Switching power supply.
- 3178: Solid state relay 40A.
- 3047: Motor for stirrer.
- 3171: Fan element, 220 Vac.
- 2466: Bath probe PT100.
- 3666: Heating element of 1200 W.
- 3701: Heater sensor.

Accessories
- 7138: Gloves heat resistant.
- 5333: Pouring plate made in brass 50 × 75 mm.

OilLab 525
Oxidation Stability of Gasoline and Aviation Fuels

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OilLab 525/L

ASTM D525 - ASTM D873 - ASTM D942
IP 40
EN ISO 7536

ASTM D525 - IP 40 - EN ISO 7536 - Oxidation Stability of Gasoline (Induction Period Method).
This test method covers the determination of the stability of gasoline in finished form only, under accelerated oxidation conditions.

ASTM D873 -Standard Test Method for Oxidation Stability of Aviation Fuels (Potential Residue Method).
This test method covers the determination of the tendency of aviation reciprocating, turbine, and jet engine fuels to form gum and deposits under accelerated aging conditions.

ASTM D942 - Oxidation Stability of Lubricating Greases by the Oxygen Pressure Vessel Method.
This test method determines resistance of lubricating greases to oxidation when stored statically in an oxygen atmosphere in a sealed system at an elevated temperature under conditions of test.

OilLab 525/L
Automatic Oxidation Stability Bath, liquid version - 4 positions, ASTM D525, D873 and D942

- Compact structure painted with anti-acid epoxy products.
- Stainless steel bath with approx. 40 liters capacity, insulated and equipped with a stirring motor for grant temperature uniformity and side drain cock for atmospheric draining.
- Upper cover equipped with 4 holes for test cells accommodation, un-used positions can be covered with stand-by covers that prevents heat loss, the cover is made in stainless-steel for easy cleaning.
- Front opening useful for deposit the cells after test for cool down and bath medium drainage.
- Stainless steel electric heaters protected inside the bath by a double bottom stainless-steel protection.
- Linetronic Management software running on 12" High-brightness 800cd/m^2 TFT with resolution 1024 × 768:
  · Pre-setting for method ASTM D525/ D873/ D942, or customizable analysis parameters;
  · Settable bath temperature and controlled by PT100 A Class with 0,1°C precision, automatic for method selected or custom temperature;
  · Calibration menu, result browser, dual level password protection;
  · More than >60'000 analysis storage capacity;
  · 2 × USB for connecting: mouse, keyboard and software updates;
  · 1 x RJ45 Ethernet / Lims connection;
  · Integrated beeper for end-test notification / errors;
- Oxygen sampling system with analog manometer and needle valve.
  · Dedicated software for real time monitoring and recording that includes:
  · Display of the pressure in bar / psi / Kpa;
  · Graph creation in real time during the test;
  · Invalid test indication in case of pressure leakage;
  · Export of files in .xls / .pdf / .jpg format;
  · Calibration up to 100 points.

Dimensions and Weight
- width 66 cm, depth 60 cm, height 45 cm
- 45 kg

Power Supply
- 220 Vac or 115 Vac 50/60 Hz

Consumption
- 1600 Watt

Temperature Range
- ambient to +150°C or +302°F
- precision 0.1°C

OilLab 525/ST-2
Automatic Oxidation Stability bath, dry version, 2 positions, ASTM D525, D873 and D942

- Compact structure painted with anti-acid epoxidy products.
- Single aluminium dry bath deeply coated, insulated and equipped with multi electrical heaters grant uniformity and stability.
- Upper cover equipped with 2 holes for test cells accommodation, un-used positions can be covered with stand-by covers that prevents heat loss, the cover is made in stainless-steel for easy cleaning.
- Linetronic Management software running on 8" high-brightness 800cd/m^2 TFT with res. 1024 × 768:
  · Pre-setting for method ASTM D525/ D873/ D942, or customizable analysis parameters;
  · Single settable bath temperature and controlled by PT100 A Class with 0,1°C precision, automatic for method selected or custom temperature;
  · Calibration menu, result browser, dual level password protection;
  · More than >60'000 analysis storage capacity;
  · 2 × USB for connecting: mouse, keyboard and software updates;
  · 1 × RJ45 Ethernet / Lims connection;
  · Integrated beeper for end-test notification / errors
  · Export file in .xls format
- Dedicated software for real time monitoring and recording that includes:
  · Display of the pressure in bar / psi / Kpa;
  · Graph creation in real time during the test;
  · Invalid test indication in case of pressure leakage;
  · Export of files in xls. / .pdf / jpg. format;
  · Calibration up to 100 points.
- Oxygen filling system with manual needle valve, analog manometer and filling tube, rear connection permit to joint to external Oxygen line (mandatory)

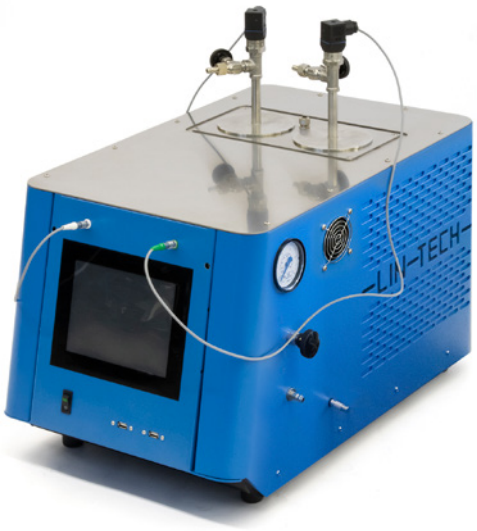
Dimensions and Weight
- width 34 cm, depth 60 cm, height 45 cm
- 28 kg

Power Supply
- 220 Vac or 115 Vac 50/60 Hz

Consumption
- 220 Vac: 1200 Watt
- 115 Vac: 900 Watt

Temperature Range
- ambient to +150°C or +302°F
- precision 0.1°C

OilLab 525
Oxidation Stability of Gasoline and Aviation Fuels



OilLab 525/ST-2



OilLab 525/ST-4

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OilLab 525/ST-4
Automatic Oxidation Stability bath, dry version, 4 positions, ASTM D525, D873 and D942

- Compact structure painted with anti-acid epoxidy products.
- Double aluminium dry bath deeply coated, insulated and equipped with multi electrical heaters grant uniformity and stability.
- Upper cover equipped with 4 holes for test cells accommodation, un-used positions can be covered with stand-by covers that prevents heat loss, the cover is made in stainless-steel for easy cleaning.
- Front opening useful for deposit the cells after test for cool down.
- Linetronic Management software running on 8" high-brightness 800 cd/m² TFT with resolution 1024 × 768:
  · Pre-setting for method ASTM D525/ D873/ D942, or customizable analysis parameters;
  · Double settable bath temperature and controlled by PT100 A Class with 0,1°C precision, automatic for method selected or custom temperature;
  · Calibration menu, result browser, dual level password protection;
  · More than >60'000 analysis storage capacity;
  · 2 × USB for connecting: mouse, keyboard and software updates;
  · 1 × RJ45 Ethernet / Lims connection;
  · Integrated beeper for end-test notification / error;
  · Export file in .xls format.
- Dedicated software for real time monitoring and recording that includes:
  · Display of the pressure in bar / psi / Kpa;
  · Graph creation in real time during the test;
  · Invalid test indication in case of pressure leakage;
  · Export of files in xls. / .pdf / jpg. format;
  · Calibration up to 100 points.
- Oxygen filling system with manual needle valve, analog manometer and filling tube, rear connection permit to joint to external Oxygen line (mandatory).

Dimensions and Weight
- width 34 cm, depth 60 cm, height 45 cm
- 38 kg

Power Supply
- 220 Vac or 115 Vac 50/60 Hz

Consumption
- 220 Vac: 2400 Watt
- 115 Vac: 1800 Watt

Temperature Range
- ambient to +150°C or +302°F
- precision 0.1°C

Accessories for ASTM D525 – D873

1000183
Oxidation Pressure Vessel ASTM D525 - D873
- Complete of:
  · Threaded suspension lid;
  · Stem with filler rod and mounting flange;
  · Needle valve for purging, pressurizing and exhausting pressure vessel with oxygen;
  · Glass sample container with cover made in glass;
  · Burst disc assembly set at 15 bar;
  · Pressure transducer sensor.
- Interior of the pressure vessel can be easily cleaned to prevent corrosion.
- Threaded lid and vessel allow a tight closure.

1000536
Oxidation Pressure Vessel ASTM D525 - D873
- Complete of:
  · Threaded suspension lid;
  · Stem with filler rod and mounting flange;
  · Needle valve for purging, pressurizing and exhausting pressure vessel with oxygen;
  · Glass sample container with cover made in glass;
  · Re-armable safety relief valve set at 15 bar;
  · Pressure transducer sensor;
  · Interior of the pressure vessel can be easily cleaned to prevent corrosion;
  · Threaded lid and vessel allow a tight closure.

Spare Parts ASTM D525 - D873
- 2487: glass sample container with cover, pack of 2 pcs.
- 7064: gasket for vessel, pack of 10 pcs.
- 5432: needle valve for purging/discharging pressure vessel.
- 16433: rupture disk set at 15 bar (only for 1000183 and 1000537).

Accessories for ASTM D942

15605-AUT
Linetronic Oxidation Pressure Vessel ASTM D942
- Pressure vessel made in stainless steel with threaded body.
- Complete of:
  · Threaded suspension lid;
  · Stem with mounting flange;
  · Needle valve for purging, pressurizing and exhausting pressure vessel with oxygen;
  · Holder and glass dishes;
  · Pressure transducer sensor.
- Interior of the pressure vessel can be easily cleaned to prevent corrosion.
- Threaded lid and vessel allow a tight closure.

Spare Parts ASTM D942
- 5290: dish holder, 5 places, made in stainless steel
- 5292: sample dish, Pyrex®, 41 mm diameter, pack of 5 pcs.
- 7064: gasket for vessel, pack of 10 pcs.

Tools or Routine Calibration
- 3013: calibration decade box - PT100 Simulator.
- 3102: kit of connectors and cables.
- 3096: digital thermometer reader with LCD display for PT100, PT1000, resolution 0.01°C, accuracy 0.01°C, read up to +650°C.
- 3774: PT100 sensor 3 mm diameter, 605 mm length, with connector.

OilLab 560
Evaporation Bath

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CE


OilLab 560


1000160


LT/FA-247000/M


5210

ASTM D381
DIN 51784
IP 131
IP 540
EN ISO 6246

Gum Content in Fuels by Jet Evaporation.
This test method covers the determination of the existent gum content of aviation fuels, and the gum content of motor gasolines or other volatile distillates in their finished form (including those containing alcohol and ether type oxygenates and deposit control additives) at the time of test.

OilLab 560 - Automatic Evaporation Bath Air and Steam Jet

- Bench top instrument with steel structure painted with anti-epoxy products.
- Rectangular aluminium metal block bath deeply coated equipped with 8 × removable adapters.
- Upper cover in stainless steel for easy cleaning.
- 2 × dedicated inlet lines.
  - Air inlet with in-line digital flowmeters for monitor the instant air-flow for each position and regulate it trough in-line proportional valves.
  - Steam inlet with distribution manifold, super heater with drainage valve and manual regulation valves for fine regulation of the flow.
- 8 × jets, one for each test place, fitted with its conical adapters with 500 to 600-micron screens.
- Stainless-steel total contact heating elements assure fast heating, uniformity and stability to the metal block up to +280°C, temperature precision and stability 0.1°C.
- Managed by a Touch Screen Panel PC by means of the Lab-Link software running in Windows ambient.
  - TFT/LCD 12", resolution 1024 × 768 16M colours.
  - 2 × I/O ports: USB for connection to an external printer, mouse, keyboard.
  - Storage capacity for more than 60'000 analysis.
- Software performance.
  - Monitoring of temperature and timer for each test position.
  - Perform analysis according to ASTM D381 or customized method.
  - Diagnostic control of each independent air or steam valve.
  - Calibration: bath temperature, up to 100 points; flow sensor, independently for each sensor.
  - Timer setting for each outlet.
- Rear connection for automatic pilot of LT/FA-247000/M.
- 8 × glass beaker, 100 ml capacity.

Temperature Range

- Ambient to +280°C, with precision 0.1°C.

Dimensions and Weight

- 48 × 48 × 56 cm.
- 52 kg.

Power Supply and Consumption

- 230 Vac or 115 Vac - 50/60 Hz.
- 2300 Watt - 2 × 12A fuses.

Accessories

- T-AS3C: Thermometer ASTM 3C.
- 5550: Tongs made in stainless steel with corks protection, total length 250 mm.

Steam Accessories

- 1000160: Industrial steam generator.
  - Steam supply: 19.5 kg / h.
  - Heating power installed: 15-18 Kw.
  - Steam temperature @ 3.5 bar: 152°C.
  - Power supply: 400 V, 3 ph, 50 Hz.
  - Working pressure: 5 bar.
  - Max. working pressure: 5,5 bar.
  - Water: must be connected to a water line (boiler capacity 10 liters).
  - Delivery tube 3 meters.
- OilLab 142: Steam verification kit composed by 2000 ml graduated glass cylinder and copper tube.

Air Accessories

- LT/FA-247000/M: Side channel flow apparatus.
  - Full die-cast aluminium construction.
  - No contact between rotating and static components.
  - Motor power: 2.20 kW.
  - Power supply: 230 V 50/60 Hz or 115 Vac.
  - Designed flow rate: 150 m3/h - 0 mbar.
  - Noise level: 66 dB(A).
  - Weight: 27 Kg.
  - Connection tube for instrument: 1 meter.
- 5210: Air filter for flow apparatus.
  - Kit composed by filter support with screwing cover made in painted steel, filter element with particle retain and adapter for connection to flow apparatus.
- 7084: Filter element (spare of kit p/n 5210).
- 3189: Mass flow meter.
  - Flow mass range from 1.2 to 60 nl/min.
  - Digital display readout.
  - Connection joints ¼".
  - Power supply: battery or micro-USB power supply.
  - Operating pressure: 0.2 – 11 bar.
  - Made in anodized aluminium, Fkm seals.
  - Repeatability ± 0.5% of full scale.

Spare Parts

- 1052: Pyrex® Beaker.
- 3114: Heating cartridge 100 mm, 115 Vac for heating block, pack of 2.
- 3168: PT100 probe 180 mm for steam superheat block.
- 3169: Safety thermostat.
- 3178: Solid state relay 40A.
- 3190: Heating cartridge 100 mm – 230 Vac for steam superheat block, pack of 2 pcs.
- 3393: PT100 sensor.
- 5476: Spare metallic mesh, pack of 10 pcs.
- 7082: Air jet complete, pack of 4 pcs.

OilLab 570
Oxidation Stability Bath by Pressure Vessel RPVOT

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OilLab 570-SA

ASTM D2112 - D2272 - D4742 - D7098
IP 229

ASTM D2112
Oxidation Stability of Inhibited Mineral Insulating Oil by Pressure Vessel
This test method is intended as a rapid method for the evaluation of the oxidation stability of new mineral insulating oils containing a synthetic oxidation inhibitor.

ASTM D2272
Oxidation Stability of Steam Turbine Oils by Rotating Pressure Vessel (RBOT)
This test method utilizes an oxygen-pressured vessel to evaluate the oxidation stability of new and in-service Turbine oils having the same composition (base stock and additives) in the presence of water and a copper catalyst coil at 150°C.

ASTM D4742
Oxidation Stability of Gasoline Automotive Engine Oils by Thin-film Oxygen Uptake (TFOUT)
This test method evaluates the oxidation stability of engine oils for gasoline automotive engines. This test, run at 160°C, utilizes a high pressure reactor pressurized with oxygen along with a metal catalyst package, a fuel catalyst, and water in a partial simulation of the conditions to which an oil may be subjected in a gasoline combustion engine.

ASTM D7098
Standard Test Method for Oxidation Stability of Lubricants by Thin-Film Oxygen Uptake (TFOUT) Catalyst B
This test method covers the oxidation stability of lubricants by thin-film oxygen uptake (TFOUT) Catalyst B. This test method evaluates the oxidation stability of petroleum products, and it was originally developed as a screening test to indicate whether a given re-refined base stock could be formulated for use as automotive engine oil (see Test Method D4742).
The test is run at 160 °C in a pressure vessel under oxygen pressure, and the sample contains a metal catalyst package, a fuel catalyst, and water to partially simulate oil conditions in an operating engine. In addition, the test method has since been found broadly useful as an oxidation test of petroleum products.

IP 229 - Relative Oxidation Stability by Rotating Bomb of Mineral Turbine Oil (RBOT)
This method covers a rapid means for estimating the oxidation stability of new turbine oils having the same composition.

OilLab 570-SA
Automated Oxidation Stability Bath by Pressure Vessel (RPVOT), 4 places

- Compact structure painted with anti-acid epoxy products.
- Heavy designed stainless-steel bath with capacity of approx. 40 liters and equipped with lateral drain valve for easily empty the bath.
- Double total immersion heating elements allow perfect bath stability and temperature range from ambient up to +199°C, stability +/- 0.1°C.
- Uniformity is granted by internal motorized stirring system and protection/diffusion grid.
- Upper part made in stainless-steel for easily cleaning equipped with heating resistant handle for open/close the bath port.
- 4 position support equipped with bearings grants 30° angle vessel-rotation.
- 4 Rear independents motors grant vessel rotation of 100 rpm according to the ASTM specifications, individually speed setting for easily calibration.
- Bath equipped with a Touch Screen panel PC:
  · FT/LCD 12"
  · 40 Gb HD
  · Resolution 1024 × 768 and 16M colours
  · 2 × USB Ports
- The dedicated software manages:
  · The motors for the rotation of the 4 cylinders independently;
  · The bath temperatures by means of a PT100 sensor class A that can be displayed in °C / °F, including the overtemperature safety alarm.
- Dedicated software for real time monitoring and recording that includes:
  · 5 methods (12 / 24 / 48 / 96 and 192 hours)
  · Display of the pressure in bar / psi / Kpa
  · Graph creation
  · Export of files in xls. and / or jpg. format
  · Calibration

Power Supply
- 230 Vac or 115 Vac, 50/60 Hz

Temperature Range
- Ambient to +199°C
- Precision 0.1°C

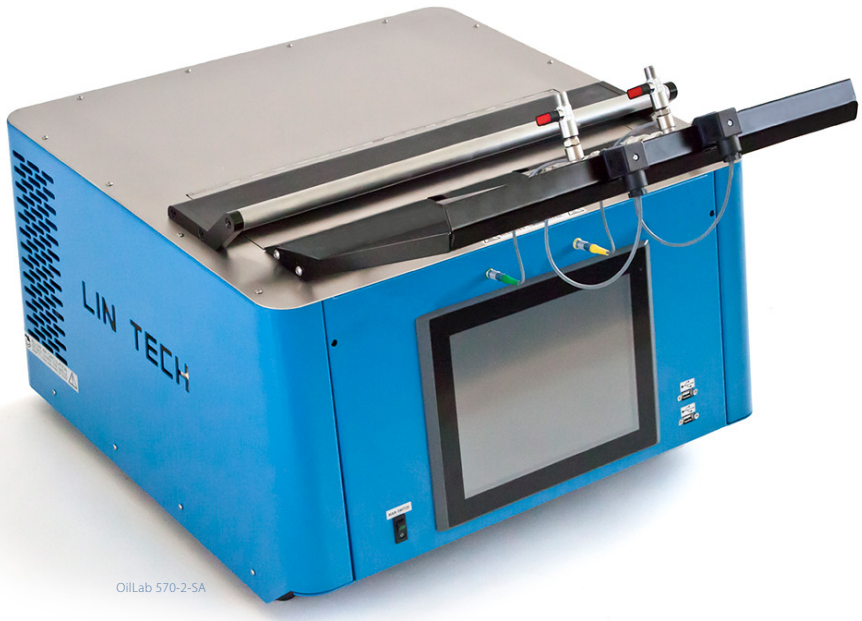
Consumption
- 2000 Watt

Dimensions
- 70 × 85 × 60 cm

Weight
- 60 kg (empty)

OilLab 570
Oxidation Stability Bath by Pressure Vessel RPVOT

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OilLab 570-2-SA

OilLab 570-2-SA
Automated Oxidation Stability Bath by Pressure Vessel (RPVOT), 2 places

- Compact structure painted with anti-acid epoxy products.
- Heavy designed stainless-steel bath with capacity of approx. 40 Liters and equipped with lateral drain valve for easily empty the bath.
- Double total immersion heating elements allow perfect bath stability and temperature range from ambient up to +199°C, stability +/- 0.1°C.
- Uniformity is granted by internal motorized stirring system and protection/diffusion grid.
- Upper part made in stainless-steel for easily cleaning equipped with heating resistant handle for open/close the bath port.
- 2 position support equipped with bearings grants 30° angle vessel-rotation.
- 2 Rear independents motors grant vessel rotation of 100 rpm according to the ASTM specifications, individually speed setting for easily calibration.
- Bath equipped with a Touch Screen panel PC:
  - TFT/LCD 12"
  - 40 Gb HD
  - Resolution 1024 × 768 and 16M colours
  - 2 × USB Ports
- The dedicated software manages:
  - The motors for the rotation of the 2 cylinders independently;
  - The bath temperatures by means of a PT100 sensor class A that can be displayed in °C / °F, including the overtemperature safety alarm.
- Dedicated software for real time monitoring and recording that includes:
  - 5 methods (12 / 24 / 48 / 96 and 192 hours)
  - Display of the pressure in bar / psi / Kpa
  - Graph creation
  - Export of files in xls. and / or jpg. format
  - Calibration

Power Supply
- 230 Vac or 115 Vac, 50/60 Hz

Temperature Range
- Ambient to +199°C
- Precision 0.1°C

Consumption
- 2000 Watt

Dimensions
- 70 × 85 × 60 cm

Weight
- 60 kg (empty)

OilLab 570-D
Automated Oxidation Stability Dry Bath by Pressure Vessel (RPVOT), 4 places

- Compact structure painted with anti-acid epoxy products.
- Heavy designed stainless-steel dry block positioned at 30° equipped with heating elements grant an optimal heat distribution over the entire cell length from ambient up to +199°C, stability +/- 0.1°C.
- Upper part made in stainless-steel for easily cleaning equipped with heating resistant handle for open/close the bath port.
- 4 position support equipped with bearings grants 30° angle vessel-rotation.
- 4 rear independents motors grant vessel rotation of 100 rpm according to the ASTM specifications, individually speed setting for easily calibration.
- Bath equipped with a Touch Screen panel PC:
  - TFT/LCD 12"
  - 40 Gb HD
  - Resolution 1024 × 768 and 16M colours
  - 2 × USB Ports
- The dedicated software manages:
  - The motors for the rotation of the 4 cylinders independently;
  - The bath temperatures by means of a PT100 sensor class A that can be displayed in °C / °F, including the overtemperature safety alarm.
- Dedicated software for real time monitoring and recording that includes:
  - 5 methods (12 / 24 / 48 / 96 and 192 hours)
  - Display of the pressure in bar / psi / Kpa
  - Graph creation
  - Export of files in xls. and / or jpg. format
  - Calibration

Power Supply
- 230 Vac or 115 Vac, 50/60 Hz

Temperature Range
- Ambient to +199°C
- Precision 0.1°C

Consumption
- 2000 Watt

Dimensions
- 70 × 85 × 60 cm

Weight
- 70 kg

OilLab 570
Oxidation Stability Bath by Pressure Vessel RPVOT



OilLab 570-D

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Accessories for Liquid Bath
- 7223: Silicon Oil
  - Viscosity approx. 350 mm² / S @ 25 °C
  - Suitable for working temperatures up to +220 °C
  - Can of 20 litres
  - Requested quantity 2 cans

Common Accessories
- 5949: Automatic Pressure Vessel RPOVT.
  - According to ASTM D2112, D2272, D4742, D7098.
  - Made in high quality corrosion resistant stainless-steel.
  - O-ring for stem.
  - O-ring for lid.
  - Stainless-steel stem calibrated.
  - Needle valve on top for pressurizing/de-pressurizing.
  - ¼" Female connection pressure reader.
  - Pressure sensor 0-16 bar rel.

Accessories D2112
- 1258: Glass sample container 175 ml.
- 7140: PTFE cover, pack of 10 pcs.
- 7142: Retaining hold-down spring made in stainless steel.
- 7545: Copper wire catalyst 3 meters, pack of 5 pcs.
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.
- T-AS96C: Thermometer ASTM 96C.

Accessories D2272
- 1258: Glass sample container 175 ml.
- 7668: PTFE cover with 4 holes, pack of 10 pcs.
- 7142: Retaining hold-down spring made in stainless steel.
- 7545: Copper wire catalyst 3 meters, pack of 5 pcs.
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.
- T-IP37C: Thermometer IP 37C.

Accessories D4742 – D7098
- 1260: Glass container.
- 7669: PTFE cover with 1 hole, pack of 10 pcs.
- 7142: Retaining hold-down spring made in stainless steel.
- 7149: Aluminum insert made of 2024.
- T-AS102C: Thermometer ASTM 102C IP 83C.

Optional Accessories
- 1000178: Electric winding mandrel for copper wire catalyst coiling:
  - Mounted on solid base with possibility to fix to bench;
  - 220 Vac or 115 Vac 50/60 Hz.
- 7590: Linetronic Varclean solution:
  - For cleaning the RBOT glass cell and internal chamber;
  - With spray ended selector;
  - 500 ml approx.
- 7151: Copper wire 500 gr, 1.6 mm diameter, approx. 28 m.
- 7153: Copper wire 5000 gr, 1.6 mm diameter, approx. 280 m.
- 5853: Rack for vessel:
  - During the assembly and disassembly;
  - 4 positions;
  - Including key for easy demounting.
- LAB-O2-transfer kit: Oxygen transfer kit with quick coupling Extensible polyurethane tube 1.6 meters minimum length.

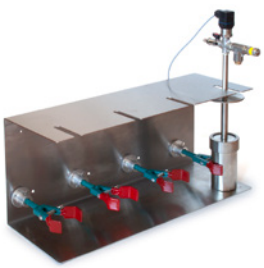
Accessories for Performance Verification
- 7579: RBOT D2272 reference liquid:
  - Approx. 2000 ml;
  - Reference value approx. 643 min.
- 7589: RBOT D2272 reference liquid:
  - Approx. 2000 ml;
  - Reference value approx. 1100 min.


5949


1000178



7590


5853


7579 - 7589

OilLab 571
Oxidation Stability of Steam Turbine Oils RPVOT

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ASTM D942 - D2272 - D4742 - D7098
IP 229

ASTM D942 - Standard Test Method for Oxidation Stability of Lubricating Greases by the Oxygen Pressure Vessel Method.

ASTM D2272 - Oxidation Stability of Steam Turbine Oils by Rotating Pressure Vessel (RBOT).

ASTM D4742 - Oxidation Stability of Gasoline Automotive Engine Oils by Thin-film Oxygen Uptake (TFOUT).

ASTM D7098 - Standard Test Method for Oxidation Stability of Lubricants by Thin-Film Oxygen Uptake (TFOUT) Catalyst B.

IP 229 - Relative Oxidation Stability by Rotating Bomb of Mineral Turbine Oil (RBOT).

OilLab 571
Automatic Oxidation Stability of Steam Turbine Oils ASTM D2272, Dry Bath.

- Compact structure painted with anti-acid epoxy products.
- Heavy designed stainless-steel dry block positioned at 30° equipped with heating elements grant an optimal heat distribution over the entire cell length.
- Magnetic rotation of the internal analysis beaker at 100 rpm.
- Automatic system for charging and de-pressurizing oxygen.
- Linetronic management software running on 8" High-brightness 800cd/m² TFT with resolution 1024 × 768.
  - Pre-setting for method ASTM D2272 or customizable analysis parameters.
  - Bath temperature controlled by PT100 A Class with 0,1°C precision, automatic for method selected or custom temperature.
  - Calibration menu, result browser, dual level password protection.
  - More than >60'000 analysis storage capacity.
  - 2 × USB for connecting: mouse, keyboard and software updates.
  - 1 × RJ45 Ethernet / Lims connection.
  - Integrated beeper for end-test notification/ errors.
- Dedicated software for real time monitoring and recording.
  - Display of the pressure in bar / psi / Kpa.
  - Graph creation in real time during the test.
  - Invalid test indication in case of pressure leakage.
  - Export of files in xls. / .pdf / jpg. format.
  - Calibration up to 100 points.
- Rear connection permit to joint to external oxygen line.
- 1 × Glass sample container.
- 1 × Copper catalyst.
- 1 × Beaker cover.
- 1 × Spring clip.

Power Supply
- 230 Vac or 115 Vac, 50/60 Hz

Temperature Range
- Ambient to +150°C
- With precision 0.1°C

Consumption
- 1000 Watt

Dimensions
- 35 × 38 × 41 cm

Weight
- 25 kg

Calibration Accessories
- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.
- 3764: Pressure Calibration Kit.
  - Hand pump with connection tube for pressure -0,95 …+ 35,0 bar.
  - Adapters.
  - Digital pressure gauge -1..+30 Bar rel. +/- 0.1%FS.
- 15902: Stainless steel cover with hole. for calibration.
- 3887: Temperature sensor for tank calibration.

Accessories D2272
- 7545: Copper wire catalyst 3 meters, pack of 5 pcs.
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.

Reference Sample
- 7579: ASTM D2272 reference liquid.
  - Approx. 2000 ml.
  - Reference value approx. 643 min.
- 7589: ASTM D2272 reference liquid.
  - Approx. 2000 ml.
  - Reference value approx. 1100 min.

Spare Parts D2272
- 1258: Glass container,175 ml, pack of 3 pcs.
- 7375: Cover in PTFE for glass, pack of 5 pcs.
- 15904: Beaker centering made in PEEK.
- 5620: Spherical cone, pack of 5 pcs.
- 7142: Compensation spring made in stainless steel.
- 7307: O-ring for cell cover, pack of 5 pcs.
- 5681: Holder for glass container.

Optional Accessories
- 1000178: Electric winding mandrel for copper wire catalyst coiling.
  - Mounted on solid base with possibility to fix to bench.
  - 220 Vac or 115 Vac 50/60 Hz.
- 7590: Linetronic Varclean solution.
  - For cleaning the glass cell and interior chamber.
  - With spray ended selector.
  - 500 ml approx.
- 7151: Copper wire 500 gr, 1.6 mm diameter, 28 m.
- 7153: Copper wire 5000 gr, 1.6 mm diameter, 280 m.
- 942 Kit: Analysis kit to perform the ASTM D942 test.
  - Dish holder with 5 glass sample dish.
  - Instrument vertical swing-balance system.
  - Holder support and centering system.
  - Software for ASTM D942 method.
- 4742 Kit: Analysis kit to perform the ASTM D4742/D7098 test.
  - Aluminum insert for reduce volume of chamber.
  - Glass, Teflon cover and spring.
  - Adapter kit for perform method on OilLab 571.
  - Software for ASTM D4742 and D7098 method.

OilLab 573
Oxidation Stability - RSSOT

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ASTM D7525
ASTM D7545

ASTM D7525
Standard Test Method for Oxidation Stability of Spark Ignition Fuel — Rapid Small Scale Oxidation Test (RSSOT)
This laboratory test method covers the quantitative determination of the stability of spark ignition fuel, including those containing alcohols or other oxygenates, under accelerated oxidation conditions, by an automatic instrument.

ASTM D7545
Standard Test Method for Oxidation Stability of Middle Distillate Fuels — Rapid Small Scale Oxidation Test (RSSOT)
This laboratory test method covers a quantitative determination of the stability of middle distillate fuels such as diesel fuels and heating oils, with up to 100 % biodiesel, under accelerated oxidation conditions, by an automatic instrument.

OilLab 573
Automatic Oxidation Stability Analyzer

- Automatic benchtop instrument for determining oxidation in accordance with ASTM D7525 and D7545 standards.
- Internal dry stainless steel test chamber with a 20ml capacity.
- Automatic oxygen filling and exhaust system.
- Stainless steel lid with o-ring seal.
- Integrated pressure sensor capable of measuring up to 1800 kPa.
- Class A PT100 temperature sensor with 0.1°C resolution/accuracy.
- Heating capacity above +140°C, forced air cooling.
- Equipped with a 7" touchscreen display.
  · 40 GB internal storage.
  · 2 USB ports, 1 RJ45 Ethernet port.
  · Dedicated management software, with the option of remote control via optional ALINK software.
  · Pressure is displayed in real time via a graph in kPa.
  · Export results via .xls, .jpg, or .pdf file format.
  · Calibration menu for temperature and pressure.

Power Supply

- 220 Vac, 50/60 Hz.

Dimensions

- 35 × 38 × 35 cm.

Weight

- 60 kg (empty).

Spare Parts

- LAB-573-014: O-ring for test cell sealing, pack of 100 pcs.

Calibration Tools

- 3764: Pressure calibration kit.
  · Hand pump with connection tube for pressure -0,95 …+35,0 bar.
  · Adapters.
  · Digital pressure gauge –1…+30 bar rel. ±0.1%FS.
- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.
- 15902/573: Stainless steel cover with hole for calibration.
- 3887/573: Temperature sensor for tank calibration.



3764

OilLab 580
Noack

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CE



ASTM D5800
CEC L-40-A-93
DIN 51581
IP 421
JPI-5S-41-04
NB/SH/T 0059

Determination of the evaporation loss of lubricating oils (particularly engine oils). Procedure A uses the Noack evaporative tester equipment. Procedure B uses the automated non-Woods metal Noack evaporative apparatus.

Measuring Noack Principle

A quantity of 65 grams of sample is heated to a specific temperature and maintained for 1 hour while it is enclosed in a crucible, the crucible's cover is shaped to allow a constant vacuum of -2 mbar to remove from the crucible the evaporating portion of the sample.
At the end of the test, the sample is cooled and then reweighted: the difference, reported in percentage, represent the sample's Evaporation Loss by the Noack Method.
Method A: bath is controlled at 250°C;
Method B: the sample is controlled at 245.2°C.

OilLab 580
Automatic Noack Tester

- Small footprint table top instrument.
- Dry aluminium heating block electrically heated, non-woods metal needed.
- High efficiency vacuum pump with oil resistant membranes, in-line filter with discharging of condensate to protect the pump from oil entrance.
- Dedicated electronic board for automatic control of temperature and differential pressure.
  · Measuring range: 0 °C … 320 °C.
  · Resolution 0.01°C, accuracy 0,5°C.
  · Differential pressure 20 mm H2O, accuracy 1%.
- Managed by a touch screen panel PC by means of the Lab-Link software running in Windows ambient.
  · TFT/LCD 8".
  · Resolution 1024 × 768 and 16.2M colours.
  · 2 × USB ports.
  · Storage capacity for more than 60'000 analysis.
  · Lin-Tech operating software Lab-Link running in Windows ambient.
  · External balance can be connected for automatic reading of the weight.
- Supplied with the instrument:
  · Evaporation crucible with PT100 and 10 test balls;
  · Nozzle cleaner, pliers and hook wrench for demount the crucible;
  · Protection gloves for heat protection.

Dimensions

- Length 40 cm
- Width 45 cm
- Height 45 cm

Weight

- 22 kg

Electrical Supply

- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Ambient Temperature

- Max 35°C
- H.R. 80%

Accessories

- 2139: Glassware acc. CEC L40-A-93, 1 complete set:
  · 2 glass bottles 2 litres capacity;
  · Rubber bungs;
  · Glass delivery tubes, internal diameter 4 mm;
  · Silicone tubings.
- 5747: Stainless steel stand for correct positioning of all the glassware:
  · Inclined water-manometer for measure 20 mm H2O.
  · Glass filter tower "Fresenius Column" filled with synthetic wadding.
  · Holder for crucible during stand-by.
  · Cooling vessel for crucible.

Spare Parts

- 5447: Evaporation crucible made in stainless steel with outage tube and ferrule for PT100.
- 3597: PT100 sample with connector.
- 7334: Silicon tubing 2 m for connecting the glassware.
- 7309: Air filters, for vacuum/compression system, pack of 10 pcs.
- 7456: Test balls, pack of 10 pcs.
- 7311: Nozzle cleaner.
- 7138: Gloves heat resistant.
- 2129: Fresenius column filled with synthetic wadding and with silicon connection tubes.
- 7320: Synthetic wadding for Fresenius column, pack of 250 g.

OilLab 580
Noack



Particular attention has been payd to the integrated vacuum pump that is also protected by an inlet filter for residual recovery.



Crucible holder made in stainless steel keeps the cup assembly ready to use.



Protection gloves ans hook wrench, high quality materials for safety operations.



With the pliers the nut of the crucible cover is accurate and easily fixed.



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- 16587: PT100 ptfe guide and PTFE sealing ring
- 5950: Crucible Gasket kit composed by PTFE gasket (A) and threaded ring and drilled made in metal (B).
- 7331: Hook wrench
- 7330: Pliers
- 2302: Woulf bottle.
- 2143: Elbow tube made of glass.
- 2144: Tube Y shape made of glass.
- 2142: Tube short bent made of glass.
- 2141: Tube long bent made of glass.

Tools Required for Routine Calibration

- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.

Reference Oil

- 7312: Noack reference oil RL 208.

Optional Accessories

- 1000461: Analytical balance.
  - · Capacity: 510 g.
  - · Readability: 1 mg.
  - · Linearity: ±2 mg.
  - · Repeatability: ±1.00 mg.
  - · Response time: 5/8 sec.
  - · Pan diameter: 110 mm.
  - · Calibration: internal.
  - · LCD display with small decimal digits.
  - · Membrane keyboard, water proof and solvent resistant, easy to use with TARE, ON/OFF, PRINT and MODE keys.
  - · Indication of the reached stable weight.
  - · Bar-graph indicator of dosage and remaining capacity of the balance.
  - · Parameters configurable by menu, reading in g (grams), lb (pound), oz (ounce), ct (carats), pcs (pieces), % (percentage).
  - · Full scale automatic calibration with internal and/or external mass.
  - · Weighing underneath the balance.
  - · Selectable response time: "fast/slow".
  - · Data output: RS232 I/O adjustable.
  - · Operating temperature: 10° … 35°C (optimum 18° … 28°C) 15° … 25°C for models with CE mark (Legal metrology).
  - · Power supply: 230 Vac 50 Hz.
  - · Power consumption: 200 mA.
  - · Dimensions: width 21,6 cm, depth 38 cm, height 33,5 cm.
  - · Weighing chamber dimensions: width 18 cm, depth 15 cm, height 20 cm.
  - · Net weight: 7 kg.

OilLab 590
Air Release

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ASTM D3427
IP 313
ISO 9120
Standard Test Method for Air Release Properties of Hydrocarbon Based Oils.
This test methods cover the ability of turbine, hydraulic and lubricating oils to separate entrained air.

- Automatic instrument with pre-programmed software for execute analysis in conformity with ASTM D 3427, IP 313 and ISO 9120.
- Compact bench instrument is fully independent, equipped in standard with density measurement system, heater, temperature control system, pressure regulation and microprocessor-based control system and other devices to assure perfect performance in all range of application.
- Design of the instrument is very easy to use and allows even inexperienced operator to perform routine tests.
- Automatic diagnostic of position and sensors as well as automatic calibration procedure.
- Integrated liquid conditioning system for test temperatures between +25°C and +85°C with accuracy of 0,1°C.
- Automatic conditioning of air from ambient up to +75°C with accuracy of 0,5°C.
- PT100 sensors class A able to monitor temperature of Air/Liquid/Oil sample with an accuracy of 0,1 °C.
- Instrument is equipped with automatic movement of glassware; no operator time is needed during analysis to perform changes in positions.
- Audible alarm when glassware is on movement.
- Integrated balance assures automatic density reading by using glass sinker 5 and 10 ml with accuracy < 0,5 Kg/m^3, temperature control device grant temperature between +25°C and +75°C.
- Test vessel made in tempered glass, composed by external test tube with graduation at 175, 180 and 185 ml, and internal air diffuser tube with bubble dispersion baffle.
- Integrated analysis timer with 0,1 sec precision.
- Safety system with audio-visual signals against overpressure, overtemperature, lack of air flow and low liquid level.
- Real-time graph creation for density and temperature over the time.

- Unit is managed by an integrated computer with high visibility 10" touch screen:
  · Internal memory capable of storing up to 30'000 tests
  · High brightness and resolution 1280 x 800 dpi
  · 2 × USB ports, 1 × RJ45 Ethernet / Lims
- Software features:
  · Possibility to change pressure unit between: bar / Psi / kpa
  · Possibility to change temperature unit between: °C / °F
  · Files export in .xls format

Power supply
- 220 Vac 50/60 Hz
- 115 Vac 50/60 Hz

Dimensions
- width 61 cm
- depth 58 cm
- height 86 cm

Weight
- 62 kg

Air Input
- Mandatory compressed air supply at least 6 bar pressure, clean and dried, unit is equipped with quick-connection mechanism with 1/8" BSP female connection.

Air Output
- Unit is equipped with a rear connection for exhaust oils fumes, a tube of inside diameter 8 mm with a length of min. 1 meter and with 0 bar backpressure is highly recommended.

Spare Parts
- 2499: External condenser / test tube.
- 2500: Internal tube with air diffuser tube and breaking bubbles flange.
- 2518: Floating for density determination 5 ml.
- 2565: Floating for density determination 10 ml.
- 3786: Water pump, high temperature.
- 17506: PT100 sample temperature.
- 17161: Heater, pack of 2 pcs.

OilLab 611
Aniline Point

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ASTM D611-E
IP 2 -E
Correlated to
ASTM D611-A, B, C, D
IP 2-A, B, C and D
Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents.
Test method E describes a procedure using an automatic apparatus suitable for the range covered by test methods A and B.

- Compact structure painted with anti-acid epoxy products.
- Solid dry aluminium block deeply coated for corrosion resistance, able to cool down sample to +10°C trough high tech peltier system with cooling exchanger, heating is granted by a dedicated stainless-steel heating element that permit the heat of sample up to +170°C (sample is not in direct contact with heating surface).
- Temperature stability +/- 0.1°C thanks to double-layer insulation.
- Temperature uniformity is granted by gently motorized three-coil stirrer system at 100 rpm.
- Simply glass cell with screw connection mechanism for easily demount and clean.
- Detection of aniline point by immersed fiber optic IR detector with dedicated detection board allow detection of transparent, opaque and dark samples (<8.0 on ASTM colour scale).
- Connection Head with hole for aniline introduction (by needle or dispenser system).
- Built-in Touch Screen for the managing of the analyser by means of the Lab-Link software:
  - TFT/LCD 8.4" with micro-computer board;
  - Resolution 1024 × 768 and 16.2 M colours;
  - 2 × USB ports for external connections;
  - 1 × Ethernet port for LAN or Lims network;
  - Storage capacity for more than 65'000 analysis.
- Lab-Link operating software:
  - Automatic execution of the analysis as per methods selected or trough customized method.
  - Display in real time of all the analysis parameters and status, real-time graph creation.
  - Field for introduction of operator and product name.
  - Audible alarm and displayed message for end analysis, errors/malfunctions.
  - Invalid test indication and diagnostic alarms.
  - Export of files in xls. / .pdf / jpg. format.
  - Calibration up to 100 points.

Range
- +10°C up to +160°C
- No external cooling required

Power supply
- 220 Vac 50/60 Hz
- 115 Vac 50/60 Hz

Dimensions
- 53 × 31 × 75 cm

Weight
- 26 kg

Tools for Routine Calibration
- 3013: calibration decade box - PT100 Simulator.
- 3102: kit of connectors and cables.

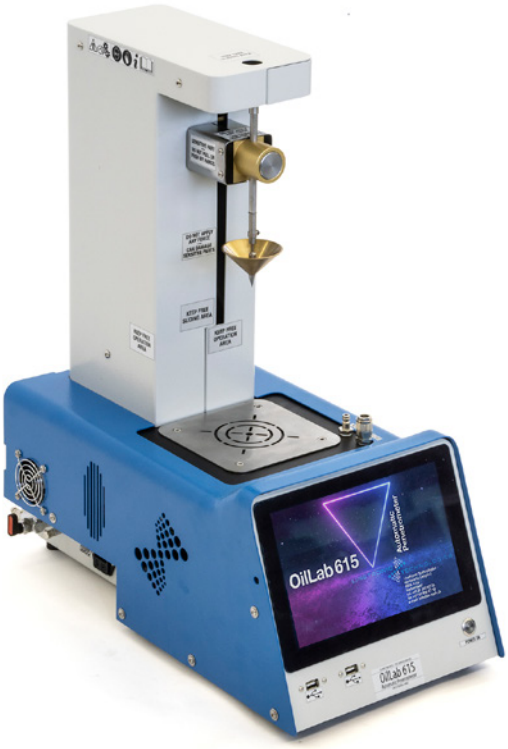
Spare Parts
- 1004: removable glass cell.
- 7187: o-ring for test jar.
- 3596: PT100 product with connector.
- 5416: fiber optic.
- 2151: mirror.
- 7185: stirrer.

Accessories
- 7244: Dispenser System.
  - High resistance granted by glass 3.3 cylinder and PTFE piston.
  - Quick and precise volume adjustment via an analogue cursor.
  - Precise graduated scale to guarantee the reproducibility of the dispensed volumes.
  - No reagent loss during air removal or filling.
  - Dispensing without the formation of bubbles.
  - The piston completely transfers the liquid with each movement.
  - Total recovery of the liquid present in the exhaust pipe by rotating the dispensing spout by 180°.
  - Autoclavable at + 121°C for 20 minutes.
  - GL32 connection.

OilLab 615
Automatic Penetrometer

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CE



ASTM D5
ASTM D217
ASTM D937
ASTM D1321
ASTM D1403
ASTM D1831
ASTM D2884
DIN 51579
DIN 51580
DIN 51804
DIN 52010
IP 49
IP 50
IP 179
IP 310
IP 376
ISO 2137
NF T60-119
NF T60-132
NF T60-140

ASTM D5, IP 49, DIN 52010
Penetration of bituminous material.
For determination of the penetration of semi-solid and solid bituminous materials.

ASTM D217, ASTM D1403, IP 50, IP 310, DIN 51804, ISO 2137, NF T60-132, NF T60-140
Cone penetration of lubricating grease.
Cover four procedures for measuring the consistency of lubricating greases by the penetration of a cone of specified dimensions, mass and finish.

ASTM D937, IP 179, DIN 51580, ISO 2137, NF T60-119
Cone penetration of petrolatum.
Covers measuring with a penetrometer the penetration of petrolatum as an empirical measure of consistency.

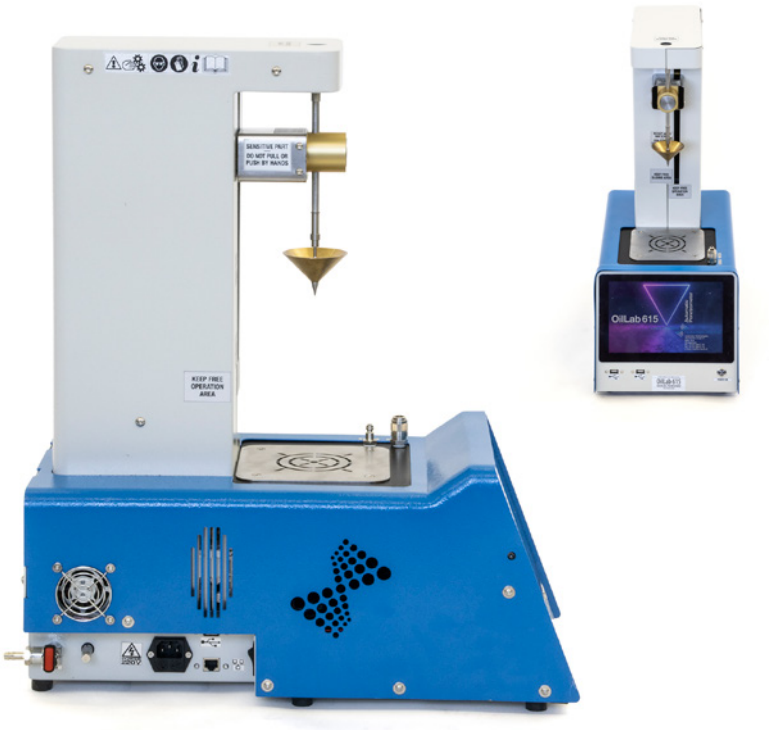
ASTM D1321, IP 376, DIN 51579
Needle penetration of petroleum waxes.
Covers the empirical estimation of the consistency of waxes derived from petroleum by measurement of the extent of penetration of a standard needle.
This test method is applicable to waxes having a penetration of not greater than 250.

ASTM D1831
Roll stability of lubricating grease.
Covers determination of the changes in the consistency, as measurably cone penetration, of lubricating greases when worked in the roll stability test apparatus.

ASTM D2884 - Yield stress of heterogeneous propellants by cone penetration method.
Covers determination of the yield stress of heterogeneous propellants, both of the gel and emulsion types, containing from 0 to 70% solid additives.

- Bench top instrument compact and solid structure bi-color painted, and last generation dedicated electronic boards.
- Analytical head made in aluminium and corrosion resistant plastics, advanced automatic up-down movement and sample surface positioning system, pen. range up to 60 mm.
- Transfer dish for water conditioning sample with quick-joints.
- Internal cooling/heating system from ambient temperature minus 10°C, up to +46.1°C.
- Safety systems: head malfunctioning movement.
- Linetronic Management software running on 10.1" high-brightness 800cd/m² TFT with resolution 1280 × 700:
  · pre-setting for method ASTM, DIN, IP; and ISO, or customizable analysis parameters
  · advanced surface detection with adjustable sensitivity;
  · settable bath temperature and controlled by PT100 A Class with 0,1°C precision, automatic for method selected or custom temperature;
  · calibration menu, result browser, dual level password protection;
  · more than 60'000 analysis storage capacity
  · 2 × USB for connecting: mouse, keyboard and software updates;
  · 1 × RJ45 Ethernet / Lims connection
  · integrated beeper for end-test notification / errors;
  · export file in .xls format.
- Plunger 47.5 gr.
- ASTM D217 optional cone.
- Sample levelling spatulas.

OilLab 615
Automatic Penetrometer



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Dimensions
- Width 28 cm
- Depth 54 cm
- Height 73 cm

Weight
- 22 Kg

General Accessories
- 6033: 50 g plunger weight.
- 6034: 100 g plunger weight.
- 3421-15135: USB led light and positioning mirror for semi-automatic option (for OilLab 615).

Spare Parts
- 5783+16772: plunger 47.5 gr. (for OilLab 615 only).

Accessories ASTM D217, IP 50
- 5306: optional penetration cone ASTM D217, 65 mm diameter, brass body and stainless-steel tip.
- 5310: optional penetration cone ASTM D217, 65 mm diameter, body and tip of stainless steel, for European Pharmacopoeia.
- 5308: standard penetration cone ASTM D217, 69 mm diameter, aluminium body and stainless-steel tip.
- 5312: sample container 76.5 × 63.5 mm, made in brass, pack of 3 pcs.
- 5313: external ring for grease restraint/recovery, 203 mm diameter.

Accessories ASTM D5, IP 49, EN 1426
- 5053: penetration needle ASTM D 5, IP 49, 2.5 g, pack of 3 pcs.
- 5480: long penetration needle ASTM D 5, IP 49, 2.5 g, pack of 3 pcs.
- 5481: reduction ring for reduce sample volume, diameter ext. 53 mm, int. 36 mm, 20 mm height, for EN 1426 method.
- 5482: reduction ring for reduce sample volume, diameter ext. 53 mm, int. 36 mm, 30 mm height, for EN 1426 method.
- 5483: sample container 55 × 35 mm, made in brass, pack of 5 pcs.
- 5407: sample container 55 × 45 mm, made in brass, pack of 5 pcs.
- 5484: sample container 70 × 45 mm, for bitumen, penetrations between 200 and 350, made in brass, pack of 5 pcs.
- 5409: sample container 70 × 60 mm, for bitumen, penetrations between 350 and 500, made in brass, pack of 5 pcs.

Accessories ASTM D1403
- 5485: penetration cone ½ ASTM D1403 IP 310, 22.5 g, body and tip in stainless steel.
- 5486: slider ½, 15 g.
- 5403: sample container ½, 38 × 32 mm, pack of 3 pcs.
- 5488*: penetration cone ¼, ASTM D1403, IP 310, 1.20 gr, body Plexiglas®, stainless steel tip.
- 5571: slider ¼ 8.18 gr.
- 5490: sample container ¼, 19 × 11.5 mm, pack of 3 pcs.

Accessories ASTM D937
- 5306: optional penetration cone ASTM D217, 65 mm diameter, body of brass, stainless steel tip.
- 5479: sample container 100 × 65 mm, made in steel with cover, pack of 3 pcs.

Accessories ASTM D1321, DIN 51579, IP 376
- 5591: needle ASTM D1321, 2.5 gr, stainless steel.
- 16095: sample container wax test cylinder 25 × 32, pack of 2 pcs.
- 5592: base plate in brass 63.5 × 38, pack of 2 pcs.

* Actually Unavailable

OilLab 600
Pensky Martens

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CE



ASTM D93 procedures A, B, C
ASTM D3941 - ASTM E502
DIN EN 22719
IP 34
ISO 2719
ISO 15267
JIS K 2265-3

Subject
Flash Point on petroleum products, gas oils, fuel oils, lubrificants, biodiesel. Suitable for flash point detection on different substances, waste materials, solvents…

Measuring Pensky Martens Principle
The sample is heated and stirred at specified rates, using one of three defined procedures (A, B, or C). An ignition source is directed into the test cup at regular intervals with simultaneous interruption of the stirring, until a flash is detected.

Measuring Parameters
- Temperatures: in °C.
- Measuring range: ambient … +370°C.
- Resolution: 0.01 °C.
- Accuracy: ± 0.1 °C.
- Repeatability / Reproducibility: as per standards methods or better.

Ignition System
Instrument equipped with flame ignition device made in brass, with 0.7 mm diameter orifice for analysis with gas also provided with electrical ignitor hot-wire that automatically passes through the center of large opening of the proper cup cover.

Pilot Flame
Secondary pilot flame gas propelled for re-enlight the test flame, alternatively electrical ignitor hot wire shall be used; a bead of 4 mm is provided to compare flame dimensions.

Measuring Temperature Devices
- Sample temperature is measured with a platinum resistance PT100 Class A with SS sheath and high temperature resistant silicone cable.
- Bath temperature is measured with a PT100 sensor.

Dual Flash Point Detection System
- By ionisation ring.
- By thermal sensor.

Barometric Correction
- Barometric built-in sensor with automatic correction of results to a barometric pressure of 101.3 kPa automatically performed by the software at the end of analysis.

Heating
- Electrical heater with heating rates as per procedures A, B, C.

Cooling
- Built-in forced air fan at the end of the test.

Test Cup
- Made of brass with Ni-Cr treatment for more corrosion resistance and provided with an high temperature resistant handle.
- With sample level mark.

Stirrer
- An electric motor drives a flexible transmission coil allowing the stirring of the product through a two-bladed metal propellers. Stirring speed as per selected procedures A, B, C.

Shutter
- Automatic mechanism opening the shutter for the dip-in of the ignition device.

Safety Features
- Gas valve for closing the gas supply (max 30 mBar), at the end of the test.
- Overheating protection with auto shut off during the test.
- Auto fire detection by means of thermal fuse with acoustic alarm.

Software Features
- All analytical parameters recorded.
- Customizable analysis parameters and methods.
- Customizable results report.
- Printable graphs and results.

The software includes:

Analysis Menu
- Automatic execution of the analysis in accordance to the selected procedure (Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference as well as costumized procedures).
- Automatic handling of samples with unknown flash point.
- Display in real time of all the analysis parameters and status.
- Fields for introduction of operator and product name.
- Expected flash point temperature programmable.
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions.
- Configuration menu with up to 20 preset samples and expected flash point.
- Automatic barometric correction of results.

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs.
- Selectable value displaying: °C / Volt.

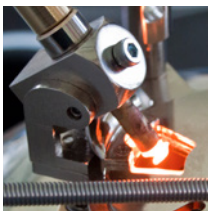
Calibration Menu
- Automatic calibration of each temperature probe.
- Up to 100 calibration points (standard with 5 and dynamic with up to 100 points).
- Programmable calibration frequency with selectable validity period and notice/lock-down at expiration date.

OilLab 600
Pensky Martens

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CE





Electric lighter
with electrical ignitor.



Gas with flame
exposure device.

- Last calibration date referred to each single probe displayed and relevant data printable.
- Display of calibration diagram.

Data Utilities

- Archive viewer for files recall.
- All analysis stored in Excel® compatible format.
- LIMS compatible.

Integrated Touch Screen Panel PC

- TFT/LCD 8".
- Resolution 1024 × 768, 16.2 M colours.
- 2 USB ports for connection to an external printer and/or external PC + 1 Ethernet port RJ45.
- Storage capacity for more than 60'000 analysis.

Electrical Supply

- 220 V or 115 V, ± 15% / 50 to 60 Hz.
- Cord cable with schuko plug.

Ambient Temperature

- Max 35°C.
- H.R. 80%.

Dimensions

- width 30 cm.
- depth 48 cm.
- height 52 cm.

Weight

- 27 kg.

Accessories for Line Connection

- 5050: Gas reducer 30 mbar.
- 5052: Gas connection tube, 5 m.

Tools Required for Routine Calibration

- 3013: Calibration decade box - PT100 simulator.
- 3102: Kit of connectors and cables.
- 3096: Digital thermometer reader with LCD display for PT100, PT1000, Resolution 0.01°C, accuracy 0.01°C, read up to +650°C – single channel.
- 3779: PT100 sensor for immersion, temperature range -196…+500°C, 3 mm diameter, 300 mm length.
- 5273: Digital tachometer, Contact & Non-Contact.
  - Digital 5-digit 13 mm LCD display with backlight.
  - Non-contact rotation speed (RPM), total revolutions (REV), Frequency (Hz), Surface speed (m/min, In/min, Ft/min, Yd/min) and length (m, In, Ft, Yd).
  - 40 reading memories: Max, Min, Avg, Data.
  - Detecting distance: 50…500 mm.
  - Speed range: up to 99 with 0.001 scale, up to 999 with 0.01 scale, up to 9999 with 0,1 scale, up to 199'999 with 1 scale (value in rpm/min).
  - Accuracy: ± 0.05% ±1 digit.
  - Dimensions: 6.0 × 16.0 × 4.0 cm.
  - Weight: 160 g.
  - Power: battery 9 V.

Reference Sample

- 7715: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A; Product Nature: Mineral Oil; Pack size: 3 × 80 ml; Certified value: +80.0 °C approx.
- 7562: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A; Product nature: Mineral Oil; Pack size: 3 × 80 ml; Certified Value: +105.0 °C approx.
- 7563: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A; Product nature: Mineral oil; Pack size: 3 × 80 ml; Certified value: +140.0 °C approx.
- 7716: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A; Product nature: Mineral Oil; Pack Size: 3 × 80 ml; Certified value: +230.0 °C approx.

Spare Parts

- 7172: Electrical ignitor for PM long life.
- 5319: Test cup made in treated brass with internal level mark and handle.
- 7170: Flexible stirrer with connection joints.
- 7175: PT100 sensor, A Class, made in stainless steel with connector.
- 7369: Detection - ionisation cable.
- 3158: Heater collar 420 W, 220 Vac.
- 3157: Heater collar 420 W, 115 Vac.
- 3150: PT100 temperature sensor for bath temperature.
- 3047: Motor for stirrer.
- 3171: Fan element 220 vac.
- 3173: Fan element 110 vac.
- 5321: Complete cover with movement.
- 3754: Thermal detector.
- 17028: Security thermal fuses.
- 5031+3051: Gas valve with solenoid (220 Vac).
- 5031+3155: Gas valve with solenoid (110 Vac).
- 15979: Gas ignitor.
- 3836: PCB Fuses, box of 10 pcs.
- 7671: Silicone tubing, 1 m.
- 16881: Support PT 100 Teflon.
- 7750: OilLab adhesive protection for screen sticked.



Test cup

Internal diameter: 50.8 mm.
External diameter: 54 mm.
Internal depht: 55.8 mm.
Filling mark at 21.8 mm from upper side.

OilLab 6000 / OilLab 6001
Leonardo – Pensky Martens

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CE





ASTM D93 procedures A, B, C
DIN EN 22719
IP 34
ISO 2719

Subject
Flash Point on petroleum products, gas oils, fuel oils, lubrificants, biodiesel. Suitable for flash point detection on different substances, waste materials, solvents…

OilLab 6000 / OilLab 6001 Double / Single Automatic PMCC Flash Point Analyser
- OilLab 6000: Two calibrated brass crucibles with sample level mark.
- OilLab 6001: one calibrated brass crucible with sample level mark.
- Ignition system: electric lighter.
- Control system: on microprocessor based.
- Temperature measurement: platinum resistance, PT100, Class A with SS sheath.
- Automatic sample stirring as per methods A, B, C and adjustable from 0 up to 300 rpm.
- Built-in barometric sensor with automatic barometric correction of results executed by the software.
- A single multi-detector combines the ionization detector and thermal detector.

Heating
- Electrical heater with heating rates as per methods A, B, C.

Temperature range
- Ambient … +420 °C.

Safety features
- Automatic diagnostic in case of breakage of the sample temperature probe and thermal sensors, automatic fire detection and extinguisher system, overheating protection with auto shut off during the test.

Cooling system
- Inbuilt forced air fan for automatic cooling at the end of test.

Built-in Touch Screen Panel PC
- For the managing of the analyser by means of the Lab-Link software.
- 10.1" Fanless Panel Pc Intel ® quad-core processor.
- PCAP touch screen: finger, gloves and tft stylus compatible.
- Resolution 1024 × 800 and 16.7 M colours, contrast 900:1.
- 2 × USB for connection to an external printer.
- 1 × Ethernet port for LAN or Lims network.
- Storage capacity for more than 65'000 analysis.

Lab-Link Operating Software
- Automatic execution of the analysis as per methods selected.
- Automatic handling of samples with unknown flash point.
- Display in real time of all the analysis parameters and status.
- Fields for introduction of operator and product name.
- Expected flash point temperature programmable.
- Audible alarm and displayed message for end analysis, errors/malfunctions.
- Configuration menu with up to 20 preset sample and expected flash point.
- Automatic barometric correction of result.

Electrical Supply
- 220 V ± 15% / 50 to 60 Hz.
- 115 V ± 15% / 60 Hz.

Ambient Temperature
- Max 35°C.
- H.R. 80%.

Weight
- 30 kg.

Dimensions
- Length 60 cm.
- Width 49 cm.
- Height 32 cm.

Spare Parts
- 3761: Electrical ignitor long life.
- 17314: PT100 product.
- 3646: Thermal ionisation PT100 sensor.
- 5727: Calibrated brass crucible with handle.
- 17353: Fuses 6.3A, box of 10 pcs.

Calibration Tools
- 3013: calibration decade box – PT100 simulator.
- 17587: kit of connectors and cables for OilLab 6000 series.

Reference Samples
- 7715: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A.
  · Product nature: mineral oil.
  · Certified value: + 80.0 °C approx.
  · Pack size: 3 × 80 ml.
- 7562: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A.
  · Product nature: mineral oil.
  · Certified value: + 105.0 °C approx.
  · Pack size: 3 × 80 ml.
- 7563: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A.
  · Product nature: mineral oil.
  · Certified value: + 140.0 °C approx.
  · Pack size: 3 × 80 ml.
- 7754: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A.
  · Product nature: mineral oil.
  · Certified value: + 190.0 °C approx.
  · Pack size: 3 × 80 ml.
- 7716: Certified reference material Pensky-Martens Closed Cup, ASTM D93 procedure A.
  · Product nature: mineral oil.
  · Certified value: + 230.0 °C approx.
  · Pack size: 3 × 80 ml.

OilLab 650 - OilLab 650 Plus Abel

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CE



EN 924
EN 13736
IP 170
IP 491
IP 492
ISO 1516
ISO 3679
ISO 13736

Subject

Flash point on petroleum products having a flash point between -18°C and 71°C (kerosene and solvents).
Suitable for flash point detection on different substances and waste materials, solvents…

Measuring Abel Principle

The sample is warmed up according to the methods. When the sample reaches the selected test temperature, the shutter is opened and the ignition system introduces itself automatically. If the flash point is reached, the detection is done by an ionisation detector. If not, the shutter closes again and the sample continues to warm up until the next test temperature.

Measuring Abel Devices

- Measurement of the Flash Point detected by an ionisation detector.
- Testing unit equipped with two ignition systems.
- Electrical system or flame exposure device.

Measuring Temperature Probe

- Platinum resistance PT100 class A.
- Temperatures: in °C.
- Resolution: 0.06 °C.
- Accuracy: ± 0.1 °C.
- Repeatability / Reproducibility: as per standards methods or better.

Measuring Parameters

- Measuring range: -50°C … +120°C (PT100 sensor capacity).
- Instrument range: +10°C … +75°C (as per method).

Software Features

- All analytical parameters recorded.
- Customizable analysis parameters and methods.
- Customizable results report.
- Printable graphs and results.
- Warning if results obtained is out of specification.

The software includes:

Analysis Menu
- Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference.
- Unknow sample.
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions.

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs.
- Selectable value displaying: °C / Volt.

Calibration Menu
- Automatic calibration of each temperature probe.
- Last calibration date referred to each single probe displayed and relative data printable.
- Display of calibration diagram.
- Insertion of offset values.
- Standard and advanced calibration modes.

Data Utilities
- Fields for introduction of operator and product name.
- Archive viewer for files recall.
- All analysis stored in Excel® compatible format.
- LIMS compatible.

Integrated Touch Screen Panel PC

- TFT/LCD 8".
- Resolution 1024 × 768, 16.2 M colours.
- 2 USB ports for connection to an external printer and/or external PC.
- Storage capacity for more than 60'000 analysis.

OilLab 650 - OilLab 650 Plus Abel





LT/CB-40800/M-30

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CE

Test Cup
- The cup is made of brass provided with high temperature resistant handle.
- Sample level mark.

Heating
- Electrical heater.
- Equipped with over temperature cut-out.

Cooling System
- Liquid refrigerant controlled by internal solenoid valve (OilLab 650), external cooling circulator or tap water is required.
- Peltier elements granting a temperature to +10°C (OilLab 650 Plus).

Safety Features:
- Gas valve for closing the gas supply (max 30 mBar), at the end of the test.
- Overheating protection with auto shut off during the test.
- Auto fire detection by means of thermal fuse with acoustic alarm.

Stirrer
- An electric motor drives a flexible transmission coil allowing the stirring of the product.

Shutter
- Automatic mechanism opening the shutter conform to the methods.

Electrical Supply
- 220 V or 115 V, ± 15% / 50 to 60 Hz.

Ambient Temperature
- Max 35°C
- H.R. 80%

Dimensions
- width 37 cm
- depth 48 cm
- height 61 cm

Weight
- 28 Kg

Accessories
- 5050: Gas reducer 30 mbar.
- 5052: Gas connection tube, 5 m.
- LT/CB-40800/M-30: Laboratory Cryostat Bath.
  - For temperatures up to -30°C.
  - Solid steel structure coated in epoxy anti-acid paint with upper side made in stainless-steel.
  - Internal chamber in seamless stainless steel with rounded corners for efficient circulation.
  - Easy cleaning thanks to atmospheric drain on the bottom of the chamber.
  - Control head equipped with digital display showing set and actual temperature, display resolution 0,1°C.
  - Temperature range from -30°C to +99,9°C, accuracy to ±0,5°C to +37°C.
  - Manual safety thermostat against overtemperature.
  - Circulating pump: prevalence 4mt/2lt.-min ~ prevalence 1mt/12lt.-min.
  - Weight: 20 kg (empty).
  - Dimensions: width 33.5 cm, depth 47.0 cm, height 63.0 cm.
  - Internal bath dimensions: width 10.5 cm, depth 12.5 cm, height 15.0 cm.
  - Capacity: 8 liters.
  - Power supply: 220 Vac or 115 Vac 50/60 Hz.
  - Max. consumption: 1500 Watt.
  - DIN 12880 class 2 construction type.

Spare Parts
- 7175: PT100 Sensor, A class, made in stainless steel with connector.
- 17028: Security thermal fuses.
- 5666: Calibrated brass crucible.
- 7369: Detection - ionisation cable.
- 3754: Thermal detector.
- 7172: Electrical ignitor long life.
- 7170: Flexible stirrer with connection joints.

Calibration Tools
- 3013: calibration decade box, PT100 simulator.
- 3102: set of connectors and cables for cold range.

OilLab 6500 Abel

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CE



EN 924, EN 13736
IP 170, IP 491, P 492
ISO 1516, ISO 3679, ISO 13736

Subject

Flash point on petroleum products having a flash point between -18°C and 71°C (kerosene and solvents). Suitable for flash point detection on different substances and waste materials, solvents…

OilLab 6500
Automatic Abel Flash Point Stand Alone

- Two calibrated brass crucibles with sample level mark.
- Ignition system: electric lighter.
- Control system: on microprocessor based.
- Temperature measurement: Platinum resistance, PT100, Class A with SS sheath.
- Automatic sample stirring as per methods 30 +/- 5 rpm.
- Built-in barometric sensor with automatic. barometric correction of results executed by the software.
- Automatic lifting and positioning arm avoid operator mistakes in positioning and shuttering.
- A single multi-detector combines the ionization detector and thermal detector.
- Heating: electrical heater.
- Cooling: external cooling joints (mandatory for granting temperature below ambient).

Temperature Range

- Up to +110°C (lower temperature depending on the source connected to the instrument).

Safety Features

- Automatic diagnostic in case of breakage of the sample temperature probe and thermal sensors, automatic fire detection and extinguisher system, overheating protection with auto shut off during the test, gas valve for closing the gas supply.

Built-in Touch Screen Panel PC

- For the managing of the analyser by means of the Lab-Link software.
- 10.1" Fanless Panel Pc Intel ® quad-core processor.
- PCAP touch screen: finger, gloves and TFT stylus compatible.
- Resolution 1024 × 800 and 16.7 M colours, contrast 900:1.
- 2 × USB for connection to an external printer.
- 1 × Ethernet port for LAN or Lims network.
- Storage capacity for more than 65'000 analysis.

Lab-Link Operating Software

- Automatic execution of the analysis as per methods selected.
- Automatic handling of samples with unknown flash point.
- Display in real time of all the analysis parameters and status.
- Field for introduction of operator and product name.
- Expected flash point temperature programmable.
- Audible alarm and displayed message for end analysis, errors/malfunctions.
- Configuration menu with up to 20 preset sample and expected flash point.
- Automatic barometric correction of result.

Electrical Supply

- Cord cable with Schuko plug.
- 220 V ± 15% / 50 to 60 Hz.
- 115 V ± 15% / 60 Hz.

Ambient Temperature

- Max 35°C
- H.R. 80%

Dimensions & Weight

- Length 60 cm, width 49 cm, height 32 cm.
- 30 kg.

Spare Parts

- 3761: Electrical ignitor long life.
- 17314: PT100 product.
- 3646: Thermal ionisation PT100 sensor.
- 5666: Calibrated brass crucible.
- 17353: Fuses 6.3A, box of 10 pcs.

Tools Required for Routine Calibration

Not mandatory for installation

- 3013: Calibration decade box - PT100 Simulator.
- 17587: Kit of connectors and cables, for OilLab 6000 series.

Accessories

- LT/CB-40830/M-PLUS: Laboratory cryostat bath for temperatures up to -30°C.
  - Pump for external circulating option.
  - Solid steel structure coated in epoxy anti-acid paint with upper side made in stainless-steel.
  - Internal chamber in seamless stainless steel with rounded corners for efficient circulation.
  - Easy cleaning thanks to atmospheric drain on the bottom of the chamber.
  - Control head equipped with digital display showing set and actual temperature, display resolution 0,1°C.
  - Temperature range from -30°C to +99,9°C accuracy to ±0,5°C to +37°C.
  - Manual safety thermostat against overtemperature.
  - Circulating pump: prevalence 4m / 2 l - min ~ prevelance 1 m /12 l - min.
  - Weight: 20 kg (empty).
  - Dimensions: W 335 × D 470 × H 630 mm.
  - Capacity 8 litres.
  - Power supply: 220 Vac or 115Vac 50/60.Hz .
  - Max. consumption 1500 Watt.
  - Cord cable with schuko plug and User manual included.
  - DIN 12880 class 2 construction type.

Reference Sample

- 7271: Certified reference material Abel closed cup; product nature: Jet A1; pack size: 250 ml; certified value: + 40.0 °C approx.

OilLab 6560 - *Golleo*
Abel + Pensky Martens

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CE



Abel

EN 924
EN 13736
IP 170
IP 491
IP 492
ISO 1516
ISO 3679
ISO 13736

Subject
Flash point on petroleum products having a flash point between -18°C and 71°C (kerosene and solvents). Suitable for flash point detection on different substances and waste materials, solvents…

Pensky Martens

ASTM D93 procedures A, B, C
DIN EN 22719
IP 34
ISO 2719

Subject
Flash Point on petroleum products, gas oils, fuel oils, lubrificants, biodiesel. Suitable for flash point detection on different substances, waste materials, solvents…

Measuring Abel Principle
The sample is warmed up according to the methods. When the sample reaches the selected test temperature, the shutter is opened and the ignition system introduces itself automatically. If the flash point is reached, the detection is done by an ionisation detector. If not, the shutter closes again and the sample continues to warm up until the next test temperature.

Measuring Pensky Martens Principle
The sample is heated and stirred at specified rates, using one of three defined procedures (A, B, or C). An ignition source is directed into the test cup at regular intervals with simultaneous interruption of the stirring, until a flash is detected.

Measuring Abel Devices
- Measurement of the Flash Point detected by an ionisation detector
- Testing unit equipped with two ignition systems
- Electrical system or flame exposure device

Measuring Pensky Devices
- Sample temperature: PT100 sensor completely made in stainless steel resistant to corrosion and shock resistant
- Bath temperature: PT100 sensor

Measuring Parameters
- Temperatures: in °C / °F
- Measuring range: 0°C … +420°C
- Resolution: 0.01 °C
- Accuracy: ± 0.1 °C
- Repeatability / Reproducibility: as per standards methods or better

Pressure sensor
- Built-in sensor with automatic correction of results to a barometric pressure of 101.3 kPa automatically performed by the software at the end of analysis

Detection system
- A single multi-detector combines the ionization detector and the thermal detector

Double ignition system
- Gas
- Ectrical ignitor

Test Cup
- The cup is made of brass provided with high temperature resistant handle
- Sample level mark

Heating
- Electrical heater
- Equipped with over temperature cut-out.
- Electrical heating with heating rates as per procedures A, B, C

Stirrer
- An electric motor drives the stirring of the product
- Stirring speed as per selected procedures A, B, C

Shutter
- Automatic mechanism opening the shutter conform to the methods

Cooling system
- Built-in forced air fan (Pensky Martens ASTM D93)
- Liquid refrigerant controlled by internal solenoid valve (Abel)

Safety Devices
- Automatic diagnostic in case of breakage of the sample temperature probe and thermal sensors
- Automatic fire detection system
- Overheating protection with auto shut off during the test
- Gas valve for closing the gas supply (max 30 mBar), at the end of the test

Fire Extinguisher
- Automatic fire detection and extinguisher system

OilLab 6560 - *Golleo*
Abel + Pensky Martens





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Software Features
- All analytical parameters recorded
- Customizable analysis parameters and methods
- Customizable results report
- Printable graphs and results

The software includes:

Analysis Menu
- Automatic execution of the analysis in accordance to the selected procedure (Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference as well as costumized procedures)
- Automatic handling of samples with unknown flash point
- Display in real time of all the analysis parameters and status
- Fields for introduction of operator and product name
- Expected flash point temperature programmable
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions
- Configuration menu with up to 20 preset samples and expected flash point
- Automatic barometric correction of results

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / Volt

Calibration Menu
- Automatic calibration of each temperature probe
- Up to 100 calibration points (standard with 5 and dynamic with up to 100 points)
- Programmable calibration frequency with selectable validity period and notice/lock-down at expiration date
- Last calibration date referred to each single probe displayed and relevant data printable
- Display of calibration diagram

Data Utilities
- Archive viewer for files recall
- All analysis stored in Excel® compatible format
- LIMS compatible

Integrated Touch Screen Panel PC
- TFT/LCD 8.4"
- Resolution 1024 × 768, 16.2 M colours
- 2 × USB ports for connection to an external printer
- 1 × ethernet port for LAN and LIMS network
- Storage capacity for more than 65'000 analysis

Electrical Supply
- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable
- 3 conductors flexible cable with schuko plug

Ambient Temperature
- Max 35°C
- H.R. 80%

Dimensions
- width 37 cm
- depth 52 cm
- height 32 cm

Weight
- 34 Kg

Spare Parts for Abel
- LAB-650/05-13: heater
- LAB-650/05-16: PT100 bath
- LAB-650/06-11: cooling valve
- LAB-650/06-12: insulated tube for connection to external cryostat
- LAB-650/06-21: gas valve
- LAB-650/07-01: electrical ignitor
- LAB-650/07-03: micro switch
- LAB-650/07-04: handle
- LAB-650/07-05: gas ignitor
- LAB-650/08-12: PT100 product
- LAB-650/08-13: detection / ionisation cable
- LAB-650/09-04: gas reducer
- LAB-650/09-05: calibrated brass crucible
- LAB-650/09-06: calibrated brass crucible complete with movement
- LAB-650/09-07: cover cup movement only
- LAB-650/10-04: PCB fuses, box of 10
- LAB-650/10-05: main electronic board
- LAB-650/11-01: silicon tubing, 1 meter
- LAB-650/11-02: stirrer / flexible
- LAB-650/12-01: voltage transformer for ignitor
- LAB-650/20-01: support PT100 Teflon

Accessories / Spare Parts for Pensky Martens
- LAB-6000/05-23: heater collar
- LAB-6000/06-21: gas valve
- LAB-6000/07-01: electrical ignitor
- LAB-6000/07-03: micro switch
- LAB-6000/07-04: handle
- LAB-6000/07-05: gas ignitor
- LAB-6000/08-12: PT100 product
- LAB-6000/08-13: detection / ionisation cable
- LAB-6000/08-14: PT100 Bath
- LAB-6000/09-04: gas reducer
- LAB-6000/09-05: calibrated brass crucible
- LAB-6000/10-04: PCB fuses, box of 10
- LAB-6000/11-02: stirrer belt
- LAB-6000-118: fire extinguisher system

Calibration Tools
- OilLab 80: calibration decade box – PT100 simulator
- OilLab 91: set of connectors and cables for OilLab 6000

OilLab 670 Cleveland

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CE



ASTM D92
ASTM D8254
AASHTO T48
DIN 51376
EN 22592 (obs.)
IP 36
ISO 2592
JIS K 2265-4

Subject
Flash and Fire Point on petroleum products, gas oils, fuel oils, lubricants.
Suitable for flash and fire point detection on different substances and waste materials, having a flash point higher than 79°C.

Measuring Cleveland Principle
The sample is warmed up according the methods. When the sample reaches the selected test temperature, the flame is passed automatically above the sample. When the flash point is reached, the detection is done by an ionisation detector.
For fire point detection, the sample continues to be heated until permanent flame is detected by the second PT100 probe, then the auto extinguisher will be placed on the top of the test cup.

Measuring Cleveland Devices
- Analyser equipped with automatic flame exposure device.
- Measurement of the Flash Point detected by an ionisation detector.
- Analyser equipped with 2 electrical ignitors and a pilot flame.
- Measurement of the Fire Point detected by PT100 detector.

Measuring Temperature Probe
- Platinum resistance PT100 class A.

Measuring Parameters
- Temperatures: in °C.
- Measuring range: ambient … +400°C.
- Resolution: 0.01 °C.
- Accuracy: ± 0.1 °C.
- Repeatability / Reproducibility: as per standards methods or better.

Software Features
- All analytical parameters recorded.
- Customizable analysis parameters and methods.
- Customizable results report.
- Printable graphs and results.

The software includes:

Analysis Menu
- Standard method as per ASTM / IP / ISO / EN / DIN… norms of reference.
- Unknow sample.
- Audible alarm and displayed messages. at the end of the analysis and in case of errors and/or malfunction.

Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs.
- Selectable value displaying: °C / Volt.

Calibration Menu
- Automatic calibration of each temperature probe.
- Last calibration date referred to each single probe displayed and relative data printable.
- Display of calibration diagram.
- Insertion of offset values.
- Standard and advanced calibration modes.

Data Utilities
- Fields for introduction of operator and product name.
- Archive viewer for files recall.
- All analysis stored in Excel® compatible format.
- LIMS compatible.

Integrated Touch Screen Panel PC
- TFT/LCD 8".
- Resolution 1024 × 768, 16.2 M colours.
- 2 USB ports for connection to an external printer and/or external PC + 1 × Ethernet port RJ45.
- Storage capacity for more than 60'000 analysis.

Test Cup
- The cup is made of chromium plated brass provided with high temperature resistant handle.
- Internal diameter: 50.8 mm.
- External diameter: 54 mm.
- Internal depht: 55.8 mm.
- Filling mark at 21.8 mm from upper side.

Heating
- Electrical heater.
- Equipped with over temperature cut-out.

Electrical Supply
- 220 V or 115 V, ± 15% / 50 to 60 Hz.
- Power cable with schuko plug.

Power consumption
- 800 W.

Ambient Temperature
- Max 35°C.
- H.R. 80%.

Dimensions
- width 34 cm.
- depth 46 cm.
- height 60 cm.

Weight
- 31 kg.

OilLab 670 Cleveland



The Flash Point detection system, which is composed by a ring sensor for the ionization's determination, constitutes the essential component granting high repeatability and excellent results. Furthermore, a sensor detects the presence of the flame for fire point determination.
The device are mounted on a mechanical arm with automatic positioning during analysis.

The test flame pilot is equipped with a flame size regulator as well as a position and direction device for a fine adjustment.

Gas ignitor / flame applicator made in stainless steel with orifice 0.8 mm diameter, automed duplicator of the sweep movement permit the precise positioning at 1.8 mm above cup rim and 152 mm radius from cup center.

The test cup closing system is totally automatic and grant the maximal security as well as the two electrical ignitors which grant the continuous presence of the test flame.



Test Cup

Accessories for Line Connection

- 5050: Gas reducer 30 mbar.
- 5052: Gas connection tube, 5 m.

Factory Option for Bitumen

- 6305: Tools kit for bitumen made up of electric drive, support for the PTFE blade flexible transmission with joint and switch.
- 17028: Thermal fuses, pack of 5 pcs.
- 17531: Emergency switch button.

Tools Required for Routine Calibration

- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.

Reference Sample

- 7606: Certified reference material Cleveland Open Cup, ASTM D92; Product nature: Mineral Oil; Pack size: 3 × 80 ml, Certified value: +85.0 °C approx.
- 7605: Certified reference material Cleveland Open Cup, ASTM D92; Product nature: Mineral Oil; Pack size: 3 × 80 ml; Certified value: +25.0 °C approx.
- 7603: Certified reference material Cleveland Open Cup, ASTM D92; Product nature: Mineral Oil; Pack size: 3 × 80 ml; Certified value: +160.0 °C approx.
- 7717: Certified reference material Cleveland Open Cup, ASTM D92; Product Nature: Mineral oil; Pack size: 3 × 80 ml; Certified value: +250.0 °C approx.

Spare Parts

- 5127: Calibrated brass crucible.
- 5130: PT100 for sample temperature.
- 3775: PT100 for fire point detection.
- 3170: Detection cable.
- 7316: Electrical ignitor.
- 5462: Peek guard for ionisation rings, pack of 2 pcs.
- 16432: Ionisation ring, pack of 2 pcs.
- 7671: Silicone tubing, 1 m.
- 3133: PCB fuse 1,6 AT, box of 10 pcs..
- 3064: Heater (heating plate).
- 5031+3051: Gas valve with solenoid (220 Vac).
- 5031+3155: Gas valve with solenoid (110 Vac).
- 3179: Micro switch.
- 17588: Main electronic board.
- 3006: Voltage transformer for ignitor.
- 3182: Motor 24 V for pivot.
- 5814: Gas plug one pilot.
- 7750: OilLab adhesive protection for screen sticked.

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OilLab 6700 / 6701 Cleveland

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ASTM D92, ASTM D8254
AASHTO T48
DIN 51376
EN 22592 (obs.)
IP 36
ISO 2592
JIS K 2265-4

Flash and Fire Point on petroleum products, gas oils, fuel oils, lubricants.
Suitable for flash and fire point detection on different substances and waste materials, having a flash point over 79°C.

OilLab 6700 / 6701
Automatic Cleveland Flash Point Analyser Stand Alone

- OilLab 6700: two calibrated brass crucible with sample level mark.
- OilLab 6701: one calibrated brass crucible with sample level mark.
- Ignition system: gas or electric lighter.
- Control system: on microprocessor based.
- Temperature measurement: Platinum resistance, PT100, Class A with SS sheath.
- Built-in barometric sensor with automatic barometric correction of results executed by the software.
- A single multi-detector combines the ionization detector and thermal detector.
- Heating: electrical heater with heating rates as per methods.
- Temperature range: ambient … +400 °C.
- Cooling: inbuilt forced air fan for automatic cooling at the end of test.
- Safety features: automatic diagnostic in case of breakage of the sample temperature probe and thermal sensors, automatic fire detection and extinguisher system, overheating protection with auto shut off during the test, gas valve for closing the gas supply.
- Automatic safety closing cup system which covers the crucible at the end of the flash point analysis and auto-extinguishes the product after fire point tests.
- Built-in Touch Screen Panel PC for the managing of the analyser by means of the Lab-Link software.
  - 0.1" Fanless Panel Pc Intel ® quad-core processor.
  - PCAP touch screen: finger, gloves and TFT stylus compatible.
  - Resolution 1024 × 768 and 16.2 M colours, contrast 900:1.
  - 2 × USB for connection to an external printer.
  - 1 × Ethernet port for LAN or Lims network.
  - Storage capacity for more than 65'000 analysis.
- Lab-Link operating software.
  - Automatic execution of the analysis as per methods selected.
  - Automatic handling of samples with unknown flash point.
  - Display in real time of all the analysis parameters and status.
  - Field for introduction of operator and product name.
  - Expected flash point temperature programmable.
  - Audible alarm and displayed message for end analysis, errors/malfunctions.
  - Configuration menu with up to 20 preset sample and expected flash point.
  - Automatic barometric correction of result.
- Cord cable with Shuko plug.
- USB flash memory pen drive with the installed software with calibration and settings (copy of backup), User Manual (PDF format).

Electrical Supply
- 220 V o 115 V 50/60 Hz

Ambient Temperature
- Max 35°C
- H.R. 80%

Dimensions & Weight
- width 49 cm, depth 60 cm, height 32 cm.
- 30 kg

Tools Required for Routine Calibration
(Not mandatory for installation)
- 3013: calibration decade box - PT100 simulator
- 17587: kit of connectors and cables for OilLab 6000 series.

Spare Parts
- 3926: Electrical ignitor long life.
- 17314: PT100 product.
- 3646: Thermal ionisation PT100 sensor.
- 5127: Calibrated brass crucible.
- 17353: Fuses 6.3A, box of 10 pcs.

Reference Sample
- 7606: Certified reference material Cleveland Open Cup, ASTM D92.
  - Product Nature: Mineral Oil.
  - Certified Value: + 85.0 °C approx.
  - Pack Size: 3 × 80 ml.
- 7605: Certified reference material Cleveland Open Cup, ASTM D92.
  - Product Nature: Mineral Oil.
  - Certified Value: + 125.0 °C approx.
  - Pack Size: 3 × 80 ml.
- 7603: Certified reference material Cleveland Open Cup, ASTM D92.
  - Product Nature: Mineral Oil.
  - Certified Value: + 160.0 °C approx.
  - Pack Size: 3 × 80 ml.
- 7755: Certified reference material Cleveland Open Cup, ASTM D92.
  - Product Nature: Mineral Oil.
  - Certified Value: + 200.0 °C approx.
  - Pack Size: 3 × 80 ml.
- 7717: Certified reference material Cleveland Open Cup, ASTM D92.
  - Product Nature: Mineral Oil.
  - Certified Value: + 250.0 °C approx.
  - Pack Size: 3 × 80 ml.

OilLab 690 Tag

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ASTM D56
ASTM D3278
ASTM D3934
ASTM D3941
IP 304
IP 491
IP 492
ISO 1516
ISO 1523
ISO 3679

Subject

Flash point on petroleum products having a flash point between ambient temperature and +93°C. Suitable for flash point detection on different substances and (NO) waste materials, solvents…

Automatic Tag Flash Point Analyser

- One calibrated brass crucible with sample level mark.
- Ignition system: gas or electric lighter.
- Control system: on microprocessor based.
- Temperature measurement: platinum resistance, PT100, Class A with metal shield.
- Built-in barometric sensor with automatic barometric correction of results executed by the software.
- Detection of the flash point by ionization/thermal flash detector.
- Heating and cooling by High Tec Peltier module + external cooling joints (mandatory for granting temperature below 0°C).
- Temperature range: +8°C up to +110°C, with external cooling temperature range extended to -30°C.
- Safety features:
  · Auto fire detection with alert alarm;
  · Fire extinguishing system with connection for external inert gas.
- Built-in Touch Screen Panel PC for the managing of the analyser by means of the Lab-Link software:
  · Large display TFT/LCD 8" to show the test temperature, test conditions, service parameters, calibration procedures etc…;
  · Resolution 1024 × 768 and 16 M colours;
  · I/O ports: 2 × USB for connection to an external printer and /or external PC;
  · Storage capacity for more than 60'000 test results and 10 different test method.
- Lab-Link operating software:
  · Automatic execution of the analysis as per methods;
  · Automatic handling of samples with unknown flash point;
  · Automatic barometric correction of results;
  · Alpha numeric keypad on the touch screen with function keys;
  · Calibrating menu with up to 50 calibration points;
  · Auto Calibration Menu with calibration time recorded.

  Diagnostic Menu:
  · Protection password for settings and calibration menu;
  · Expected flash point temperature programmable.

Electrical Supply

- 220 V / 50 Hz
- 115 V / 60 Hz

Ambient Temperature

- Max 35°C
- H.R. 80%

Dimensions

- width 48 cm
- depth 37 cm
- height 61 cm

Weight

- 32 Kg

Accessories

- 5050: gas reducer 30 mbar.
- 5052: gas connection tube, 5 m.
- LT/CB-40800/M-30: cryostatic bath for temperatures up to -30°c:
  · Professional cryostatic baths ideal for all thermostatic application;
  · Outer body in steel coated in epoxy anti-acid paint;
  · Double wall heat insulation;
  · Internal chamber in seamless stainless steel with rounded corners for efficient circulation and cleaning;
  · Digital display P.I.D. thermostat;
  · Temperature range from -30°C to +99,9°C accuracy to ±0,5°C to +37°C (BC);
  · Display precision ±0,1°C;
  · Exit RS 485;
  · Safety thermostat;
  · Power supply 230 V / 115 V;
  · Built according to C.E.I. normatives (66-5), 2 class, DIN 12880;
  · Capacity: 8 litres.

Spare Parts

- LAB-690/07-01/P: electrical ignitor platinum coil.
- LAB-690/08-12: PT100 product.
- 5755: calibrated brass crucible.
- LAB-690/08-13: ionisation / detection cable.
- LAB-690/08-17: thermal flash detector.
- LAB-690/08-66: thermal fuses.

Calibration Tools

- 3013: calibration decade box - PT100 simulator.
- 3102: kit of connectors and cables.

OilLab 6900 / OilLab 6901 Tag

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ASTM D56
ASTM D3278
ASTM D3941

Subject

Flash point on petroleum products having a flash point between ambient temperature and +93°C. Suitable for flash point detection on different substances and (NO) waste materials, solvents…

OilLab 6900 / OilLab 6901 - Double / Single Automatic Tag Flash Point Analyser

- Two calibrated brass crucible with sample level mark (OilLab 6900).
- One calibrated brass crucible with sample level mark (OilLab 6901).
- Ignition system: gas or electric lighter.
- Control system: on microprocessor based.
- Temperature measurement: platinum resistance, PT100, Class A with SS sheath.
- Built-in barometric sensor with automatic barometric correction of results executed by the software.
- A single multi-detector combines the ionization detector and thermal detector.
- Heating: electrical heater with heating rates as per method.

Temperature range

- OilLab 6900: up to +110°C, lower temperature depending on the source connected to the instrument.
- OilLab 6901 +8°C … +110 °C.

Cooling

- OilLab 6900: External cooling joints, mandatory for granting temperature below ambient.
- OilLab 6901: via internal Peltier Module.

Safety features

- Automatic diagnostic in case of breakage of the sample temperature probe and thermal sensors.
- Automatic fire detection and extinguisher system.
- Overheating protection with auto shut off during the test.
- Gas valve for closing the gas supply.

Built-in Touch Screen Panel PC

- For the managing of the analyser by means of the Lab-Link software.
- 10.1" Fanless Panel Pc Intel® quad-core processor.
- PCAP touch screen: finger, gloves and tft stylus compatible.
- Resolution 1024 × 768 and 16.2 M colours.
- 2 × USB for connection to an external printer.
- 1 × Ethernet port for LAN or Lims network.
- Storage capacity for more than 65'000 analysis.

Lab-Link operating software

- Automatic execution of the analysis as per method.
- Automatic handling of samples with unknown flash point.
- Display in real time of all the analysis parameters and status.
- Field for introduction of operator and product name.
- Expected flash point temperature programmable.
- Audible alarm and displayed message for end analysis, errors/malfunctions.
- Configuration menu with up to 20 preset sample and expected flash point.
- Automatic barometric correction of result.
- USB flash memory pen drive with the installed software with calibration and settings (copy of backup), User Manual (PDF format).

Electrical Supply

- Cord cable with Schuko plug.
- 220 V / 50 Hz
- 115 V / 60 Hz

Ambient Temperature

- Max 35°C
- H.R. 80%

Dimensions & Weight

- width 49 cm, depth 60 cm, height 32 cm, 30 kg.

Calibration Tools

- Testo511: absolute barometer.
- 3013: calibration decade box - PT100 Simulator.
- 17587: kit of connectors and cables for OilLab 6000 series.

Spare Parts

- 5755: calibrated brass crucible with handle.
- 17314: PT100 product.
- 3761: electrical ignitor long life.
- 3646: thermal ionisation PT100 sensor.

Accessories

- LT/CB-40830/M-PLUS: Laboratory cryostat bath for temperatures up to -30°C.
  - Pump for external circulating option.
  - Solid steel structure coated in epoxy anti-acid paint with upper side made in stainless-steel.
  - Internal chamber in seamless stainless steel with rounded corners for efficient circulation.
  - Easy cleaning thanks to atmospheric drain on the bottom of the chamber.
  - Control head equipped with digital display showing set and actual temperature, display resolution 0,1°C.
  - Temperature range from -30°C to +99,9°C accuracy to ±0,5°C to +37°C.
  - Manual safety thermostat against overtemperature
  - Circulating pump: prevalence 4m / 2 l - min ~ prevalence 1 m /12 l - min.
  - Weight: 20 kg (empty).
  - Dimensions: W 335 × D 470 × H 630 mm.
  - Capacity 8 liters.
  - Power supply: 220 Vac or 115 Vac 50/60 Hz .
  - Max. consumption 1500 Watt.
  - DIN 12880 class 2 construction type.

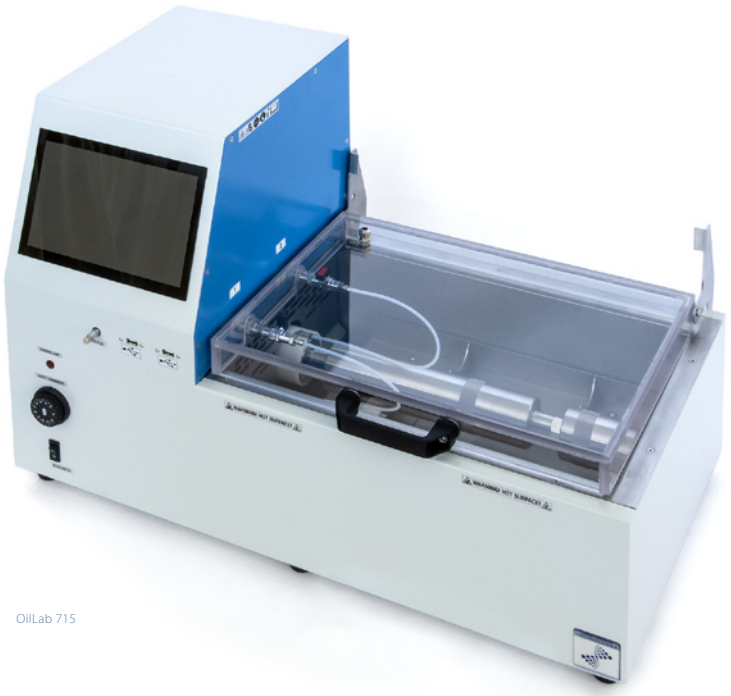
Reference Sample

- 7271: Certified reference material Tag closed cup; product nature: Jet A1; certified value: + 40.0 °C approx.; pack size: 250 ml.

OilLab 715
Reid Vapour Pressure

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3764


OilLab 715


5703+5735QC

ASTM D323
ASTM D4953
IP 69
ISO 3007

ASTM D323 - IP 69 - ISO 3007
Vapour Pressure of Petroleum Products
(Reid Method) Procedure B

The test method covers the determination of vapour pressure of gasoline, volatile crude oil, by means of three procedures: A, B and C. The OilLab 715 grant the determination in conformity with the procedure B (horizontal bath) on petroleum products having Reid Vapour Pressures below 180 kPa (26 psi).

ASTM D4953
Standard Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends

This test method covers and is applicable to gasolines and gasoline-oxygenate blends with a vapor pressure range from 35 kPa to 100 kPa (5 psi to 15 psi). This test method, a modification of Test Method D323 (Reid Method), provides two procedures to determine the vapor pressure of gasoline and gasoline-oxygenate blends.

Automatic Reid Vapour Pressure

- Bath made in stainless steel suitable for the accommodation of up to two (2) vapour pressure cylinders according to ASTM specifications.
- Bath temperature range from ambient to +80°C ±0.1°, filling level 20 litres.
- Analysis range from 0 up to 250 kPa.
- Motorized stirrer with shaft , drain tap
- Electric immersion Heater controlled by PID system.
- Drive system for swing gently the vessel in horizontal position.
- Secure handle cover for open bath.
- Bath equipped with a Touch screen panel PC:
  · TFT/LCD 8";
  · 40 Gb HD;
  · Resolution 1024 × 768 and 16M colours;
  · 2 × USB Ports for connecting pen drive and printer.
- The dedicated software manages:
  · The bath temperatures by means of a PT100 sensor class;
  · A that can be displayed in °C / °F, including the over temperature safety alarm.
- 2 (two) electronic sensors, pressure transducers / electronic pressure gauges supplied for the coupling to the test vessels.
- Cables and connectors.
- Dedicated software for real time monitoring and recording that includes:
  · Display of the pressure in bar / psi / Kpa;
  · Graph creation in real time during the test;
  · Invalid test indication;
  · Export of files in xls / pdf / jpg format;
  · Calibration up to 100 points.

Dimensions

- Length 78.5 cm
- Depth 45.0 cm
- Height 60.0 cm

Weight

- 56 kg approx.

Power supply

- 220 Vac 50/60 Hz
- 115 Vac 50/60 Hz

Consumption

- 2000 Watt

Spare Parts

- 3187: Heaters pack of 2 pcs.
- 16238: Connection head with quick pressure coupling for Reid cylinder D323.
- 3888: Power line fuse pack of 10 pcs.
- LAB-715-029: Quick connection made in stainless steel for p/n 16238 complete with flexible tube.
- 16230: Valve with knob for cylinder connection.
- 7187: O-ring for sealing between vapour and liquid chamber, pack of 10 pcs.

Accessories

- 5703+5735QC: Reid vapour pressure cylinder one-opening for petroleum products, ASTM D323
  Upper Side Vapour Chamber ASTM D323
  · Made of high-quality stainless steel, long time corrosion resistant, internal and external fine polishing for excellent drop drain.
  · Upper/Lower connections ½" fitting.
  Lower side: Liquid Chamber One Opening ASTM D323
  · Made of high-quality stainless steel, long time corrosion resistant, internal and external fine polishing for excellent drop drain.
  · Upper connection ½" fitting.
  · The inner surface of the coupling end shall be sloped to provide complete drainage when inverted.
- T-AS18C: Thermometer ASTM 18C IP 23C.
- 5839: Sample transfer tool: rubber stopper + 2 tubes.
- 2596: Sample cooling vessel, 1 liter capacity made of glass with screw cap, pack of 4 pcs.
- 7430: Silicon caps, pack of 10 pcs.
- 7527: Water line tube 5 m complete with fixing collars, pack of 2 pcs.

Accessories for Calibration

- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.
- 3764: Pressure calibration kit.
  · Hand pump with connection tube for pressure -0,95 …+ 35,0 bar.
  · Adapters.
  · Digital pressure gauge -1..+30 Bar rel. ±0.1% FS.

OilLab 720
Automatic Vapour Pressure Testing of Fuel

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3764



ASTM D5188
ASTM D5191
ASTM D6378
ASTM D8009
EN 13016-1, -2, -3
IP 394
IP 409
SHT 0769

Correlated to:
ASTM D323
ASTM D1267
ASTM D2533
ASTM D4953
ASTM D5482

ASTM D5188
Vapor-Liquid Ratio Temperature Determination of Fuels (Evacuated Chamber and Piston Based Method)

ASTM D5191
Standard Test Method for Vapor Pressure of Petroleum Products and Liquid Fuels (Mini Method)

ASTM D6378
Standard Test Method for Determination of Vapor Pressure (VPX) of Petroleum Products, Hydrocarbons, and Hydrocarbon-Oxygenate Mixtures (Triple Expansion Method)

ASTM D8009
Standard Practice for Manual Piston Cylinder Sampling for Volatile Crude Oils, Condensates, and Liquid Petroleum Products

OilLab 720
Automatic Vapour Pressure Testing of Fuels

- Bench top instrument compact and solid structure painted with anti-epoxy products.
- Refrigerator system able to grant temperatures from 0°C to +100°C (32 – 212° F) with dedicated electronic.
- Integrated pressure sensor with range 0 to 9.5 bar (pressure unit switchable to hPa, kPa, psi, mmHg, mbar), resolution 0.02 kPa.
- Movable piston technique with evacuated test chamber able to grant from 0.02:1 to 20:1 V/L ratio.
- Volume needed for test: 1 ml.
- Safety systems:
  · software cooling/heating malfunctioning;
  · system overpressure;
  · programmable protection against leakage;
  · stand-by module for energy saving.
- Automatic sample inlet/outlet (separate lines).
- Linetronic management software running on 10.1" high-brightness 800cd/m² TFT with resolution 1280 × 700.
  · Pre-setting for method ASTM, EN, IP and ISO, or customizable analysis parameters.
  · Multi-language software.
  · Temperature shown in °C or °F.
  · Settable cell temperature controlled by PT100 A Class with 0,05°C precision, automatic for method selected or custom temperature.
  · Calibration menu, result browser, dual level password protection.
  · More than >100'000 analysis storage capacity, export file in .xls format.
  · 2 × USB ports for connecting: mouse, keyboard and software updates.
  · 1 × RJ45 Ethernet / Lims connection.
  · Integrated beeper for end-test notification / errors.
  · Real time graph and test progression.

Weight
- 22 kg.

Dimensions
- Width 28 cm.
- Depth 52 cm.
- Height 32 cm.

Power supply
- 100-240 Vac, 50-60 Hz (automatic switching).

Spare Parts
- Maintenance-kit720: Kit for routine maintenance complete of sealing, o-rings, piston and tubing.
- 16899: Microvalve for dosing sample.
- 3863: Piston movement motor.
- 3007: HT Peltier.
- 17198: Heating element 175 W.
- 17543: Pressure sensor.
- 3150: PT100 temperature sensor.
- 16952: Brass cell body.

Accessories
- 2225+: 250 ml bottle with screw cap and joint, with connector for tube, pack of 4 pcs.

Tools Required for Routine Calibration
- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.
- 3764: Pressure calibration kit.
  · Hand pump with connection tube for pressure, 0,95 …+ 35,0 bar.
  · Adapters.
  · Digital pressure gauge, –1…+30 Bar rel. ±0.1% FS.

OilLab 730
Ductilometer



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ASTM D113
ASTM D6084
AASHTO T51
EN 13398
IP 32 (obs.)

Ductility of Bituminous Materials.
The ductility of a bituminous material is measured by the distance to which it will elongate before breaking when two ends of a briquet specimen of the material are pulled apart at a specified speed and at a specified temperature.
Unless otherwise specified, the test shall be made at a temperature of 77 ± 0.9°F (25 ± 0.5°C) and with a speed of 5 cm/min ± 5.0%.
At other temperatures the speed should be specified.



5047+15945



5045+15945



5207

Automatic Refrigerated Apparatus for Ductility of Bituminous Materials

- Structure fully made in stainless steel, internal bath realized with round edges easily to clean, bath is also equipped with atmospheric drain.
- Bath is automatically thermo-stated with integrated refrigerating gas motor-compressor system CFC free for test temperatures up to +5°C and heated with total immersion stainless steel heaters granting temperature up to +50°C, resolution 0,1°C and stability ± 0.1°C (with cover).
- Double pump system with gently movement of liquid avoid ripple on sample surface.
- 1 × traction monophasic motor 220 Watt with reduction. fitted on traction head able to manage 3 samples thanks to 3 independent force reader sensors.
- Analysis length resolution 1500 mm with < 1mm resolution and minimum settable parameter.
- Transparent inspection window and anti-overturn system.
- Automatic traction system to measure and record the traction from 0.1 to 300N for each test place, with automatic system to measure the elongation from 1 to 1500 mm for each test place.
- Touch screen panel pc 10.1" high visibility display equipped with 2 USB ports for connecting external control peripherals, for software updates, for exporting files and printing, 1 × RJ45 for Ethernet connection and LIMS.
- Dedicated software for automatic sample according to ASTM D113 – ASTM D6084 - EN13589 - EN13703:
  · User friendly and customizable interface;
  · Automatic saving of all analytical parameters;
  · Customizable analysis parameters;
  · Printable graphs and results.
- Included with instrument:
  · 3 × Ductility form for ASTM D113;
  · 3 × Base plate for form filling.

Dimensions
- Width 190 cm
- Depth 50 cm
- Height 90 cm (with open cover)

Weight
- 82 Kg (empty)

Bath Internal Dimensions
- Width 175 cm
- Depth 25 cm
- Height 16 cm

Range
- +5°C to +50°C

Power supply
- 230 Vac 50 Hz
- 115 Vac 50 Hz

Max. consumption
- 1300 Watt

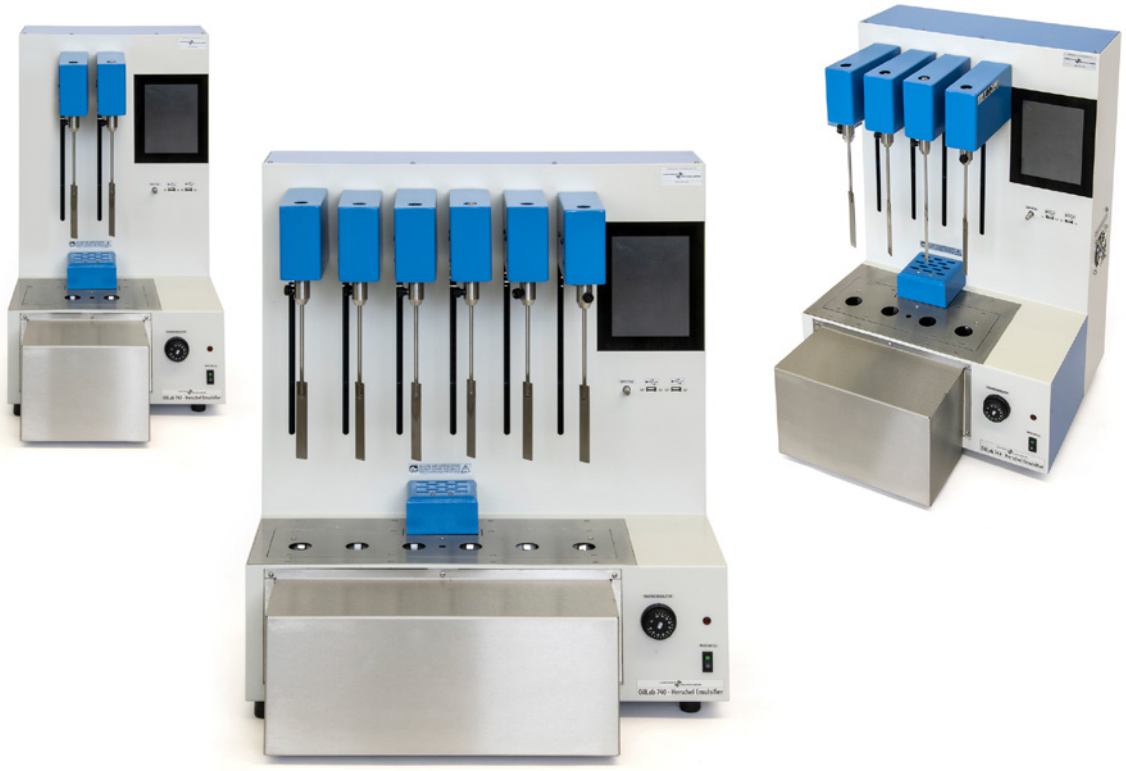
Accessories
- 5047+15945: elastic recovery form/mold made in brass for ASTM D6084

Spare Parts
- 5045+15945: ductility form/mold made in brass for ASTM D113
- 5207: base plate for form/mold fllling

OilLab 740
Herschel Emulsifying

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ASTM D1401
DIN 51599
ISO 6614

Water Separability of Petroleum Oils and Synthetic Fluids.
This test method covers measurement of the ability of petroleum oils or synthetic fluids to separate from water.

Automatic Herschel Emulsifier
OilLab 740 - 6 places
OilLab 744 - 4 places
OilLab 742 - 2 places

- Compact structure painted with anti-acid epoxidy products.
- Stainless steel bath with approx. 14/10/5 liters capacity, insulated and equipped with a wide double windows equipped with illuminating LED barriers.
- Rear drain tap.
- Cover with 6/4/2 holes for the accommodation of up to 6/4/2 graduated cylinders (included) and 1 hole for bath thermometer.
- Stainless steel total immersion heater with protection bulkhead and PT100 A class sensor for bath temperature monitoring.
- Water recirculation system grants bath uniformity.
- Automatic foam detection system through image acquisition chamber.
- Security system.
  · Manual safety thermostat.
  · Level sensor.
  · Acoustic sensor for alarms / end of analysis.
- 6/4/2 × independent work station with D1401 standard stirring rod, independent revolution counter, automatic up/down movement.
- Integrated touch screen panel pc 8" high-resolution with dedicated software.
  · Bath temperature control with analysis programming.
  · Independent control of each head with pre-set setting according to the ASTM method or customizable in the RPM, stirring time and temperature.
  · 2 × USB ports and 1 × RJ45 port for LIMS connection.

Power supply
- 220 Vac 50/60 Hz.
- 115 Vac 50/60 Hz.

Dimensions & Weight
- OilLab 740: 78 × 55 × 77 cm, 70 kg.
- OilLab 744: 54 × 55 × 77 cm, 58 kg.
- OilLab 742: 37 × 55 × 94 cm, 37 kg.

Accessories
- T-AS19C: Thermometer ASTM 19C, range +49°…+57°C, div. 0,1°C, propylene carbonate filled.
- T-AS21C: Thermometer ASTM 21C, range +79°…+87°C, div. 0,1°C, propylene carbonate filled.
- 5271: External stainless-steel support for up to 10 cylinders.

Spare Parts
- 3168: PT100 Probe for LT/HE-186000/M and OilLab 740.
- 5495: Stirring paddle for Herschel.
- 1234: Glass cylinder Pyrex®, 100 ml graduated.
- 3592/2-AUT: Upper and lower led strip 24 V CoB kit, for OilLab 742.
- 3592/4-AUT: Upper and lower led strip 24 V CoB kit, for OilLab 744.
- 3592/6-AUT: Upper and lower led strip 24 V CoB kit, for OilLab 740.
- 5498: Stand-by cover made in POM.
- 16230: Drain valve.

Calibration Tool
- 3811: Digital tachometer (Contact and Non-contact).
  · Digital 5-digit 13 mm LCD display with backlight.
  · Non-contact rotation speed (RPM).
  · Total revolutions (REV).
  · Frequency (Hz).
  · Surface speed (m/min, In/min, Ft/min, Yd/min).
  · Length (m, In, Ft, Yd).
  · 40 reading memories: Max, Min, Avg, Data.
  · Detecting distance: 50…500 mm.
  · Speed range:
  up to 99 with 0.001 scale,
  up to 999 with 0.01 scale,
  up to 9999 with 0,1 scale,
  up to 199'999 with 1 scale,
  value in rpm/min.
  · Accuracy: ±0.05% ±1 digit.
  · Dimensions: 6.0 × 16.0 × 4.0 cm.
  · Weight: 160 g.
  · Power: battery 9 V.

OilLab 880/S
Saybolt Viscometer

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ASTM D88
ASTM D7496
ASTM E102
Correlated to:
IP 55
FTM 791-0304
JIS K 2207

ASTM D88 Saybolt Viscosity
Determination of the Saybolt Universal or Saybolt Furol viscosities of petroleum products at specified temperatures between 21 and 99°C.

ASTM D7496
This test method utilizes the Saybolt Furol viscometer to measure the consistency of emulsified asphalt (at 25°C and 50°C).

ASTM E 102 Saybolt Viscosity
Determination of the Saybolt Furol viscosity of bituminous materials at specified temperatures: 121°, 135° and 149°C.

Automatic Saybolt Viscometer
- Solid painted structure with Hi-technology insulation granting low dissipation and better stability.
- Air fan system accurately developed for better performance and low power consumption.
- New designed 4 places dry bath block accurately CNC processed with new generation rotating valves for precise fluid control.
- Detection through high definition weight transductor.
- Safety feature implemented for high-temperature (over-temperature), errors and malfunctioning auto cut-out.
- 4 × Saybolt Flask 60 ml.
- 4 × Furol orifice.
- Orifice wrench.

Software Features
- Lin-Tech operating software Lab-Link running in Windows ambient.
- Automatic execution of the analysis in accordance to the selected procedure.
- Display in real time of all the analysis parameters and status.
- Field for introduction of operator and product name.
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions.
- Direct access to all analog / digital, inputs and outputs.
- Up to 100 calibration points, last calibration data available.
- Calibration due date selectable.
- Customizable results report / analysis parameters / methods.
- Easy calibration of orifice with reference samples (SUS and SFS).
- Centring procedure of glassware, automatic open/close for valves, automatic viscosity calculation.

Integrated Touch Screen Panel PC
- TFT/LCD 8.4", resolution 1024 × 762, 16.2 M colours.
- 1 × USB port for printer connection.
- Storage for more than 65'000 analysis.
- Possibility to export via USB the analysis file (.xls or .pdf).

Accessories
- 5364: Filter funnel with stainless steel wire mesh 150.
- 7224: Spare stainless-steel wire mesh 75.
- 7748: Filter funnel with stainless steel wire, 850 micron.
- 5610: Thermometer support.
- 5694: Withdrawal tube.
- 5448: Displacement ring.
- 2382: Suction pipette.
- 6239: Orifice wrench.

Spare parts
- 1754: Saybolt glass flask calibrated 60 ml, pack of 2 pcs.
- 6240: Universal orifice with diameter 1.76 mm.
- 6241: Furol orifice with diameter 3.15 mm.

OilLab 900
Refrigerated Distillation

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ASTM D86 group 0,1,2,3, 4
ASTM D216
ASTM D447
ASTM D850
ASTM D1078
ASTM E133
DIN 51751
IP 123 - IP 195
ISO 3405

ASTM D86 - Distillation of Petroleum Products at Atmospheric Pressure.
This test method covers the atmospheric distillation of petroleum products using a laboratory batch distillation unit to determine quantitatively the boiling range characteristics of such products as natural gasolines, light and middle distillates, automotive spark-ignition engine fuels, aviation gasolines, aviation turbine fuels, 1-D and 2-D regular and low sulphur diesel fuels, special petroleum spirits, naphthas, white spirits, kerosines, and grades 1 and 2 burner fuels. The test method is designed for the analysis of distillate fuels; it is not applicable to products containing appreciable quantities of residual material.

ASTM D216 (obs.), ASTM D447 (obs.)
Distillation Test Method.

ASTM D447 (obs.)
Test Method for Distillation of Plant Spray Oils.

ASTM D850 - Distillation of Industrial Aromatic Hydrocarbons and Related Materials.
This test method covers the distillation of industrial aromatic hydrocarbons and related materials of relatively narrow boiling ranges from 30 to 250°C.

ASTM D1078, IP 195 - Distillation Range of Volatile Organic Liquids.
This test method covers the determination of the distillation range of liquids boiling. Between 30 and 350°C, that are chemically stable during the distillation process, by manual or automatic distillation procedures. This test method is applicable to organic liquids such as hydrocarbons, oxygenated compounds, chemical intermediates, and blends thereof.

ASTM E 133, IP 123, DIN 51751, ISO 3405
Standard Specification for Distillation Equipment.
This specification covers distillation equipment used in the following ASTM test methods: D86, D216, D447, D850, and D1078.

OilLab 900
Automatic Refrigerated Distillation Unit Analyser Stand Alone

Hardware Performance
- Internal built-in heating/cooling unit which granting the following working temperatures: +65°C…0°C for condensing side, +40°C…0°C for receiver side.
- Low mass low voltage heater 600 W in order to heat sample up to +450°C.
- Automatic electric fan with electronic switch for rapidly cooling down end of analysis.
- Distillation range adjustable between 1 and 15 mL/min.
- Automatic fire extinguisher system with joint to be connected to an external extinguisher product line with 2 × fire detector and pressure connection sensor.
- Automatic barometric correction (0 up to 1000 kpa).
- Temperature resolution and accuracy 0.1°C through PT100 A class sensor.
- Volume resolution 0.02 ml.
- Volume accuracy ±0.1ml.
- Level following accuracy: ±0.1 ml.

Software Performance
- Managed by a touch screen panel PC by means of the Lab-Link software running in Windows® ambient:
  · TFT/LCD 10.1" with microcomputer board;

OilLab 900
Refrigerated Distillation



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· resolution 1280 × 800 with 16M colours, high brightness;
· 3 × USB Port, 1 × RJ45; 1 × RS232.
· LIMS compatible connection with network printer option;
· storage capacity for more than 60'000 analysis;
· up to 50 customizable programs and pre-charged distillation program;
· settable password for protect calibration settings;
· recovery program;
· friendly user system with wizard.

- Automatic determination of initial boiling point (IBP) and final boiling point (FBP).
- Automatic determination of dry point (optional).

Instrument Features

- Mounted on a single-solid case painted with anti-acid epoxidic products.
- Recovery metal plate supported by a base whose height is adjustable with elevating system software controlled , self-positioning heating plate with compatibility with distillation flask 125 and 200 cc.
- Wide toughened glass squared window movable for easily operation.
- Condensing tube made in stainless steel with integrated drip deflector and tube cleaned sensor.
- Receiver positioning sensor (receiver in-place), receiving door sensor for better conditioning, optical measurement sensor for auto-adapting distillation feature.
- PT100 A platinum resistance for sample temperature able to read temperature from 0 up to +500°C.

Power Consumption

- Approx. 1200 W.
- 220 Vac, 50/60 Hz.

Weight

- 70 kg

Dimensions

- 46 × 55 × 80 cm

The instrument includes

- 1 × flask type B, 125 ml.
- 1 × receiver type B 100 ml.
- 1 × ceramic flask support board 38 mm diameter.
- 1 × ceramic flask support board 50 mm diameter.
- 1 × silicone cap with hole for condenser.
- 1 × cord for cleaning of the condenser tube.
- 1 × pack of 150 gr of boiling stones.

Accessories

- 17325+16585: Dry point detector with stopper.

Spare Parts

- 2504: Flask type B, 100ml (ASTM D86), with conical connection 19/26.
- 2242/C: Flask type B, 125ml (ASTM D86), with conical connection 19/26.
- 2459: Receiver Tube type B 100ml (ASTM D86, D850, D1078).
- 6041: Base 60 mm diameter for receiver 100 ml automatic distillation.
- 2484: Ceramic flask support board with hole 38 mm diameter.
- 2485: Ceramic flask support board with hole 50 mm diameter.
- 5274: Silicone stopper between flask and condenser unit.
- 16586: Stopper for flask with hole for PT100 sensor.
- 1988: Boiling stones, pack of 150 g.
- 5471: Cord for cleaning of the condenser tube.
- 2466: Sample probe PT100.
- 5902: PTFE disc for preventing receiver evaporation.

Thermo Twin
Thermo Four

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Thermo Twin


Thermo Four









Application
Determination of the Crystallization Point.

Main Features
- The analyser is managed by an integrated touch screen panel PC by means of the dedicated software running in Windows® ambient.
- Bench top analysers with two test positions.
- Bath made in aluminium with integrated cooling system.
- The cooling of the sample happens inside the dry cooling jacket.
- The instrument is equipped with high-tech peltier with liquid exchanger.

Dimensions
- width: 34 cm
- depth: 50 cm
- height: 50 cm

Weight:
- 30 kg

Main characteristics
- Automatic Analysers for the determination of the Shukoff and Tempering curves
- Determination of min T - max T
- Automatic calculation of the slope (Q =ΔT/Δt)
- User friendly
- Easy sample preparation: with glass bottles and / or disposable plastic cups
- Rapidity in analysis execution
- Excellent repeatability of the analysis
- No particular maintenance required

Measuring devices
- PT100 sensors class A

Measuring Parameters
- Temperatures: in °C
- Measuring range: +80 °C … –50 °C
- Bath temperatures: –10 °C … +60 °C
- Heating curve: 3°C/min
- Cooling curve: 1°C/min

Software
Main features
- User friendly interface
- Real time display of all the analytical parameters
- Independent managing of the two / six test positions
- Storage of all the analysis
- Storage of the results in Excel® format
- Display of the graphic
- Execution of recipes
- Curves comparison
- Printable results

Calibration
- Automatic calibration of each temperature probe by means of the calibration decade box (Art. OilLab 80-T)
- Storage of the data referred to the calibration
- Last calibration date referred to each single probe displayed

Diagnostic
- Access to all analogue and digital signals (inlet and outlet) in order to verify their functioning.
- Thermofat Sceenshot

Accessories
- Calibration decade box – PT100 simulator with cable and connector for Thermofat range (Art. OilLab 80-T)

Spare Parts
- Thermo 206: PT100 sensor (color)
- Thermo 220: Shukoff bottle 19/26
- Thermo 221: Shukoff bottle 24/29
- LT-1412: Teflon stopper 19/26 with hole for PT100 sensor
- LT-1422: Teflon stopper 24/29 with hole for PT100 sensor

Manual and Semi-automatic Analysers



Aniline Point

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LT/AP-215000-A/M



LT/AP-215000-B/M

ASTM D611-A-B-C-D
IP 2-A-B-C-D

Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents

Method A is suitable for transparent samples with an initial boiling point above room temperature and where the aniline point is below the bubble point and above the solidification point of the aniline-sample mixture.
Method B, a thin-film method, is suitable for samples too dark for testing by Method A.
Methods C is for samples that may vaporize appreciably at the aniline point.
Method D is for samples that may vaporize appreciably at the aniline point, particularly suitable where only small quantities of sample are available.

LT/AP-215000-A/M
Aniline Point ASTM D611-A

- Metallic case structure painted with anti-acid products.
- Heating plate with aluminium ring, rod and clamp for glassware.
- Thermometer stand-by support.
- Main switch for activate the heating and heat regulation knob.
- Glassware composed by external tube 175 × 40 mm, internal tube 150 × 25 mm and glass sleeve 65 × 3 mm.
- Cork stoppers and soft iron stirrer for manual operating.

LT/AP-215000-B/M
Aniline Point "Thin-film" ASTM D611-B

- Metallic case structure painted with anti-acid products.
- Heating plate with rod and clamp for pump motor.
- Main switch, heating warming lamp with power regulator, light and pump regulation knobs.
- Thermometer stand-by support.
- External bath beaker and aniline test tube mm 100 × 33.
- Bakelite covers with manual stirrer, joints for thermometer and cooling coil with joints for external cooling source.
- Low voltage lamp for aniline identification.
- Pump assembly composed by glass pump body and stainless steel rotor.

LT/AP-215000-C/M
Aniline Point "Tube" ASTM D611-C

- Electric heater device.
- Test tube diam. 22 mm × 150 mm.
- Caps.
- Support.

LT/AP-215000-D/M
Aniline Point ASTM D611-D

- Electric heater device.
- Test tube 22 mm.
- Caps.
- Support.

Power Supply

- 220 or 115 Vac 50/60 Hz

Dimensions & Weight

- cm 40 × 50 × 60
- kg 8

Spare Parts for LT/AP-215000-A/M

- LAB-102-151: external jacket.
- LAB-102-152: test tube.
- LAB-102-153: manual stirrer.
- LAB-102-153/S: glass sleeve for metal stirrer.
- LAB-102-154/G: cork for external jacketed tube.
- LAB-102-154/P: cork for test tube.

Spare Parts for LT/AP-215000-B/M

- LAB-102-155: external jar.
- LAB-102-156: internal test cell.
- LAB-102-157: manual stirrer.
- LAB-102-158: pump body made in glass.
- LAB-102-159: pump rotor.
- LAB-150-033: lamps.

Spare Parts for LT/AP-215000-C/M

- LAB-102-160: test tube.
- LAB-102-161: thermometer tube.
- LAB-102-162: cork stopper.
- LAB-102-163: metal guard.

Spare Parts for LT/AP-215000-D/M

- LAB-102-163: metal guard.
- LAB-102-164: test bulb.
- LAB-102-165: sampling pipette.

Thermometers

- T-AS33C: thermometer ASTM 33C IP 20C.
- T-AS33F: thermometer ASTM 33F.
- T-AS34C: thermometer ASTM 34C IP 21C.
- T-AS34F: thermometer ASTM 34F.
- T-AS35C: thermometer ASTM 35C IP 59C.
- T-AS35F: thermometer ASTM 35F.

General Accessories

- LT/B-2470/BCA200: analytical balance.
- LT/DO-248000/N: natural ventilation oven.

Ductilometer

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ASTM D113
ASTM D6084
AASHTO T51
EN 13398
IP 32 (obs.)

Ductility of Bituminous Materials.
The ductility of a bituminous material is measured by the distance to which it will elongate before breaking when two ends of a briquet specimen of the material are pulled apart at a specified speed and at a specified temperature.
Unless otherwise specified, the test shall be made at a temperature of 77 ± 0.9°F (25 ± 0.5°C) and with a speed of 5 cm/min ± 5.0%.
At other temperatures the speed should be specified.

LT/DU-73000-R/M
Ductility of Bituminous Materials
Electric and Refrigerated - ASTM D113

- Bench top instrument completely made in stainless-steel and double chamber insulation.
- Internal stainless-steel bath with capacity of approximately 55 liters, equipped with double-insulation and fully immersion stainless-steel heater.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +50°C, resolution 0,1°C and stability ± 0.1°C (with cover).
- Double pump system with gently movement of liquid avoid ripple on sample surface.
- Gas CFC free refrigeration system allow to cool down the bath to +5°C.
- Three-place stainless steel structure with a motion of 1500 mm, transmission of 10 rev. on square-thread traction rod with speed 5 cm/min. by monophasic motor 220 Watt with reduction.
- Stainless-steel / plexiglass cover preventing evaporation and disturbance during the test.
- Lateral drain valve for easily emptying the bath.
- Safety thermostat.
- Included with instrument:
  · 3 × ductility form for ASTM D113;
  · 3 × base plate for form filling.

Dimensions
- Width 190 cm
- Depth 32 cm
- Height 90 cm (with open cover)

Weight
- 70 Kg (empty)

Bath Internal Dimensions
- Width 175 cm
- Depth 25 cm
- Height 16 cm

Range
- +5°C to +50°C

Power supply
- 230 Vac 50 Hz
- 115 Vac 50 Hz

Max. consumption
- 1200 Watt

Accessories
- 5047+15945: elastic recovery form/mold made in brass for ASTM D6084

Spare Parts
- 5045+15945: ductility form/mold made in brass for ASTM D113
- 5207: base plate for form/mold fllling


5207


5047+15945


5045+15945

Fraass

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LT/FA-252000/M



LT/FA-252000-BIS/M

DIN 52012
IP 80

Breaking Point of Bitumen
Fraass Method.

This test method covers the determination of the temperature at which a bitumen tends to break rather than to flow when stressed. The Fraass Breaking Point is the temperature at which the first cracks appear the coating. It can be applied by any homogeneous road or industrial bitumen.

LT/FA-252000/M
Fraass Apparatus IP 80

- Bending apparatus composed by 2 concentric tubes topped by two clamps for holding the test plaque.
- Flexing brass system complete with 1 test plaque.
- Internal glass tube 35 × 210 mm, median glass tube 55 × 200 mm, external glass container.
- Glass funnel for carbon dioxide introduction.
- 3 Stoppers made in rubber/cork.

LT/FA-252000-BIS/M
Fraass Apparatus IP 80

- Bending apparatus composed by 2 concentric tubes topped by two clamps for holding the test plaque.
- Flexing brass system complete with 1 test plaque.
- Internal glass tube 35 × 210 mm, external unsilvered dewar jar.
- Glass funnel for carbon dioxide introduction.
- 2 Stoppers made in rubber/cork.
- Base support for dewar jar.

Accessories

- 1000511: heating plate 600 W
- T-IP42C: thermometer IP 42C

Spare Parts

- LAB-102-521: Fraass test plaque, pack of 25 pcs.
- LAB-102-522: glassware set composed by median tube and external for LT/FA-252000/M
- LAB-102-524: internal glass tube 35 × 210 mm
- LAB-102-525: stoppers set pack of 3 pcs. for LT/FA-252000/M
- LAB-102-526: stoppers set pack of 2 pcs. for LT/FA-252000-BIS/M
- LAB-102-527: flexing brass system complete of bending apparatus
- LAB-102-528: Dewar jar for LT/FA-252000-BIS/M

Thin-Film Oven Test

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ASTM D6
ASTM D1754
EN 12607-2

Loss on Heating of Oil
and Asphaltic Compounds.
This test method covers the determination of the loss in mass (exclusive of water) of oil and asphaltic compounds when heated.

Effect of Heat and Air on Asphaltic Materials (Thin-Film Oven Test).
This test method covers the determination of the effect of heat and air on a film of semisolid asphaltic materials. The effects of this treatment are determined from measurements of selected asphalt properties before and after the test.

LT/TF-257000/M
Thin-Film Oven Test and Loss on Heating of Oil and Asphaltic Compounds

- Outer body in steel coated in epoxy anti-acid paint.
- Inner structure in stainless steel AISI 304 with rounded corners.
- Internal dimensions: width 40.3 × depth 37.0 × height 45.8 cm.
- Internal axle rotating at 5-6 rpm controlled by a geared motor located on the oven top for the relevant container support.
- Double insulation door with silicone seal to prevent heat loss.
- Door equipped with toughened glass window having a size of 20.0 × 20.0 cm.
- Interior light with dedicated on / off button.
- Thermal insulation with mineral fiber.
- Digital display P.I.D. thermostat to ensure good stability.
- Equipped with security thermostat.
- Forced ventilation with manual flow control opening.
- 1 × thermometer support.

Temperature Range
- Ambient to +280°C
- Resolution 0.1°C.

Power Supply
- 220 Vac or 115 Vac 50/60 Hz.

Consumption
- 13 W.

Dimensions
- cm 60 × 80 × 80.

Weight
- kg 50.

Accessories ASTM D6
- 5502: Support for ASTM D6 (9 places).
- 5005: Container made in brass ASTM D6.
- T-AS13C: Thermometer ASTM 13C IP 47C, range +155°…+170°C, div. 0,5°C, propylene carbonate filled.

Accessories ASTM D1754
- 5277: Support for ASTM D1754 (4 places).
- 5278: Container made in stainless steel ASTM D1754.
- T-AS13C: Thermometer ASTM 13C IP 47C, range +155…+170°C, div. 0,5°C, propylene carbonate filled.

Spare Parts
- 3706: Thermoregulator.
- 3632: Heating element 1200 W, 220 Vac.
- 17171: Heating element 1200 W, 110 Vac.
- 3709: PT100 for air measurement.
- 3425: Fan motor.
- 3570: Motor for carriage, 24 V, with cover and cable.

Ring and Ball

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ASTM D36
ASTM E28
EN 1427
IP 58

Softening Point of Bitumen
(Ring and Ball Apparatus)
This test method coversthe determination of the softening point of bitumen in the range from 30 to 157°C (86 to 315°F) using the ring and ball apparatus immersed in distilled water (30 to 80°C), USP glycerine (above 80 to 157°C), or ethylene glycol (30 to 110°C).

Standard Test Methods for Softening Point of Resins Derived from Pine Chemicals and Hydrocarbons, by Ring-and-Ball Apparatus.
These test methods are intended for determining the softening point of resins (including rosin and terpene resins) and similar materials by means of the ring-and-ball apparatus.

LT/RB-217000/M
Manual apparatus for Softening Point of Bitumen - Ring and Ball Apparatus
- Metallic case structure painted with anti-acid products light and resistant, vibration-free feets.
- Heating plate with insulating ring, rod and clamp for motor stirrer.
- Tempered glass jar 85 mm diameter × 130 mm used as bath.
- Two-place brass cage adjustable in height equipped with rings and collars for centering the test balls.
- 2 × hardened steel test balls 9.5 mm diameter.
- Thermometer stand-by support.
- Control box equipped with heating regulation, main switch and stirrer activation switch.

Power Supply
- 220 or 115 Vac 50/60 Hz

Dimensions
- cm 40 × 40 × 60

Weight
- kg 5

Accessories
- 7138: Gloves heat resistant.
- T-AS15C: Thermometer ASTM 15C IP 60C.
- T-AS16C: Thermometer ASTM 16C IP 61C.
- 5333: Pouring plate.
- 5524: Forceps.

Accessories IP 58
- 5331: Ball centering guide IP, pack of 2 pcs.
- 6014: Tapered ring IP, pack of 2 pcs.
- 6015: Square shouldered ring IP, pack of 2 pcs.

Spare Parts
- 5330: Shoulder ring ASTM D36, E28, EN1427, pack of 2 pcs.
- 5329: Ball centering guide ASTM D36, E28, EN1427, pack of 2 pcs.
- 5170: Balls, pack of 10 pcs.
- 2376: Pyrex® jar.
- 3151: Electronic regulator.
- 3064: Heater.
- 15539: Brass cage.


5330


5329


5170

Rolling Thin-Film

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ASTM D2872
EN 12607

ASTM D2872 - Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test).
This test method is intended to measure the effect of heat and air on a moving film of semi-solid asphaltic materials.
The effects of this treatment are determined from measurements of the selected properties of the asphalt before and after the test.

EN 12607 - Determination of the Resistance to Hardening under the Influence of Heat and Air.

LT/RT-255000/M
Rolling Thin-Film Oven Test

- Bench top instrument with stainless-steel structure equipped with anti-vibrating foots.
- Insulated stainless steel internal chamber, equipped with a wide double window front door.
- Forced ventilation through a squirrel cage-type fan rotating at 1725 rpm.
- Aluminium vertical circular carriage, diameter 30.5 cm, rotating at 15 rpm, with 8 openings with clips for glass containers.
- Air jet made in copper with coil for preheating the air, external flow meter with needle regulation knob.
- Digital thermo-regulator PID with over temperature alarm and probe PT100 A class.
- 8 × glass containers.

Power Supply

- 220 Vac 50/60 Hz

Consumption

- 2000 Watt

Dimensions

- cm 79.5 × 59.5 × 59.5

Internal Chamber Dimensions

- cm 40.5 × 34.0 × 44.5

Accessories

- 7138: Gloves heat resistant.
- 5453: Tongs in stainless steel with cork protection for the glassware, total length 32 cm.
- T-AS13C: Thermometer ASTM 13C IP 47C.
- 5993: Bottle scraper for removing sample from glass container.
- 7577: Compact diaphragm air pump
  · Vacuum and compression application.
  · Flow rate max. 7 l/min.
  · Pressure max. 2.5 bar rel.
  · Ultimate vacuum max. 130 mbar (abs.).
  · Weight 1.3 kg.
  · Dimensions 7,5 × 11,9 × 15,6 cm.
  · Valve material FKM.
  · Diaphragm PTFE coated.
  · 6 mm connector and silencer.
  · Adjustable speed control and maintenance free.
  · Universal power supply 100-240 Vac 50-60 Hz.
- 1000244: Cooling rack allowing the accommodation of up to 8 sample containers in horizontal position.

Spare Parts

- 1010: Container, made in glass.
- 7457: V-Type belt, pack of 2 pcs.
- 3116: Warning lamp.

Fuel Blending Unit

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ASTM D613
ASTM D2699
ASTM D2700
ASTM D2885

Standard Test Method for Research Octane Number of Spark-Ignition Engine Fuel

Standard Test Method for Determination of Octane Number of Spark-Ignition Engine Fuels by On-Line Direct Comparison Technique

Standard Test Method for Cetane Number of Diesel Fuel Oil

LT/BM-314000/SA

- Floor instrument compact and solid structure painted with anti-epoxy products, include the refrigerator system (with gas CFC free) and dedicated electronic boards.
- Linetronic fixing system for glassware that allow an easy cleaning of all components.
- Safety systems: overheating alarm and protection, over-pressure protection system, sample bottle wrong position protection, stand-by module for energy saving.
- Cooling performance: able to grant working temperatures of -20°C.
- Up to 6 liquid tank connection facility.
- Integrated balance assures an accuracy of +/- 0.01 ON/CN (0.2%).
- Linetronic Management software running on 12" high-brightness TFT with resolution 1024 × 768:
  . Pre-setting for methods: ASTM D2699 / D2700 / D2885 / D613;
  . Customizable blending parameters with tolerance of 0.2%;
  . Settable bath temperature and controlled by PT100 A Class with 0,1°C precision;
  . More than 100 recipes storage capacity;
  . 2 × USB for connecting: mouse, keyboard and software updates;
  . 1 × RJ45 Ethernet / Lims connection;
  . Integrated beeper for end-preparation notification.

Weight
- 250 Kg

Dimensions
- Width 77 cm
- Depth 72 cm
- Height 145 cm

Power supply
- 220 or 115 Vac 50/60 Hz

Boiling Point of Engine Coolants

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ASTM D1120

Boiling point of engine coolants.
Covers the determination of the equilibrium boiling point of engine coolants.

LT/BP-232000/M
Manual apparatus for Boiling Point of Engine Coolants - ASTM D1120

- Metal tube-shaped structure with double colour fine painting equipped with rod and clamp for glassware.
- Heating mantle equipped with wire heating resistance gently rolled around a stainless steel basket.
- Internal insulation made with mineral fibres.
- Main switch and heating power regulator.
- 100 ml round-bottom flask with short-neck and side-entering for the thermometer introduction.
- Linear condenser made in glass with joints for liquid circulation and grounds joints 19/38.

Temperature Range
- Ambient to +300°C

Power Supply
- 220 or 115 Vac 50/60 Hz

Consumption
- 250 Watt

Spare Parts
- 092: 100 ml glass flask with thermometer cap.
- 1094: condenser made in glass.
- 1988: Boiling stones, pack of 150 g.

Accessories
- T-AS2C: thermometer ASTM 2C without mercury.

Centrifuge

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LT/WB-123200/M - water conditioning bath, 18 liters capacity,
LAB-4007-010 - gas release and dilution system, adapters and glassware.









ASTM D91, ASTM D96, ASTM D893, ASTM D1796, ASTM D2273, ASTM D2709, ASTM D2711, ASTM D4007, ASTM D5546, API 2542, API 2548, BS 4385, DIN 51793, IP75, IP 359, ISO 3734, ISO 9030, NF M07-020

ASTM D91 - Precipitation Number of Lubricating Oils.
This test method covers the determination of the precipitation number of steam cylinder stocks and black oils, and can be used for other lubricating oils.

ASTM D96 (obs.) - Water and Sediment in Crude Oil.
This test method covers the centrifuge method for determining sediment and water in crude oil during field custody transfers.

ASTM D893 - Insolubles in Used Lubricating Oils.
This test method covers the determination of pentane and toluene insoluble in used lubricating oils.

ASTM D1796 - Standard Test Method for Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Procedure).
This test method describes the laboratory determination of water and sediment in fuel oils in the range from 0 % to 30 % volume by means of the centrifuge procedure.

ASTM D2273 - Trace Sediment in Lubricating Oils.
This test method covers the determination of trace amounts (less than 0.05 volume %) of sediment in lubricating oils.

ASTM D2709 - Water And Sediment in Middle Distillate Fuels.
This test method covers the determination of the volume of free water and sediment in middle distillate fuels having viscosities at 40°C (104°F) in the range of 1.0 to 4.1 mm/s (1.0 to 4.1 cSt) and densities in the range of 770 to 900 kg/m.

ASTM D2711 - Demulsibility Characteristics of Lubricating Oils.
This test method covers the measurement of the ability of oil and water to separate from each other. It is intended for use in testing medium and high-viscosity lubricating oils.

ASTM D4007 - Water and Sediment in Crude Oil.
This test method describes the laboratory determination of water and sediment in crude oils by means of the centrifuge procedure.

ASTM D5546 - Standard Test Method for Solubility of Asphalt Binders in Toluene by Centrifuge.
This test method covers determination of the degree of solubility of asphalt binders in toluene using centrifugal separation. The method is an alternative to Test Method D 2042, and may be preferable to Test Method D 2042 when testing modified asphalt binders.

API 2542
API 2548
BS 4385
DIN 51793
IP 75 (obs.)
IP 359
ISO 3734
ISO 9030
NF M07-020

LT/CF-121000/M
Laboratory Centrifuge

- Table top compact and robust centrifuge, frontal and upper part made of anti-abrasion and fire-retardant plastic material.
- Sever method available: ASTM D91, D893, D2273, D2709, D5546, API 2542, API 2548, BS 4385, DIN 51793.
- TFT color touch screen, visible from more than 3 m.
- Shows RPM and RCF, time, temperature, acceleration/deceleration values (PCBS) and unbalancing location system (ULS).
- Speed programming in 10 RPM/10 xg steps.
- Real RCF values on screen based in accessories configuration.
- Count up/down from "0" or at "set RPM/RCF" for test reproducibility, timer countdown/up from "0" or at "set RPM/ RCF" for reproducible tests, timer settable from 1min – 99 hrs.
- PCBS: Progressive controlled acceleration and braking system up to 175 selectable ramps that prevents sample homogenization after separation.
- ULS: Unbalancing location system indicating on the screen the number of the bucket which produces the unbalance switch off.
- 40 programmable memories, with protection under password.
- Several acoustic and visual messages warning the user the device situation.
- Microprocessor controlled, PC connection, last values remain in memory.
- Induction motor maintenance free (brushless) with noise level below 60 dB, Rotors and adapters list on memory.
- Start, stop, open lid and short spin with adjustable speed buttons.
- Option of free/locked adjustment of RPM/ RCF along the run.
- Automatic rotor recognition, over-speed protection.

Centrifuge

- Lid provided with security systems:
  · Automatic lid lock system, motorized with double lock.
  · Emergency lid-lock release.
  · Locking and protection against opening along the run.
  · Lid dropping protection.
  · Port in the lid for calibration and operation checking.
- Chamber of centrifugation in stainless steel (easy cleaning), equipped with protection safety ring.
- Rotors and adapters autoclavable, easy to install by the user.
- Automatic disconnection for energy saving up to 8 h.
- Max speed 3000 RPM / 2425 RCF xg.
- Swing out rotor 4 positions – for hold 4 x 100 ml 8/6" tubes

Power Supply
- 220 or 115 Vac 50/60 Hz
- 450 W

Dimensions and Weight
- 54 × 65 × 40 cm
- 73 kg

LT/CF-122000-R/M
Heated Laboratory Centrifuge
- Table top compact and robust centrifuge, frontal and upper part made of anti-abrasion and fire-retardant plastic material.
- Sever method available: ASTM D91, D96, D893, D1796, D2273, D2709, D2711, D4007, D5546, API 2542, API 2548, BS 4385, ISO 3734, ISO 9030, IP75, IP 359, NF M07-020, DIN 51793.
- TFT color touch screen, visible from more than 3 m.
- Shows RPM and RCF, time, temperature, acceleration/deceleration values (PCBS) and unbalancing location system (ULS).
- Speed programming in 10 RPM/10 xg steps.
- Real RCF values on screen based in accessories configuration.
- Count up/down from "0" or at "set RPM/RCF" for test reproducibility, timer countdown/up from "0" or at "set RPM/ RCF" for reproducible tests, timer settable from 1min – 99 hrs.
- PCBS: Progressive controlled acceleration and braking system up to 175 selectable ramps that prevents sample homogenization after separation.
- ULS: Unbalancing location system indicating on the screen the number of the bucket which produces the unbalance switch off.
- 40 programmable memories, with protection under password.
- Several acoustic and visual messages warning the user the device situation.
- Microprocessor controlled, PC connection, last values remain in memory.
- Induction motor maintenance free (brushless) with noise level below 60 dB, rotors and adapters list on memory
- Start, stop, open lid and short spin with adjustable speed buttons.
- Option of free/locked adjustment of RPM/ RCF along the run.
- Automatic rotor recognition, over-speed protection.
- Lid provided with security systems:
  · Automatic lid lock system, motorized with double lock.
  · Emergency lid-lock release.
  · Locking and protection against opening along the run.
  · Lid dropping protection.
  · Port in the lid for calibration and operation checking.
- Chamber of centrifugation in stainless steel (easy cleaning), equipped with protection safety ring that also reduce heat dissipation.
- Rotors and adapters autoclavable, easy to install by the user.
- Automatic disconnection for energy saving up to 8 h.
- Preheating program with rotor spinning and temperature selectable. Allows keep the chamber at working temperature before starting the process.
- Regulation of the room temperature +5°C (41°F) to 80°C (176°F) in 1°C/1°F steps programmable in °C o °F.
- Temperature sensor inside the chamber. Overheating protection.
- Max speed 3000 RPM / 2425 RCF xg.
- Swing out rotor 4 positions – for hold 4 × 100 ml 8/6" tubes.

Power Supply
- 220 or 115 Vac 50/60 Hz
- 450 W

Dimensions and Weight
- 54 × 65 × 40 cm
- 77 kg

Accessories for Safety

LAB-4007-010
Gas Release and Dilution System
- Safety box system that work only when centrifuge is in analysis.
- Create 10 l/min suction from test chamber (compressed air supply is requested / max 8 bar).
- Air inlet pressure regulator and inlet pressure gauge.
- Operation controlled by operator with a simple valve.

LT/WB-123200/M
Water Conditioning Bath 18 Liters Capacity
- Heating element bottom positioned.
- Atmosferic drain tap.
- Stainless steel inner tank with rounded edges.
- Digital thermoregulatory with 0.1°C precision.
- Stainless steel cover with handle.
- Dimensions 36 × 37 × 33 cm.
- Power supply 220 Vac or 115 Vac.

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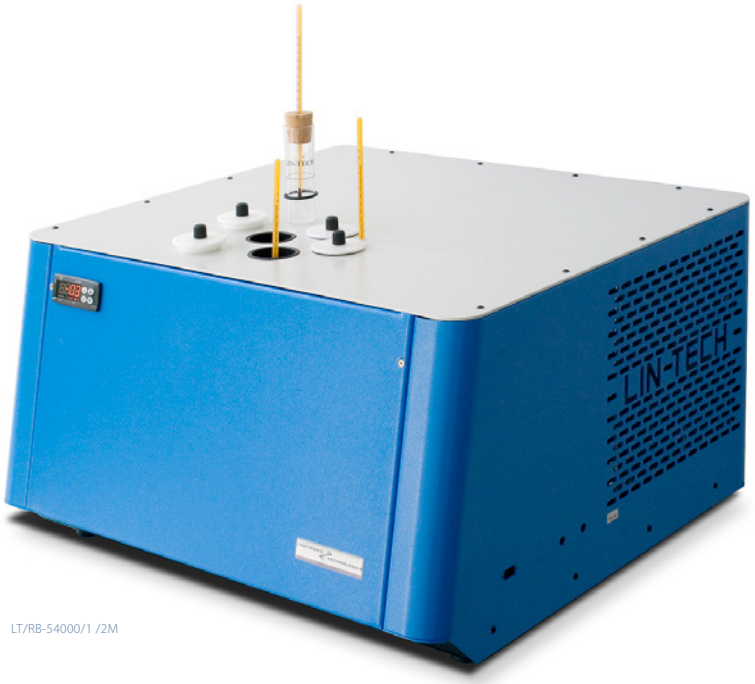
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Accessories

	Article	Description	ASTM D91	ASTM D96	ASTM D893	ASTM D1796	ASTM D2273	ASTM D2709	ASTM D2711	ASTM D4007	ASTM D5546
optional accessories	LT/WB-123000/M	water bath	•	•		•	•	•		•	
	LT/DO-248000/F	drying oven			•						•
	LT/B-2470/BCA200 INT-CAL	analytical balance, range 220 g			•						•
	LAB-4007-010	gas release and dilution system								•	
adapters	5116	adapter made in plastic with rubber insert, height 137 mm, pack of 4 pcs., for 2104 and 2106	•	•	•	•	•	•	•	•	•
	5419	adapter made in plastic with rubber insert, height 65 mm, pack of 4 pcs., for 2102 and 2109		•				•	•		
	5420	adapter made in plastic with rubber insert, height 137 mm, pack of 4 pcs., for 2108		•					•		
	5421	adapter made in plastic with 7 positions, height 97 mm, pack of 4 pcs., for 2110		•							
glassware	2102	pear-shaped tube 100 ml, graduated to 0.1 ml, pack of 4 pcs.		•				•	•		
	2102/st	stoppers, pack of 50 pcs.									
	2104	cone-shaped tube 100 ml, height 203 mm, graduated to 0.05, pack of 4 pcs.	•	•	•	•			•	•	•
	2104/st	stoppers, pack of 50 pcs.									
	2106	trace sediment tube 100 ml, graduated to 0,005, fine tip, pack of 4 pcs.					•	•	•		
	2106/st	stoppers, pack of 50 pcs.									
	2108	cone-shaped tube 100 ml, height 152 mm graduated to 0.05 ml, pack of 4 pcs.		•					•		
	2108/st	stoppers, pack of 50 pcs.									
	2109	trace sediment pear-shaped tube Goetz 100 ml with stopper, pack of 4 pcs.						•			
	2110	Api tube 12.5 ml with % graduation, pack of 12 pcs.		•							
	2110/st	stoppers, pack of 50 pcs.									
racks	5425	5 places water bath rack for 2102 and 2109		•				•	•		
	5473	8 places water bath rack for 2104 and 2106	•	•	•	•	•	•	•	•	•
	5474	6 Places water bath rack for 2108		•					•		
	LAB-101-229/W28	28 Places water bath rack for 2110		•							

Cloud and Pour Point Refrigerator

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LT/RB-54000/1 /2M

ASTM D97
ASTM D2500
ASTM D5853
ASTM D6922
DIN 51428
DIN 51597
IP 15
IP 219
IP 309
ISO 3015
ISO 3016

Pour Point of Petroleum Products

This test method is intended for use on any petroleum product. Suitable for black specimens, cylinder stock, and non-distillate fuel oil and for testing the fluidity of a residual fuel oil at a specified temperature is described.

Cloud Point of Petroleum Products

This test method covers only petroleum products that are transparent in layers 40 mm in thickness, and with a cloud point below 49°C.

Pour Point of Crude Oils

Homogeneity and Miscibility in Automotive Engine Oils (D6922)

Determination if an automotive engine oil is homogeneous and will remain so, and if it is miscible with certain standard reference oils after being submitted to a prescribed cycle of temperature changes.

LT/RB-54000/1-M
Manual refrigerator, dry bath, 1 temperature, 4 places, bench model

- Bench top instrument with steel structure painted with anti-epoxy products.
- Circular aluminium metal block bath deeply coated equipped with heating element to heat up the bath up to +60°C.
- 4 × dry wells for glassware introduction and 1 × thermometer hole.
- 4 × stand-by plastic covers with handle.
- Temperature controlled by a digital thermoregulator with PID function that control the temperature trough an A class PT100 sensor with resolution 0,1°C and stability +/- 0.1°C.
- Cooling provided by motor compressor system single-stage grant temperature up to -51°C.

Power supply
- 220 or 115 Vac, 50/60 Hz

Power consumption
- 0.7 Kw

Dimensions
- Width 66 cm
- Depth 60 cm
- Height 42 cm

Weight
- 70 kg

LT/RB-54000/2-M
Manual refrigerator, dry bath, 1 temperature, 4 places, bench model

- Bench top instrument with steel structure painted with anti-epoxy products.
- Circular aluminium metal block bath deeply coated equipped with heating element to heat up the bath up to +60°C.
- 4 × dry wells for glassware introduction and 1 × thermometer hole.
- 4 × stand-by plastic covers with handle.
- Temperature controlled by a digital thermoregulator with PID function that control the temperature trough an A class PT100 sensor with resolution 0,1°C and stability +/- 0.1°C.
- Cooling provided by Motor compressor system single-stage grant temperature up to -69°C.

Power supply
- 220 or 115 Vac, 50/60 Hz

Power consumption
- 1.5 Kw

Dimensions
- Width 66 cm
- Depth 60 cm
- Height 42 cm

Weight
- 70 kg

Cloud and Pour Point Refrigerator

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LT/RB-53300/M /M+



LT/RB-50000/M

LT/RB-53300-M
Manual refrigerator, dry bath, Pour Point of Petroleum Products, 3 temperature

- Floor model instrument made in die-casted aluminium covered by special plastic material fitted with four wheels allowing movement.
- 3 × dry aluminium block bath with 4 wells each for accommodation of glassware and a small 1 for thermometer/ each block.
- Low-voltage anti-condensing system and 12 stand by covers made in plastic material.
- Motor compressor system with CFC free gases.
- 3 × digital thermoregulator with PT100 A class grant resolution and precision of 0,1°C.
- Standard block temperature configuration: 0, -18, -33°C.
- Available working temperature (on last position): up to -33°C.

Power supply
- 220 or 115 Vac, 50/60 Hz

Power consumption
- 1.8 Kw

Inrush current
- 5.5 Kw

Dimensions
- Width 110 cm
- Depth 60 cm
- Height 92 cm

Weight
- 170 kg

LT/RB-53300-M+
Manual refrigerator, dry bath, for Pour Point of Petroleum Products, 3 temperature

- Floor model instrument made in die-casted aluminium covered by special plastic material fitted with four wheels allowing movement.
- 3 × dry aluminium block bath with 4 wells each for accommodation of glassware and a small 1 for thermometer/ each block.
- Low-voltage anti-condensing system and 12 stand by covers made in plastic material.
- Motor compressor system with CFC free gases.
- 3 × digital thermoregulator with PT100 A class grant resolution and precision of 0,1°C.
- Standard block temperature configuration: 0, -18, -51°C.
- Available working temperature (on last position): up to -51°C.

Power supply
- 220 or 115 Vac, 50/60 Hz

Power consumption
- 1.8 Kw

Inrush current
- 5.5 Kw

Dimensions
- Width 110 cm
- Depth 60 cm
- Height 92 cm

Weight
- 170 kg

LT/RB-50000/M
Manual refrigerator, dry bath, 4 temperatures, 4 places

- Floor type instrument with steel structure painted with anti-epoxy products.
- 4 × Circular aluminium metal block bath deeply coated, last position equipped with heating element to heat up the bath up to +60°C.
- For each block:
  · 4 × dry wells for glassware introduction and 1 × thermometer hole.
  · 4 × stand-by plastic covers with handle.
- Fitted with four wheels allowing easy movement in laboratory.
- Working temperatures:
  · 1st position: ambient to 0°C.
  · 2nd position: ambient to -18°C.
  · 3rd position: ambient to -33°C.
  · 4th position: +60 to -51°C.
- Automatic defrosting device low voltage.
- Temperature controlled by 4 independents digital thermoregulators with PID function that control the temperature trough an A class PT100 sensor with resolution 0,1°C and stability +/- 0.1°C.
- Cooling provided by Motor compressor system double-stage equipped with CFC free gases.

Power supply
- 220 or 115 Vac, 50/60 Hz

Power consumption
- 2.5 Kw

Inrush current
- 8 Kw

Dimensions
- Width 140 cm
- Depth 60 cm
- Height 92 cm

Weight
- 240 kg

Cloud and Pour Point Refrigerator



LT/RB-50000-W/M



LT/RB-53100/M

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LT/RB-50000-W/M
Manual refrigerator, 4 temperatures

- Floor model instrument made in die-casted aluminium covered by special plastic material fitted with four wheels allowing movement.
- 4 × small bath with 4 wells each for accommodation of glassware and a small 1 for thermometer/pouring medium liquid.
- Low-voltage anti-condensing system and 16 stand by covers made in plastic material.
- Motor compressor system with CFC free gases.
- 4 × digital thermo-regulator with PT100 A class grant resolution and precision of 0,1°C.
- Standard block temperature configuration:
  · 1st position: ambient to 0°C.
  · 2nd position: ambient to -18°C.
  · 3rd position: ambient to -33°C.
  · 4th position: ambient to -51°C.

Power supply
- 220 or 115 Vac, 50/60 Hz

Power consumption
- 4 Kw

Inrush current
- 12 Kw

Dimensions
- Width 140 cm
- Depth 60 cm
- Height 92 cm

Weight
- 265 kg

LT/RB-53100/M
Manual refrigerator, dry bath, 5 temperatures, 4 places

- Floor type instrument with steel structure painted with anti-epoxy products.
- 5 × Circular aluminium metal block bath deeply coated, last 2 positions equipped with heating element to heat up the bath up to +60°C.
- For each block:
  · 4 × dry wells for glassware introduction and 1 × thermometer hole.
  · 4 × stand-by plastic covers with handle.
- Fitted with four wheels allowing easy movement in laboratory.
- Working temperatures:
  · 1st position: ambient to 0°C
  · 2nd position: ambient to -18°C
  · 3rd position: ambient to -33°C
  · 4th position: +60° to -51°C
  · 5th position: +60° to -69°C
- Automatic defrosting device low voltage.
- Temperature controlled by 5 independents digital thermoregulators with PID function that control the temperature trough an A class PT100 sensor with resolution 0,1°C and stability +/- 0.1°C.
- Cooling provided by motor compressor system double-stage equipped with CFC free gases.

Power supply
- 220 or 115 Vac, 50/60 Hz

Power consumption
- 4 Kw

Inrush current
- 12 Kw

Dimensions
- Width 170 cm
- Depth 60 cm
- Height 92 cm

Weight
- 260 kg

Accessories ASTM D97 / D2500
- 1050: test jar graduated glassware ASTM, pack of 4 pcs.
- 5334: cork cover for centring thermometer, pack of 4 pcs.
- 7183: cork disk for test jar, pack of 4 pcs.
- 11143: insulating gasket, pack of 4 pcs.
- T-AS5C: thermometer ASTM 5C IP 1C.
- T-AS6C: thermometer ASTM 6C IP 2C.

Accessories for manual determination of CFPP
- LT/CF-254000/M: Manual Cold Filter Plugging Point EN116 / IP 309.
  Instrument to be used with the article LT/RB-5x000/M or others refrigerators.
  · Test tube with level mark.
  · Stopper with relevant holes.
  · Spacer, centring basket.
  · Calibrated glass aspiration pipette.
  · Filter assembly complete with filter.
- OilLab 250: vacuum generator
  · 2 × glass bottles according to IP method.
  · U-tube.
  · Stopper with: flow regulating, valve manual, funnel Vinyl tube for connections.
- 3087: compact diaphragm air/vacuum pump
  · Vacuum and compression application.
  · Flow rate max. 5 l/min.
  · Pressure max. 0.3 bar rel.
  · Ultimate vacuum max. 300 mbar (abs.).
  · Weight 0.85 Kg.
  · Dimensions 72 × 72 × 180 mm.
  · Valve material NBR coated.
  · 4 mm connector included.
  · Maintenance free.
  · Power supply: 220 Vac, 50-60 Hz.

Spare Parts for CFPP
- 2505: calibrated aspiration pipette for CFPP.
- 7054: o-ring (small) for CFPP filter.
- 7055: o-ring (big) for CFPP filter.
- LAB-200/013-02-SS: stainless steel filter holder with 10 × mesh interchangeable.

Cold Filter Plugging Point CFPP

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ASTM D6371
DIN 51428
EN 116
IP 309
JIS K 2288

Cold Filter Plugging Point
of diesel and heating fuels
Determination of the Cold Filter Plugging Point (CFPP) temperature of diesel and domestic heating fuels by measuring the temperature at which the sample ceases to flow through a wire mesh filter.

LT/CF-254000/M
Manual CFPP
Instrument to be used with the manual refrigerators.

- Test tube with level mark.
- Stopper with relevant holes.
- Spacer, centring basket.
- Calibrated glass aspiration pipette.
- Filter assembly complete with filter.

Accessories

- OilLab 250: Vacuum Generator.
  · 2 × glass bottles according to IP method.
  · U-tube.
  · Stopper with flow regulating, valve manual, funnel.
  · Stopper with vinyl tube for connections.
- 3087: Compact diaphragm air/vacuum pump.
  · Vacuum and compression application.
  · Flow rate max. 5 l/min.
  · Pressure max. 0.3 bar rel.
  · Ultimate vacuum max. 300 mbar (abs.).
  · Weight 0.85 kg.
  · Dimensions 72 × 72 × 180 mm.
  · Valve material NBR coated.
  · 4 mm connector included.
  · Maintenance free.
  · Power Supply 220 Vac 50-60Hz.
- T-AS5C: thermometer ASTM 5C IP 1C
- T-AS6C: thermometer ASTM 6C IP 2C

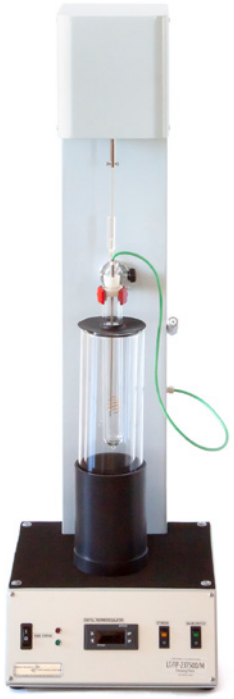
Spare Parts

- 2558: Calibrated glass cell for CFPP.
- 2505: Calibrated aspiration pipette for CFPP.
- 7054: O-ring (small) for CFPP filter.
- 7055: O-ring (big) for CFPP filter.
- LAB-200/013-02-SS: Stainless steel filter holder with 10 × mesh interchangeable.

Freezing Point of Aviation Fuels
Freezing Point of Antifreeze and Coolants

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LT/FP-237500/M



LT/FP-237000/M



LT/FP-238500/M

ASTM D2386
DIN 51421
IP 16
ISO 3013

Freezing point of aviation fuels
Covers the determination of the temperature below which solid hydrocarbon crystals may form in aviation turbine fuels and aviation gasoline.

ASTM D1177
NF T78-102

Freezing point of aqueous antifreeze and engine coolants.
Covers the determination of the freezing point of an aqueous engine coolant solution in the laboratory.

LT/FP-237000/M
Manual Freezing Point - ASTM D2386

- Double tube 30 × 240 mm fitted with cap with a stopper supporting the thermometer and moisture-proof collar through which the stirrer passes
- Dewar jar 75 × 280 mm mount-based
- Stirrer made of 1.6 mm brass rod bent into a smooth three-loop spiral at the bottom

LT/FP-237500/M
Electric Freezing Point - ASTM D2386

- Double tube 30 × 240 mm fitted with cap
- Dewar jar 75 × 280 mm mount-based
- Geared motor for stirring at 80 rpm with wire stirrer
- PT100 sensor
- Mounted on a plate structure painted with anti-acid epoxy products
- Power supply 220 Vac 50/60 Hz

Dimensions
- 40 × 50 × 80 cm

Weight
- kg 10

Accessories
- T-AS114C: thermometer ASTM 114C IP 14C

Spare Parts
- LAB-102-371: double tube
- LAB-102-372: wire stirrer
- LAB-102-373: Dewar jar 75 × 280 mm
- LAB-102-374: cap
- LAB-102-375: PT100 sensor, only for LT/FP-237500/M

LT/FP-238000/M
Manual Freezing Point ASTM D1177 - NF T78-102

- Double tube diam. 48 × 220 mm fitted with cap
- Silvered Dewar jar diam. 95 × 295 mm
- Brass wire stirrer and cork cap
- Support with rod and clamp

LT/FP-238500/M
Electric Freezing Point ASTM D1177 - NF T78-102

- Double tube diam. 48 × 220 mm fitted with cap
- Silvered Dewar jar diam. 95 × 295 mm
- Geared motor for stirring at 80 rpm with wire stirrer
- PT100 sensor
- Mounted on a plate structure painted with anti-acid epoxy products
- Power supply 220 Vac 50/60 Hz

Dimensions
- 40 × 50 × 80 cm

Weight
- kg 10

Spare Parts
- LAB-102-381: test tube
- LAB-102-382: wire stirrer
- LAB-102-383: Dewar jar diam. 95 × 295 mm
- LAB-102-384: stopper
- LAB-102-385: PT100 sensor, only for LT/FP-238500/M

Freezing Point Refrigerator

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ASTM D1655
ASTM D2386
ASTM D5901
ASTM D5972
ASTM D7154
IP 16
IP 435
IP 529
ISO 3013

Subject
Freezing Point of aviation fuels, aviation gasoline, aviation turbine fuels, engine coolants, antifreeze products, brake fluids,…

Measuring Freezing Point Principle
According to the methods, the sample is cooled down and stirred.
The solid hydrocarbon crystals formation are observed by the operator.
As soon as crystals are detected, the sample is warmed up until their complete disappearance.

Measuring Temperature Probe
- Thermometer

LT/RB-55004/M Freezing Point Refrigerator
- Bench top model made in alluminium with epoxid anti-acid paint
- 4 dry clean wells of test
- 4 small stand-by covers
- Working temperatures: +60° … -80° C
- 1 temperature digital controllers resolution 0,1°
- 1 PT 100 probes class A
- 1 main switches
- CFC free gases
- 4 start/stop button for stirrer

Stirrer
- A micro-motor drives all the mechanical system
- 3 coils stirrer made of brass

Measuring Parameters
- Temperatures: in °C/°F
- Measuring range: +80°C … -100°C
- Resolution: 0.1 °C
- Accuracy: ± 0.1 °C
- Repeatability / reproducibility as per standards methods or better

Test Jar
- Same dimensions and volume as described by the standard test methods
- Product level mark at 25 ml
- Small edge on the top in order to fix the glass cell to the analytical head

Cooling System
- Insulated cooling jackets.
- Integrated gas CFC free motor compressors: double stage, for temperatures up to -85°C / 2.
- Equipped with an automatic energy power save system. After 15 minutes from the end of the analysis the cooling system goes in stand-by mode.

Safety Devices
- Pressure controller for 1st stage motor compressor
- Pressure controller for 2nd stage motor compressor
- Thermostat for 2nd stage activation
- Thermo-switch for each cooling / heating jacket
- Motor compressors equipped with internal overload devices

Electrical Supply
- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable:
3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat resistant.

Ambient Temperature
- Max 32 °C
- H.R. 80%

Dimensions
- width 100 cm
- depth 60 cm
- height 80 cm

Weight
- 110 kg

Spare Parts
- LAB-400/005-03: heater + auto adhesive+ insulation
- LAB-400/005-04: thermo switch
- LAB-400/005-06: PT100 bath
- LAB-400/007-02: static relay
- LAB-400/006-01: cooling fluid valve + fitting
- LAB-400/008-05: stirrer
- LAB-400/008-06: motor for stirrer
- LAB-410/008-12: removable glass cell Freezing Point
- LAB-410/008-041: o-ring for Freezing Point test jar
- LAB-410-556-M: freezing point module

Solidification Point of Benzene

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ASTM D852
ASTM D6875

ASTM D852 - Solidification Point of Benzene
This test method covers the determination of the solidification point of benzene.

ASTM D6875 - Standard Test Method for Solidification Point of Industrial Organic Chemicals by Thermistor
This test method covers a general procedure for determining the solidification point of most organic chemicals having appreciable heats of fusion and solidification points between 4 and 41°C.

LT/SP-237100/ME
Electric Manual Solidification Point of Benzene

- Mounted on a metallic case painted with anti-acid products, equipped with PT100 stand-by support and anti-slide carpet.
- Support base made in corrosion resistant plastic for holding the Un-Silvered vacuum dewar.
- Easily accessible control panel with: thermoregulator, stirrer switch, main switch and re-armable detection fuse with led status indicator.
- Geared motor for stirring at approx. 80 rpm with 1 mm metal wire stirrer.
- PT100 A Class for sample temperature with reading 0.1°C.

Power Supply

- 230 Vac or 115 Vac, 50/60 Hz

Consumption

- 40 W

Spare Parts

- 1044: dewar
- 3168: PT100 sensor
- 2093: test tube glass 25 mm diameter × 150 mm height, pack 10 pcs.
- 1046: test tube 15 × 125 mm, pack of 10 pcs.
- 7216: cover for jacket tube + stopper for test tube + stopper for PT100
- 5826: stainless steel wire

Copper and Silver Corrosion

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5597


2093


5334

1115


5554


5132


5422


7024

ASTM D130
ASTM D7671
DIN 51759
IP 154 - IP 227
ISO 2160

Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test.

This test method covers the detection of the corrosiveness to copper of aviation gasoline, aviation turbine fuel, automotive gasoline, natural gasoline or other hydrocarbons having a Reid vapour pressure no greater than 18 psi (124 kPa), cleaners (Stoddard) solvent, kerosene, diesel fuel, distillate fuel oil, lubricating oil, and certain other petroleum products.

Silver Corrosion Aviation Fuels.

This method describes a procedure for the detection of the corrosiveness of aviation turbine fuels towards silver.

Standard Test Method for Corrosiveness to Silver by Automotive Spark–Ignition Engine Fuel–Silver Strip Method.

This test method covers the determination of the corrosiveness to silver by automotive spark-ignition engine fuel having a vapor pressure no greater than 124 kPa (18 psi) at 37.8 °C (100 °F), by one of two procedures. Procedure A involves the use of a pressure vessel, whereas Procedure B involves the use of a vented test tube.

5597 - Copper Corrosion Test Vessel
- Stainless steel.
- 10 bar pressure certificate.
- For liquid model only.

2093 - Test Tube ASTM
- Made in glass.
- 25 mm diameter × 150 mm height.
- Pack of 10 pcs.

5334 - Vented Corks
- For gasoline application.
- Pack of 10 pcs.

5554 - Support Test Tube Racks
- Autoclavable.
- Made in polypropylene.
- With 12 × 25 mm diameter holes for the accommodation of 12 test tubes.

1115 - Flat Glass
- Viewing tube.
- To protect the strip.

5132 - Copper Test Strip
- 75 × 12.5 mm.
- Pack of 10 pcs.

5422 - 3 Places Strip Vice

Silicon Carbide Paper
- 7146: 100 grit, pack of 100 pcs.
- 7060: 240 grit, pack of 100 pcs.

7024 - Copper Strip Corrosion Standard
- Original ASTM®.

7062 - Silicon Carbide Grains
- 150 mesh.
- Pack of 1kg.

7016 - Gasket
- Pack of 10 pcs.

5499 - Stainless steel forceps
- For manage the test strips.

T-AS12C - Thermometer ASTM 12C - IP 64C

Accessories for IP 227
- 7278: silver test strip IP 227, 19 × 12.7 × 3 mm, pack of 5 pcs.
- 2088: silver corrosion test tube complete.
- 7277: IP 227 standard original ASTM ® for Silver Corrosion Test, ASTM D3241.

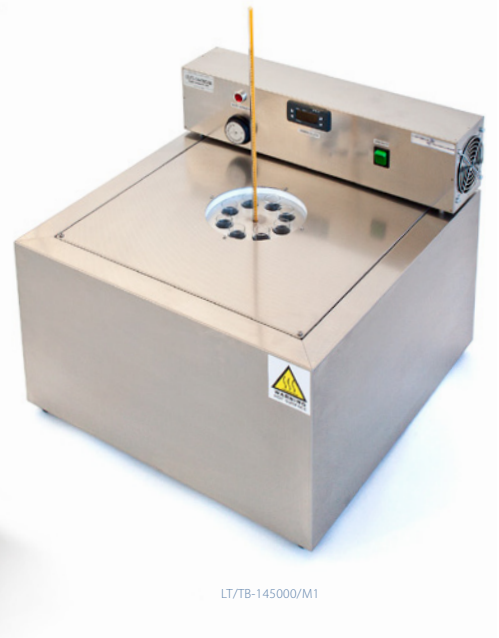
Spare Parts for IP 227
- 2089: glass cradle for silver strip suspension.
- 7278: silver test strip IP 227, 19 × 12.7 × 3 mm, pack of 5 pcs.

Accessories for ASTM D7671
- 5698: silver strip ASTM D7671, pack of 5 pcs.
- LAB-001-7671-002: silver strip suspension assembly, proc. A, made in glass, pack of 3 pcs.

Copper and Silver Corrosion



LT/TB-144000/M



LT/TB-145000/M1

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LT/TB-144000/M

Bench top laboratory liquid bath

- Bench top instrument completely made in stainless-steel and double chamber insulation.
- Internal stainless-steel bath with capacity of 45 liters, equipped with double-insulation and fully immersion stainless-steel heater.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature through an A class PT100 sensor in the range from ambient to +150°C, resolution 0,1°C and stability +/- 0.1°C (with cover).
- Motorized stirrer grant uniformity and stability.
- Manually settable overtemperature cut-off alarm.
- Stainless-steel cover with thermoplastic insulated handle.

Dimensions

- Width 50 cm, depth 50,5 cm, height 49,2 cm

Internal Dimensions

- Width 40 cm, depth 33 cm, height 30 cm

Power consumption

- 1600 Watt

Power supply

- 220 or 115 Vac 50 Hz

Accessories for LT/TB-144000/M

- 5856: support and cover for copper corrosion application D130 & D1838 application, 4 positions with covers and hook, 8 places for glass tube Æ 25 mm when directly immersed.
- 5942: support and cover for copper corrosion application D130 & D1838 application, 4 positions with covers and hook, 8 places for glass tube Æ 25 mm when directly immersed and 2 position for ASTM D7671 test glass.

Accessory: Silicon Oil for Liquid Bath

- 7058: silicone oil, kinematic viscosity 50 mm^2/s at 25°C, can of 20 liters for working up to +150°C, requested quantity 2 cans.

Spare Parts for LT/TB-144000/M

- 3168: PT100 probe.
- 3186: digital thermoregulator K38.
- 3178: solid state relay 40A.
- 3072: stirring motor without propeller - 230 Vac.

LT/TB-145000/M1

Bench top laboratory dry bath

- Bench top instrument completely made in stainless-steel and double chamber insulation.
- Single aluminium dry bath deeply coated equipped with 8 × Æ26 mm wells for test tube introduction, insulated and equipped with multi electrical heaters grant uniformity and stability.
- Upper cover equipped with central hole made in stainless-steel for easy cleaning.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature through an A class PT100 sensor in the range from ambient to +200°C, resolution 0,1°C and stability +/- 0.1°C.
- Manually settable overtemperature cut-off alarm.

Dimensions

- Width 50 cm, depth 50,5 cm, height 49,2 cm

Temperature Range

- Ambient to +200°C, with precision 0.1°C

Power consumption

- 1200 Watt

Power supply

- 220 or 115 Vac 50 Hz

Accessories for LT/TB-145000/M1

- 3631: heater for dry bath, 1700 W.
- 3168: PT100 probe.
- 3186: digital thermoregulator K38.
- 3178: solid state relay 40A.

Corrosion of Cast Aluminum

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ASTM D4340

Standard Test Method for Corrosion of Cast Aluminum Alloys in Engine Coolants Under Heat-Rejecting Conditions.

This test method covers a laboratory screening procedure for evaluating the effectiveness of engine coolants in combating corrosion of aluminum casting alloys under heat-transfer conditions that may be present in aluminum cylinder head engines.

LT/CA-222000/M

Manual instrument composed by:

- Metallic case structure painted with anti-acid products and stainless steel test cabinet equipped with liquid connector and drain tap
- Heating plate digitally thermo-regulated with 0,1°C resolution with PT100 A class for temperature reading
- Safety thermostat for overheating protection and cooling fan
- Main switch and heating activation switch
- Aluminium test specimen plate with holes for temperature sensors
- Corrosion cell made in glass with heat resistant O-rings
- Top plate made in stainless steel with filling hole and pressure inlet equipped with pressure gauge and safety valve
- Plexiglas protection window with magnetic open/close feature

Power supply

- 220 or 115 Vac 50/60 Hz

Max. power consumption

- 1000 W

Dimensions

- width 32 cm
- depth 42 cm
- height 88 cm

Weight

- 25 kg

Accessories

- LAB-222-001: cast aluminium heat transfer

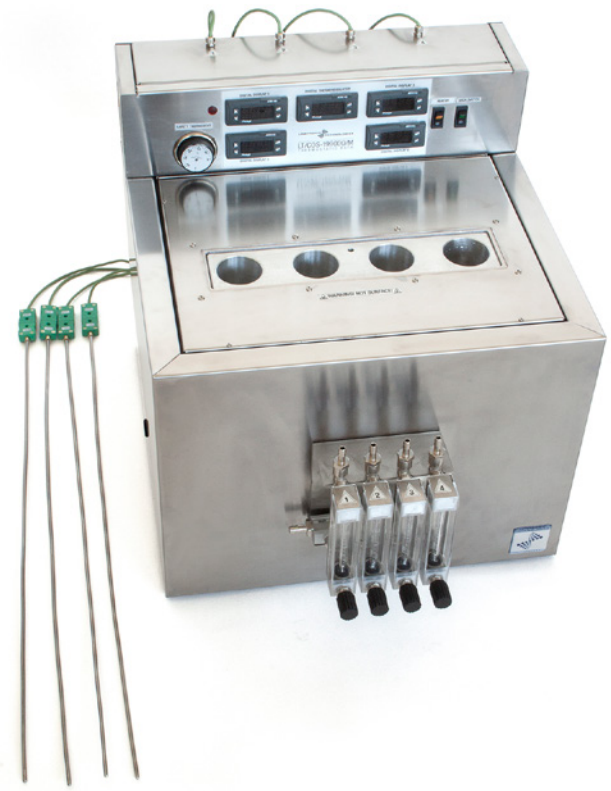
Spare Parts

- LAB-222-001: cast aluminium heat transfer
- LAB-222-002: PT100 probe for cast aluminium heat transfer, 3 × 180 mm
- LAB-222-003: sealing o-rings, pack of 2 pcs.
- LAB-222-004: sample test cell 500 ml, level mark
- LAB-222-005: heater collar 420 W, 60 × 50 mm, pack of 2 pcs.
- LAB-222-006: safety thermostat 300°C
- LAB-222-007: digital thermoregulator and programmer K38P
- LAB-222-008: pressure gauge 63 mm diameter, 6 bar M1/4 G
- LAB-222-009: pressure relief valve adjustable, 0/10Bar M1/4 G
- LAB-222-010: pressure drain valve, 0/10Bar 1/4 G MF
- LAB-222-011: static relay, 10/40 A
- LAB-222-012: drain tap, 1/4 G MF
- LAB-222-013: quick coupling female 1/4 G for pressure inlet

Corrosiveness and Oxidation Stability Bath

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ASTM D4636
ASTM D6594

Corrosiveness and Oxidation Stability of Hydraulic Oils, Aircraft Turbine Engine Lubricants and Other Highly Refined Oils.

This test method is used to test hydraulic oils, aircraft turbine engine lubricants, and other highly refined oils to determine their resistance to oxidation and corrosion degradation and their tendency to corrode various metals. Petroleum and synthetic fluids may be evaluated using moist or dry air with or without metal test specimens.

Evaluation of Corrosiveness of Diesel Engine Oil at 135°C.

This test method covers testing diesel engine lubricants to determine their tendency to corrode various metals, specifically alloys of lead and copper commonly used in cam followers and bearings.

LT/COS-199000/M

Corrosiveness and oxidation stability bath, manual instrument composed by:

- Bench top instrument fully made in stainless steel with double chamber insulation
- Heating block made in aluminium with 4 holes/positions,
- Range of temperature: ambient +10° up to +400°C
- Digital thermo-regulator with 0.1°C resolution and PT100 sensor for bath temperature, over-temperature alarm and safety thermostat.
- Stainless steel heaters with PID control system
- 4 × Digital displays for independent sample temperature with thermocouple type K
- 4 × independent flowmeter able to regulate the flow from 1.6 to 16 Lt/h for each position

Power supply

- 220 or 115 Vac 50 Hz

Accessories

- LAB-101-991, glassware set that include 1 of each of:
  · air tube of 6 mm
  · sample tube
  · sample tube head
  · Allihn condenser 300 mm
- LAB-101-992/W: washer shaped specimens ASTM D4636 (composed by 7 pcs.)
- LAB-101-992/S: square shaped specimens ASTM D4636 (composed by 5 pcs.)
- LAB-101-441/L: silicon carbide paper 240 grit, pack of 100 pcs.
- LAB-101-441/O: silicon carbide grains 150 mesh, pack of 1 kg
- LAB-101-441/Q: silicon carbide paper 400 grit, pack of 100 pcs.
- T-AS95C: thermometer ASTM 95C

Spare Parts

- LAB-101-991: glassware
- LAB-101-992: test wire Federal
- LAB-101-994: catalyst wire Federal 5321
- LAB-101-441/L: silicon carbide paper 240 grit, pack of 100 pcs.
- LAB-101-441/O: silicon carbide grains 150 mesh, pack of 1 kg
- LAB-101-441/Q: silicon carbide paper 400 grit, pack of 100 pcs.

Metals Corrosion of Engine Coolants

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LT/MC-233000/M



LT/MC-233003/M

ASTM D1384

Corrosion Test for Engine Coolants in Glassware

This test method covers a simple beaker-type procedure for evaluating the effects of engine coolants on metal specimens under controlled laborawtory conditions.

LT/MC-233000/M
Corrosion Test for Engine Coolants in Glassware

- Bench top instrument with steel structure painted with anti-epoxy products.
- Test bath made in spoutless tempered glass beaker with capacity 1000 mL equipped with Epdm stopper.
- Condenser made in glass, reflux straight type with a 400 mm condenser jacket.
- Aerator tube with porosity end size 12-C.
- Stainless steel heater 630 Watt with motor stirrer for granting stability and uniformity.
- Digital thermo-regulator display with PID temperature control and PT100 probe A Class for easily check the sample temperature.
- Support bar with clamps for glassware positioning.
- Analog flowmeter 0.8 - 8 nL/h with stainless-steel sheath and graduated glass metering chamber equipped with fine needle regulating knob.

Dimensions
- 28 × 20.5 × 80 cm

Power Supply
- 230 Vac 50/60 Hz or 115 Vac

Temperature Range
- Ambient to 99,9°C

Consumption
- 630 Watt

LT/MC-233003/M
Corrosion Test for Engine Coolants in Glassware (3 positions)

- Bench top instrument with steel structure painted with anti-epoxy products, internal bath with capacity of approx. 18 liters made in stainless steel with rounded edges and atmospheric drain for easily cleaning.
- 3 × test bath made in spoutless tempered glass beaker with capacity 1000 mL equipped with Epdm stopper.
- 3 × condenser made in glass, reflux straight type with a 400 mm condenser jacket.
- 3 × aerator tube with porosity end size 12-C.
- Stainless steel heater 800 Watt with overheat protection.
- Digital thermo-regulator display with PID temperature control and PT100 probe A Class for easily check the bath temperature.
- Support bar with clamps for glassware positioning.
- 3 × analog flowmeter 0.8 - 8 nL/h with stainless-steel sheath and graduated glass metering chamber equipped with fine needle regulating knob.

Dimensions
- 36 × 36.5 × 80 cm

Power Supply
- 230 Vac 50/60 Hz or 115 Vac

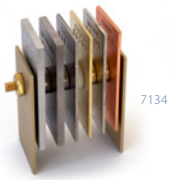
Temperature Range
- Ambient to 99,9°C

Consumption
- 800 Watt

Metals Corrosion of Engine Coolants



LT/MC-233006/M



7134

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LT/MC-233006/M
Corrosion Test for Engine Coolants in Glassware (6 positions)

- Bench top instrument with steel structure painted with anti-epoxy products, internal bath with capacity of approx. 18 liters made in stainless steel with rounded edges and atmospheric drain for easily cleaning.
- 6 × test bath made in spoutless tempered glass beaker with capacity 1000 mL equipped with Epdm stopper.
- 6 × condenser made in glass, reflux straight type with a 400 mm condenser jacket.
- 6 × aerator tube with porosity end size 12-C.
- Stainless steel heater 800 Watt with overheat protection.
- Digital thermo-regulator display with PID temperature control and PT100 probe A Class for easily check the bath temperature.
- Support bar with clamps for glassware positioning.
- 6 × analog flowmeter 0.8 - 8 nL/h with stainless-steel sheath and graduated glass metering chamber equipped with fine needle regulating knob.

Dimensions
- 54 × 36.5 × 80 cm

Power Supply
- 230 Vac 50/60 Hz or 115 Vac

Temperature Range
- Ambient to 99,9°C

Consumption
- 1200 Watt

Accessories
- 3087: compact diaphragm air/vacuum pump
  - Vacuum and Compression application
  - Flow rate max. 5l/min
  - Pressure max. 0.3 bar rel.
  - Ultimate Vacuum max. 300 mbar (abs.)
  - Weight 0.85 Kg
  - Dimensions 72 × 72 × 180 mm
  - Valve Material NBR coated
  - 4 mm connector included
  - Maintenance free
  - Power Supply 220 Vac 50-60Hz

Accessories for Each Test Position
- 7134: catalyst ASTM D1384 metal specimen arrangement
  - 2 × brass leg, pan head screw with hex nut
  - insulating spacers (brass, steel and Ptfe)
  - test speciments 50.8 × 25.4 × 3.18 mm made of:
    Copper CA-110
    Solder 30%
    Brass CA-260
    Steel SAE-1020 CR
    Cast Iron SAE G-3500
    Cast Aluminum A319

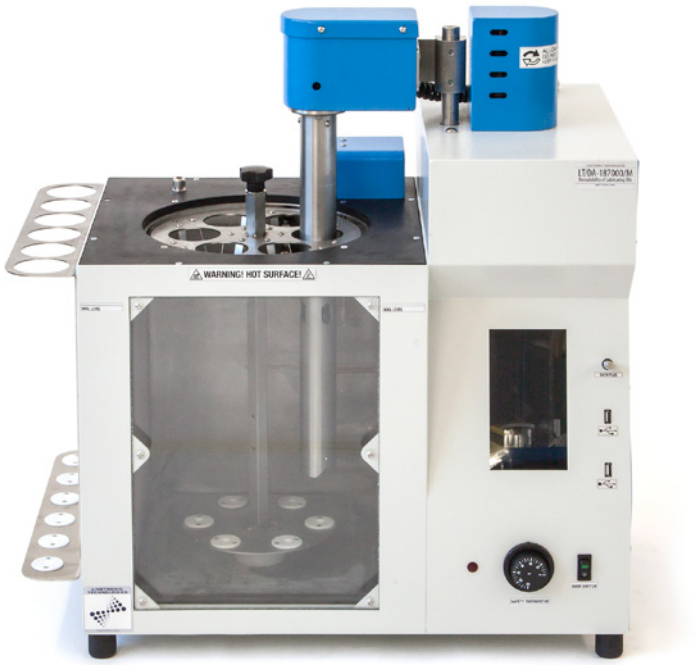
Mandatory Accessories for Each Test Position – Liquid Bath
- T-AS1C: thermometer ASTM 1C
- 3837: digital thermometer reader with LCD display for PT100, PT1000
  - resolution 0.01°C
  - accuracy 0.01°C
  - read up to +650°C, double channel
- 3779: PT100 sensor for immersion
  - temperature range -196°…+500°C
  - 3 mm diameter
  - 300 mm length

Spare Parts
Recommended for 2 years for each test position
- 2211: flowmeter with needle valve, range 0.8 – 8 nL/h
- 1248: beaker 1 Liter capacity with rubber stopper
- 2185: Liebig condenser 400 mm, pack of 3 pcs.
- 1251: tube for air diffusion with porosity ended (P2)
- 16265: holder set
  - pan head screw
  - hex nut
  - brass leg
  - insulating spacers (brass, steel and Ptfe)
- 7121: metal specimen Copper spare parts for 7134, pack of 5 pcs.
- 7123: metal specimen Solder spare parts for 7134, pack of 5 pcs.
- 7125: metal specimen Brass spare parts for 7134, pack of 5 pcs.
- 7127: metal specimen Steel spare parts for 7134, pack of 5 pcs.
- 7129: metal specimen Cast Iron spare parts for 7134, pack of 5 pcs.
- 7130: metal specimen Cast Aluminum spare parts for 7134, pack of 5 pcs.

Demulsibility Characteristics of Lubricating Oils

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ASTM D2711

Demulsibility Characteristics of Lubricating Oils.

This test method covers the measurement of the ability of oil and water to separate from each other.
It is intended for use in testing medium and high-viscosity lubricating oils.

LT/DA-187000/M
Semi-automatic Apparatus for Demulsibility Characteristics of Lubricating Oils

- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation.
- Stainless steel bath with double window for internal inspection, cover made in plastic material with hole for bath thermometer and motorized stirrer.
- 6 positions side rack for separatory funnel for stand-by after analysis.
- Temperature controlled by Linetronic's control board with PT100 A class, stainless steel immersion heaters and manually settable over-temperature protection system.
- Automatic head for up and down movement equipped with turbine stirrer from 300 to 5000 rpm, electronically regulated with digitally reading and audible beeper for end mixing procedure.
- Touch screen displayed stirring time, rpm, bath temperature, demulsivity timer.

Power Supply
- 220 Vac or 115 Vac, 50/60 Hz

Consumption
- 2000 Watt

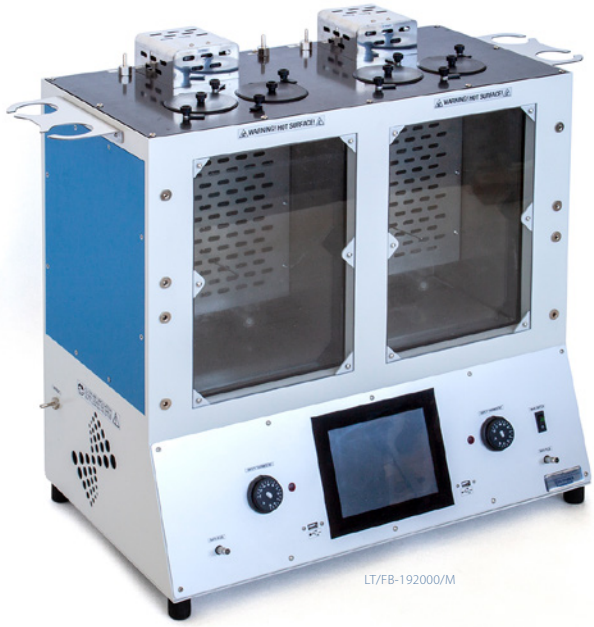
Dimensions
- width 60 cm
- depth 42 cm
- height 70 cm

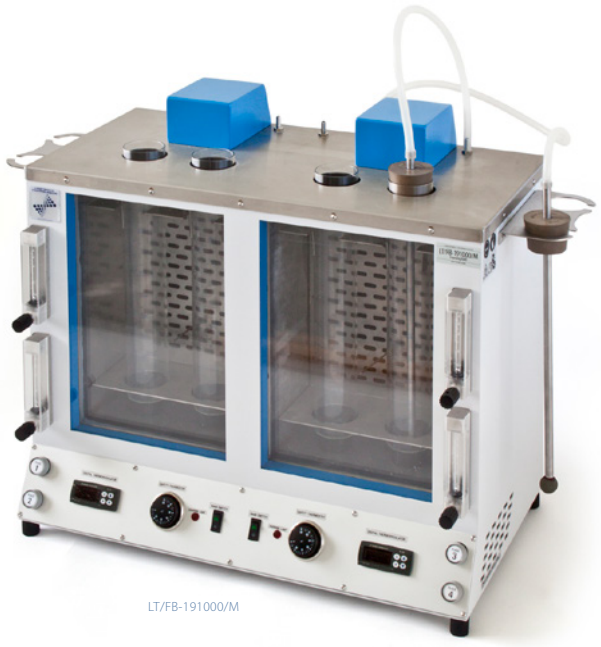
Weight
- 65 kg

Spare Parts
- 1142: Separatory Funnel Pyrex®, 500 ml, graduated, 54 mm diameter.
- 17161: Heater, pack of 2 pcs.
- 3168: PT100 probe.
- 3178: Solid state relay 40A.

Foaming Characteristics of Lubricating Oils

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LT/FB-192000/M


LT/FB-191000/M

ASTM D892
ASTM D6082
DIN 51566
IP 146

Foaming Characteristics of Lubricating Oils.
This test method covers the determination of the foaming characteristics of lubricating oils at 24°C and 93.5°C.
Means of empirically rating the foaming tendency and the stability of the foam are described.

Instrument meet the
Sequence I, II & III
as for
ASTM D892
ASTM D6082
IP 146
ISO 6247
and related methods.

LT/FB-192000/M
Semi-automatic Apparatus for Foaming Characteristics of Lubricating Oils – 4 places

- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation, top cover made in stainless steel with four holes for the cylinders accommodation and one hole for control thermometer (not included).
- 2 × independent 25 liters capacity stainless steel baths (one for 24°C and one for more than 93.5°C) equipped with viewing and illuminated windows, two independent motor stirrer grants uniformity and stability of bath temperature.
- Stainless steel grid divide the glassware from the heating and stirring device.
- Air pre-heating system by copper coils immersed in the first bath.
- Lateral stand-by support for stoppers and diffusing assembly.
- Anti-floating and centring system for test cylinders.
- Control unit include 7"Touch screen panel PC with 800 × 480 resolution with dedicated Lin-Tech software able to manage the bath functions:
  - Independent management of 4 places analysis trough the activation of air micro-compressors and counter (time of blowing, waiting time, flow), audible alarm for each intervention of the operator requested.
  - Air flow monitoring system (flow rate) managed digitally and calibrated.
  - Diagnostic panel for temperature calibration, air flow, analysis parameters.
- Removable back panel equipped with drain tap for easily empty and clean the baths.
- Baths are thermo-insulated equipped with tempered glass window inside for easily cleaning the limestone or oils residue, second protection panel made of plastic material with optical transparency.
- 4 Places Apparatus including: 4 diffuser stones (not certified), 4 rubber stoppers, 4 air diffuser tubes, 4 graduated cylinders.

Dimensions
- Width 71 cm
- Depth 40 cm
- Height 67 cm

Power Supply
- 115 Vac or 220 Vac
- 50/60 Hz

LT/FB-191000/M
Manual apparatus for Foaming Characteristics of Lubricating Oils – 4 places

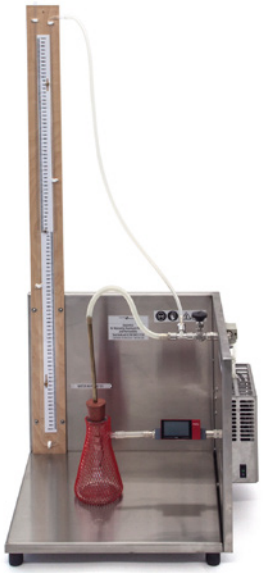
- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation, top cover made in stainless steel with four holes for the cylinders accommodation and one hole for control thermometer.
- 2 × independent 25 Liters capacity Stainless steel baths (one for 24°C and one for more than 93.5°C) equipped with viewing and illuminated windows, two independent motor stirrer grants uniformity and stability of bath temperature.
- Stainless steel grid divide the glassware from the heating and stirring device.
- Air pre-heating system by copper coils immersed in the first bath.
- Lateral stand-by support for stoppers and diffusing assembly.
- Anti-floating and centring system for test cylinders.
- On the front the 4 flowmeter with regulating knob grant the easy adjustment of the air flow as foreseen by the method.

Foaming Characteristics of Lubricating Oils

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LT/FB-190000/M


5232

- Temperature controlled by 2 independent digital thermo-regulator with PID function, over-temperature protection and alarm, temperature displayed with 0,1°C precision thanks to PT100 Class A sensors.
- Stainless steel total immersion heating elements.
- 4 independent blowing pumps, equipped with damper system in order to avoid fluctuation in flow and external independent dryer system.
- Removable back panel equipped with drain tap for easily empty and clean the baths.
- Baths are thermo-insulated equipped with tempered glass window inside for easily cleaning the limestone or oils residue, second protection panel made of plastic material with optical transparency.
- 4 diffuser stones (not certified).
- 4 rubber stoppers.
- 4 air diffuser tubes.
- 4 graduated cylinders.

Dimensions
- Width 71
- Depth 40
- Height 67

Power Supply
- 115 Vac or 220 Vac
- 50/60 Hz

Accessories for LT/FB-191000/M and LT/FB-192000/M
- 7096: Certified diffuser stone.
- 5699: Mott metal cylindrical diffuser, tested and verified, ASTM D6082.
- 1000386: Mass flow meter.
  - Flow mass range from 9 to 450 mL/min.
  - Digital display readout.
  - Connection joints ¼".
  - Power supply, battery or micro-USB power supply.
  - Operating pressure 0.2, 11 bar.
  - Made in anodized aluminium, Fkm seals.
  - Repeatability ±0.5% of full scale.
- 7635: Desiccant for filters, pack of 700 gr.
- 5232: Apparatus for test maximum diameter / permeability of diffusers.
  - Air compressor with filter.
  - Air regulator and U-tube manometer.
  - Glass calibrated cylinder with delivery tube.
  - Filtering flask wide mouth with rubber stopper and delivery tube.
  - Digital flowmeter 1.2 to 60 nL/min with calibration certificate.
- LAB-892-099: VL Reference liquid.
  - Bottle of 1.0 liter approx.
  - 1 year shelf life.
  - Foam value acc. ASTM D892.

Spare Parts for LT/FB-191000/M and LT/FB-192000/M
- 7094: Diffuser stone, not certified.
- 1206: Graduated cylinder 1000 ml.
- 7349: Rubber stopper, pack of 2 pcs.
- 3168: PT100 Probe.
- LAB-110-012: Heaters, pack of 2 pcs.
- 5547: Air-Inlet tube.
- 11241: Washer, pack of 2 pcs.
- 7635: Desiccant for filters, 450 g approx.

LT/FB-190000/M Manual 2 Places - Twin Foaming Bath ASTM D 892
- Bench top heavy glass tempered bath with 25 liters capacity.
- Stainless-steel cover with 2 × holes, 125 mm diameter, for introducing of graduated cylinders.
- One motor stirrer grants uniformity and stability of bath temperature.
- Stainless steel grid divides the glassware from the heating and stirring device.
- Air pre-heating system by copper coils immersed in the first bath.
- Anti-floating and centring system for test cylinders.
- On the front the 2 flowmeter with regulating knob grant the easy adjustment of the air flow as foreseen by the method.
- Temperature controlled by digital thermo-regulator with PID function, over-temperature protection and alarm, temperature displayed with 0,1°C precision thanks to PT100 Class A sensors.
- Stainless steel total immersion heating elements.
- 2 independent blowing pumps with relevant interrupters, equipped with damper system in order to avoid fluctuation in flow.
- 2 × glass graduated cylinder.
- 2 × stoppers.
- 2 × diffuser stone.
- 2 × diffuser tubes.

Power Supply
- 115 Vac or 220 Vac
- 50/60 Hz

Temperature Range
- +24° up to +90°C

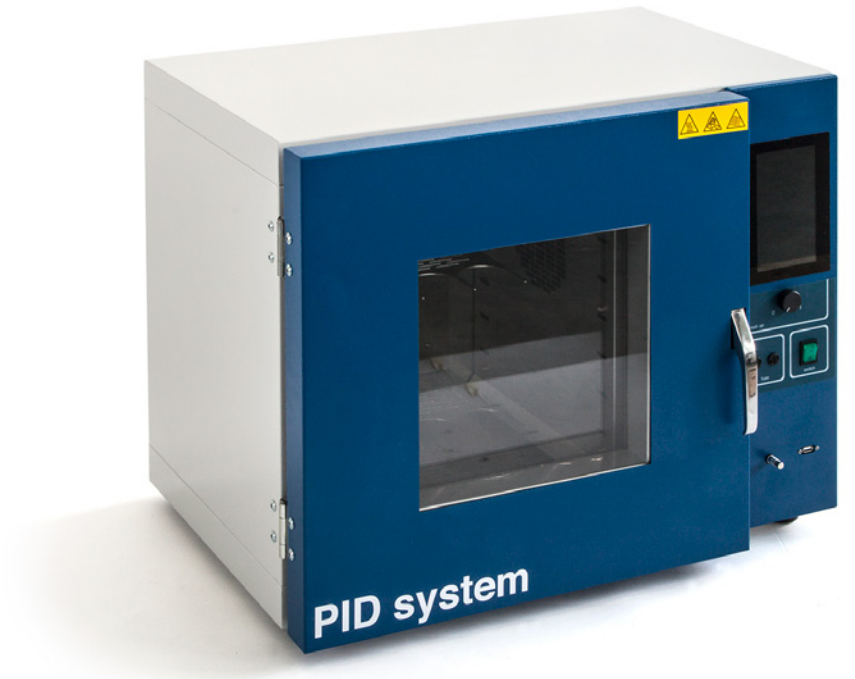
Consumption
- 800 Watt

Spare Parts for LT/FB-190000/M
- 7094: Diffuser Stone, not certified.
- 1206: Graduated cylinder 1000 ml.
- 7349: Rubber stopper, pack of 2 pcs.
- 3168: PT100 Probe.
- 3185: Heaters, pack of 2 pcs.
- 5547: Air-inlet tube.
- 11241: Washer, pack of 2 pcs.

Foaming Characteristics of Lubricating Oils

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ASTM D892 - DIN 51566 - IP 146 - ISO 6247

Foaming Characteristics of Lubricating Oils.

This test method covers the determination of the foaming characteristics of lubricating oils at 24°C and 93.5°C. Means of empirically rating the foaming tendency and the stability of the foam are described.
Instrument meet the Sequence I, II and III as for ASTM D892, ASTM D6082, IP 146, ISO 6247 and related methods.

ASTM D6082

Standard Test Method for High Temperature Foaming Characteristics of Lubricating Oils.

This test method covers the procedure for determining the foaming characteristics of lubricating oils (specifically transmission fluid and motor oil) at 150 °C.

LT/FB-193000/M
Semi-automatic apparatus for Foaming Characteristics of Lubricating Oils - 4 places

- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation.
- Stainless steel chamber with internal rack 4 positions for 1000 ml glass test cylinder, equipped with 300 × 300 viewing and illuminated window
- Forced ventilation grant uniformity and stability of bath temperature.
- Stainless steel grid divides the glassware from the heating and stirring device.
- Lateral rack with 4 flowmeters equipped with regulating knob grant the easy adjustment of the air flow as foreseen by the method.
- Control unit include 7" touch screen panel PC with 800 × 480 resolution with dedicated Lin-Tech software:
  - Independent management of 4 places analysis trough the activation of air micro-compressors and counter (time of blowing, waiting time, flow) – audible alarm for each intervention of the operator requested.
  - Flow resolution 0.01 mL/min
  - Temperature stability +/- 0.5°C.
  - Automatic calibrated Air flow monitoring and regulating system (flow rate) from 80 up to 200 mL/min.
  - Diagnostic panel for temperature calibration, air flow, analysis parameters, soak time settings.
- Stainless steel heater granting temperature as per ASTM D6082 method.
- Integrated cooling system able to maintain the chamber temperature at +24°C.
- Manual natural ventilation for extracting the fumes.

Power Supply & Consumption

- 115 Vac or 230 Vac, 50/60 Hz.
- 1600 Watt

Dimensions

- Width 71 cm, depth 40 cm, height 67cm.

Temperature Range

- +24°C up to +200,0°C.

Spare Parts

- 7094: Diffuser stone, not certified.
- 1206: Graduated cylinder 1000 ml.
- 7349: Rubber stoppers, pack of 2 pcs.
- 3709: PT100 for air measurement.
- 17028: Security thermal fuses.
- 5547: Air-Inlet tube.
- 11241: Washer, pack of 2 pcs.
- 17002: Micro-pump for air.
- 6009: Cooling system with exchanger 240 mm.

Accessories

- 7096: Certified diffuser stone.
- 5033: Mott metal cylindrical diffuser, ASTM D6082.
- 5699: Mott metal cylindrical diffuser, certified in porosity and permeability, ASTM D6082.
- 1000386: Mass flow meter.
  - Flow mass range from 9 to 450 mL/min.
  - Digital display readout.
  - Connection joints ¼".
  - Power supply: battery or micro-Usb power supply.
  - Operating pressure 0.2 – 11 bar.
  - Made in anodized aluminium, Fkm seals.
  - Repeatability ±0.5% of full scale.
- 7635: desiccant for filters, pack of ~ 700 g.
- 5232: Apparatus for test maximum diameter / permeability of diffusers.
  - Air compressor with filter.
  - Air regulator and U-tube manometer.
  - Glass calibrated cylinder with delivery tube.
  - Filtering flask wide mouth with rubber stopper and delivery tube.
  - Digital flowmeter 1.2 to 60 nL/min with calibration certificate.
- LAB-892-099: VL Reference liquid, bottle of 1.0 liter approx., 1 year shelf life, foam value acc. ASTM D892.

Foaming Tendencies of Engine Coolants

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ASTM D1881

Foaming Tendencies of Engine Coolants in Glassware.

This test method covers a simple glassware test for evaluating the tendency of engine coolants to foam under laboratory-controlled conditions of aeration and temperature.

LT/FT-191500/M
Manual Apparatus for Foaming Tendencies of Engine Coolants in Glassware

- Electric heating device 600 W with magnetic stirrer and electronic regulator with relevant temperature sensor A class.
- Glass beaker 3000 ml capacity.
- Graduated glass cylinder 500 ml capacity, 45 mm diameter, 380 mm length.
- Rod with clamp for support the graduated cylinder.
- Internal cylinder cover cap with thermometer support and air-inlet tube made in brass with Ni-Cr treatment with connection to the spherical diffuser ball.
- Analog flowmeter 14-140 nL/h with stainless-steel sheath and graduated glass metering chamber equipped with fine needle regulating knob.

Power Supply

- 230 Vac or 115 Vac, 50/60 Hz

Temperature Range

- Ambient to +250°C

Consumption

- 600 Watt

Accessories - ASTM D1881

- 3087: Compact diaphragm air/vacuum pump.
  · Vacuum and compression application.
  · Flow rate max. 5 l/min.
  · Pressure max. 0.3 bar rel.
  · Ultimate vacuum max. 300 mbar (abs.).
  · Weight 0.85 kg.
  · Dimensions 72 × 72 × 180 mm.
  · Valve material NBR coated.
  · 4 mm connector included.
  · Maintenance free.
  · Power Supply: 220 Vac 50-60 Hz.
- T-AS1C: Thermometer ASTM 1C.
- 3012: Digital stopwatch.
- 7096: Certified diffuser stone.
- 5699: Mott metal cylindrical diffuser, tested and verified, ASTM D6082.

Spare Parts

- 1217: Cylinder 500 ml capacity.
- 5547: Air-inlet tube.
- 11241: Washer, pack of 2 pcs.
- 7094: Diffuser stone, not certified.
- 15120: PTFE cover for cylinder.
- 1219: External bath beaker 3 liters.
- 5660: Flowmeter with needle valve, range 14-140 nl/h.
- 3384: Heating plate, 660 W, with magnetic stirring option, 220 Vac.

Herschel Emulsifying

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LT/HE-186000/M



LT/HE-185000-A/M

ASTM D1401
DIN 51599
ISO 6614

Water Separability of Petroleum Oils and Synthetic Fluids.

This test method provides a guide for determining the water separation characteristics of oils subject to water contamination and turbulence. It is used for specification of new oils and monitoring of in-service oils.
Covers measurement of the ability of petroleum oils or synthetic fluids to separate from water.

LT/HE-185000-A/M
Semiautomatic Herschel Emulsifier

- Bath housed in a Pyrex® tank diam. 200 mm mounted on a painted resistance stainless steel chassis.
- Stainless steel heater.
- Digital thermoregulator with PID temperature control and PT100 probe A Class.
- Safety thermostat for overtemperature protection and warning lamp.
- Motor stirrer for temperature stability of the bath.
- 6 places rotating support able to accommodate up to 6 test graduated glass cylinders.
- Square bar, with safety metal block, supporting the motor stirrer with digital display for setting and reading current speed rotation (adjustable range from 50 to 2000 rpm).
- Stainless steel blade agitator 19 × 1.5 mm L = 120.6 mm with shaft.
- Programmable digital timer to start and end the analysis automatically.
- Double fuses for power supply protection.
- Two poles main switch with operating lamp.

Power supply

- 220 Vac 50/60 Hz.

Dimensions and Weight

- 50 × 50 × 70 cm
- 30 kg

LT/HE-186000/M
Semiautomatic Herschel Emulsifier, 6 places, ASTM D1401 – DIN 51599 – ISO 6614

- Compact structure painted with anti-acid epoxidy products.
- Stainless steel bath insulated and equipped with a wide double windows equipped with illuminating LED barriers.
- 1 × drain tap.
- Cover with 6 holes for the accommodation of up to 6 graduated cylinders.
- Heating supplied by stainless steel heater.
- PT100 made in stainless steel for bath temperature control.
- Liquid level sensor with alarm.
- Water pump for bath uniformity.
- 6 × Herschel head equipped with stirring paddle, rpm sensor and up/down movement system.
- Beeper for audible alarm at the end of analysis.
- Integrated touch screen panel pc 6" with dedicated software:
  · 6 × independent timer management.
  · Bath temperature management.
  · Independent RPM setting.
  · 2 × USB ports for connection to external hardware.

Power supply

- 220 Vac 50/60 Hz.

Dimensions and Weight

- 78 × 50 × 94 cm
- 105 kg

Herschel Emulsifying



LT/HE-186004/M



LT/HE-185002/M

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LT/HE-186002/M
Semiautomatic Herschel Emulsifier, 2 places, ASTM D1401 – DIN 51599 – ISO 6614

- Compact structure painted with anti-acid epoxidy products.
- Stainless steel bath with approx. 5 liters capacity, insulated and equipped with a wide double window equipped with illuminating LED barriers.
- Rear drain tap.
- Cover with 2 holes for the accommodation of up to 2 graduated cylinders (included) and 1 hole for bath thermometer.
- Stainless steel total immersion heater with protection bulkhead and PT100 A class sensor for bath temperature monitoring.
- Water recirculation system grants bath uniformity.
- Security system:
  · Manual safety thermostat.
  · Level sensor.
  · Acoustic sensor for alarms / end of analysis.
- 2 × independent work station with D1401 standard stirring rod, independent revolution counter, automatic up/down movement.
- Integrated touch screen panel pc 8" high-resolution with dedicated software:
  · Bath temperature control with analysis programming.
  · Independent control of each head with pre-set setting according to the ASTM method or customizable in the RPM, stirring time and temperature.
  · 2 × USB ports and 1 × RJ45 port for LIMS connection.

Power Supply
- 220 or 115 Vac 50/60 Hz

Dimensions
- 37 × 43 × 77 cm

LT/HE-186004/M
Semiautomatic Herschel Emulsifier, 4 places, ASTM D1401 – DIN 51599 – ISO 6614

- Compact structure painted with anti-acid epoxidy products.
- Stainless steel bath with approx. 10 liters capacity, insulated and equipped with a wide double window equipped with illuminating LED barriers.
- Rear drain tap.
- Cover with 4 holes for the accommodation of up to 4 graduated cylinders (included) and 1 hole for bath thermometer.
- Stainless steel total immersion heater with protection bulkhead and PT100 A class sensor for bath temperature monitoring.
- Water recirculation system grants bath uniformity.
- Security system:
  · Manual safety thermostat.
  · Level sensor.
  · Acoustic sensor for alarms / end of analysis.
- 4 × independent work station with D1401 standard stirring rod, independent revolution counter, automatic up/down movement
- Integrated touch screen panel pc 8" high-resolution with dedicated software:
  · Bath temperature control with analysis programming.
  · Independent control of each head with pre-set setting according to the ASTM method or customizable in the RPM, stirring time and temperature.
- 2 × USB ports and 1 × RJ45 port for LIMS connection.

Power Supply
- 220 or 115 Vac 50/60 Hz

Dimensions
- 54 × 43 × 77 cm

Accessories
- T-AS19C: thermometer ASTM 19C with special propylene filling, range +49...+57, div. 0,1°C.
- T-AS21C: thermometer ASTM 21C with special propylene filling, range +79...+87, div. 0,1°C.
- 5271: external stainless-steel support for up to 10 cylinders.
- 5273: digital tachometer (contact and non-contact).
  · Digital 5 digit 13 mm LCD display with backlight.
  · Non-contact rotation speed (RPM), total revolutions (REV), Frequency (Hz), Surface speed (m/min, In/min, Ft/min, Yd/min) and length (m, In, Ft, Yd).
  · 40 reading memories: Max, Min, Avg, Data.
  · Detecting distance: 50…500 mm.
  · Speed range: up to 99 with 0.001 scale, up to 999 with 0.01 scale, up to 9999 with 0,1 scale , up to 199'999 with 1 scale (value in rpm/min).
  · Accuracy: +/- 0.05% +/- 1 digit.
  · Dimensions: 60 × 160 × 40 mm.
  · Weight: 160 grams.
  · Power: battery 9 V.

Spare Parts
- 3646: PT100 Probe for HE-185000.
- 3168: PT100 Probe for HE-186000 series and OilLab 740.
- 5495: Stirring paddle for Herschel.
- 1234: Glass cylinder Pyrex®, 100 ml graduated.

Densimetry Bath

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LT/DB-55112/M



LT/DB-55100/M

ASTM D70
ASTM D71
ASTM D287
ASTM D1298
ASTM D1481
ASTM E100
IP 160
IP 189
IP 190
ISO 3675
ISO 3838
JIS K 2207
JIS K 2249
JIS K 2265

ASTM D287 - Api gravity of crude petroleum and petroleum products.
Covers the determination by means of a glass hydrometer of the API gravity of crude petroleum and petroleum products normally handled as liquids and having a Reid vapour pressure (Test Method D323) of 26 psi (180 kPa) or less.

ASTM D1298 - Density, relative density (specific gravity), or API gravity of crude petroleum and petroleum products by hydrometer.
Covers the laboratory determination using a glass hydrometer, of the density, relative density (specific gravity), or API gravity of crude petroleum, petroleum products, or mixtures of petroleum and non-petroleum products normally handled as liquids, and having a Reid vapour pressure of 14.696 psi (101.325 kPa) or less.

LT/DB-55112/M

Digital densimetry bath, manual instrument composed by:
- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation.
- Internal bath made of stainless steel with capacity of 42 litres approx., drain tap and overflow.
- Support with 9 holes diam. 65 mm for 64 × 440 mm test tubes.
- Test tubes blocking system.
- Double motor stirrer with on/off switch and main power switch.
- Temperature controlled by a digital thermoregulator with PT100 A class temperature sensor with PID range from ambient to +230°C, resolution 0,1°C.
- Over-temperature light and heating cut-off manually settable by safety thermostat.
- Cooling fan for electronic parts, stirrer motor grant homogeneity/uniformity.
- Cooling coil with joints for external cooling source, metal cover with handle.

Power consumption
- 4000 Watt

Power Supply
- 220 or 115 Vac 50/60 Hz

Dimensions
- 35 cm × 70 cm × 60 cm

Weight
- 27 kg

LT/DB-55100/M

Digital densimetry bath, manual instrument composed by:
- Glass tank of about 29 litres capacity with stainless steel table support.
- Stainless steel cover with 5 holes diam. 69 mm for 65 × 440 mm test tubes with tube guide.
- Thermometer support and 5 stand-by covers for unused openings.
- Stainless steel control unit with heating protection system including, power switch, stirrer switch, thermoregulator, safety thermostat equipped with PT100 A class for temperature reading.
- Brass cooling coil with Ni-Cr treatment and joints for external cooling system.
- Stainless steel immersion heaters with low level liquid protection system.

Dimensions
- diam. 56 cm × 65 cm

Weight
- 12 kg

Accessories
- LAB-100-552/45: protection jacket for low temperature, for tank 29 litres
- LAB-100-553: test tubes 65 × 440 mm, pack of 5
- LAB-100-555: cylinder for densimetry with foot, 450 mm height
- T-AS12C: thermometer ASTM 12C - IP 64C

Spare Parts
- LAB-100-553: test tubes 65 × 440 mm, pack of 5
- LAB-100-555: cylinder for densimetry with foot, 450 mm height
- LAB-140-002: PT100 probe
- LAB-110-012: heater
- LAB-160-014: digital thermoregulator
- LAB-150-015: static relay

Schilling Effusiometer

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IP 59-C (obs.)

Density and Relative Density

The methods described are for the determination of the density or relative density of petroleum products as normally handled.

LT/SE-231000/M
Schilling Effusiometer - IP 59

- Glass cylinder
- Cylinder cover fitted with three sphere valves for gas charge and flow-off
- Stainless steel orifice plate with a gauged diam. 0.45 mm
- Internal tube fitted with two calibration weight lines

Accessory

- T-IP39C - thermometer IP 39C

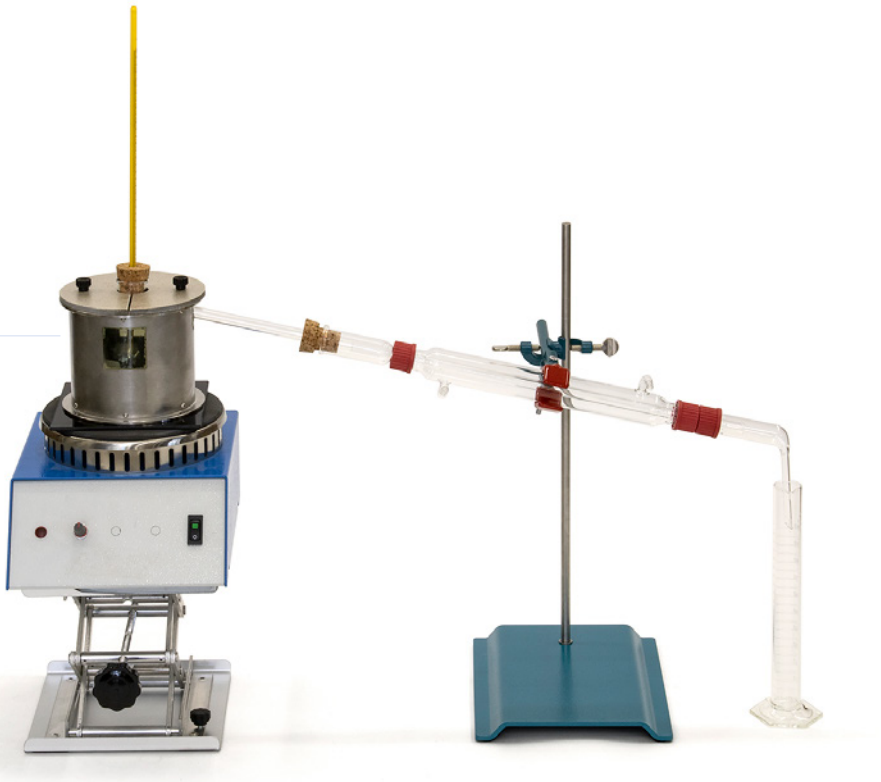
Spare Parts

- LAB-102-311: external cylinder
- LAB-102-312: internal tube
- LAB-102-313: stainless steel plate with orifice
- LAB-102-314: rubber rings, pack of 10 pcs.

Distillation of Cutback Asphaltic Products

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Shield
Internal diameter 117 mm
Total height 117 mm
Mica windows 45 x 45 mm
Rim external
diameter 148 mm

ASTM D402

Distillation of Cutback Asphaltic (Bituminous) Products

This procedure measures the amount of the more volatile constituents in cutback asphaltic products. The properties of the residue after distillation are not necessarily characteristic of the bitumen used in the original mixture, nor of the residue which may be left at any particular time after field application of the cutback asphaltic product. The presence of silicone in the cutback may affect the distillation residue by retarding the loss of volatile material after the residue has been poured into the residue container.

LT/CB-106000/M

- Electric heater supported on a height adjustable platform, with main switch and heater power regulator.
- Chimney 117 mm diameter with insulated metal shield and insulated cover split in two halves.
- Distillation Flask, 500 ml, side-arm.
- Adapter made in glass with angle of 105°.
- Water jacket condenser and nozzle extensor 450 mm.
- Cylinder 100 ml capacity.
- Stand with clamp to hold the glass cooler.

Power supply

- 220 or 115 Vac 50/60 Hz

Max. Consumption

- 350 Watt

Accessories

- T-AS7C: Thermometer ASTM 7C - IP 5C
- T-AS8C: Thermometer ASTM 8C - IP 6C

Spare Parts

- 1105: Distillation flask 500 ml side-arm.
- 5100: Chimney cover composed by 2 halves.
- 7053: Set of stoppers.
- 1107: Receiver type B 100 ml (D86, D850, D1078).
- 1109: Water jacket condenser.
- 5103: Nozzle extensor 450 mm.
- 5101: Adapter made in glass with angle of 105°.

Distillation Units

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LT/HCU-99000/M

ASTM D86 - ASTM D216 (obs.) - ASTM D447 (obs.) - ASTM D850 - ASTM D1078 - ASTM E133
DIN 51751
IP 123 - IP 195
ISO 3405

ASTM D86 - Distillation of Petroleum Products at Atmospheric Pressure.
This test method covers the atmospheric distillation of petroleum products using a laboratory batch distillation unit to determine quantitatively the boiling range characteristics of such products as natural gasolines, light and middle distillates, automotive spark-ignition engine fuels, aviation gasolines, aviation turbine fuels,
1-D and 2-D regular and low sulphur diesel fuels, special petroleum spirits, naphthas, white spirits, kerosines, and grades
1 and 2 burner fuels. The test method is designed for the analysis of distillate fuels; it is not applicable to products containing appreciable quantities of residual material.

ASTM D216 (obs.), ASTM D447 (obs.) - Distillation Test Method.

ASTM D447 (obs.) - Test Method for Distillation of Plant Spray Oils.

ASTM D850 - Distillation of Industrial Aromatic Hydrocarbons and Related Materials.
This test method covers the distillation of industrial aromatic hydrocarbons and related materials of relatively narrow boiling ranges from 30 to 250°C.

ASTM D1078, IP 195 - Distillation Range of Volatile Organic Liquids.
This test method covers the determination of the distillation range of liquids boiling. Between 30 and 350°C, that are chemically stable during the distillation process, by manual or automatic distillation procedures. This test method is applicable to organic liquids such as hydrocarbons, oxygenated compounds, chemical intermediates, and blends thereof.

ASTM E 133, IP 123, DIN 51751, ISO 3405 - Standard Specification for Distillation Equipment.
This specification covers distillation equipment used in the following ASTM test methods: D86, D216, D447, D850, and D1078.

LT/HCU-99000/M

Manual instrument for distillation composed by:

- Structure fully made in stainless steel
- Front panel including manual controls for heating power, fan activation and main power supply
- Plate supported by a base whose height is adjustable with an elevation mechanism controlled by an external knob
- Electric heater 1200 Watt with ceramic-glass plate support
- Wide toughed glass squared window and stainless steel cover with hole for flask neck
- Cooling fan manually activated for cooling down the glass after analysis
- Condensing unit fully made in stainless steel with double chamber insulation:
  - Condensing tube made in stainless steel
  - Insulated cover with handle and hole for accommodation of the thermometer with relevant support and liquid level indicator
  - Rear connection for coolants circulation, over flow tube and atmospheric drain cock
  - White background panel for easier reading of the receiver glass cylinder level mark

LT/HCU-99000/M+

Manual instrument for distillation composed by:

- Structure fully made in stainless steel
- Front panel including manual controls for heating power, fan activation and main power supply
- Plate supported by a base whose height is adjustable with an elevation mechanism controlled by an external knob
- Controlled by a digital thermoregulator with PT100 A class temperature sensor
- PID range from ambient to +450°C, resolution and accuracy 0,1°C
- Electric heater 1200 Watt with ceramic-glass plate support
- Wide toughed glass squared window and stainless steel cover with hole for flask neck
- Cooling fan manually activated for cooling down the glass after analysis
- Condensing unit fully made in stainless steel with double chamber insulation:
  - Condensing tube made in stainless steel
  - Insulated cover with handle and hole for accommodation of the thermometer with relevant support and liquid level indicator
  - Rear connection for coolants circulation, over flow tube and atmospheric drain cock
  - White background panel for easier reading of the receiver glass cylinder level mark

Power consumption

- 1200 Watt

Power supply

- 220 or 115 Vac 50/60 Hz

Distillation Units



LT/RDS-900/SA

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LT/RDS-900/SA

Semi-automatic instrument for distillation composed by:

- Structure fully made in stainless steel
- Front panel including manual controls for heating power, fan activation and main power supply
- Plate supported by a base whose height is adjustable with an elevation mechanism controlled by an external knob
- Controlled by a digital thermoregulator with PT100 A class temperature sensor
- PID range from ambient to +450°C, resolution and accuracy 0,1°C
- 3 programmable set points for Gasoline, Kerosene, Gasoil for semiautomatic operation mode
- Infrared heaters 1300 Watt with ceramic-glass plate support
- Fire extinguisher system composed by:
  · solenoid valve
  · red emergency push button
  · dedicated line internally placed with holes for the emission of the fire extinguisher product with joint for the external conection
- Wide toughed glass squared window and stainless steel cover with hole for flask neck
- Cooling fan manually activated for cooling down the glass after analysis
- Refrigerated condensing unit fully made in stainless steel with double chamber insulation:
  · condensing tube made in stainless steel
  · Insulated cover with handle and hole for accommodation of the thermometer with relevant support and liquid level indicator
  · integrated cooling system granting temperature from 0 to +60°C
  · controlled by a digital thermoregulator with PT100 A class temperature sensor with resolution 0,1°C, stirrer motor grant homogeneity/ uniformity
  · rear connection for coolants circulation, over flow tube and atmospheric drain cock
  · white background panel for easier reading of the receiver glass cylinder level mark

Power consumption

- 2500 Watt

Power supply

- 220 or 115 Vac 50/60 Hz

Accessories

- LAB-100-005: h.r. gloves
- LAB-100-332: digital stopwatch
- LAB-101-176: flask type A, 100 ml
- LAB-101-177: flask type B, 125 ml
- LAB-101-187: receiver Type B 100 ml, 1.0 ml sub
- LAB-101-191: ceramic board diam. 25 mm
- LAB-101-192: ceramic board diam. 32 mm
- LAB-101-193: ceramic board diam. 38 mm
- LAB-101-194: ceramic board diam. 50 mm
- LAB-101-300: cap condenser
- LAB-101-301: cap flask
- LAB-101-302: cap flask Teflon
- LAB-101-303: boiling stones
- LAB-101-304: cleaning cord
- LAB-101-305: drip deflector
- LAB-101-306: evaporating disc
- LAB-101-630/RD: rubber disc for receiver cylinder to prevent evaporation
- T-AS7C: thermometer ASTM 7C, range -2°…+300° C, div. 1° C
- T-AS7F: thermometer ASTM 7F, range +30°…+580° F, div. 2° F
- T-AS8C: thermometer ASTM 8C, range -2°…+400° C, div. 1° C
- T-AS8F: thermometer ASTM 8F, range +30°…+760° F, div. 2° F

Spare Parts

- LAB-110-024: heater
- LAB-110-025: air fan ventilator
- LAB-110-026: elevating system
- LAB-150-110: electronic regulator

Residue by Distillation of Emulsified Asphalts

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ASTM D244
These test methods and practices cover the examination of asphalt emulsions composed principally of a semisolid or liquid asphaltic base, water, and an emulsifying agent.

ASTM D6997
This test method covers the quantitative determination of residue and oil distillate in emulsified asphalts composed principally of a semisolid or liquid asphaltic base, water, and an emulsifying agent.

LT/RD-271000/M
Residue by Distillation Apparatus for Emulsified Asphalts ASTM D244 - D6997

- Aluminium alloy boiler with annular gas lamp for heating.
- Connection glass tube with protection shield.
- Glass condenser for water circulation.
- Graduated cylinder 100 ml.
- Supporting ring.
- Bases with rods.
- Pliers.

Accessories

- T-AS7C: Thermometer ASTM 7C IP 5C, range -2…+300°C, div. 1°C, gallium filled.

Spare Parts

- 5345: Anular gas lamp.
- 1315: Connection glass tube.
- 1109: Water jacket condenser.
- 1318: Internal tube condenser.
- 1107: Receiver type B 100ml (D86, D850, D1078).
- 5101: Adapter made in glass with angle of 105°.
- LAB-102-717: Set of stoppers, pack of 5 pcs.
- 17065: Muscovite gasket for aluminum still, pack of 3 pcs.
- 17060+17061: Anodized aluminum pot still with cover.

Abel

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LT/AF-82000/M


LT/AF-82200/DC

BS 3442-2 (obs.)
EN 924
ISO 1516 - ISO 1523 - ISO 13736
IP 113 (obs.) - IP 170 (obs.) - IP 304-1 (obs.) - IP 304-2 (obs.) - IP 491 - IP 492
NF M07-011 (obs.) - NF T66-009 (obs.)

Flash Point by Abel Closed Cup Method
Determines the closed cup flash point of petroleum products and other liquids having flash points between -30°C and 71°C.

LT/AF-82000/M
Electric Abel Flash Point, manual instrument composed by:
- Metallic case structure painted with anti-acid products
- Digital display for temperature reading with 0,1°C resolution
- Temperature read by a stainless steel PT100 A class with stand-by protection support
- Stirrer motor with flexible junction and on/off switch
- Calibrated brass crucible with level line, handle and stand-by support
- Cover with gas ignition device allowing to ignite the testing sample by a manual glide-opening
- Electrical ignitor/enlighter with intensity regulation knob
- Stainless steel bath with internal cooling coil and joints for external cooling source
- Internal solenoid valve for manage cooling through a power switch
- Stainless steel heating element with power heating regulation knob
- Power supply 220 or 115 Vac 50/60 Hz

Dimensions and Weight
- cm 40 × 50 × 50
- kg 10

LT/AF-82200/DC
Electric Abel Flash Point, semi-automatic instrument composed by:
- Metallic case structure painted with anti-acid products
- Digital display for temperature reading with 0,1°C resolution
- Temperature read by a stainless steel PT100 A class with stand-by protection support
- Stirrer motor with flexible junction and on/off switch
- Calibrated brass crucible with level line, handle and stand-by support
- Cover with gas ignition device allowing to ignite the testing sample by pushing a button
- Electrical ignitor/enlighter with intensity regulation knob
- Stainless steel bath with internal cooling coil and joints for external cooling source
- Internal solenoid valve for manage cooling through a power switch
- Stainless steel heating element with power heating regulation knob
- Power supply 220 or 115 Vac 50/60 Hz

Dimensions and Weight
- cm 40 × 50 × 50
- kg 12

Accessories for all articles
- LAB-100-749: gas reducer 30 mbar
- LAB-100-750: rubber tube-joint and tube 5 m
- T-IP74C: thermometer IP 74C
- T-IP75C: thermometer IP 75C

Spare parts for LT/AF-82000/M
- LAB-100-752: thermometer collar, pack of 5 pcs.
- LAB-100-753: flexible stirrer drive, pack of 5 pcs.
- LAB-100-771: calibrated brass crucible
- LAB-100-772: complete movement
- LAB-110-003: heater
- LAB-150-110: electronic regulator

Spare parts for LT/AF-82200/DC
- LAB-150-110: electronic regulator
- LAB-160-019: digital display for sample temperature display
- LAB-650/05-13: heater
- LAB-650/07-01: electrical ignitor
- LAB-650/08-12: PT100 for sample temperature for test flame lighting
- LAB-650/09-05: calibrated brass crucible
- LAB-650/09-07: cover cup movement only
- LAB-650/11-02: stirrer / flexible
- LAB-650/20-01: support PT100 Teflon

Cleveland

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LT/CO-89000/DC



LT/CO-88000/M

AASHTO T48 (obs.)
ASTM D92
BS 4689 (obs.)
DIN 51376 (obs.)
EN 22592 (obs.)
FTM 791-1103
ISO 2592
IP 36
JIS K 2265
NF T60-118 (obs.)

Flash and Fire Point by Cleveland Open Cup Tester.
This test method describes the determination of the flash and fire point of petroleum products with flash points above 79°C (175°F) and below 400°C (752°F) except fuel oils.

LT/CO-88000/M
Electric Cleveland Fire and Flash Point

- Electrically heated by electronic regulator.
- Mounted on a case painted with anti-acid epoxidic products.
- Calibrated brass cup.
- Gas ignition device fitted with a manually operated pivot passing through the cup.
- Pincers for thermometer.
- Power supply: 230 Vac or 115 Vac, 50/60 Hz.
- Cord cable with schuko plug.

LT/CO-89000/DC
Electric Semi-automatic Cleveland Fire and Flash Point

- Metallic case structure painted with anti-acid products.
- Digital display for temperature reading with 0,1°C resolution.
- Temperature read by a stainless steel PT100 A class.
- Gas ignition device fitted with a motor operated pivot passing through the cup.
- Calibrated brass crucible with level line, handle and correct positioning support.
- Safety cover activated when flame/flash occur.
- Electrical ignitor/enlighter with intensity regulation knob and stand-by SS protection.
- Electric heater 500 Watt with main switch, power regulator and centring aluminium ring.
- Cooling fan with activation switch.
- Test button for check the instrument performance.
- Motorized up-down movement of sensor's head, buttons operated.
- Internal solenoid valve for manage gas supply, activated by an external switch.
- Ionization detector rings with audible alarm.
- Power supply: 220 Vac or 115 Vac, 50/60 Hz.

Accessories

- 5050: Gas reducer 30 mbar.
- 5052: Gas connection tube, 5 m.
- T-AS11C: Thermometer ASTM 11C IP 28C, range -6…+400°C, Div. 2°C – gallium filled.
- T-AS11F: Thermometer ASTM 11F, range +20…+760°F, Div. 5°F – gallium filled.

Spare Parts

- 5127: Calibrated brass crucible.
- 5129: Gas plug one pilot.
- 3151: Electronic regulator for heating adjustment.
- 3064: Heater (heating plate).
- 7671: Silicon tubing 1 m, for gas.

Pensky Martens

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LT/PM-75500/M



LT/PM-75000/DC

AASHTO T73 - AASHTO T172
ASTM D93-A - ASTM D93-B - ASTM D6751
BS 684-1.17 - BS 2839 (obs.)
DIN 51758 (obs.)
EN 22719
FTM 141-4293 - FTM 791-110
IP 34-A - IP 34-B
ISO 2719-A - ISO 2719-B - ISO 15267
JIS K 2265
NF M07-019 (obs.)

From Method Flash Point by Pensky Martens Closed Cup Tester:
This test method covers the determination of the flash point of petroleum products in the temperature range from 35 to 360°C. Procedure A is applicable to distillate fuels (diesel, kerosene, heating oil, turbine fuels), new lubricating oils, and other homogeneous petroleum liquids not included in the scope of Procedure B.
Procedure B is applicable to residual fuel oils, cutback residual, used lubricating oils, mixtures of petroleum liquids with solids, petroleum liquids that tend to form a surface film under test conditions, or are petroleum liquids of such kinematic viscosity that they are not uniformly heated under the stirring and heating conditions of Procedure A.

LT/PM-75500/M
Digital Electric Pensky Martens
A and B Procedures

- Electrically heated by electronic regulator
- Mounted on a case painted with anti-acid epoxy products
- Calibrated brass crucible
- Cover with gas ignition device allowing to ignite the testing sample by a manual trip-opening
- Motor stirrer for Procedure A and B
- Air bath made in brass with external stainless steel protection cover
- PT 100 probe Class A for sample temperature measuring
- Measuring range from 15 to 370°C
- Over heat protection

LT/PM-75000/DC
Semiautomatic Pensky Martens
ASTM D93 IP 34

- Electrically heated by electronic regulator manually settable
- Mounted on a case painted with anti-acid epoxy products
- Calibrated brass crucible
- Cup / cup cover with movement stand-by support
- Cover with ignition device for gas propane/butane
- Automatic shutter opening and dip-in of test flame by means of an electrical motor
- Electrical motor stirrer with shut off during flame application
- Digital display for sample temperature reading
- PT 100 probe Class A for sample temperature measuring
- Built in cooling fan
- Measuring range from 15 to 370°C
- Over heat protection

Power Supply

- 220 Vac 50/60 Hz

Dimensions

- LT/PM-75500/M /ME: cm 35 × 28 × 43
- LT/PM-75500/DC: cm 48 × 30 × 52

Weight

- LT/PM-75500/M /ME: kg 7
- LT/PM-75500/DC: kg 17

Accessories

- LAB-100-749: gas reducer 30 mbar
- LAB-100-750: rubber tube-joint and tube, 5 m
- T-AS9C: thermometer ASTM 9C - IP 15C
- T-AS9F: thermometer ASTM 9F - IP 15F
- T-AS10C: thermometer ASTM 10C - IP 16C
- T-AS10F: thermometer ASTM 10F - IP 16F

Spare Parts

- LAB-100-741: calibrated brass crucible
- LAB-100-742: complete movement
- LAB-110-022: heater
- LAB-100-751: silicone tubing 5 m
- LAB-100-752: thermometer collar, pack of 5
- LAB-100-753: flexible stirrer drive, pack of 5
- LAB-120-020: electric motor (LT/PM-75500/M)
- LAB-150-110: electronic regulator
- LAB-600/08-12: PT100
- LAB-160-014: digital thermoregulator

Tag Closed

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LT/TC-93000/M



LT/TC-93000/DC

ASTM D56 - ASTM D3934 - ASTM D3941
BS 6664-3 (obs.) - BS 6664-4 (obs.)
DIN 55680 (obs.)
EN 456 (obs.) - EN 924
FTM 791-1101
IP 304-1 (obs.) - IP 304-2 (obs.) - IP 491 - IP 492
ISO 1516 - ISO 1523 - ISO 3679 - ISO 3680
JIS K 2265
NF T60-616 (obs.) - NF T60-617 (obs.)

Flash Point by Tag Closed Tester

This test method covers the determination of the flash point of liquids with a viscosity below 5.5 mm^2/s (cSt) at 40°C (104°F), or below 9.5 mm^2/s (cSt) at 25°C (77°F), and a flash point below 93°C (200°F).

Flash / No Flash Test - Equilibrium Method by a Closed Cup Apparatus

This test method covers the determination of whether a liquid complies with the closed-cup flash.
This test method is limited to a temperature range between 0 and 110°C (32 and 230°F).

Flash Point by Equilibrium Method with a Closed Cup Apparatus

This test method covers the determination of the flash point of liquids in which the specimen and the air/vapour mixture above it are approximately in temperature equilibrium. This test method is limited to a temperature range between 0 and 110°C (32 and 230°F).

LT/TC-93000/M
Electric Tag Closed
ASTM D56 D3934 D3941

- Electrically heated by electronic regulator
- Mounted on a case painted with anti-acid epoxy products
- Test copper cup equipped with glide-device and gas-ignition
- Water bath and support-jacket made in brass
- Internal cooling coil

Power Supply
- 220 Vac 50/60 Hz

Dimensions
- cm 40 × 40 × 50

Weight
- 8 kg

LT/TC-93000/DC
Electric Semi-Automatic Tag Closed
ASTM D56 D3934 D3941

- Electrically heated by electronic regulator manually settable that give the possibility to have different ramp rate
- Temperature range up to +120°C
- Mounted on a case painted with anti-acid epoxidic products
- Calibrated brass crucible
- Cooling coil for testing sample below ambient temperature (an external cooling source is needed)
- Electrical heater 250W or similar
- Cover with ignition system: electric lighter or gas flame
- Automatic shutter opening and dip-in of test flame by means of an electrical motor, activation by push button
- Built in cooling fan allow rapid cooling between tests
- PT100 probe Class A for sample temperature measuring
- Digital display with 0.1°C resolution

Power Supply
- 220Vac 50/60 Hz

Dimensions
- cm 40 × 50 × 50

Weight
- 12 kg

Accessories
- LT/CB-40800-M/30: cryostatic bath -30°C
- LAB-100-749: gas reducer 30 mbar
- LAB-100-750: rubber tube-joint and tube 5 m
- T-AS57C: thermometer ASTM 57C
- T-AS57F: thermometer ASTM 57F
- T-AS9C: thermometer ASTM 9C - IP 15C
- T-AS9F: thermometer ASTM 9F - IP 15F

Spare Parts
- LAB-100-751: silicone tubing 5 m
- LAB-100-932: copper cup, pack of 2
- LAB-100-933: complete movement
- LAB-110-022: heater
- LAB-150-110: electronic regulator

Tag Open

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ASTM D1310
ASTM D3143

ASTM D1310 - Flash Point and Fire Point of Liquids by Tag Open Cup Apparatus
This test method covers the determination of the flash point and fire point of liquids having flash points between -18 and 165°C (0 and 325°F) and fire points up to 165°C.

ASTM D3143 - Flash Point of Cutback Asphalt
This test method covers the determination of flash points of cutback asphalts having flash points of less than 93°C (200°F).

LT/TO-95000/M
Electric Tag Open - ASTM D1310 D3143
- Mounted on a case painted with anti-acid epoxy products
- Test cup made in moulded glass
- Gas ignition device with jet-ended passes on the circumference of a circle having a radius of 150 mm minimum, grants the ignition at the center of test cup
- Copper with Ni-Cr treatment water bath with constant level overflow for keep bath level at 3.2 mm approx. from glass cup rim fitted with pincers for thermometer
- Levelling device for adjusting liquid level in test cup, height of taper above cup, and size of test flame

Power Supply
- 220Vac 50/60 Hz

Dimensions
- cm 40 × 40 × 50

Weight
- 7 kg



Levelling device



Gas ignition device

Accessories
- LAB-100-748: triangular draft shield 610 × 610 mm
- LAB-100-749: gas reducer 30 mbar
- LAB-100-750: rubber tube-joint and tube 5 m
- T-AS9C: thermometer ASTM 9C - IP 15C
- T-AS9F: thermometer ASTM 9F - IP 15F
- T-AS33C: thermometer ASTM 33C - IP 20C
- T-AS33F: thermometer ASTM 33F
- T-AS35C: thermometer ASTM 35C - IP 59C
- T-AS35F: thermometer ASTM 35F
- LAB-102-242: syringe 1 ml capacity, div. 0.01 ml, stainless steel needle L = 102 mm

Spare Parts
- LAB-100-951: test cup made of moulded glass, pack of 2
- LAB-100-952: gas ignition device, pack of 3
- LAB-110-022: heater
- LAB-150-110: electronic regulator



Test cup
Outside diameter: 63.5 mm
Inside diameter: 50.8 mm
Internal height: 47.6 mm
Total height: 51.6 mm

Evaporation Bath

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LT/EB-241000/M



LT/EB-241400/M

ASTM D381
DIN 51784
IP 131
IP 540
ISO 6246

Gum Content in Fuels by Jet Evaporation.
This test method covers the determination of the existent gum content of aviation fuels, and the gum content of motor gasolines or other volatile distillates in their finished form (including those containing alcohol and ether type oxygenates and deposit control additives) at the time of test.

LT/EB-241000/M
Gum Content in Fuels by Jet Evaporation Air and Steam

- Compact structure painted with anti-acid epoxidy products.
- Rectangular aluminium metal block bath deeply coated equipped with 8 × removable adapters.
- 2 × dedicated inlet lines.
  - Air inlet with in-line flowmeter for monitor the instant air-flow and regulation ball valve.
  - Steam inlet with distribution manifold and ball valve for regulating the flow.
- 8 × jets (one for each test place) fitted with its conical adapters with 500 to 600-micron screens.
- Temperature controlled by a digital thermoregulator PID with overtemperature alarm and probe PT100 A class with 0.1°C resolution and 0.5°C precision.
- Safety manual thermostat for overheating preventing with warning lamp.
- 8 × glass beaker 100 ml capacity.

Dimensions
- 40 × 43 × 56 cm.

Temperature Range
- Ambient to +246°C.

Consumption
- 2200 Watt.
- + 400 Watt superheater if optionally added.

Power Supply
- 220 Vac or 115 Vac 50/60 Hz.

Factory options for LT/EB-241000/M
- D381-SH: Super-heater option.

LT/EB-241400/M
Gum Content in Fuels by Jet Evaporation Air and Steam

- Compact structure painted with anti-acid epoxidy products.
- Circular aluminium metal block bath deeply coated equipped with 4 × removable adapters.
- 2 × dedicated inlet lines.
  - Air inlet with in-line flowmeter for monitor the instant air-flow and regulation ball valve.
  - Steam inlet with distribution manifold and ball valve for regulating the flow.
- 4 × jets (one for each test place) fitted with its conical adapters with 500 to 600-micron screens.
- Temperature controlled by a digital thermoregulator PID with overtemperature alarm and probe PT100 A class with 0.1°C resolution and 0.5°C precision.
- Safety manual thermostat for overheating preventing with warning lamp.
- 4 × glass beaker 100 ml capacity.

Dimensions
- 40 × 43 × 56 cm.

Temperature Range
- Ambient to +246°C.

Consumption
- 1800 Watt.
- + 400 Watt superheater if optionally added.

Power Supply
- 220 Vac or 115 Vac 50/60 Hz.

Evaporation Bath



LT/EB-241500/M



1000160



1000158



LT/FA-247000/M



5210

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LT/EB-241500/M
Gum Content in Fuels by Jet Evaporation Air and Steam

- Compact structure painted with anti-acid epoxidy products.
- Circular aluminium metal block bath deeply coated equipped with 5 × removable adapters.
- 2 × dedicated inlet lines.
  · Air inlet with in-line flowmeter for monitor the instant air-flow and regulation ball valve.
  · Steam inlet with distribution manifold and ball valve for regulating the flow.
- 5 × jets (one for each test place) fitted with its conical adapters with 500 to 600-micron screens.
- Temperature controlled by a digital thermoregulator PID with overtemperature alarm and probe PT100 A class with 0.1°C resolution and 0.5°C precision.
- Safety manual thermostat for overheating preventing with warning lamp.
- 5 × glass beaker 100 ml capacity.

Dimensions
- 40 × 43 × 56 cm.

Temperature Range
- Ambient to +246°C.

Consumption
- 1800 Watt.
- + 400 Watt superheater if optionally added.

Power Supply
- 220 Vac or 115 Vac 50/60 Hz

Factory options for LT/EB-241400/M and LT/EB-241500/M
- D381-SH: Super-heater option for 4 and 5 positions.

Accessories
- T-AS3C: Thermometer ASTM 3C.
- 5550: Tongs made in stainless steel with corks protection, total length 250 mm.

Steam Accessories
- 1000160: Industrial steam generator.
  · Steam supply: 19.5 kg / h.
  · Heating power installed: 15-18 Kw.
  · Steam temperature @ 3.5 bar: 152°C.
  · Power supply: 400 V, 3 ph, 50 Hz.
  · Working Pressure: 5 bar / max. working pressure: 5,5 bar.
  · Water: must be connected to a water line (boiler capacity 10 liters).
  · Delivery tube 3 meters.
- 1000158: Laboratory steam generator.
  · Steam supply: 5.2 kg / h.
  · Power: 4 KW.
  · Power supply: 230 V, 1 ph, 50 Hz.
  · Pressure: 4.5 bar.
  · Steam temperature: ~ +149°C.
  · Internal boiler capacity: 8.5 Lt.
  · Water: rear water tank of 20 liters.
  · Delivery tube 2 meters.
- OilLab 142: Steam verification kit composed by 2000 ml graduated glass cylinder and copper tube.

Air Accessories
- LT/FA-247000/M: Side channel flow apparatus.
  · Full die-cast aluminium construction.
  · No contact between rotating and static components.
  · Motor power: 2.20 kW.
  · Power supply: 230 V 50/60 Hz or 115 Vac.
  · Designed flow rate: 150 m^3/h - 0 mbar.
  · Noise level: 66 dB(A).
  · Weight: 27 Kg.
  · Connection tube for instrument, 1 meter.
- 5210: Air filter for flow apparatus.
  · Kit composed by filter support with screwing cover made in painted steel, filter element with particle retain and adapter for connection to flow apparatus.
- 7084: Filter element (spare of kit p/n 5210).
- 3189: Mass flow meter.
  · Flow mass range from 1.2 to 60 nl/min.
  · Digital display readout.
  · Connection joints ¼".
  · Power supply, battery or micro-usb power supply.
  · Operating pressure: 0.2 – 11 bar.
  · Made in anodized aluminium, Fkm seals.
  · Repeatability: ± 0.5% of full scale.

Spare Parts
- 1052: Pyrex® Beaker.
- 3574: Digital thermoregulator.
- 3114: Heating cartridge 100 mm, pack of 2 pcs.
- 7082: Air jet complete, pack of 4 pcs.
- 5476: Spare metallic mesh, pack of 10 pcs.

Hydrometers / Thermo-hydrometers
Specific Gravity

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CE



General Purpose Hydrometers for Common Density Areas
Instruments with good accuracy for reliable determination of density in laboratory and industry

Hydrometer without thermometer – short form – scale 0.060 g/cm³ - accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.
LAB-H-800-000	00	0,600 - 0,660 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-002	0	0,650 - 0,710 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-004	1	0,700 - 0,760 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-006	2	0,760 - 0,820 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-008	3	0,820 - 0,880 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-010	4	0,880 - 0,940 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-012	5	0,940 – 1,000 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-014	6	1,000 - 1,060 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-016	7	1,060 - 1,120 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-018	8	1,120 - 1,180 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-020	9	1,180 - 1,240 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-022	10	1,240 - 1,300 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-024	11	1,300 - 1,360 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-026	12	1,360 - 1,420 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-028	13	1,420 - 1,480 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-030	14	1,480 - 1,540 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-032	15	1,540 - 1,600 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-034	16	1,600 - 1,660 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-036	17	1,660 - 1,720 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-038	18	1,720 - 1,780 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-040	19	1,780 - 1,840 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-042	20	1,840 - 1,900 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-044	21	1,900 - 1,960 : 0,001 g/cm³	160 mm	+20°C
LAB-H-800-046	22	1,960 - 2,020 : 0,001 g/cm³	160 mm	+20°C

Hydrometer without thermometer – long form – accuracy +/- 1 scale di vision

Art. no.	Type	Range	Length	Ref. temp.
LAB-H-800-130	00	0,600 - 0,660 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-132	0	0,650 - 0,710 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-134	1	0,700 - 0,760 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-136	2	0,760 - 0,820 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-138	3	0,820 - 0,880 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-140	4	0,880 - 0,940 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-142	5	0,940 – 1,000 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-144	6	1,000 - 1,060 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-146	7	1,060 - 1,120 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-148	8	1,120 - 1,180 : 0,001 g/cm³	300 mm	+20°C




Hydrometers / Thermo-hydrometers
Specific Gravity

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CE

LAB-H-800-150	9	1,180 - 1,240 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-152	10	1,240 - 1,300 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-154	11	1,300 - 1,360 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-156	12	1,360 - 1,420 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-158	13	1,420 - 1,480 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-160	14	1,480 - 1,540 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-162	15	1,540 - 1,600 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-164	16	1,600 - 1,660 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-166	17	1,660 - 1,720 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-168	18	1,720 - 1,780 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-170	19	1,780 - 1,840 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-172	20	1,840 - 1,900 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-174	21	1,900 - 1,960 : 0,001 g/cm³	300 mm	+20°C
LAB-H-800-176	22	1,960 - 2,020 : 0,001 g/cm³	300 mm	+20°C

Hydrometer with thermometer – long form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.	Thermometer scale
LAB-H-800-240	00	0,600 - 0,660 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-244	1	0,700 - 0,760 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-246	2	0,760 - 0,820 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-248	3	0,820 - 0,880 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-250	4	0,880 - 0,940 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-252	5	0,940 – 1,000 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-254	6	1,000 - 1,060 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-256	7	1,060 - 1,120 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-258	8	1,120 - 1,180 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-260	9	1,180 - 1,240 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-262	10	1,240 - 1,300 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-264	11	1,300 - 1,360 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-266	12	1,360 - 1,420 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-268	13	1,420 - 1,480 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-270	14	1,480 - 1,540 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-272	15	1,540 - 1,600 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-274	16	1,600 - 1,660 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-276	17	1,660 - 1,720 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-278	18	1,720 - 1,780 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-280	19	1,780 - 1,840 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-282	20	1,840 - 1,900 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-284	21	1,900 - 1,960 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-800-286	22	1,960 - 2,020 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C

Hydrometer without thermometer – long form – (Scale 0.100 g/cm³) - accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.
LAB-H-801-050	0,600 - 0,700 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-052	0,700 - 0,800 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-054	0,800 - 0,900 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-056	0,900 - 1,000 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-058	1,000 - 1,100 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-060	1,100 - 1,200 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-062	1,200 - 1,300 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-064	1,300 - 1,400 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-066	1,400 - 1,500 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-068	1,500 - 1,600 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-070	1,600 - 1,700 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-072	1,700 - 1,800 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-074	1,800 - 1,900 : 0,001 g/cm³	300 mm	+20°C
LAB-H-801-076	1,900 - 2,000 : 0,001 g/cm³	300 mm	+20°C

Thermo-Hydrometer with thermometer – long form – (Scale 0.100 g/cm³) - accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.	Thermometer scale
LAB-H-801-200	0,600 - 0,700 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-202	0,700 - 0,800 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-204	0,800 - 0,900 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-206	0,900 - 1,000 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-208	1,000 - 1,100 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-210	1,100 - 1,200 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-212	1,200 - 1,300 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-214	1,300 - 1,400 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-216	1,400 - 1,500 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-218	1,500 - 1,600 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-220	1,600 - 1,700 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C

Hydrometers / Thermo-hydrometers
Specific Gravity

LAB-H-801-222	1,700 - 1,800 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-224	1,800 - 1,900 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-226	1,900 - 2,000 : 0,001 g/cm³	350 mm	+20°C	0..+40:1°C

Hydrometer without thermometer – short form – (Scale 0.150 up to 0.250 g/cm³) - accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.
LAB-H-801-280	0,700 - 0,850 : 0,005 g/cm³	180 mm	+20°C
LAB-H-801-282	0,850 - 1,000 : 0,005 g/cm³	180 mm	+20°C
LAB-H-801-284	1,000 - 1,250 : 0,005 g/cm³	180 mm	+20°C
LAB-H-801-286	1,250 - 1,500 : 0,005 g/cm³	180 mm	+20°C
LAB-H-801-288	1,500 - 1,750 : 0,005 g/cm³	180 mm	+20°C
LAB-H-801-290	1,750 - 2,000 : 0,005 g/cm³	180 mm	+20°C

Hydrometer without thermometer – long form – (Scale 0.150 up to 0.250 g/cm³) - accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.
LAB-H-801-360	0,600 - 0,800 : 0,002 g/cm³	280 mm	+20°C
LAB-H-801-362	0,800 - 1,000 : 0,002 g/cm³	280 mm	+20°C
LAB-H-801-364	1,000 - 1,200 : 0,002 g/cm³	280 mm	+20°C
LAB-H-801-366	1,200 - 1,400 : 0,002 g/cm³	280 mm	+20°C
LAB-H-801-368	1,400 - 1,600 : 0,002 g/cm³	280 mm	+20°C
LAB-H-801-370	1,600 - 1,800 : 0,002 g/cm³	280 mm	+20°C
LAB-H-801-372	1,800 - 2,000 : 0,002 g/cm³	280 mm	+20°C

Thermo-Hydrometer with thermometer – long form – (Scale 0.150 up to 0.250 g/cm³) - accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.	Thermometer scale
LAB-H-801-490	0,600 - 0,800 : 0,002 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-492	0,800 - 1,000 : 0,002 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-494	1,000 - 1,200 : 0,002 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-496	1,200 - 1,400 : 0,002 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-498	1,400 - 1,600 : 0,002 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-500	1,600 - 1,800 : 0,002 g/cm³	350 mm	+20°C	0..+40:1°C
LAB-H-801-502	1,800 - 2,000 : 0,002 g/cm³	350 mm	+20°C	0..+40:1°C

Hydrometer without thermometer – long form – (Scale 0.300 up to 0.500 g/cm³) - accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.
LAB-H-801-620	0,700 - 1,000 : 0,005 g/cm³	280-300 mm	+20°C
LAB-H-801-622	1,000 - 1,300 : 0,005 g/cm³	280-300 mm	+20°C
LAB-H-801-624	1,000 - 1,500 : 0,005 g/cm³	280-300 mm	+20°C
LAB-H-801-626	1,300 - 1,600 : 0,005 g/cm³	280-300 mm	+20°C
LAB-H-801-628	1,500 - 2,000 : 0,005 g/cm³	280-300 mm	+20°C
LAB-H-801-630	2,000 - 2,500 : 0,005 g/cm³	280-300 mm	+20°C
LAB-H-801-632	2,500 - 3,000 : 0,005 g/cm³	280-300 mm	+20°C

Thermo-Hydrometer with thermometer – long form – (Scale 0.150 up to 0.250 g/cm³) - accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.	Thermometer scale
LAB-H-801-680	0,700 - 1,000 : 0,005 g/cm³	280-350 mm	+20°C	0..+40:1°C
LAB-H-801-682	1,000 - 1,500 : 0,005 g/cm³	280-350 mm	+20°C	0..+40:1°C
LAB-H-801-684	1,500 - 2,000 : 0,005 g/cm³	280-350 mm	+20°C	0..+40:1°C

Hydrometer without thermometer – long form – (Scale 1.000 up to 1.300 g/cm³) - accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.
LAB-H-801-800	0,700 - 2,000 : 0,02 g/cm³	280-350 mm	+20°C
LAB-H-801-804	1,000 - 2,000 : 0,01 g/cm³	280-350 mm	+20°C

Specific Gravity Hydrometers
General purpose hydrometers for the ranges of 0,600sp gr up to 2,000sp gr

Hydrometer without thermometer – long form – accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.
LAB-H-801-850	0,600 - 0,700 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-852	0,700 - 0,800 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-854	0,800 - 0,900 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-856	0,900 - 1,000 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-858	1,000 - 1,100 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-860	1,100 - 1,200 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-862	1,200 - 1,300 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-864	1,300 - 1,400 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-866	1,400 - 1,500 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-868	1,500 - 1,600 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-870	1,600 - 1,700 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-872	1,700 - 1,800 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-874	1,800 - 1,900 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F

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CE

LAB-H-801-876	1,900 - 2,000 : 0,001 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-890	0,600 - 0,800 : 0,002 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-892	0,800 - 1,000 : 0,002 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-894	1,000 - 1,200 : 0,002 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-896	1,200 - 1,400 : 0,002 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-898	1,400 - 1,600 : 0,002 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-900	1,600 - 1,800 : 0,002 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-902	1,800 - 2,000 : 0,002 sp gr	300 mm	+28.9/28.9°C – 89°F
LAB-H-801-920	0,700 - 1,000 : 0,005 sp gr	285 mm	+28.9/28.9°C – 89°F
LAB-H-801-922	1,000 - 1,500 : 0,005 sp gr	285 mm	+28.9/28.9°C – 89°F
LAB-H-801-924	1,500 - 2,000 : 0,005 sp gr	285 mm	+28.9/28.9°C – 89°F

Density Hydrometers according to international standards
High-precision hydrometers for the density range of 0,600g/cm³ up to 2,000g/cm³

Hydrometer series L20 without thermometer – long form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-805-008	L20-068	0,6800 - 0,7000 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-010	L20-070	0,7000 - 0,7200 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-012	L20-072	0,7200 - 0,7400 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-014	L20-074	0,7400 - 0,7600 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-016	L20-076	0,7600 - 0,7800 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-018	L20-078	0,7800 - 0,8000 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-020	L20-080	0,8000 - 0,8200 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-022	L20-082	0,8200 - 0,8400 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-024	L20-084	0,8400 - 0,8600 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-026	L20-086	0,8600 - 0,8800 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-028	L20-088	0,8800 - 0,9000 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-030	L20-090	0,9000 - 0,9200 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-032	L20-092	0,9200 - 0,9400 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-034	L20-094	0,9400 - 0,9600 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-036	L20-096	0,9600 - 0,9800 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-038	L20-098	0,9800 - 1,0000 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-040	L20-100	1,0000 - 1,0200 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-042	L20-102	1,0200 - 1,0400 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-044	L20-104	1,0400 - 1,0600 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-046	L20-106	1,0600 - 1,0800 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C
LAB-H-805-048	L20-108	1,0800 - 1,1000 : 0,0002 g/cm³	430 mm	DIN 12 791 / BS 718	+20°C

Hydrometer series L50 without thermometer – long form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-806-200	L50-060	0,600 - 0,650 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-202	L50-065	0,650 - 0,700 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-204	L50-070	0,700 - 0,750 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-206	L50-075	0,750 - 0,800 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-208	L50-080	0,800 - 0,850 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-210	L50-085	0,850 - 0,900 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-212	L50-090	0,900 - 0,950 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-214	L50-095	0,950 - 1,000 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-216	L50-100	1,000 - 1,050 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-218	L50-105	1,050 - 1,100 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-220	L50-110	1,100 - 1,150 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-222	L50-115	1,150 - 1,200 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-224	L50-120	1,200 - 1,250 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-226	L50-125	1,250 - 1,300 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-228	L50-130	1,300 - 1,350 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-230	L50-135	1,350 - 1,400 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-232	L50-140	1,400 - 1,450 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-234	L50-145	1,450 - 1,500 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-236	L50-150	1,500 - 1,550 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-238	L50-155	1,550 - 1,600 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-240	L50-160	1,600 - 1,650 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-242	L50-165	1,650 - 1,700 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-244	L50-170	1,700 - 1,750 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-246	L50-175	1,750 - 1,800 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-248	L50-180	1,800 - 1,850 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-250	L50-185	1,850 - 1,900 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-252	L50-190	1,900 - 1,950 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C
LAB-H-806-254	L50-195	1,950 - 2,000 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+20°C




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Hydrometer series L50SP precision without thermometer – long form – accuracy +/- 0.0003 g/cm³

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-806-300	L50-060	0,600 - 0,650 : 0,0005 g/cm³	335 mm	DIN 12 791 / BS 718	+15°C
LAB-H-806-302	L50-065	0,650 - 0,700 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C
LAB-H-806-304	L50-070	0,700 - 0,750 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C
LAB-H-806-306	L50-075	0,750 - 0,800 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C
LAB-H-806-308	L50-080	0,800 - 0,850 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C
LAB-H-806-310	L50-085	0,850 - 0,900 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C
LAB-H-806-312	L50-090	0,900 - 0,950 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C
LAB-H-806-314	L50-095	0,950 - 1,000 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C
LAB-H-806-316	L50-100	1,000 - 1,050 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C
LAB-H-806-318	L50-105	1,050 - 1,100 : 0,0005 g/cm³	335 mm	DIN12 791 / BS 718	+15°C

Hydrometer series M50 without thermometer – short form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-808-000	M50-060	0,600 - 0,650 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-002	M50-065	0,650 - 0,700 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-004	M50-070	0,700 - 0,750 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-006	M50-075	0,750 - 0,800 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-008	M50-080	0,800 - 0,850 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-010	M50-085	0,850 - 0,900 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-012	M50-090	0,900 - 0,950 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-014	M50-095	0,950 - 1,000 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-016	M50-100	1,000 - 1,050 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-018	M50-105	1,050 - 1,100 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-020	M50-110	1,100 - 1,150 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-022	M50-115	1,150 - 1,200 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-024	M50-120	1,200 - 1,250 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-026	M50-125	1,250 - 1,300 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-028	M50-130	1,300 - 1,350 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-030	M50-135	1,350 - 1,400 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-032	M50-140	1,400 - 1,450 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-034	M50-145	1,450 - 1,500 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-036	M50-150	1,500 - 1,550 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-038	M50-155	1,550 - 1,600 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-040	M50-160	1,600 - 1,650 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-042	M50-165	1,650 - 1,700 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-044	M50-170	1,700 - 1,750 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-046	M50-175	1,750 - 1,800 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-048	M50-180	1,800 - 1,850 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-050	M50-185	1,850 - 1,900 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-052	M50-190	1,900 - 1,950 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C
LAB-H-808-054	M50-195	1,950 - 2,000 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+20°C

Hydrometer series M50SP precision without thermometer – short form – accuracy +/- 0.0006 g/cm³

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-808-100	M50-060	0,600 - 0,650 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-102	M50-065	0,650 - 0,700 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-104	M50-070	0,700 - 0,750 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-106	M50-075	0,750 - 0,800 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-108	M50-080	0,800 - 0,850 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-110	M50-085	0,850 - 0,900 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-112	M50-090	0,900 - 0,950 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-114	M50-095	0,950 - 1,000 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-116	M50-100	1,000 - 1,050 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C
LAB-H-808-118	M50-105	1,050 - 1,100 : 0,001 g/cm³	270 mm	DIN 12 791 / BS 718	+15°C

Hydrometer series M100 without thermometer – short form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-809-600	M100-060	0,600 - 0,700 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-602	M100-070	0,700 - 0,800 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-604	M100-080	0,800 - 0,900 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-606	M100-090	0,900 - 1,000 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-608	M100-100	1,000 - 1,100 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-610	M100-110	1,100 - 1,200 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-612	M100-120	1,200 - 1,300 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-614	M100-130	1,300 - 1,400 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-616	M100-140	1,400 - 1,500 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-618	M100-150	1,500 - 1,600 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-620	M100-160	1,600 - 1,700 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-622	M100-170	1,700 - 1,800 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-624	M100-180	1,800 - 1,900 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C
LAB-H-809-626	M100-190	1,900 - 2,000 : 0,002 g/cm³	250 mm	DIN 12 791 / BS 718	+20°C




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Hydrometer series M100 with thermometer – long form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Standard	Ref. temp.	Thermom. scale
LAB-H-809-730	M100/TH-060	0,600 - 0,700 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-732	M100/TH-070	0,700 - 0,800 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-734	M100/TH-080	0,800 - 0,900 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-736	M100/TH-090	0,900 - 1,000 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-738	M100/TH-100	1,000 - 1,100 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-740	M100/TH-110	1,100 - 1,200 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-742	M100/TH-120	1,200 - 1,300 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-744	M100/TH-130	1,300 - 1,400 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-746	M100/TH-140	1,400 - 1,500 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-748	M100/TH-150	1,500 - 1,600 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-750	M100/TH-160	1,600 - 1,700 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-752	M100/TH-170	1,700 - 1,800 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-754	M100/TH-180	1,800 - 1,900 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C
LAB-H-809-756	M100/TH-190	1,900 - 2,000 : 0,002 g/cm³	310 mm	DIN 12 791 / BS 718	+20°C	0+30 :1°C

Hydrometer series S50 without thermometer – short form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-811-100	S50-060	0,60 - 0,65 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-102	S50-060	0,65 - 0,70 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-104	S50-070	0,70 - 0,75 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-106	S50-075	0,75 - 0,80 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-108	S50-080	0,80 - 0,85 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-110	S50-085	0,85 - 0,90 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-112	S50-090	0,90 - 0,95 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-114	S50-095	0,95 - 1,00 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-116	S50-100	1,00 - 1,05 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-118	S50-105	1,05 - 1,10 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-120	S50-110	1,10 - 1,15 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-122	S50-115	1,15 - 1,20 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-124	S50-120	1,20 - 1,25 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-126	S50-125	1,25 - 1,30 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-128	S50-130	1,30 - 1,35 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-130	S50-135	1,35 - 1,40 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-132	S50-140	1,40 - 1,45 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-134	S50-145	1,45 - 1,50 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-136	S50-150	1,50 - 1,55 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-138	S50-155	1,55 - 1,60 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-140	S50-160	1,60 - 1,65 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-142	S50-165	1,65 - 1,70 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-144	S50-170	1,70 - 1,75 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-146	S50-175	1,75 - 1,80 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-148	S50-180	1,80 - 1,85 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-150	S50-185	1,85 - 1,90 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-152	S50-190	1,90 - 1,95 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C
LAB-H-811-154	S50-195	1,95 - 2,00 : 0,002 g/cm³	190 mm	DIN 12 791 / BS 718	+20°C

Hydrometer series S50 SP precision without thermometer – short form – accuracy +/- 0.001 g/cm³

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-811-200	S50-060	0,60 - 0,65 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-202	S50-065	0,65 - 0,70 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-204	S50-070	0,70 - 0,75 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-206	S50-075	0,75 - 0,80 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-208	S50-080	0,80 - 0,85 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-210	S50-085	0,85 - 0,90 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-212	S50-090	0,90 - 0,95 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-214	S50-095	0,95 - 1,00 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-216	S50-100	1,00 - 1,05 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C
LAB-H-811-218	S50-105	1,05 - 1,10 : 0,001 g/cm³	190 mm	DIN 12 791 / BS 718	+15°C

Laboratory Hydrometer without thermometer – short form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Standard	Ref. temp.
LAB-H-820-290	1	0,630 - 0,715 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-292	2	0,715 - 0,788 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-294	3	0,788 - 0,860 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-296	4	0,860 - 0,930 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-298	5	0,930 - 1,000 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-300	6	1,000 - 1,110 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-302	7	1,090 - 1,210 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-304	8	1,190 - 1,310 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C

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LAB-H-820-306	9	1,290 - 1,410 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-308	10	1,390 - 1,510 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-310	11	1,490 - 1,610 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-312	12	1,600 - 1,720 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-314	13	1,720 - 1,842 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C
LAB-H-820-316	14	1,842 - 2,000 : 0,001 g/cm³	225 mm	DIN 12 791	+20°C

Hydrometers According to ASTM - High-precision hydrometers for the ranges of -1 upto +101°API from 0,065 up to 1,850 sp gr and from 600 up to 1100 kg/m³

API Gravity Hydrometer without thermometer – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.
LAB-H-825-000	1H-62	-1 + 11 : 0,1° API	330 mm	60°F
LAB-H-825-002	2H-62	9 + 21 : 0,1° API	330 mm	60°F
LAB-H-825-004	3H-62	19 + 31 : 0,1° API	330 mm	60°F
LAB-H-825-006	4H-62	29 + 41 : 0,1° API	330 mm	60°F
LAB-H-825-008	5H-62	39 + 51 : 0,1° API	330 mm	60°F
LAB-H-825-010	6H-62	49 + 61 : 0,1° API	330 mm	60°F
LAB-H-825-012	7H-62	59 + 71 : 0,1° API	330 mm	60°F
LAB-H-825-014	8H-62	69 + 81 : 0,1° API	330 mm	60°F
LAB-H-825-016	9H-62	79 + 91 : 0,1° API	330 mm	60°F
LAB-H-825-018	10H-62	89 + 101 : 0,1° API	330 mm	60°F
LAB-H-825-120	21H-62	0 + 6 : 0,1° API	163 mm	60°F
LAB-H-825-122	22H-62	5 + 11 : 0,1° API	163 mm	60°F
LAB-H-825-124	23H-62	10 + 16 : 0,1° API	163 mm	60°F
LAB-H-825-126	24H-62	15 + 21 : 0,1° API	163 mm	60°F
LAB-H-825-128	25H-62	20 + 26 : 0,1° API	163 mm	60°F
LAB-H-825-130	26H-62	25 + 31 : 0,1° API	163 mm	60°F
LAB-H-825-132	27H-62	30 + 36 : 0,1° API	163 mm	60°F
LAB-H-825-134	28H-62	35 + 41 : 0,1° API	163 mm	60°F
LAB-H-825-136	29H-62	40 + 46 : 0,1° API	163 mm	60°F
LAB-H-825-138	30H-62	45 + 51 : 0,1° API	163 mm	60°F
LAB-H-825-140	31H-62	50 + 56 : 0,1° API	163 mm	60°F
LAB-H-825-142	32H-62	55 + 61 : 0,1° API	163 mm	60°F
LAB-H-825-144	33H-62	60 + 66 : 0,1° API	163 mm	60°F
LAB-H-825-146	34H-62	65 + 71 : 0,1° API	163 mm	60°F
LAB-H-825-148	35H-62	70 + 76 : 0,1° API	163 mm	60°F
LAB-H-825-150	36H-62	75 + 81 : 0,1° API	163 mm	60°F
LAB-H-825-152	37H-62	80 + 86 : 0,1° API	163 mm	60°F
LAB-H-825-154	38H-62	85 + 91 : 0,1° API	163 mm	60°F
LAB-H-825-156	39H-62	90 + 96 : 0,1° API	163 mm	60°F
LAB-H-825-158	40H-62	95 + 101 : 0,1° API	163 mm	60°F

Specific Gravity Hydrometer without thermometer – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.
LAB-H-826-500	82H-62	0,650 – 0,700 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-502	83H-62	0,700 – 0,750 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-504	84H-62	0,750 – 0,800 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-506	85H-62	0,800 – 0,850 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-508	86H-62	0,850 – 0,900 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-510	87H-62	0,900 – 0,950 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-512	88H-62	0,950 – 1,000 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-514	89H-62	1,000 – 1,050 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-516	90H-62	1,050 – 1,100 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-628	98H-62	0,950 – 1,000 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-630	111H-62	1,000 – 1,050 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-632	112H-62	1,050 – 1,100 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-634	113H-62	1,100 – 1,150 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-636	114H-62	1,150 – 1,200 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-638	115H-62	1,200 – 1,250 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-640	116H-62	1,250 – 1,300 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-642	117H-62	1,300 – 1,350 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-644	118H-62	1,350 – 1,400 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-646	119H-62	1,400 – 1,450 : 0,0005 sp gr	330 mm	60/60 °F
LAB-H-826-648	120H-62	1,450 – 1,500 : 0,0005 sp gr	330 mm	60/60 °F

Specific Gravity Hydrometer without thermometer – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.	Thermometer scale
LAB-H-826-760	101H	0,500 – 0,650 : 0,001 sp gr	360 mm	60/60 °F	+30+90: 1 °F

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Specific Gravity Hydrometer without thermometer – short form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.
LAB-H-826-780	102H-62	0,650 – 0,700 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-782	103H-62	0,700 – 0,750 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-784	104H-62	0,750 – 0,800 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-786	105H-62	0,800 – 0,850 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-788	106H-62	0,850 – 0,900 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-790	107H-62	0,900 – 0,950 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-792	108H-62	0,950 – 1,000 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-910	125H-62	1,000 – 1,050 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-912	126H-62	1,050 – 1,100 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-914	127H-62	1,100 – 1,150 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-916	128H-62	1,150 – 1,200 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-918	129H-62	1,200 – 1,250 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-920	130H-62	1,250 – 1,300 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-922	131H-62	1,300 – 1,350 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-924	132H-62	1,350 – 1,400 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-926	133H-62	1,400 – 1,450 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-928	134H-62	1,450 – 1,500 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-930	135H-62	1,500 – 1,550 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-932	136H-62	1,550 – 1,600 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-934	137H-62	1,600 – 1,650 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-936	138H-62	1,650 – 1,700 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-938	139H-62	1,700 – 1,750 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-940	140H-62	1,750 – 1,800 : 0,001 sp gr	260 mm	60/60 °F
LAB-H-826-942	141H-62	1,800 – 1,850 : 0,001 sp gr	260 mm	60/60 °F

Density Hydrometer with thermometer – long form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.	Thermometer scale
LAB-H-827-100	S500HL-14	600 – 650 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-102	S501HL-14	650 – 700 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-104	S502HL-14	700 – 750 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-106	S503HL-14	750 – 800 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-108	S504HL-14	800 – 850 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-110	S505HL-14	850 – 900 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-112	S506HL-14	900 – 950 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-114	S507HL-14	950 – 1000 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-116	S508HL-14	1000 – 1050 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C
LAB-H-827-118	S509HL-14	1050 – 1100 : 0,5 kg/m^3	380 mm	15°C	-20+65: 1 °C

Density Hydrometer with thermometer – long form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.	Thermometer scale
LAB-H-826-764	310H	500 – 650 : 1 kg/m^3	390 mm	15°C	0+35: 0,5 °C

Density Hydrometer without thermometer – long form – accuracy +/- 1 scale division

Art. no.	Type	Range	Length	Ref. temp.
LAB-H-827-130	311H - 82	600 – 650 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-132	312H - 82	650 – 700 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-134	313H - 82	700 – 750 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-136	314H - 82	750 – 800 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-138	315H - 82	800 – 850 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-140	316H - 82	850 – 900 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-142	317H - 82	900 – 950 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-144	318H - 82	950 – 1000 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-146	319H - 82	1000 – 1050 : 0,5 kg/m^3	330 mm	15°C
LAB-H-827-148	320H - 82	1050 – 1100 : 0,5 kg/m^3	330 mm	15°C

Hydrometers for Mineral Oil and Liquefied Gas Testing.
Reliable instruments for determination of density, material and quality in different special ranges.

Hydrometers for Mineral oil testing, with thermometer – long form – accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.	Thermometer scale
LAB-H-838-140	0,610 - 0,700 : 0,001 g/cm^3	380 mm	15°C	-20+60 : 1°C
LAB-H-838-142	0,680 - 0,770 : 0,001 g/cm^3	380 mm	15°C	-20+60 : 1°C
LAB-H-838-144	0,750 – 0,840 : 0,001 g/cm^3	380 mm	15°C	-20+60 : 1°C
LAB-H-838-146	0,820 - 0,910 : 0,001 g/cm^3	380 mm	15°C	-20+60 : 1°C
LAB-H-838-148	0,890 - 0,990 : 0,001 g/cm^3	380 mm	15°C	-20+60 : 1°C
LAB-H-838-150	0,980 - 1,100 : 0,001 g/cm^3	380 mm	15°C	-20+60 : 1°C




Hydrometers / Thermo-hydrometers Specific Gravity

Hydrometers for Mineral oil testing, customs examinations, with thermometer – long form – accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.	Thermometer scale
LAB-H-838-380	0,645 - 0,705 : 0,0005 g/cm^3	420 mm	15°C	-10+60 : 0,5°C
LAB-H-838-382	0,695 - 0,755 : 0,0005 g/cm^3	420 mm	15°C	-10+60 : 0,5°C
LAB-H-838-384	0,745 - 0,805 : 0,0005 g/cm^3	420 mm	15°C	-10+60 : 0,5°C
LAB-H-838-386	0,795 - 0,855 : 0,0005 g/cm^3	420 mm	15°C	-10+60 : 0,5°C
LAB-H-838-388	0,845 - 0,905 : 0,0005 g/cm^3	420 mm	15°C	-10+60 : 0,5°C
LAB-H-838-390	0,895 - 0,955 : 0,0005 g/cm^3	420 mm	15°C	-10+60 : 0,5°C
LAB-H-838-392	0,945 - 1,005 : 0,0005 g/cm^3	420 mm	15°C	-10+60 : 0,5°C

Hydrometers for Liquefied Gas, for overpressure of 14 bar, with thermometer – long form – accuracy +/- 1 scale division

Art. no.	Range	Length	Ref. temp.	Thermometer scale
LAB-H-838-760	0,500 - 0,550 : 0,001 g/cm^3	360 mm	15°C	0+30 : 1°C
LAB-H-838-762	0,550 - 0,600 : 0,001 g/cm^3	360 mm	15°C	0+30 : 1°C
LAB-H-838-764	0,600 - 0,650 : 0,001 g/cm^3	360 mm	15°C	0+30 : 1°C
LAB-H-838-768	0,500 - 0,650 : 0,001 g/cm^3	360 mm	15°C	0+30 : 1°C

Hydrometers for Special Applications.
Reliable instruments for determination of density, material and quality in different special ranges

Art. no.	Type	Range	Length	Ref. temp.
LAB-H-851-500	Battery tester	1,10 – 1,30 g/ml	260 mm	15°C
LAB-H-851-710	Anti-freeze tester	-50 – 0°C, 0 – 57%vol	300 mm	15°C
LAB-H-860-580	Latexometers	50-250 : 10g/l	240 mm	84°F/28,9°C
LAB-H-860-582	Latexometers	50-450 : 10g/l	210 mm	84°F/28,9°C
LAB-H-860-590	Hydrogen Peroxide	10-40 : 0,5 mas%	270 mm	15°C
LAB-H-860-600	Ammonia	0-35 : 1 mas%	270 mm	15°C
LAB-H-860-604	Chloride of Lime	0-25 : 0,5 mas%	270 mm	20°C
LAB-H-860-608	Vinegar Tester	0-75 : 1 mas%	270 mm	15°C
LAB-H-860-616	Brine According to Bischoff	0-27 : 1 mas%	270 mm	15°C
LAB-H-860-620	Glues tester according to Suhr	0-56 : 1 mas%	415 mm	75°C
LAB-H-860-626	Nitric Acid	0-47 : 1 mas%	270 mm	15°C
LAB-H-860-628	Nitric Acid	45-96 : 1 mas%	270 mm	15°C
LAB-H-860-630	Hydrochloride Acide	0-39 : 1 mas%	270 mm	15°C
LAB-H-860-634	Sulphuric Acid	45-95 : 1 mas%	270 mm	15°C
LAB-H-860-636	Sulphurous Acid	0-10 : 1 mas%	260 mm	15°C
LAB-H-860-638	Phosphor Acid	0-25 : 1 mas%	260 mm	20°C
LAB-H-860-640	Phosphor Acid	0-75 : 1 mas%	300 mm	20°C
LAB-H-860-660	Potassium Hydroxide	0-50 : 1 mas%	280 mm	20°C
LAB-H-860-664	Sodium Hydroxide	0-27 : 0,5 mas%	270 mm	15°C
LAB-H-860-666	Sodium Hydroxide	25-50 : 1 mas%	270 mm	15°C
LAB-H-860-680	Milk of Lime	0 -50 g/l	260 mm	20°C
LAB-H-860-682	Milk of Lime	1,000 – 1,300 :0,002 g/cm^3	325 mm	20°C
LAB-H-860-686	Milk of Lime	0-340 g/l	290 mm	20°C

Art. no.	Type	Range	Length	Ref. temp.	Thermometer scale
LAB-H-860-632	Sulphuric Acid	0-45 : 1 mas%	270 mm	15°C	+30+85 :1 °C
LAB-H-860-720	Glycerine Tester	0-100 : 1% mas	360 mm	15°C	0+35 :1 °C

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Copper Corrosion by LPG

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ASTM D1838
IP 411
ISO 6251

Copper Strip Corrosion by Liquefied Petroleum (LP) Gases.

This test method detects the presence of components in liquefied petroleum gases which may be corrosive to copper.

LT/LPG-169000/M
LPG Corrosion Vessel - ASTM D1838

- Stainless steel vessel with two needle valves in stainless steel.
- Screw top closure and o-ring sealing gasket.
- Tested at 70 bar.

Accessories

- 5697: Copper test strip ASTM D130, 75.0 × 12.7 mm, with hole for D1838, pack of 10 pcs.
- 1115: Flat glass viewing tube to protect the strip during observation.
- 7060: Silicon carbide paper, 240 grit, pack of 100 pcs.
- 7062: Silicon carbide grains, 150 mesh, pack of 1 kg.
- 5422: 3 places strip vice.
- 7024: Copper strip corrosion standard, original ASTM®.
- T-AS12C: Thermometer ASTM 12C IP 64C, range -20°…+102°C, div. 0,2°C, propylene carbonate filled.
- 5472: Flexible junction according to EN ISO 6251 with quick couplings.

Spare Parts

- 7315: O-ring small for inside ASTM D1838, pack of 10 pcs.
- 7064: O-ring big for outside ASTM D1838, pack of 10 pcs.
- 5136: Upper needle valve.
- 5432: Bottom needle valve.



5422

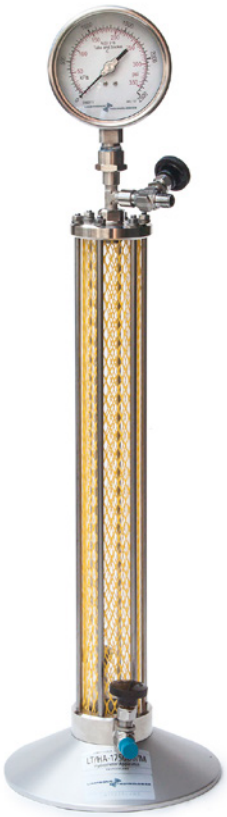


7024

Density of LPG and of Light Hydrocarbons

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LT/TB-176000/M LT/TB-177000/M

ASTM D1657
IP 235
ISO 3993

ASTM D1657 - Density or Relative Density of Light Hydrocarbons by Pressure Hydrometer.
This test method covers the determination of the density or relative density of light hydrocarbons including liquefied petroleum gases (LPG) having Reid vapour pressures exceeding 101.325 kPa (14.696 psi).

IP 235 - ISO 3993 - Density or Relative Density of LPG and of Light Hydrocarbons by Pressure Hydrometer.
The prescribed apparatus shall not be used for materials having gauge vapour pressures higher than 1,4 MPa (absolute vapour pressure 1,5 MPa) at the test temperature.

LT/HA-175000/M
Hydrometer Apparatus ASTM D1657

- Table support made in aluminium, instrument lower and upper chamber connection made in brass with Ni-Cr treatment.
- Tubular chamber made in acrylic resins diameter 50 mm × 36 mm, length 440 mm, equipped with safety mesh.
- Neoprene gaskets with small holes for gas passing.
- Three ¼" needle valves with Cv 0.37 orifice, MNPT connection.
- Double scale pressure gauger 0-2500 kPa, 0-350 Psi, stainless steel case.
- Thermo-hydrometer ASTM 310H, range 0.500-0.650 , thermometer range -10°…+35°C.
- Tested at 15 bar hydraulic pressure.

Accessories

- 1228: Specific gravity hydrometer similar to ASTM, type 101H.
  · Density range 0,500-0,650.
  · Division 0,001 sp g.
  · Length 360 mm.
  · Reference temperature 60/60°F.
- 5268: Safety relief valve with pre-set 15 bar.
- T-AS12C: Thermometer ASTM 12C IP 64C, range -20°…+102°C, div. 0,2°C, propylene carbonate filled.
- LT/TB-177000/M: Thermostatic bath, floor model.
  · Floor stand instrument completely made in stainless-steel.
  · Internal stainless-steel bath with capacity of 90 liters, equipped with double-insulation and fully immersion stainless-steel heater.
  · Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +90°C, resolution 0,1°C and stability ±0.1°C (with cover).
  · Motorized stirrer grant uniformity and stability.
  · Manually settable overtemperature cut-off alarm.
  · Stainless-steel cover with thermoplastic insulated handle.
  · Support which allows the immersion of 3 vapour pressure cylinders.
  · Dimensions: w 50.5 × d 50.0 × h 105.0 cm.
  · Internal dimensions: w 40.0 × d 35.0 × h 61.0 cm.
  · Power supply: 220 Vac or 115 Vac 50/60 Hz.
  · Max. consumption: 2000 Watt.
- LT/TB-176000/M: Thermostatic bath, table top.
  · Bench top instrument completely made in stainless-steel.
  · Internal stainless-steel bath with capacity of 45 liters, equipped with double-insulation and fully immersion stainless-steel heater.
  · Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +90°C, resolution 0,1°C and stability ±0.1°C (with cover).
  · Motorized stirrer grant uniformity and stability.
  · Manually settable overtemperature cut-off alarm.
  · Stainless-steel cover with thermoplastic insulated handle.
  · Support which allows the immersion of 2 vapour pressure cylinders.
  · Dimensions: w 37.0 × d 37.0 × h 72.0 cm.
  · Internal dimensions: w 21.0 × d 26.7 × h 53.0 cm.
  · Power supply: 220 Vac or 115 Vac 50/60 Hz.
  · Max. consumption: 2000 Watt.

Spare Parts

- 7022: Gasket, pack of 10 pcs.
- 5262: Polymethylmethacrylate tube.
- 5266: Thermo-hydrometer similar ASTM type 310H, density range 500-650, div. 1 kg/m^3, length 390 mm, reference temperature 15°C, thermometer range 0°...+35°C, div. 0.5°C, filled without mercury.
- 2271: Pressure gauge, double scale 0-2500 kPa, 0-350 Psi, made in stainless steel, with ½" adapter.

Gage Vapour Pressure of LPG

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ASTM D1267
IP 161 - IP 410 - ISO 4256

Gage Vapour Pressure of Liquefied Petroleum (LP) Gases (LP-gas Method)

This test method covers the determination of the gage vapour pressures of liquefied petroleum gas products at temperatures of 37.8°C (100°F) up to and including a test temperature of 70°C (158°F).

Vapour Pressure Cylinder

LT/VP-174000-A: Lower Chamber, Two Openings, 20% vol. ratio

- Made of high-quality stainless steel, long time corrosion resistant, Internal and external fine polishing for excellent drop drain.
- Upper connection ½" fitting with 12.7 straight-through full-opening valve made in brass (p/n 5138).
- The inner surface of the coupling end shall be sloped to provide complete drainage when inverted.
- 6.35 mm valve positioned near bottom.
- Volume of approx. 130 cc.

LT/VP-174000-B: Upper Side, Vapour Chamber

- Made of high-quality stainless steel, long time corrosion resistant, Internal and external fine polishing for excellent drop drain.
- Upper/Lower connections ½" fitting.
- Stainless steel adapter with ¼" purging valve and ½" pressure gauge connection.
- Volume of approx. 520 cc.

LT/VP-174000-C: Lower Chamber, Two Openings, 33⅓% vol. ratio

- Made of high-quality stainless steel, long time corrosion resistant, Internal and external fine polishing for excellent drop drain.
- Upper connection ½" fitting with 12.7 straight-through full-opening valve made in brass (p/n 5138).
- The inner surface of the coupling end shall be sloped to provide complete drainage when inverted.
- 6.35 mm valve positioned near bottom.
- Volume of approx. 260 cc.

Spare Parts

- 7066: Gasket, pack of 10 pcs.
- 5138: Total flow valve made in brass.
- 17661: Total flow valve made in stainless steel.

Accessories

- 5472: Flexible junction with quick couplings.
- 5389: Pressure gauge double scale 0-700 kPa, 0-100 Psi, made in stainless steel, div. 70 kPa (10 Psi), precision 3.4 kPa (0.5 Psi).
- 2334: Pressure gauge double scale 0-1750 kPa, 0-250 Psi, made in stainless steel, div. 172 kPa (25 Psi), precision 7 kPa (1 Psi).
- 5393: Pressure gauge double scale 0-2000 kPa, 0-285 Psi, made in stainless steel, div. 100 kPa (20 Psi), precision 5 kPa (1 Psi).
- 5395: Pressure gauge double scale 0-3500 kPa, 0-500 Psi, made in stainless steel, div. 344 kPa (50 Psi), precision 35 kPa (5 Psi).
- T-AS18C: Thermometer ASTM 18C IP 23C, range +34°…+42°C, div. 0,1°C, propylene carbonate filled.
- T-AS64C: Thermometer ASTM 64C, range +25°…+55°C, div. 0,1°C, propylene carbonate filled.
- T-AS65C: Thermometer ASTM 65C, range +50°…+80°C, div. 0,1°C, propylene carbonate filled.
- 3837: Digital thermometer reader with LCD display for PT100, PT1000, resolution 0.01°C, accuracy 0.01°C, read up to +650°C, double channel.
- 3779: PT100 sensor for immersion, temperature range -196°…+500°C, 3 mm diameter, 300 mm length.
- LT/TB-177000/M: Thermostatic bath, floor model.
  - Floor stand instrument completely made in stainless-steel.
  - Internal stainless-steel bath with capacity of 90 liters, equipped with double-insulation and fully immersion stainless-steel heater.
  - Temperature controlled by a digital thermo-regulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +90°C, resolution 0,1°C and stability ±0.1°C (with cover).
  - Motorized stirrer grant uniformity and stability.
  - Manually settable overtemperature cut-off alarm.
  - Stainless-steel cover with thermoplastic handle.
  - Support which allows the immersion of 3 vapour pressure cylinders.
  - Dimensions: w 50.5 × d 50.0 × h 105.0 cm.
  - Internal dimensions: w 40.0 × d 35.0 × h 61.0 cm.
  - Power supply: 220 Vac or 115 Vac 50/60 Hz.
  - Max. consumption: 2000 Watt.
- LT/TB-176000/M: Thermostatic bath, table top.
  - Bench top instrument completely made in stainless-steel.
  - Internal stainless-steel bath with capacity of 45 liters, equipped with double-insulation and fully immersion stainless-steel heater.
  - Temperature controlled by a digital thermo-regulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +90°C, resolution 0,1°C and stability ±0.1°C (with cover).
  - Motorized stirrer grant uniformity and stability.
  - Manually settable overtemperature cut-off alarm.
  - Stainless-steel cover with thermoplastic handle.
  - Support which allows the immersion of 2 vapour pressure cylinders.
  - Dimensions: w 37.0 × d 37.0 × h 72.0 cm.
  - Internal dimensions: w 21.0 × d 26.7 × h 53.0 cm.
  - Power supply: 220 Vac or 115 Vac 50/60 Hz.
  - Max. consumption: 2000 Watt.

Hydrogen Sulfide in LPG

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ASTM D2420
ISO 8819

Hydrogen Sulfide in Liquefied LPG
Lead Acetate Method.
This test method covers the detection of hydrogen sulfide in liquefied petroleum (LP) gases. The sensitivity of the test is about 4 mg/m^3 (0.15 to 0.2 grain of hydrogen sulfide per 100 ft^3) of gas.

LT/HS-230000/M
Manual Detection of Hydrogen Sulphide Lead Acetate Method in Liquefied Petroleum Gases LPG

- Water bath 18 litres capacity with stainless steel internal bath, removable double bottom for protect heater and Pt100 sensor, atmospheric drain for easily cleaning.
- Front panel with temperature digital display and power switch.
- Unit equipped with rod and clamps for support the sampling cylinder and test section.
- External flowmeter for check the LPG flow, calibration tube 25-250 nL/h with fine regulation needle valve.
- Stainless-steel cylinder 500ml with needle valve and internal PTFE treatment, stainless-steel connection tubing with central metering valve.
- Analysis section composed by: tempered clear glass cylinder with rubber stoppers, watch glass, glass rod for suspending the lead acetate paper and outage tube.
- Lead acetate test paper, pack of 100 pcs.

Temperature Range
- Ambient to +90°C

Power Supply
- 230 Vac or 115 Vac, 50/60 Hz

Consumption
- 1000 Watt

Dimensions
- 70 × 50 × 60 cm

Weight
- 20 kg

Spare Parts
- 7117: Lead acetate test paper, pack of 100 pcs.
- 1236: Watch glass, pack of 3 pcs.
- 1238: Glass cylinder, pack of 3 pcs.
- 1240: Glass rod, pack of 3 pcs.
- 1242: Glass outage tube diameter 3 × 6 mm, pack of 3 pcs.
- 7473: Set of rubber stoppers, pack of 2 pcs.
- 2369: Flowmeter with needle valve, range 25-250 nL/h.
- 11126: Central metering valve ¼".

Accessories
- T-AS15C: thermometer ASTM 15C IP 60C

Extra Spare Parts
- 17658+17659+17030+17657: Stainless steel tubing with needle valve.
- 3706: Thermostat with PT100 control.
- 3897: Heating element 600 W - 220 Vac.
- 3894: Heating element 800 W - 110 Vac.
- 15661+5432: Sampling cylinder capacity 500 ml complete with needle valve.

LPG Relative Purity

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ASTM D1837
ASTM D2158
IP 317

ASTM D1837
Volatility of Liquefied Petroleum (LP) Gases
This test method is a measure of the relative purity of the various types of liquefied petroleum (LP) gases and helps to ensure suitable volatility performance.
The test results, when properly related to vapour pressure and density of the product, can be used to indicate the presence of butane and heavier components in propane type LP-gas, and pentane and heavier components in propane-butane and butane type fuels. The presence of hydrocarbon compounds less volatile than those of which the LP-gas is primarily composed is indicated by an increase in the 95 % evaporated temperature.

ASTM D2158 - IP 317
Residues in Liquefied Petroleum (LP) Gases
This test method covers the determination of the extraneous materials weathering above 38°C that are present in liquefied petroleum gases.

LT/WT-170000/M
Volatility and Residue in Liquefied Petroleum (LP) Gases

- Bath composed by twin wall stainless steel tubes with insulation material.
- Copper cooling coil, 6 meters wound to a diameter of 63.5mm, total length of approx. 285 mm with Ni-Cr treatment.
- Equipped with two ¼" valves.

Accessories for ASTM D1837:

- 1573: Cone-shaped tube 100 ml, 203 mm, graduated for ASTM D1837, pack of 4 pcs.
- 1000336: Water bath.
  · Bath made in stainless steel with water inlet and outlet connection.
  · Thermometer central support for monitoring the temperature.
  · 8 positions cone-shaped support for right immersion at depth of 38 mm.
  · Mandatory connection to external water conditioning source.
- T-AS99C: Thermometer ASTM 99C.
- T-AS99F: Thermometer ASTM 99F.
- 7458: Thermometer armour.
- LAB-101-225/TH: Cork with hole for thermometer.
- 7087: Syringe 1ml capacity div. 0.1 with needle L = 200 mm.
- 7362: Blue watertight PVC gloves with 100% knitted woven cotton liner underneath.
- 5511: Device for dry ice, used for produce dry ice flakes or semi-compact block.
  · Stainless steel spread trumpet.
  · Manometer for pressure monitoring and gas cylinder Eu thread valve DIN 477 w 21.8 × 1/14";
  · Plastic ring for hold the receiving bag.
  · Receiving bag 500 g and 1000 g supplied.
  · The apparatus is not supplied with gas for ice production, this apparatus must be connected to a cylinder with CO_2 (liquefied with internal siphon).

Accessories for ASTM D2158-IP317:

- 2104: Cone-shaped tube 100 ml, 203 mm, graduated to 0.05 ml, pack of 4.
- 7087: Syringe 1 ml capacity, div. 0.1, needle L = 200 mm.
- T-AS5C: Thermometer ASTM 5C - IP 1C.
- T-AS6C: Thermometer ASTM 6C - IP 2C.
- T-AS57C: Thermometer ASTM 57C.
- 7034: Filter paper medium 42 degree, 125 mm diameter, pack of 100 pcs.
- LT/WB-123100/M: Water conditioning bath, 8 liters capacity.
  · Heating element bottom positioned.
  · Atmospheric drain tap.
  · Stainless steel inner tank with rounded edges.
  · Digital thermoregulatory with 0.1°C precision.
  · Stainless steel cover with handle.
  · Dimensions: 33 × 22 × 33 cm.
  · Power supply: 220 Vac or 115 Vac.
- 5798: Copper wire 1.5 mm diameter, L = 300 mm.
- 5797: Support with axle and clamp.
- 5551: Rack for cone-shaped tube, 4 position.
- 1000462: Laboratory solvent dispenser:
  · Wash capacity up to 1 lt.
  · Filter container made in stainless steel 25 mm diameter.
  · Pack of 100 pcs. filter 0.45 µm, 25 mm diameter (P/n 5237).
  · Borosilicated glass flask.
  · PTFE High quality seal.

Sampling and Gauging Tanks + Valves

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6069



5432



5906

ASTM D1265
GPA 2140

Practice for Sampling Liquefied Petroleum Gases (Manual Method).

Sampling Cylinder

Body material: 304L stainless steel.
Connection 1: female NPT.
Connection 2: female NPT.
Max pressure: 1800 psig (124 bar) at +37°C.
Max pressure: 930 psig (64 bar) at +426°C.
Minimum temperature: -53°C.

- 6054: Double ended sampling cylinder with capacity 50 cc – ¼" connections.
- 6055: Double ended sampling cylinder with capacity 75 cc – ¼" connections.
- 6056: Double ended sampling cylinder with capacity 150 cc – ¼" connections.
- 6057: Double ended sampling cylinder with capacity 300 cc – ¼" connections.
- 6058: Double ended sampling cylinder with capacity 400 cc – ¼" connections.
- 6059: Double ended sampling cylinder with capacity 500 cc – ¼" connections.
- 5882: Double ended sampling cylinder with capacity 1000 cc – ¼" connections.
- 6060: Double ended sampling cylinder with capacity 2250 cc – ¼" connections.
- 6061: Double ended sampling cylinder with capacity 3785 cc – ¼" connections.

Sampling Cylinder

Body material: 316L stainless steel.
Connection 1: ¼ female NPT.
Connection 2: ¼ female NPT.
Max pressure: 1800 psig (124 bar) at +37°C.
Max pressure: 930 psig (64 bar) at +426°C.
Minimum temperature: -53°C.

- 6062: Double ended sampling cylinder with capacity 150 cc – ¼" connections.
- 6063: Double ended sampling cylinder with capacity 300 cc – ¼" connections.
- 6064: Double ended sampling cylinder with capacity 500 cc – ¼" connections.
- 6068: Double ended sampling cylinder with capacity 1000 cc – ¼" connections.

Sampling Cylinder

Body material: 316L stainless steel.
Connection 1: ¼ female NPT.
Connection 2: ¼ fmale NPT.
Max pressure: 5000 psig (344 bar) at +37°C.
Max pressure: 2640 psig (181 bar) at +454°C.
Minimum temperature: -53°C.

- 6065: Double ended sampling cylinder with capacity 150 cc – ¼" connections.
- 6066: Double ended sampling cylinder with capacity 300 cc – ¼" connections.
- 6067: Double ended sampling cylinder with capacity 500 cc – ¼" connections.

Accessories

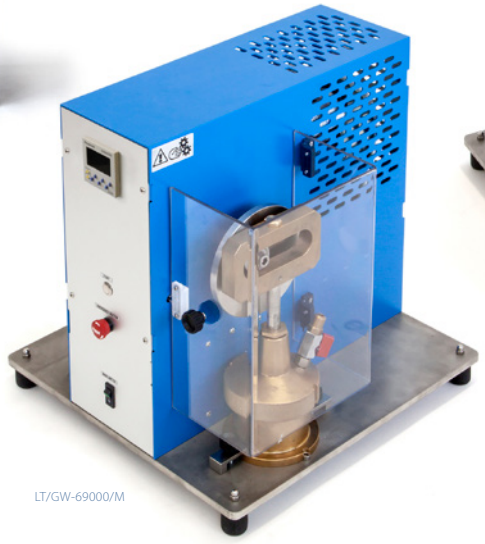
- 6069: Transport handle.
- 5432: Stainless steel Integral bonnet needle valve ¼" male npt – regulating stem CV 0.37.
  · Max pressure: 5000 psig (344 bar) at +37°C.
  · Max pressure: 3130 psig (215 bar) at +315°C.
  · Minimum temperature: -53°C.
- 6070: Stainless steel integral bonnet 90° needle valve ¼" male npt– regulating stem CV 0.37.
  · Max pressure: 5000 psig (344 bar) at +37°C.
  · Max pressure: 3130 psig (215 bar) at +315°C.
  · Minimum temperature: -53°C.
- 5906: Stainless steel outage tube ¼" male/female length 20% cylinder volume.
- LAB-1265-006: Sample transfer line, 1 m × 6 mm stainless steel tube with sampling needle valve 0.37 CV and vent needle valve 0.37 CV.

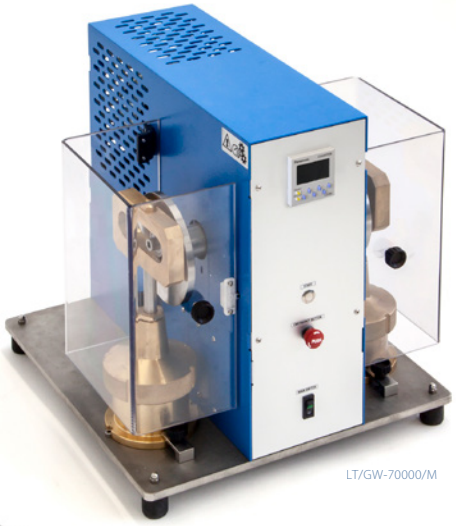
Grease Worker
Consistency of Lubricating Greases

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LT/GW-68000/M


LT/GW-67000/M


LT/GW-69000/M


LT/GW-70000/M

ASTM D217
ASTM D1403

Cone penetration of lubricating grease.
Cover four procedures for measuring the consistency of lubricating greases by the penetration of a cone of specified dimensions, mass and finish.

LT/GW-67000/M
Manual Grease Worker ASTM D217 - D1403
- Brass body.
- Screw cover with air valve and thermometer pass.
- Piston with ground-slideway brass handle allowing connection to a base with lever (LT/GW-68000/M) or automatic machine (LT/GW-69000/M, LT/GW-70000/M).
- Disc complying with ASTM regulations and with 51 holes diam. 6.35 mm.

LT/GW-68000/M
Slave Unit ASTM D217 - D1403
- For manipulating fats manually.
- Adaptable to manual grease worker (LT/GW-67000/M).

LT/GW-69000/M
Automatic Grease Worker ASTM D217 - D1403
- 5 figure stroke counter.
- Automatic preselector.
- Adaptable to manual grease worker (LT/GW-67000/M).

LT/GW-70000/M
Automatic Grease Worker (2 places)

Power Supply
- 220 or 115 Vac 50/60 Hz.

Dimensions
- cm 43 × 45 × 46.

Weight
- kg 47 (LT/GW-69000/M)
- kg 54 (LT/GW-70000/M)

Spare Parts
- 5261: churn plate FTM with 51 × 6.35 mm holes.
- LAB-100-712-001: brass cup for GW-67000/M.
- LAB-100-712-002/SS: manipulator's bell made in brass with shaft and handle for GW-67000/M.
- 7685: axe sealing gasket – pack of 10 pcs.

Accessories
- 5514: thermometer 0-120°C, stem < 4 mm.
- 5259: grease cutter with base.
- 5260: churn plate FTM with 270 × 1.58 mm holes.
- 5487: half-scale grease worker ASTM D1403, made in stainless steel, with 8 × 6.35 mm holes.
- LAB-100-714/adapt: adapter to use 5487 with LT/GW-70000.
- 5491: quarter-scale grease worker ASTM D1403, made in stainless steel, plate with 8 x 3.17 mm holes.
- LAB-100-718/adapt: adapter to use 5491 with LT/GW-70000.
- LT/CB-40800/M-30: Laboratory Cryostat Bath.
  - For temperatures up to -10°C.
  - Solid steel structure coated in epoxy anti-acid paint with upper side made in stainless-steel.
  - Internal chamber in seamless stainless steel with rounded corners for efficient circulation.
  - Easy cleaning thanks to atmospheric drain on the bottom of the chamber.
  - Control head equipped with digital display showing set and actual temperature, display resolution 0,1°C.
  - Temperature range from -10°C to +99,9°C, accuracy to ±0,5°C to +37°C.
  - Manual safety thermostat against overtemperature.
  - Circulating pump: prevalence 4 m / 2 l -min ~ prevalence 1 m / 12 l - min.
  - Weight: 20 kg (empty).
  - Dimensions: width 33.5 cm, depth 47.0 cm, height 63.0 cm.
  - Internal bath dimensions: width 10.5 cm, depth 12.5 cm, height 15.0 cm.
  - Capacity: 8 liters.
  - Power supply: 220 Vac or 115 Vac 50/60 Hz.
  - Max. consumption: 1500 Watt.
  - DIN 12880 class 2 construction type.
- 5895: spatula for grease, stainless steel with wood handle.
- LT/GW-67000/M-SS: Manual Grease Worker ASTM D217.
  - Stainless steel body.
  - Screw cover with air valve and thermometer pass.
  - Piston with ground-slideway stainless steel handle allowing connection to a base with lever (art. LT/GW-68000/M).
  - Disc complying with ASTM regulations with 51 holes of 6.35 mm diameter.


5487


5491

Corrosion Preventive Properties of Lubricating Greases

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ASTM D1743
ASTM D4950

ASTM D1743 - Corrosion Preventive Properties of Lubricating Greases.
This test method covers the determination of the corrosion preventive properties of greases using grease-lubricated tapered roller bearings stored under wet conditions. This test method is based on CRC T echnique L 41 that shows correlations between laboratory results and service for grease lubricated aircraft wheel bearings.

ASTM D4950 - Classification and Specification of Automotive Service Greases.
This specification covers lubricating greases suitable for the periodic relubrication of chassis systems and wheel bearings of passenger cars, trucks, and other vehicles.

LT/CG-205800/M
Automatic Bearing Preparation for Corrosion Preventive Properties of Lubricating Greases

- Lightweight and solid structure painted with anti-epoxy products.
- Mechanical group for ASTM D1743 preparation made of brass with Ni-Cr treatment.
- Brushless motor technology with adjustable rpm 0-2000 (customizable procedure) and timer 1-30 min.
- TFT Display 10" with dedicated software for automatic sample preparation according to ASTM D1743 and customizable procedure.
- Automatic Positioning system of head.
- Automatic force adjustment continuously controlled.
- Integrated balance with real-time readout until 5 kg.
- Fine regulation can be performed manually along with security release.
- Software calibration tools for balance system.
- Safety weight imbalance control system.
- 1 × bearing and 1 × container.
- 1 × bearing holder composed by: weight 1 kg, kit of air bleeds, bearing holder, o-rings and adapter ring.

Power Supply
- 220 or 115 Vac 50/60 Hz

Dimensions
- cm 30 × 52 × 69

Weight
- kg 24

Consumables
- 7056: bearing LM11949/LM11910, pack of 3 pcs.
- 7057: container 895 made in plastics, pack of 5 pcs.

Accessories
- 2371: syringe 50 ml glass, Luer Lock metal.
- 5341: needle 16G × 150 mm, beveled, Luer Lock.
- 5722: bearing removal pliers.

Accessories Bearing Packer
- 15586: grease pack plunger.
- 15587: cylinder.
- 15588: stud.
- 15589: base.

Spare Parts
- 5124: weight 1 Kg.
- 5125: kit of air bleeds + screw.
- 15817: bearing holder.
- 5126: kit of o-rings (3 × traction o-ring, 3 × cup o-ring, 3 × water access o-ring).
- 15815: adapter ring, pack of 3 pcs.

Dropping Point of Lubricating Grease

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LT/DP-211000/M


LT/DP-211500/M

ASTM D566 - D2265 - D4950
DIN 51801 - DIN 51801-2
IP 132

ASTM D566 - IP 132 - DIN 51801
Dropping Point of Lubricating Grease.

ASTM D4950
Classification and Specification
of Automotive Service Greases.

ASTM D2265
Dropping Point of Lubricating Grease
over Wide Temperature Range

LT/DP-211000/M
Manual Apparatus for Dropping Point of Lubricating Grease, ASTM D566 – D4950

- Metallic case structure painted with anti-acid products.
- Electric heater 500 Watt with main switch, power regulator and centring aluminium ring.
- Aluminium rod and clamp for holding the stirrer motor.
- Bath glass 400 ml without spout, cover made in aluminium, cork/silicon stoppers with hole for thermometer.
- Test tube with three pins, cork ring guide and grease cup.

Power supply - Power Consumption
- 220 or 115 Vac 50/60 Hz
- 500 Watt

Temperature Range
- Ambient to +268°C

Accessories for LT/DP-211000/M
- T-AS2C: thermometer ASTM 2C IP 62C.

Spare Parts for LT/DP-211000/M
- 5189: grease cup.
- 1163: test tube with 3 pins.
- 1165: beaker 400 ml.
- 5191: polished metal rod for filling the grease cup.
- 16369: stopper for test tube with hole for thermometer, pack of 5 pcs.
- 5334: test tube support used to correct positioning into the bath, pack of 5 pcs.

LT/DP-211500/M
Manual Apparatus for Dropping Point of Lubricating Grease, ASTM D2265 – D4950

- Metal structure painted with anti-epoxy varnish with frontal stainless-steel opening for easily check the 6 test positions.
- Insulated 6 places aluminium furnace block for heat up to +400°C.
- 6 vertical apertures for the introduction of the sample tubes with spherical end for easily cleaning.
- Viewing chambers illuminated by a cold light lamp.
- Temperature controlled by a digital thermoregulator PID with overtemperature alarm and probe PT100 A class with 0.1°C resolution and 0.5°C precision.

Power supply - Power Consumption
- 220 or 115 Vac 50/60 Hz
- 1000 Watt

Temperature Range
- Ambient to +400°C

Accessories for LT/DP-211500/M
- 5189: grease cup ASTM.
- 1167: sampling tube made in glass, pack of 6 pcs.
- 5193: cup support made in glass, pack of 6 pcs.
- 5195: thermometer clamp made in brass, pack of 6 pcs.
- 5197: high bushing made in brass, pack of 6 pcs.
- 5199: low bushing made in brass, pack of 6 pcs.
- 5191: polished metal rod for filling the grease cup.
- 5201: bushing support ring, pack of 6 pcs.
- 2111: thermometer depth cage made in brass
- T-AS3C: thermometer ASTM 3C, without mercury filling.
- T-AS11C: thermometer ASTM 11C.
- 5205: cup cage made in brass for check grease cup dimensions.

Spare Parts for LT/DP-211500/M
- 3592: led illumination system.
- 3574: digital thermoregulator.
- 17064: heater.
- 3787: static relay 20A.

Dropping Point of Lubricating Grease



LT/DP--211506/DC

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LT/DP-211503/DC
Digital Manual Apparatus for Dropping Point of Lubricating Grease, ASTM D2265 – D4950

- Metal structure painted with anti-epoxy varnish with frontal stainless-steel opening for easily check the 6 test positions.
- Insulated 6 places aluminium furnace block for heat up to +400°C.
- 6 vertical apertures for the introduction of the sample tubes with spherical end for easily cleaning.
- Viewing chambers illuminated by a cold light lamp.
- Touch screen 7" easy to read with operation system, alarm for over temperature.
- Lablink software:
  · Diagnostic and calibration menu;
  · Real time temperature display for each channel;
- 3 × PT100 sensors Class A, for real time sample temperature with 0.1°C resolution and 0.5°C precision.

LT/DP-211506/DC
Digital Manual Apparatus for Dropping Point of Lubricating Grease, ASTM D2265 – D4950

- Metal structure painted with anti-epoxy varnish with frontal stainless-steel opening for easily check the 6 test positions.
- Insulated 6 places aluminium furnace block for heat up to +400°C.
- 6 vertical apertures for the introduction of the sample tubes with spherical end for easily cleaning.
- Viewing chambers illuminated by a cold light lamp.
- Touch screen 7" easy to read with operation system, alarm for over temperature.
- Lablink software:
  · Diagnostic and calibration menu.
  · Real time temperature display for each channel.
- 6 × PT100 sensors Class A, for real time sample temperature with 0.1°C resolution and 0.5°C precision.

Power supply
- 220 or 115 Vac 50/60 Hz.

Power Consumption
- 1000 Watt.

Temperature Range
- Ambient to +400°C.

Accessories for LT/211503/DC + LT/DP-211506/DC
- 5189: grease cup ASTM.
- 1167: sampling tube made in glass, pack of 6 pcs.
- 5193: cup support made in glass, pack of 6 pcs.
- 5936: PT100 clamp made in brass, pack of 6 pcs.
- 5138: PT100 high bushing made in brass, pack of 6 pcs.
- 5937: PT100 low bushing made in brass, pack of 6 pcs.
- 5191: polished metal rod for filling the grease cup.
- 2111: PT100 depth cage made in brass.
- 5205: cup cage made in brass for check grease cup dimensions.

Spare Parts for LT/211503/DC + LT/DP-211506/DC
- 3592: led illumination system.
- 3393: PT100 sample temperature.
- 17064: heater.
- 3787: solid state relay 40A.

Evaporation Loss

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1000100



LT/TB-145000/M6-4

ASTM D972
IP 183

Evaporation Loss of Lubricating Greases and Oils.
This test method covers the determination of the loss in mass by evaporation of lubricating greases and oils for applications where evaporation loss is a factor. Evaporation loss data can be obtained at any temperature in the range from 100 to 150°C (210 to 300°F).

1000100
Manual apparatus for Evaporation Loss of Lubricating Greases and Oils

- Stainless steel cylindrical body with neck flange and three screw bolt for tight cover closure.
- Double bottom with 3.17 mm orifice.
- Stainless Steel pre-heating coil with cell connections and air inlet tube.
- Stainless steel cover with neoprene gaskets.
- Central air flow-off connected to a 18/8 stainless steel tube with lower threaded junction for connection with the test cup.

Accessories

- LT/TB-145000/M6-4
  Bench top laboratory dry bath.
  · Bench top instrument completely made in stainless-steel and double chamber insulation.
  · Single aluminium dry bath deeply coated, insulated and equipped with multi electrical heaters grant uniformity and stability.
  · Upper cover equipped with 4 holes for test cells accommodation, un-used positions can be covered with stand-by covers that prevents heat loss, the cover is made in stainless-steel for easy cleaning.
  · Bath temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +150°C, resolution 0,1°C and stability ± 0.1°C.
  · Manually settable overtemperature cut-off alarm.
  · Sample temperature controlled by single digital display with 0.1°C resolution through A class PT100 sensors immersed in the dry block.
  · Air supply system include: 4 × independent flowmeters with needle regulation knob and graduated scale 16-160 Nl/h, air filter system filled with desiccant; instrument need an external air source, connection silicon tubes.
  · Dimensions:
  width 50.0 × depth 50.5 × height 49.2 cm.
  · Temperature range: ambient to +150°C, with precision 0.1°C.
  · Consumption: 2000 Watt.
  · Power supply:
  220 Vac 50/60 Hz or 115 Vac 50/60 Hz.
- 5213: Test cup for greases stainless steel 18/8, max sample 200 g.
- 5215: Test cup for lubricating oil stainless steel 18/8, max sample 200 gr.
- T-AS22C: Thermometer ASTM 22C IP 24C, range +95°…+103°C, div. 0,1°C, propylene carbonate filled.
- T-AS67C: Thermometer ASTM 67C, range +95°…+155°C, div. 0,2°C, propylene carbonate filled.
- 7577: Compact diaphragm air pump.
  · Vacuum and compression application.
  · Flow rate max. 7 L/min, pressure max. 2.5 bar rel.
  · Ultimate vacuum max. 130 mbar (abs.).
  · Weight: 1.3 kg.
  · Dimensions: 7.5 × 11.9 × 15.6 cm.
  · Valve material FKM, diaphragm PTFE coated.
  · 6 mm connector and silencer included.
  · Adjustable speed control and maintenance free.
  · Universal power supply included 100-240 Vac 50-60 Hz.

Spare Parts for ASTM D972

- 7085: Gasket for evaporation cell, pack of 10 pcs.

Evaporation Loss of Lubricating Greases

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LT/TB-205100/4-DM



LT/TB-205100/2-DM

ASTM D2595

ASTM D2595 - Evaporation Loss of Lubricating Greases Over Wide-Temperature Range.

This test method covers the determination of evaporation loss of lubricating greases at temperatures between 93 °C and 316 °C (200 °F and 600 °F). This test method is intended to augment Test Method D972, which is limited to 149 °C (300 °F).

LT/TB-205100/4-DM
Thermostatic Dry Bath
4 places

- Four places aluminium block with double insulating wall
- Operating temperature up to + 320°C
- Digital thermoregulator, risolution 0.1°C, PT100 probe class A, over-temperature alarm and safety thermostat
- Digital display for air temperature control with thermocouple K for each single position
- Stainless steel heater controlled by PID system
- Four stand-by covers
- Remote control unit with cooling fan
- Four test places each with its flow meters 2 Lt/Min or 120 Lt/h
- Power supply: 220 Vac ±10% 50 Hz
- User manual
- Cord cable with shuko plug

LT/TB-205100/2-DM
Thermostatic Dry Bath
2 places

- Two places aluminium block with double insulating wall
- Operating temperature up to + 320°C
- Digital thermoregulator, risolution 0.1°C, PT100 probe class A, over-temperature alarm and safety thermostat
- Digital display for air temperature control with thermocouple K for each single position
- Stainless steel heater controlled by PID system
- Two stand-by covers
- Remote control unit with cooling fan
- Two test places each with its flow meters 2 Lt/Min or 120 Lt/h
- Power supply: 220 Vac ±10% 50 Hz
- User manual
- Cord cable with shuko plug



LT/SP-302-SA LT/EC-205100/M

Accessories for ASTM D2595

- LT/SP-302-SA: air pump
  · capacity: 5 l/min
  · max pressure: 0,3 bar
  · power supply: 220 Vac
- LT/EC-205100/M: set for product evaporation ASTM D2595 in stainless steel
  · flange for fixing to the block, 3 sealing screws and gasket
  · threaded axis for fixing the sample cup and calibrated internal hole to guarantee the correct vapors / pressure breather
- LAB-102-051: greases test cup with support
- T-AS3C: thermometer ASTM 3C

Spare Parts for ASTM D2595

- LAB-102-052/C: gasket, pack of 10 pcs.
- LAB-102-030: thermocouple support

Filterability of Lubricating Greases

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ISO 13357 -1 -2

Procedure for the evaluation of the filterability of lubricating oils, particularly those designed for hydraulic applications, in the presence of water.
The procedure only applies to mineral-based oils, since fluids manufactured from other materials (e.g. fire-resistant fluids) may not be compatible with the specified test membranes.

LT/FR-13357/M
Manual Filterability of Lubricating Greases ISO 13357 -1 -2

- Stand support with relevant clamps.
- Filter funnel system with support for 47 mm filter.
- Oil tank gas tight closure with 350 ml capacity.
- Membrane filter 47mm 0.8 µm.
- Grounding system.
- Air pump valve 220 Vac 50/60 Hz, power cable included.
- Pressure gauge Dial to 250 kpa.
- Ball valve on/off for apply the pressure.
- Measuring/receiving cylinder 250 ml capacity and 320 ml capacity.
- Forceps for manage the filter.
- Digital stopwatch.
- Petrislide 47 mm, for microscopic examination, pack of 100 pcs.
- Oven natural convection 20 litres.

Power Supply

- 115 / 220 Vac 50/60 Hz

Spare Parts

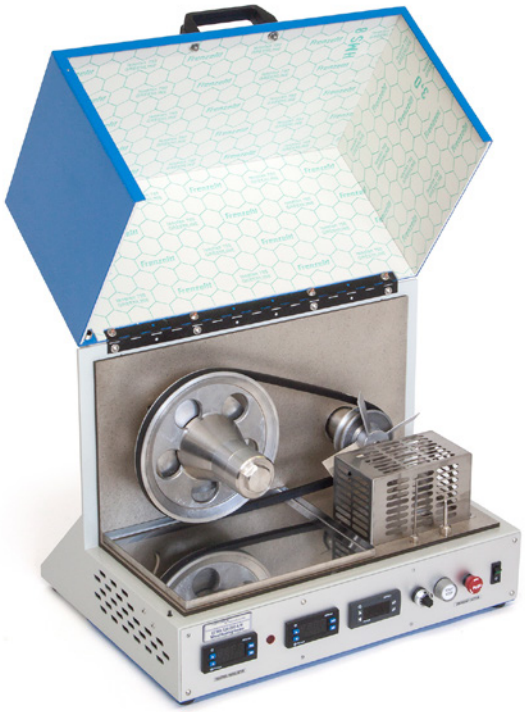
- 7101: Membrane filters 0.8 micron, pack of 100 pcs.
- 7309: Air filters for compression system, pack of 10 pcs.
- 1165: Beaker 400 ml.
- 5670: Sample cylinder body made in stainless-steel with upper cover equipped with valve and quick connection, for test sample.
- 7379: Gaskets for sample cylinder, pack of 10 pcs.
- 2216: Glass receiving cylinder graduated 300 ml with mark at 10 ml and 330 ml.
- 2227: Glass sampling cylinder graduated 320 ml.

Accessories

- 1000462: Laboratory solvent dispenser.
  · Wash capacity up to 1 litre.
  · Filter container made in stainless steel 25 mm diameter.
  · Filter 0.45 µm, 25 mm diameter, JHWP02500, pack of 100 pcs.
  · Borosilicated glass flask.
  · PTFE High quality seal.
- 5237: Omnipore PTFE filters, 25 mm diameter, 0.45 µm, pack of 100 pcs.
- 1214: Glass bottle 500 capacity with screw cap, pack of 4 pcs.
- 3408: Overhead stirrer with digital display and RPM regulator, power supply 220 Vac, power cable, laboratory stand.
- LT/DO-248000/N-20: Oven, 20 liters capacity, natural convection, for temperature from +5° ambient up to +200°C, power supply 115 / 220 Vac 50/60 Hz.

Leakage Tendencies of Wheel Bearing Greases

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ASTM D1263

Leakage Tendencies of Automotive Wheel Bearing Greases

This test method covers the evaluation of the leakage tendencies of wheel bearing greases when tested under prescribed laboratory condition.

LT/WB-205300/M
Wheel Bearing Grease Apparatus
ASTM D1263

For the evaluation of the Leakage Tendencies of Wheel Bearing Greases.

- Benchtop thermostatic steel cabinet equipped with thermic insulator and thermometer support.
- Front cover with handle and anti-tipping system.
- Command panel with digital display for bath temperature setting, hub temperature display, RPM counter/regulator, emergency stop.
- Manually settable safety thermostat prevent over-heating.
- Brushless high-torque drive motor.
- 2 × electric heaters with protection cover grant fast heating.
- Stainless steel hub for long maintenance free operation.
- Stainless steel grease collector.
- Included in the scope of supply: two taper roller bearings, drive belt.
- Settable hub speed: 50 – 800 rpm.
- Settable temperature: ambient +10° up to +150°C.

Power supply
- 220 or 115 Vac 50/60 Hz.

Max. consumption
- 1000 Watt.

Dimensions
- Width 52.5 cm.
- Depth 39.0 cm.
- Height 43.0 cm.

Weight
- 39 kg.

Accessories
- 5049: Torque wrench for 6.8 Nm.
- 7138: Gloves heat resistant.
- T-AS7C: Thermometer ASTM 7C IP 5C, range -2°…+300°C, div. 1°C, gallium filled.

Spare Parts
- 15165: Drive belts kit, pack of 2 pcs.
- 15544: Outer bearing.
- 15545: Inner bearing.

Oil Separation from Lubricating Grease

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LT/GS-203128/M



LT/GS-203300/M



LT/GS-203200/M-SS

ASTM D1742 - ASTM D6184
DIN 51817
FTM 791-321
IP 121

ASTM D1742 - Oil Separation from Lubricating Grease During Storage.
This test method covers the determination of the tendency of a lubricating grease to separate oil during storage in both normally filled and partially filled containers.

ASTM D6184 - Standard Test Method for Oil Separation from Lubricating Grease (Conical Sieve Method)
This test method covers the determination of the tendency of lubricating grease to separate oil at an elevated temperature. This test method shall be conducted at 100°C for 30 h unless other conditions are required by the grease specification.

FTM 791-321- Determination of the Tendency of Lubricating Grease to Separate Oil at an Elevated Temperature.

IP 121 - Determination of Oil Separation from Lubricating Grease - Pressure Filtration Method.

LT/GS-203128/M
Oil Separation from Lubricating Grease During Storage with Climatic Chamber ASTM D1742

- Compact structure painted with anti-acid epoxy products, plexiglass protection doors.
- Bottom part made in stainless-steel with independent activation valves, pressure gauge and regulator.
- Integrated air generator with main switch.
- Temperature controlled by a digital thermo-regulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +50°C, resolution 0,1°C and stability +/- 0.5°C.
- Rear joints for water tap / cooling circuit connection.
- Active fan grants uniformity.
- 4 × 5664 Complete cell type B included.

Dimensions
- Width 53 cm
- Depth 60 cm
- Height 75 cm

Weight
- 30 Kg

Range
- Ambient to +50°C

Power supply
- 230 Vac 50 Hz or 115 Vac, 50 Hz

Max. consumption
- 500 Watt

Spare Parts for LT/GS-203128/M
- 5664: complete cell type B, made in aluminium deeply coated with soldered funnel, connection by fine-pitch thread
- 1223: recovery beaker, 20 ml capacity
- 7105: brass ring with stainless steel filter mesh

Accessories for LT/GS-203128/M
- 5246: complete cell type A made in brass with soldered funnel, brass ring with stainless steel filter mesh and recovery beaker 20 ml capacity, connection by turn-push system

LT/GS-203200/M-SS
Greases Separation - DIN 51817, IP 121

Manual apparatus for determination of oil separation from lubricating greases under static conditions.
- Stainless steel couple with 240 mesh filter cone located at the bottom
- Stainless steel weight 100 gr
- Oil container made in stainless steel

Spare Parts for LT/GS-203200/M-SS
- 5637: container made in stainless steel with mesh
- 5638: oil container made in stainless steel
- 5636: weight made in stainless steel, 100 gr

LT/GS-203300/M
Oil separation from lubricating grease, conical Sieve method ASTM D6184, FTM 791-321

- Stainless steel cone shaped 60 mesh filter
- Beaker made in borosilicated glass, without spout
- Cover with crane hook for cone suspension

Spare Parts for LT/GS-203300/M
- 5255: cone-shaped Sieve 60 mesh
- 1225: beaker made in borosilicated glass, without spout
- 5257: cover with crane hook for cone suspension

Resistance of Lubricating Grease to Water Spray

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ASTM D4049

Resistance of Lubricating Grease to Water Spray.

This test method is used to evaluate the ability of a grease to adhere to a metal surface when subjected to direct water spray. The results obtained from the use of this test method suggest correlation in operations involving direct water spray impingement such as steel mill roll neck bearing service.
This test method is used for quality control and purchase specifications.

LT/WS-404900/M
Apparatus for Determining the Resistance of Lubricating Grease to Water Spray

- Bench top instrument with anti-vibration feet.
- Spray chamber made of acrylic transparent material for easily inspection.
- Stainless steel bath with test panel positioning plate and drain tap for easily cleaning.
- Circulation system composed by drive motor, 1725 rpm, rotary pump, pressure gauge and spray nozzle.
- Temperature controlled by digital thermoregulatory and PT100 A class for grant stability +/- 0.5°C.
- Grease application fixture and charging pipe.

Power Supply

- 220 or 115 Vac 50/60 Hz

Accessories

- T-AS37C: Thermometer ASTM 37C IP 77C.

Spare Parts

- 16928: Steel test plate.
- 7551: Grease application spatula.
- 16929: Grease application jig.
- 16949: Misting nozzle.

Roll Stability of Lubricating Grease

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CE



ASTM D1831

Roll Stability of Lubricating Grease

This test method covers determination of the changes in the consistency, as measured by cone penetration, of lubricating greases when worked in the roll stability test apparatus.

LT/RS-205702/M
LT/RS-205704/M
Manual Roll stability of Lubricating Grease
ASTM D1831, 2 / 4 places

- Thermostatic cabin granting the following working temperature: from ambient to +80°C.
- Touch screen with dedicated software, pre-set parameters for ASTM D1831 and customizable methods.
- Safety thermostat.
- 160rpm (±15) speed geared motor.
- The instrument is able to accom modate up to 2 / 4 stainless steel cylinders containing the test grease with the internal stainless-steel roller weights which rotate inside the cylinder.
- Base with roller supports allowing the rotation.

Dimensions
- Width 52 cm
- Depth 52 cm
- Height 38 cm

Weight
- 32 kg / 34 kg

Power consumption
- 1200 Watt

Power supply
- 220 Vac or 115Vac, 50/60 Hz

LT/RS-205722/M
LT/RS-205724/M
Manual Roll stability of Lubricating Grease
ASTM D1831 + R&D, 2 / 4 places

- Thermostatic cabin granting the following working temperature: from ambient +10°C to +200°C.
- Touch screen with dedicated software, pre-set parameters for ASTM D1831 and customizable methods.
- Safety Thermostat up to +250°C.
- Countdown timer up to 100 hrs.
- 15-160 rpm (±15) speed geared motor selectable.
- The instrument is able to accommodate up to 2 / 4 stainless steel cylinders containing the test grease with the internal stainless-steel roller weights which rotate inside the cylinder.
- Base with roller supports allowing the rotation.

Dimensions
- Width 52 cm
- Depth 52 cm
- Height 38 cm

Weight
- 33 kg / 35 kg

Power consumption
- 1600 Watt

Power supply
- 220 Vac or 115Vac, 50/60 Hz

Accessories
- 5360+5738: Stainless steel cylinders complete with the internal stainless-steel roller.

Spare Parts
- 16167+16168: PTFE spacers set 4+1.
- 16256+16257: Rubberized roller (1 ×Traction & 2 × Free movement).
- 3425: Fan motor, for models LT/RS-205722/M & LT/RS-205724/M.
- 5560: Traction belt.
- 3426: Heating element 800 Watts.
- 3135: Safety thermostat, for models LT/RS-205702/M & LT/RS-205704/M.
- 3169: Safety thermostat, for models LT/RS-205722/M & LT/RS-205724/M.
- 3533: Chamber PT100 sensor.
- 5561: Bearing set, 6 pieces.

Oxidation Stability

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LT/OX-192000/L-M



LT/OX-192000/D-M

ASTM D943
ASTM D2274
ASTM D4310
DIN 51587
EN ISO 12205
IP 388
ISO 4263

ASTM D943 - DIN 51587 - ISO 4263
Test Method for Oxidation Characteristics of Inhibited Mineral Oils

This test method is used to evaluate the oxidation stability of inhibited steam-turbine oils in the presence of oxygen, water, and copper and iron metals at an elevated temperature. The test method is also used or testing other oils such as hydraulic oils and circulating oils having a specific gravity less than that of water and containing rust and oxidation inhibitors.

ASTM D2274 - IP 388
Oxidation Stability of Distillate Fuel Oil (Accelerated Method)

This test method covers the measurement of the inherent stability of middle distillate petroleum fuels under specified oxidizing conditions at 95°C.

ASTM D4310 - Determination of the Sludging and Corrosion Tendencies of Inhibited Mineral Oils

This test method is used to evaluate the tendency of inhibited mineral oil based steam turbine lubricants and mineral oil based anti-wear hydraulic oils to corrode copper catalyst metal and to form sludge during oxidation in the presence of oxygen, water, and copper and iron metals at an elevated temperature. The test method is also used for testing circulating oils having a specific gravity less than that of water and containing rust and oxidation inhibitors.

LT/OX-192000/L-M
Oxidation Stability Liquid Bath 8 Places
EN ISO 12205 / ASTM D2274 / ASTM D943

- Compact steel structure with powder coating and wheels for easily positioning.
- Heavy designed stainless-steel bath with capacity of approx. 45 liters and equipped with lateral drain valve for easily empty the bath.
- Double total immersion heating elements allow perfect bath stability and temperature range from ambient up to +150°C, stability ± 0.1°C.
- Uniformity is granted by internal motorized stirring system and protection/diffusion grid.
- Upper part made in stainless-steel for easily cleaning and draining.
- Oxygen supply system consist of 8 flowmeters equipped with needle regulation valve for fine regulating.
- Cooling water supply system consist of inlet and outlet piping with 8 individual valves for easily maintenance and cleaning.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +150°C, resolution 0,1°C and stability ± 0.1°C (with cover).
- Light protection cover made in steel with polymeric handle.
- Manually settable overtemperature cut-off alarm.
- Low level liquid alarm and warning light.

Range
- Ambient to +150°C

Power supply
- 230 or 115 Vac 50 Hz

Consumption
- 4000 Watt

Dimensions and Weight
- 46 × 42 × 131 cm
- 50 kg

LT/OX-192000/D-M
Oxidation Stability Dry Bath 8 Places
EN ISO 12205 / ASTM D2274 / ASTM D943

- Compact steel structure with powder coating and wheels for easily positioning.
- Internal tube-positioning system with stainless steel centering guide, optimal heat distribution over the entire cell length from ambient up to +150°C, stability ± 0.1°C, heating uniformity is granted by an high-temperature circulating fan.
- Oxygen supply system consist of 8 flowmeters equipped with needle regulation valve for fine regulating.
- Cooling water supply system consist of inlet and outlet piping with 8 individual valves for easily maintenance and cleaning.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +150°C, resolution 0,1°C and stability ± 0.5°C (with cover).
- Light protection cover made in steel with polymeric handle.
- Manually settable overtemperature cut-off alarm.

Range
- Ambient to +150°C

Power supply
- 230 or 115 Vac 50 Hz

Consumption
- 1200 Watt

Dimensions and Weight
- 46 × 42 × 131 cm
- 55 kg (empty)

Oxidation Stability

Spare Parts for LT/OX-192000/D-M

- 3707: Heating element 800 W.
- 3186: Digital thermoregulator K38.
- 3708: Relay 25A.
- 3709: PT100 for air measurement.
- 3425: Motor for chamber uniformity – high temperature.
- 3135: Safety thermostat 0-120°C, 220 Vac.

Spare Parts for LT/OX-192000/L-M

- 5021: Heating element 2000 W.
- 3186: Digital thermoregulator K38.
- 3708: Relay 25 A.
- 3184: Floating switch in SS.
- 3072: Stirring motor without propeller, 230 Vac.
- 3135: Safety thermostat 0-120°C, 220 Vac.
- 3168: PT100 Probe.
- 17546: Fuses 20 A, pack of 10 pcs.

Mandatory Accessories for Oil Bath

- 7058: Silicone Oil – Kinematic viscosity 50 mm^2/s at 25°C, can of 20 litres for working up to +150°C, 3 cans are recommended to fill correctly the bath.

Accessories ASTM D2274 / EN 12205

- 2113: Evaporating vessel, borosilicate glass beaker 200 ml capacity tall form.
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.
- T-AS40C: Thermometer ASTM 40C IP 80C.
- 1266+2138+1270: Oxidation cell D2274.
  - · Oil test tube.
  - · Oxygen inlet tube.
  - · Fungus condenser.
- 1000511: Heating device unit 600 W.
  - · Construction material: Technopolymer.
  - · Heating plate: aluminum alloy coated with a special protection.
  - · Heating plate diameter: 155 mm.
  - · Power: 600 Watt.
  - · Power supply: 220 Vac - 50/60 Hz.
  - · Temperature regulation: from ambient to +370 °C.
- 1280: Filter assembly.
  - · 2000 ml vacuum flask made of glass with side welded nozzle for filtrations under vacuum.
  - · Stopper and tubing.
  - · Funnel set and funnel clamp.
- 7487: Membrane filter, cellulose esters membrane filters 47 mm diameter, nominal pore size of 0.8 µm, pack of 100 pcs.
- 7577: Compact diaphragm air pump.
  - · Vacuum and compression application.
  - · Flow rate max. 7 l/min.
  - · Pressure max. 2.5 bar rel.
  - · Ultimate Vacuum max. 130 mbar (abs.).
  - · Weight: 1.3 kg.
  - · Dimensions: 75 × 119 × 156 mm.
  - · Valve material FKM, diaphragm PTFE coated.
  - · 6 mm connector and silencer included.
  - · Adjustable speed control and maintenance free.
  - · Universal power supply included 100-240 Vac, 50-60 Hz.
- LT/DO-248000/F-250: Hot air oven.
  - · 250 litres volume.
  - · Power 2500 W.
  - · Weight 90 kg.
  - · 220 Vac 50/60 Hz.
- 1000015: Analytical balance.
  - · Capacity: 220 g.
  - · Readability: 0.1 mg.
  - · Linearity: ±0.2 mg.
  - · Repeatability: ±0.05 mg.
  - · Response time: 4/6 sec.
  - · Pan diameter: 80 mm.
  - · Calibration: internal.
  - · LCD display with small decimal digits.
  - · Membrane keyboard, water proof and solvent resistant, easy to use with TARE, ON/OFF, PRINT and MENU.
  - · Indication of the reached stable weight.
  - · Bar-graph indicator of dosage and remaining capacity of the balance.
  - · Parameters configurable by menu: reading in g (grams), lb (pound), oz (ounce), ct (carats), pcs (pieces), % (percentage).
  - · Full scale automatic calibration with internal and/or external mass.
  - · Weighing underneath the balance, selectable response time: "fast/slow".
  - · Data output: RS232 I/O adjustable.
  - · Operating temperature: 18° ~ 35°C.
  - · Power supply: 100 ~ 240 VAC
  - · Power consumption: 200 mA.
  - · Dimensions: 21,6 × 38 × 36 cm.
  - · Weighing chamber dimensions: 18 × 17 × 24 cm.
  - · Net weight: 7 kg.
  - · Power supply: 230/115 Vac 50 Hz.
- 1057: Dessicator made in glass, 200 mm diameter, with tap plate made in porcelain.
- 3665: Digital stopwatch multi-channel.
  - · 2 independent channels.
  - · 6 digits display maximum setting 99 hrs, 59 min, 59 sec.
  - · Start-Stop and countdown.
  - · Alarm at countdown end.
  - · Clock 12 o 24 hours format, with date and alarm clock.
- 5455: Tweezers made in SS, length 120 mm.

Accessories for ASTM D943

- 1266+1268+1270: Oxidation cell D943:
  - · Oil test tube.
  - · Oxygen inlet tube
  - · Fungus condenser
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.
- 7151: Copper wire 500 g, 1.6 mm diameter, approx. 28 m.
- 7157: Steel wire, 500 g, 1.59 mm diameter.
- 7159: Thermometer bracket (for test cell).
- 1272: Syringe Luer-lock 10 ml.
- 2371: Syringe Luer-lock 50 ml.
- 7160: Syringe sampling tube stainless steel L = 560 mm.
- 6030: Stopper for Luer fitting.
- 5294: Sampling tube holder.
- 6031: Sampling tube spacer.
- 5295: Wire coiling mandrel to form spiral of steel and copper catalyst wire.
- 5665: Reducer manometer for O_2, primary 0-250 bar, reducer 0-1 bar.
- 5298: Oil level indicator for test cell.
- T-AS137C: Thermometer ASTM 137C.

Accessories for ASTM D4310

- 1266+1268+1270: Oxidation cell D943-D4310.
  - · Oil test tube.
  - · Oxygen inlet tube.
  - · Fungus condenser.
- T-AS40C: Thermometer ASTM 40C IP 80C.
- T-AS137C: Thermometer ASTM 137C.
- 5295: Wire coiling mandrel - to form spiral of steel and copper catalyst wire.
- 5298: Oil level indicator for test cell.
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.
- LAB-102-274/B-5: cellulose esters membrane filters 47 mm diameter, nominal pore size of 5 µm, pack of 100 pcs.
- 1280: Filter assembly
  - · 2000 ml Vacuum flask made of glass with side welded nozzle for filtrations under vacuum.
  - · Stopper and tubing.
  - · Funnel set and funnel clamp.
- LAB-4310-002: Weighing gravity bottle cylinder shape.
  - · Made in Pyrex® glass.
  - · Inside diameter 45 mm approx.
  - · 60 ml capacity.
- 7151: Copper wire 500 gr, 1.6 mm diameter, approx. 28 m.
- 7157: Steel wire 1.59 mm diameter, 500 gr.
- 7577: Compact diaphragm air pump.
  - · Vacuum and Compression application.
  - · Flow rate max. 7 l/min
  - · Pressure max. 2.5 bar rel.
  - · Ultimate Vacuum max. 130 mbar (abs.).
  - · Weight 1.3 kg
  - · Dimensions 75 × 119 × 156 mm.
  - · Valve material FKM / diaphragm PTFE coated.
  - · 6 mm connector and silencer included.
  - · Adjustable speed control and maintenance free.
  - · Universal power supply included 100-240 Vac, 50-60Hz.
- 1057: Dessicator made in glass, 200 mm diameter, with tap plate made in porcelain.
- 5499: Stainless steel forceps for manage the test strips/filters.
- 1272: Syringe Luer-lock 10 ml.
- 2371: Syringe Luer-lock 50 ml.
- 7160: Syringe sampling tube stainless steel L = 560 mm.

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Oxidation Stability of Gasoline and Aviation Fuels

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CE



ASTM D525
ASTM D873
DIN 51780
DIN 51799
IP 40
IP 138
ISO 7536

ASTM D525 - IP 40 - DIN 51780 - ISO 7536
Oxidation Stability of Gasoline
(Induction Period Method)
This test method covers the determination of the stability of gasoline in finished form only, under accelerated oxidation conditions.

ASTM D873 - IP 138 - DIN 51799
Oxidation Stability of Aviation Fuels (Potential Residue Method)
This test method covers the determination of the tendency of aviation reciprocating, turbine, and jet engine fuels to form gum and deposits under accelerated ageing conditions.

LT/OS-201000-2/M
Oxidation Stability Bath (2 places)
ASTM D525

- Completely made in stainless steel
- About 30 litres capacity
- Heated by electric stainless steel heater controlled by a thermoregulator
- Cover serves as condenser with connections for water circulation
- Temperature range: ambient to 100°C

LT/OS-201000-4/M
Oxidation Stability Bath (4 places)

- Completely made in stainless steel
- About 40 litres capacity
- Heated by electric stainless steel heater controlled by a thermoregulator
- Cover serves as condenser with connections for water circulation
- Temperature range: ambient to 100°C

Power Supply

- 220Vac 50/60 Hz

Dimensions

- cm 60 × 60 × 100

Weight

- kg 65

Accessories for ASTM D525 - D873

- LT/OPV-200000: oxidation pressure vessel made in stainless steel, complete with o-ring, stem needle valve, fast connection, 30 bar pressure certificate
- LAB-102-013: junction for O_2
- LAB-102-014: pressure reducer
- LAB-102-001-DPS-RF-30:
  digital manometer with record functions
  · autonomous battery powered instrument with digital display designed to record pressure and temperature over long periods
  · application: 0 … 30 bar
  · resolution: 10 mbar
  · supply 3,6 V lithium battery, type SL-760
  · all standard instruments are calibrated in bar; the pressure can be indicated in the following units: bar, mbar/hPa, kPa, MPa, PSI, kp/cm^2, (m)H_2O
  · supplied with connection cable for data transfer
- LAB-102-001-K104/A:
  converter cable with Fischer plug
  · Fischer plug for connection of RS485A/B (without supply)
  · cable length: 1,8 m
  · galvanic isolation of communication
  · LED for indication of communication activity
  · driver software also included in delivery
- LAB-102-001/2: recorder pressure gauge, Bourdon spring, range 0-50 bar, equipped with 2 pens (red+blue), and plexiglass graduated plate (double scale)
- LAB-102-001/3: recorder pressure gauge, Bourdon spring, range 0-50 bar, equipped with 3 pens (red+blue+green), and plexiglass graduated plate (triple scale)
- LAB-102-012: pressure trasmitting capillary (for connection to the vessel)
- LAB-102-001/P: spare pen, colour must be specified on PO
- LAB-102-001/S: pack of 500 diagrams sheet
- LAB-100-371/50: silicone oil can of 25 litres

Spare Parts

- LAB-110-012: heater
- LAB-140-002: PT 100 probe
- LAB-160-014: digital thermoregulator
- LAB-150-015: static relay
- LAB-150-022: motor for stirrer

Oxidation Stability of Greases
Oxygen Pressure Vessel Method

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1000185



LT/TB-144000/M

ASTM D942
DIN 51808
IP 142

Oxidation Stability of Lubricating Greases by the Oxygen Pressure Vessel Method

This test method determines resistance of lubricating greases to oxidation when stored statically in an oxygen atmosphere in a sealed system at an elevated temperature under conditions of test.

LT/OS-202000/M
Oxidation Stability of Greases Oxygen Pressure Vessel Method
ASTM D942

15605
Linetronic Oxidation Pressure Vessel
ASTM D942

- Pressure vessel made in stainless steel with threaded body.
  · Threaded suspension lid.
  · Stem with mounting flange.
  · Needle valve for purging, pressurizing and exhausting pressure vessel with oxygen.
  · Holder and glass dishes.
- Interior of the pressure vessel can be easily cleaned to prevent corrosion.
- Threaded lid and vessel allow a tight closure.

1000185
Oxidation Pressure Vessel
ASTM D942

- Pressure vessel made in stainless steel with threaded body.
  · Threaded suspension lid.
  · Stem with mounting flange.
  · Needle valve for purging, pressurizing and exhausting pressure vessel with oxygen.
  · Holder and glass dishes.
  · PTFE gasket.
- Interior of the pressure vessel can be easily cleaned to prevent corrosion.
- Bolt-on Lid - 8 × M8 bolts connection.

LT/TB-144000/M
Bench Top Laboratory Liquid Bath

- Bench top instrument completely made in stainless-steel and double chamber insulation.
- Internal stainless-steel bath with capacity of 45 liters, equipped with double-insulation and fully immersion stainless-steel heater.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +90°C, resolution 0,1°C and stability ±0.1°C (with cover).
- Motorized stirrer grant uniformity and stability.
- Manually settable overtemperature cut-off alarm.
- Stainless-steel cover with thermoplastic insulated handle.
- Dimensions:
  width 50.0 × depth 50.5 × height 49.2 cm.
- Internal dimensions:
  width 40.0 × depth 33.0 × height 30.0 cm.
- Power supply: 220 Vac or 115 Vac 50/60 Hz.
- Max. consumption: 1600 Watt.
- 7058: Silicone oil, kinematic viscosity 50 mm^2/s at 25°C, can of 20 l for working up to +150°C.
- 5922: Stainless steel support that permit to housing 2 × oxidation pressure vessel ASTM D525/D873/D942.
- 5923: Stainless steel support that permit to housing 4 × oxidation pressure vessel ASTM D525/D873/D942.

LT/TB-145000/M2
Bench top laboratory dry bath
ASTM D525, D873, D942

- Bench top instrument completely made in stainless-steel and double chamber insulation.
- Single aluminium dry bath deeply coated, insulated and equipped with multi electrical heaters grant uniformity and stability.

Oxidation Stability of Greases
Oxygen Pressure Vessel Method

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5290+5292



LT/TB-145000/M2

- Upper cover equipped with 2 holes for test cells accommodation, un-used positions can be covered with stand-by covers that prevents heat loss, the cover is made in stainless-steel for easy cleaning.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +150°C, resolution 0,1°C and stability ± 0.1°C (with cover).
- Manually settable overtemperature cut-off alarm.
- Dimensions:
  width 50.0 × depth 50.5 × height 49.2 cm.
- Temperature range: ambient to +150°C, with precision 0.1°C.
- Consumption: 1200 Watt.
- Power supply: 220 Vac or 115 Vac 50/60 Hz.

Accessories ASTM D942

- 3093: Digital manometer with record functions.
  · Autonomous battery powered instrument with digital display designed to record pressure and temperature over long periods.
  · Application: 0 … 30 bar.
  · Resolution: 10 mbar.
  · Supply: 3,6 V Lithium battery, type SL-760.
  · Units: all standard instruments are calibrated in bar.
  · The pressure can be indicated in the following units:
  bar, mbar/hPa, kPa, MPa, PSI, kp/cm^2, (m)H_2O.
- 3683: Converter cable with fischer plug.
  · Fischer plug for connection of RS485A/B (without supply).
  · Cable length: 1,8 m.
  · Galvanic isolation of communication.
  · LED for indication of communication activity.
  · Driver software also included in delivery.
- 5391: Pressure gauge dual scale.
  · 0-1750 kPa, 0-250 Psi.
  · Div. 172 kPa (25 Psi).
  · Precision 7 kPa (1 Psi).
  · Made in stainless steel, with ¼" connection.
  · External diameter 150 mm.
  · Equipped with anti-parallax mirror.
- 5472: Flexible junction according to EN ISO 6251 with quick couplings.
- 5287: Oxygen pressure reducer from 200 to 10 bar, double 63 mm diameter gauges.
- T-AS22C: Thermometer ASTM 22C IP 24C, range +95…+103°C, div. 0,1°C, propylene carbonate filled.

Spare Parts ASTM D942

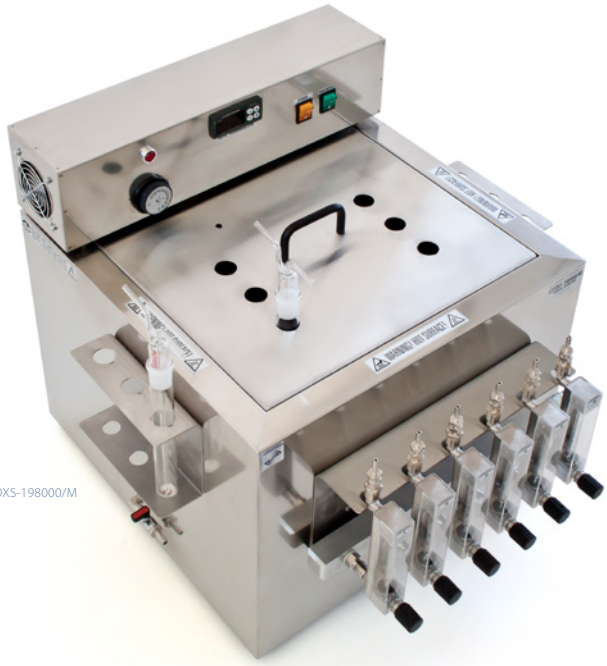
- 5290: Dish holder, 5 holding positions made in stainless steel.
- 5292: Sample Dish made in Pyrex® 41mm diameter, pack of 5 pcs.
- 7064: Gasket for 15605 vessel, pack of 10 pcs.
- 7591: Gasket for 1000185 vessel only, pack of 5 pcs.

Optional Accessories
1000015: Analytical Balance

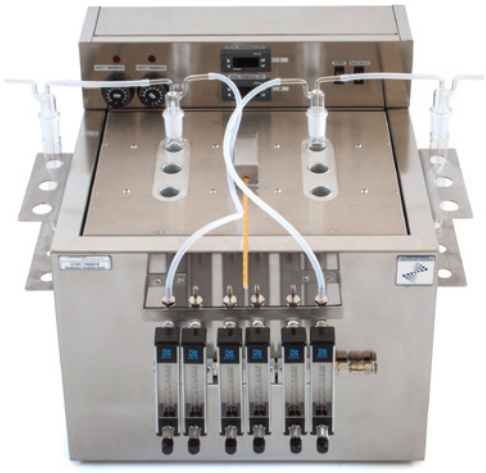
- Capacity: 220 g.
- Readability: 0.1 mg.
- Linearity: ±0.2 mg.
- Repeatability: ±0.05 mg.
- Response time: 4/6 sec.
- Pan diameter: 80 mm.
- Calibration: internal, every 3 hours or at temperature change.
- Internal weighing cell with magnetic compensation and anti-shock system.
- Functions.
  · LCD display with small decimal digits.
  · Membrane keyboard, water proof and solvent resistant, easy to use with TARE, ON/OFF, PRINT and MENU.
  · Indication of the reached stable weight.
  · Bar-graph indicator of dosage and remaining capacity of the balance.
  · Parameters configurable by menu: reading in g (grams), lb (pound), oz (ounce), ct (carats), pcs (pieces), % (percentage).
- Technical characteristics.
  · Full scale automatic calibration with internal and/or external mass.
  · Weighing underneath the balance, selectable response time: "fast/slow".
  · Data output: RS232 I/O adjustable.
  · Printing protocol (GLP/GMP/GCP/ISO) with password protection.
  · Operating temperature: 18° ~ 35°C.
  · Power supply: 100 ~ 240 Vac.
  · Power consumption: 200 mA.
  · Dimensions:
  width 21.6 × depth 38.0 × height 36.0 cm.
  · Weighing chamber dimensions:
  width 18.0 × depth 17.0 × height 24.0 cm.
  · Weight: 7 kg.
  · CE Marked.

Oxidation Stability of Mineral Insulating Oil

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LT/OXS-198000/M



LT/OXS-198000-D/M

ASTM D2440
IP 280
IEC61125

Oxidation Stability of Mineral Insulating Oil.
This test method determines the resistance of mineral transformer oils to oxidation under prescribed accelerated aging conditions. Oxidation stability is measured by the propensity of oils to form sludge and acid products during oxidation.
This test method is applicable to new oils, both uninhibited and inhibited, but is not well defined for used or reclaimed oils.

LT/OXS-198000/M Oxidation Stability Bath for ASTM D2440

- Oil bath for the immersion of 6 standard test-tubes held by a double bottom
- Stainless steel structure
- Insulated double wall
- Six independent flowmeters that transfer oxygen at a 1 l/h rate
- Oil thermostatics is controlled by a digital thermoregulator PID with over-temperature alarm and probe PT100A
- Heavy duty motor stirrer
- Outlet system
- Complete of glassware

LT/OXS-198000-D/M Oxidation Stability Apparatus "Dry Bath" for ASTM D2440, 6/8 test positions available

- Stainless steel structure and aluminium block with holes for the accomodation of the glass tubes
- Digital thermoregulator PID with over-temperature alarm and probe PT100A
- Collector with 6/8 flowmeters 1 L/h O_2 fitted with pin valves
- Glassware are included (one set of Oil Receptacle and Head for each test position)

Accessories

- LT/SP-302-SA: air pump
- LAB-100-332: digital stopwatch
- LAB-100-371/50: silicone oil, can of 25 litres
- LAB-102-501: drying tower
- LAB-101-922/CU10: catalyst copper coil ext diam. 16 mm, 50 mm height, pack of 10 pcs.
- LAB-101-980: glassware
- LAB-101-987/D: digital soap bubble flowmeter
- T-AS41C: thermometer ASTM 41C

Accessories for IP 280

- LAB-101-980: glassware
- LAB-101-991: membrane filter 5 um diam. 47 mm
- LAB-101-992: evaporating dish 50 ml
- LAB-101-993: filtration apparatus 1 lt
- LAB-101-132/500: conical flask 500 ml with ground glass stopper
- LT/DO-248000/N: natural ventilation oven

Spare Parts

- LAB-101-982: air reducer
- LAB-110-012: heater
- LAB-160-014: digital thermoregulator
- LAB-140-002: probe PT100
- LAB-150-015: static relay

Oxidation Stability RBOT and TFOUT Bath

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ASTM D2112
ASTM D2272
ASTM D4742
IP 229

ASTM D2112
Oxidation Stability of Inhibited Mineral Insulating Oil by Pressure Vessel.
This test method is intended as a rapid method for the evaluation of the oxidation stability of new mineral insulating oils containing a synthetic oxidation inhibitor. This test is considered of value in checking the oxidation stability of new mineral insulating oils containing 2,6-ditertiary-butyl para-cresol or 2,6-ditertiary-butyl phenol, or both, in order to control the continuity of this property from shipment to shipment. The applicability of this procedure for use with inhibited insulating oils of more than 12 cSt at 40°C (approximately 65 SUS at 100°F) has not been established.

ASTM D2272
Oxidation Stability of Steam Turbine Oils by Rotating Pressure Vessel (RBOT).
This test method utilizes an oxygen-pressured vessel to evaluate the oxidation stability of new and in-service turbine oils having the same composition (base stock and additives) in the presence of water and a copper catalyst coil at 150°C.

ASTM D4742 - Oxidation Stability of Gasoline Automotive Engine Oils by Thin-film Oxygen Uptake (TFOUT)
This test method evaluates the oxidation stability of engine oils for gasoline automotive engines.
This test, run at 160°C, utilizes a high pressure reactor pressurized with oxygen along with a metal catalyst package, a fuel catalyst, and water in a partial simulation of the conditions to which an oil may be subjected in a gasoline combustion engine.
This test method can be used for engine oils with viscosity in the range from 4 mm2/s (cSt) to 21 mm2/s (cSt) at 100°C, including re-refined oils.

IP 229 - Relative Oxidation Stability by Rotating Bomb of Mineral Turbine Oil (RBOT)
This method covers a rapid means for estimating the oxidation stability of new turbine oils having the same composition.

LT/OS-197000/M
RBOT and TFOUT Bath
ASTM D2112 - D2272 - D4742

- Bath made in stainless steel for four vessels with capacity about 35 litres where the oxidation cylinders are turned at 100 rpm with a 30° angle according to ASTM specifications
- Bath temperature range from ambient to 199°C ± 0.1°
- Controlled by a digital thermo regulator PID with over-temperature alarm and PT100A
- Each rotating place is independent with motor switching
- Drain tap

Accessories

- LAB-101-971: oxidation pressure vessel RBOT/ RPOVT, made in stainless steel, complete with O-ring, stem, needle valve, fast connection
- LAB-101-972: pressure gauge 0-200 psi, div. 5 (for each vessel)

Accessories for ASTM D2112

- LAB-101-974/A: glass container 175 ml
- LAB-101-974/C: glass cover
- LAB-101-922/CU: copper wire catalyst; 3 meters, pack of 5 pcs.
- LAB-101-441/P: silicon carbide paper 100 grit, pack of 100 pcs.
- LAB-100-371/50: silicone oil, can of 25 litres
- T-AS96C: thermometer ASTM 96C

Accessories for ASTM D2272

- LAB-101-974/A: glass container 175 ml
- LAB-101-974/B: cover in Teflon®
- LAB-101-974/D: spring made in stainless steel as per ASTM D2272
- LAB-101-922/CU: copper wire catalyst 3 meters, pack of 5 pcs.
- LAB-101-441/P: silicon carbide paper 100 grit, pack of 100 pcs.
- T-IP37C: thermometer IP 37C

Accessories for ASTM D4742

- LAB-101-978/A: glass container
- LAB-101-978/B: cover in Teflon®
- LAB-101-978/D: spring made in stainless steel as per ASTM D4742
- LAB-101-978/E: aluminum insert made of 2024
- T-AS102C: thermometer ASTM 102C

Alternative Pressure Gauge

- LAB-102-001-DPS-RF: digital manometers with record function
  - · Autonomous battery powered instrument with digital display designed to record pressure and temperature over long periods.
  - · High measuring accuracy, resolution and robustness
  - · High data security due to the use of a non-volatile memory
  - · Display of the actual pressure and the record status
  - · Recording of the pressure and temperature
  - · Connectable to a Data software for PC via USB
  - · Pressure connection with G1/4" thread (other threads on demand)

Optional Accessories

- LT/WM-227200: electric winding mandrel for copper wire catalyst coiling, mounted on solid base whit possibility to fix to bench, 220 Vac 50/60 Hz

Oxidation Characteristics of Lubricating Oil

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IP 48

This method indicates the tendency of a lubricating oil to deteriorate on oxidation under specified conditions.

LT/TB-145000/M8
Bench Top Laboratory Dry Bath - IP48

- Bench top instrument completely made in stainless-steel and double chamber insulation.
- Double aluminium dry bath deeply coated equipped with 3 × 27 mm diameter wells for test tube introduction (each block), insulated and equipped with multi electrical heaters grant uniformity and stability.
- Upper cover equipped with central aluminium alloy temperature measuring block for thermometer introduction.
- Temperature controlled by a double digital thermoregulators with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +200°C, resolution 0,1°C and stability +/- 0.1°C.
- Fixing plate and collector.
- 6 × flowmeters range 1.6 – 16 nL/h with needle regulation knob.
- Quick connection for external oxygen supply line.
- Manually settable overtemperature cut-off alarm.
- External lateral supports for 6 absorption tubes and connection silicon tubes.

Accessories

- 2129: Fresenius column filled with synthetic wadding and with silicon connection tubes.
- 1283: Oil receptacle and head made in glass.

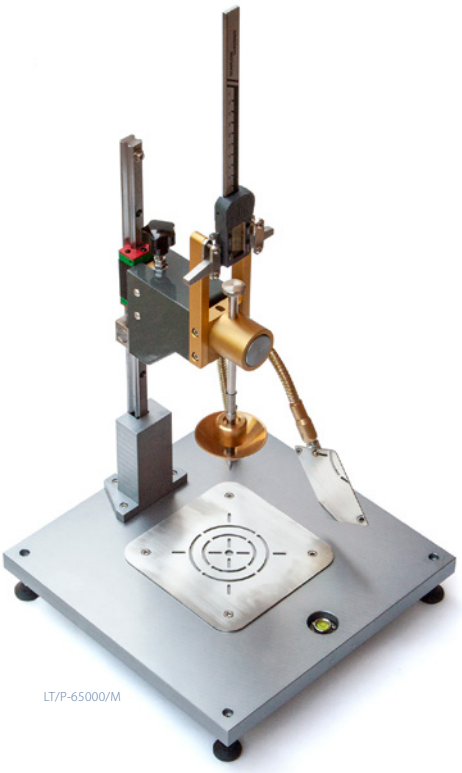


2129

Penetration of Bituminous Material, Grease, Petrolatum, Waxes, Gel

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LT/P-65000/M

ASTM D5
ASTM D217
ASTM D937
ASTM D1321
ASTM D1403
ASTM D1831
ASTM D2884
DIN 51579
DIN 51580
DIN 51804
DIN 52010
IP 49
IP 50
IP 179
IP 310
IP 376
ISO 2137
NF T60-119
NF T60-132
NF T60-140

ASTM D5, IP 49, DIN 52010
Penetration of bituminous material.
For determination of the penetration of semi-solid and solid bituminous materials.

ASTM D217, ASTM D1403, IP 50, IP 310, DIN 51804, ISO 2137, NF T60-132, NF T60-140
Cone penetration of lubricating grease.
Cover four procedures for measuring the consistency of lubricating greases by the penetration of a cone of specified dimensions, mass and finish.

ASTM D937, IP 179, DIN 51580, ISO 2137, NF T60-119
Cone penetration of petrolatum.
Covers measuring with a penetrometer the penetration of petrolatum as an empirical measure of consistency.

ASTM D1321, IP 376, DIN 51579
Needle penetration of petroleum waxes.
Covers the empirical estimation of the consistency of waxes derived from petroleum by measurement of the extent of penetration of a standard needle.
This test method is applicable to waxes having a penetration of not greater than 250.

ASTM D1831
Roll stability of lubricating grease.
Covers determination of the changes in the consistency, as measurably cone penetration, of lubricating greases when worked in the roll stability test apparatus.

ASTM D2884 - Yield stress of heterogeneous propellants by cone penetration method.
Covers determination of the yield stress of heterogeneous propellants, both of the gel and emulsion types, containing from 0 to 70% solid additives.

LT/P-65000/M
Manual Apparatus for Penetration

- Aluminium base with spirit level and adjustable feet.
- Sliding bar made in steel for head movement equipped with security brake.
- Analytical head equipped with digital calibre for millimetre measurement.
- Lever system for manual release of penetration weight.
- Adjustable viewing mirror.
- 47,5 g plunger/slider included.
- Stainless steel containers centring device.

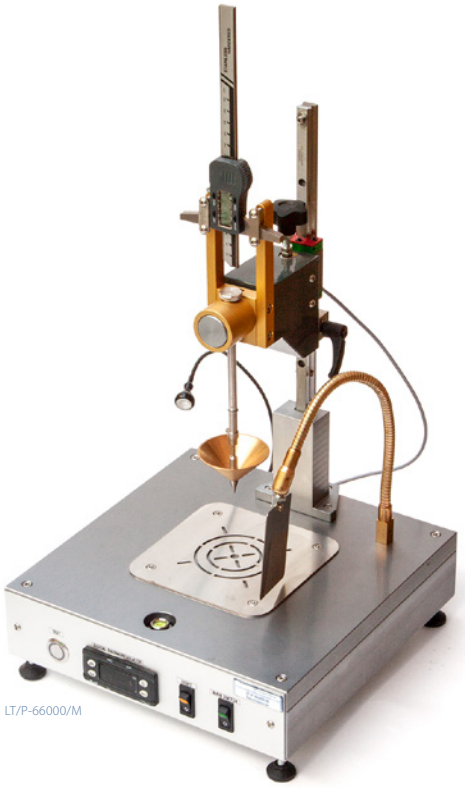
Weight

- 9 kg

Dimensions

- Length 35 cm
- Width 30 cm
- Height 70 cm

Penetration of Bituminous Material, Grease, Petrolatum, Waxes, Gel



LT/P-66000/M

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LT/P-66000/M
Semi-automatic Apparatus for Penetration

- Aluminium base with spirit level and adjustable feet.
- Sliding bar made in steel for head movement equipped with security brake.
- Analytical head equipped with digital calibre for millimeter measurement.
- Lever system for manual release of penetration weight and automatic programmable release function.
- Integrated timer for setting the automatic release/hooking timer.
- Adjustable viewing mirror and check light.
- 47,5 plunger/slider included.
- Stainless steel containers centring device.

Weight
- 12 kg

Dimensions
- Length 35 cm
- Width 30 cm
- Height 80 cm

Power supply
- 220 Vac 50/60Hz
- 115 Vac 50/60Hz

Max. consumption
- 50 Watt

General Accessories
- 6033: 50 g plunger weight
- 6034: 100 g plunger weight

Spare Parts
- 5783: Plunger 47.5 g

Accessories ASTM D217, IP50
- 5306: optional penetration cone ASTM D217, 65 mm diameter, brass body and stainless-steel tip
- 5310: optional penetration cone ASTM D217, 65 mm diameter, body and tip of stainless steel, for European Pharmacopoeia
- 5308: standard penetration cone ASTM D217, 69 mm diameter, aluminium body and stainless-steel tip
- 5312: sample container 76.5 × 63.5 mm, made in brass, pack of 3 pcs.
- 5313: external ring for grease restraint/recovery, 203 mm diameter

Accessories ASTM D5, IP 49, EN 1426
- 5053: penetration needle ASTM D5, IP 49, 2.5 g, pack of 3 pcs.
- 5480: long penetration needle ASTM D 5, IP 49, 2.5 g, pack of 3 pcs.
- 5481: reduction ring for reduce sample volume, 53 mm external diameter, 36 mm internal diameter, 20 mm height, for EN 1426 method
- 5482: reduction ring for reduce sample volume, 53 mm external diameter, 36 mm internal diameter, 30 mm height, for EN 1426 method
- 5483: sample container, 55 × 35mm, made in brass, pack of 5 pcs.
- 5407: sample container, 55 × 45mm, made in brass, pack of 5 pcs.
- 5484: sample container, 70 × 45mm, for bitumen, penetrations between 200 and 350, made in brass, pack of 5 pcs.
- 5409: sample container, 70 × 60 mm, for bitumen, penetrations between 350 and 500, made in brass, pack of 5 pcs.

Accessories ASTM D1403
- 5485: penetration cone, ½ ASTM D1403 IP 310, 22.5 g, body and tip in stainless steel
- 5486: slider ½, 15 g
- 5403: sample container ½ 38 × 32 mm, pack of 3 pcs.
- 5488: penetration cone ¼ ASTM D1403, IP 310, 1.20 gr, body Plexiglas®, stainless steel tip
- 5571: slider ¼ 8.18 g
- 5490: sample container ¼ 19 × 11.5 mm, pack of 3 pcs.

Accessories ASTM D937
- 5306: optional penetration cone ASTM D217, 65 mm diameter, body of brass, stainless steel tip
- 5479: sample container 100 × 65 mm, made in steel with cover, pack of 3 pcs.

Accessories ASTM D1321, DIN 51579, IP 376
- 5591: needle ASTM D1321, 2.5 g SS
- 16095: sample container wax test cylinder 25 × 32 mm, pack of 2 pcs.
- 5592: base plate in brass 63.5 × 38, pack of 2 pcs.

Accessories Penetrometer
- 5492: Klein micro-cone, weight 7 g, total height 71 mm, tip 25° with height 9.8 mm
- 5493: sample container for Klein micro-cone 28.5 × 63.5
- 5494: plunger 16.8 g, stem diameter 10 mm, for Klein micro-cone

Ash Determination

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CE





ASTM D482 - D1119 - D4422
IP 4 - IP 163
ISO 3987 - ISO 6245

ASTM D482 - IP 4 - ISO 6245
Ash from Petroleum Products.
This test method covers the determination of ash in the range 0.001- 0.180 mass %, from distillate and residual fuels, gas turbine fuels, crude oils, lubricating oils, waxes, and other petroleum products, in which any ash-forming materials present are normally considered to be undesirable impurities or contaminants.

ASTM D1119
Standard Test Method for Percent Ash Content of Engine Coolants.
This test method covers the determination of ash content after ignition of commercial engine coolants and antirusts, as packaged or after use.

ASTM D4422
Ash in Analysis of Petroleum Coke.
This test method covers the determination of the ash content of petroleum coke.

Muffle Furnace for Evaporating-autoclave Application

- Insulation heat made in ceramics fibre in order to get a speed heating with a limited energetic consumption.
- Heating muffle unthreaded from the back, in an only cast of refractory cordieletic material to provide for thermal jolts.
- Resistors in Kanthal screened by thermic stainless AISI 310.
- Lateral opening door with pressure wedge and with a stop device for electric feeding when it opens, allowing the worker, during the loading and unloading of the muffle, to act with the utmost safety avoiding the contact with the burning part.
- Control panel is positioned on the furnace bottom containing a digital visualized thermoregulator and safety switch for system protection – Gefran 1200.
- Internal chamber made in AISI 310 with direct-welded posterior exhaust for fume extraction (Optional Incoloy Ds).

LT/ME-271000/M

- Single phase tension: 220 Vac
- Power: 4.0 Kw
- Max. temperature + 980°C (up to +1050°C with optional Incoloy Ds Chamber)
- Encumbrance dimensions:
  · Width 500 mm
  · Depth 750 mm
  · Height 650 mm
  · Weight 85 Kg
- Useful inside dimensions:
  · Width 210 mm
  · Depth 320 mm
  · Height 145 mm

LT/ME-275000/M

- Single phase tension: 220 Vac
- Power: 6.0 Kw
- Max. temperature + 980°C (up to +1050°C with optional Incoloy Ds Chamber)
- Encumbrance dimensions:
  · Width 500 mm
  · Depth 950 mm
  · Height 650 mm
  · Weight 100 Kg
- Useful inside dimensions:
  · Width 210 mm
  · Depth 520 mm
  · Height 145 mm

Accessories Table	ASTM D482	ASTM D1119	ASTM D4422
Porcelain capsule 45 × 25 mm – 25 ml cap.			
Shallow form dishes 70×16 mm – 30 ml cap.			•
Silica/porcelain crucible 50 ml	•	•	
Cover for silica/porcelain crucible 50 ml		•	
Silica/porcelain crucible 100 ml	•		
Silica/porcelain crucible 150 ml	•		
Platinum crucible 50 ml	•	•	
Cover for platinum crucible 50 ml		•	
Platinum crucible 100 ml	•		
Platinum crucible 150 ml	•		
Meker gas burner	•	•	
Mechanical shaker	•		
Filter paper	•		
Balance 220 grams	•	•	•
Drying Oven			•
Desiccator			•
Sieve No.20 (850 µm)			•
Sieve No.60 (250 mm)			
Sieve No.200 (75 µm)			•

Reagents Table			
Propan-2-ol	•		
Toluene	•		
QC sample	•		

Ash Determination

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ASTM D482 - D1119 - D3174 - D4422
IP 4 - IP 163
ISO 3987 - ISO 6245

ASTM D482 - IP 4 - ISO 6245
Ash from Petroleum Products.
This test method covers the determination of ash in the range 0.001- 0.180 mass %, from distillate and residual fuels, gas turbine fuels, crude oils, lubricating oils, waxes, and other petroleum products, in which any ash-forming materials present are normally considered to be undesirable impurities or contaminants.

ASTM D1119
Standard Test Method for Percent Ash Content of Engine Coolants.
This test method covers the determination of ash content after ignition of commercial engine coolants and antirusts, as packaged or after use.

ASTM D3174
Standard Test Method for Ash in the Analysis Sample of Coal and Coke from Coal.
This test method covers the determination of the inorganic residue as ash in the analysis sample of coal or coke as prepared in accordance with Practice D2013 or Practice D346.

ASTM D4422
Ash in Analysis of Petroleum Coke.
This test method covers the determination of the ash content of petroleum coke.

Muffle furnace for Ash Determination

- Insulation heat made in ceramics fibre in order to get a speed heating with a limited energetic consumption.
- Heating muffle unthreaded from the back, in an only cast of refractory cordieletic material to provide for thermal jolts.
- Resistors in Kanthal screened.
- Lateral opening door with pressure wedge and with a stop device for electric feeding when it opens, allowing the worker, during the loading and unloading of the muffle, to act with the utmost safety avoiding the contact with the hottest part.
- Natural draught posterior exhaust of the smokes.
- Control panel is positioned on the furnace bottom containing a digital visualized thermoregulator with overheating protection and safety switch for system protection.

LT/MF-271000/M

- Single phase tension: 220 Vac
- Power: 2.6 Kw
- Max. temperature +1100°C
- Encumbrance dimensions:
  · Width 400 mm
  · Depth 580 mm
  · Height 540 mm
  · Weight 40 Kg
- Useful inside dimensions:
  · Width 145 mm
  · Depth 250 mm
  · Height 100 mm

LT/MF-272000/M

- Single phase tension: 220 Vac
- Power: 3.9 Kw
- Max. temperature +1100°C
- Encumbrance dimensions:
  · Width 500 mm
  · Depth 650 mm
  · Height 650 mm
  · Weight 83 Kg
- Useful inside dimensions:
  · Width 210 mm
  · Depth 320 mm
  · Height 145 mm

LT/MF-273000/M

- Single phase tension: 220 Vac
- Power: 4.2 Kw
- Max. temperature +1200°C
- Encumbrance dimensions:
  · Width 500 mm
  · Depth 650 mm
  · Height 650 mm
  · Weight 83 Kg
- Useful inside dimensions:
  · Width 210 mm
  · Depth 280 mm
  · Height 145 mm

Accessories Table	ASTM D482	ASTM D1119	ASTM D3174	ASTM D4422
Porcelain capsule 45 × 25 mm – 25 ml cap.			•	
Shallow form dishes 70×16 mm – 30 ml cap.				•
Silica/porcelain crucible 50 ml	•	•		
Cover for silica/porcelain crucible 50 ml		•	•	
Silica/porcelain crucible 100 ml	•			
Silica/porcelain crucible 150 ml	•			
Platinum crucible 50 ml	•	•		
Cover for platinum crucible 50 ml		•		
Platinum crucible 100 ml	•			
Platinum crucible 150 ml	•			
Meker gas burner	•	•		
Mechanical shaker	•			
Filter paper	•			
Balance 220 grams	•	•	•	•
Drying Oven				•
Desiccator				•
Sieve No.20 (850 µm)				•
Sieve No.60 (250 mm)			•	
Sieve No.200 (75 µm)				•

Reagents Table	
Propan-2-ol	•
Toluene	•
QC sample	•

Asphaltenes Determination

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ASTM D6560
IP 143
NF T60-115

Determination of Asphaltenes (Heptane Insolubles) in Crude Petroleum and Petroleum Products.
Covers a procedure for the determination of the heptane insoluble asphaltene content of gas oil, diesel fuel, residual fuel oils, lubricating oil, bitumen, and crude petroleum that has been topped to an oil temperature of 260°C.

AA-21
Apparatus for Determination of Asphaltenes

- Floor standing support with rod and clamps for sustain glassware and elements.
- Upper part composed by 380 W heating belt, boiling flask 1000 ml capacity with lateral sample injector port, upper condenser 300 mm.
- Gravity drain system with top manual actuator.
- Stainless steel hood with fume recovery system, complete with filter holder and o-rings that avoid pressure leak.
- 3 × needle valve for deviating fluid / nitrogen flush and recovery program.
- Lower flask 500 ml with temperature sensing port.
- Lateral condenser for fume recovery.
- Lower flask with condenser for solvent recovery.
- Lower heating mantle 250 W for boiling solvent, equipped with up/down movement.
- External control unit with Linetronic software to manage the temperature inside the 2 heating part of instrument, timer for analysis, audible alarm and analysis wizard step-by-step.
- Instrument shipped with spare o-rings, 1 pack of 100 filters and allen keys for open easily the hood for cleaning and filter change.

Asphaltenes Extraction



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ASTM D6560
DIN 51595
IP 143

Determination of Asphaltenes (Heptane Insolubles) in Crude Petroleum and Petroleum Products.
Covers a procedure for the determination of the heptane insoluble asphaltene content of gas oil, diesel fuel, residual fuel oils, lubricating oil, bitumen, and crude petroleum that has been topped to an oil temperature of 260°C.

LT/AA-114000/M

Manual apparatus composed by:
- Heating plate with manual heating regulation and magnetic stirring features with rod and clamp for supporting glassware
- Bubble condenser made in glass with joints for liquid circulation and grounds joints 24/40 – 34/35
- Reflux extractor made in glass
- Conical flask made in borosilicate glass 500 ml capacity
- Stopper made in glass with ground connection 24/40
- Evaporating vessel diam. 90 mm
- Filter funnel made in glass
- Forceps made in stainless steel for manage the filters

Conical Flasks

- LAB-101-132/1000: Erlenmeyer Flask 1000 ml complete of stopper
- LAB-101-132/500 Erlenmeyer Flask 500 ml complete of stopper
- LAB-101-132/250 Erlenmeyer Flask 250 ml complete of stopper
- LAB-101-132/150 Erlenmeyer Flask 150 ml complete of stopper
- LAB-101-132/100 Erlenmeyer Flask 100 ml complete of stopper

Accessories

- LAB-100-555/50: graduated cylinder capacity 50 ml
- LAB-100-555/100: graduated cylinder capacity 100 ml
- LAB-103-776: filter papers, grade 42, diam. 110 mm, pack of 100 pcs.

Optional Accessories

- LAB-102-275: dessicator 300 mm
- LT/AB-200/M: analytical balance 200 gr

Spare Parts

- LAB-101-134: condenser
- LAB-101-135: reflux extractor
- LAB-101-136: glass stoppers
- LAB-101-137: magnetic bars
- LAB-101-138: evaporating vessel

Conradson

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ASTM D189
ASTM D2416
DIN 51551
IP 13
ISO 6615

ASTM D189 - DIN 51551 -
IP 13 - ISO 6615
Conradson Carbon Residues
of Petroleum Products

This test method covers the determination of the amount of carbon residue left after evaporation and pyrolysis of an oil, and is intended to provide some indication of relative coke-forming propensities.

ASTM D2416
Coking Value of Tar and Pitch

This test method covers the determination of the coking value of tar and pitch having an ash content not over 0.5 %.

LT/CCR-96000/M

Conradson carbon residues,
manual instrument composed by:

- LPG-heated by Meker lamp fitted with safety valve
- Metal tripod holder with Nichrome triangle
- External insulating ring block fining painted
- Metallic chimney with handle
- Crucibles: porcelain crucible, inner iron crucible, outer iron crucible
- Covers: inner skidmore cover, outer iron cover
- User manual and power cable making part of scope of supply

LT/CCV-97000/M

Conradson coking value,
manual instrument composed by:

- Vertical electric furnace
- Insulating ring block
- Metal tripod holder with nichrome triangle
- Stainless steel chimney
- Inner porcelain crucible
- Middle iron crucible fitted with Skidmore lid
- External iron crucible fitted with lid

Accessories

- LT/B-2470/ BC150: balance

Spare Parts

- LAB-100-961: inner porcelain crucible
- LAB-100-962: middle iron crucible
- LAB-100-963: external iron crucible
- LAB-100-964: Skidmore
- LAB-100-965: chimney
- LAB-100-966: Nichrome triangle
- LAB-100-967: cover for external crucible
- LAB-100-968: insulating ring
- LAB-100-696: Meker gas burner

LAB-100-961	Rim diam. 48 mm			
LAB-100-962	Flange outside diam. 64 mm	Flange inside diam. 55 mm	Inside height 38 mm	
LAB-100-963	Outside at top diam. 80 mm	Height 60 mm	Approx. thickness 0.9 mm	
LAB-100-964	Horizontal hole diam. 6 mm			
LAB-100-965	Lower side diam. 121 mm	Lower side height 50 mm	Upper side value diam. 52 mm	Upper side height 60 mm
LAB-100-966	Approximately diam. 1.2 mm			
LAB-100-967	diam. 83 mm			
LAB-100-968	External diam. 157 mm	Height 36 mm	Internal up diam. 89 mm	Internal down diam. 82.5 mm
LAB-100-969	Total height 155 mm	Flame obturator diam. 25 mm		

Values reported are indicatives and can change according production procedures.

FIA – Fluorescent Indicator Adsorption

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LT/FA-225000-S/M



LT/FA-224000-S/M

ASTM D1319
DIN 51791
EN 10 (obs.)
FTM 791-3703
IP 156
JIS K 2536
ISO 3837
NF M07-024

ASTM D1319 - IP 156 - Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption.

This test method covers the determination of hydrocarbon types over the concentration ranges from 5 to 99 volume % aromatics, 0.3 to 55 volume % olefins, and 1 to 95 volume % saturates in petroleum fractions that distill below 315°C.

LT/FA-225000-S/M
Manual Apparatus for Hydrocarbon Types in Liquid Petroleum Products, Fluorescent Indicator Adsorption (FIA), ASTM D1319, 2 places

- Flat support made in black material equipped with spring connections that block the columns.
- Supporting up to two, to be chosen between standard and Precision True Bore.
- 2 spherical joint.
- 2 linear rulers with sliding pointers.
- 2 socket places fitted with a reducer and manometer for controlling the nitrogen pumped into the columns.
- 1 stainless steel lamp holder with 365 nm UV light source.

LT/FA-224000-S/M
Manual Apparatus for Hydrocarbon Types in Liquid Petroleum Products, Fluorescent Indicator Adsorption (FIA), ASTM D1319, 4 places

- Flat support made in black material equipped with spring connections that block the columns.
- Supporting up to four, to be chosen between standard and precision true bore.
- 4 spherical joint.
- 4 linear rulers with sliding pointers.
- 4 socket places fitted with a reducer and manometer for controlling the nitrogen pumped into the columns.
- 2 stainless steel lamp holder with 365 nm UV light source.

Power Supply

- 220 or 115 Vac 50/60 Hz

Dimensions

- 2 places: 500 × 220 × 1900 cm
- 4 places: 750 × 220 × 1900 cm

Accessories

- 1200: Standard column, 1 pcs.
- 1202: Analyser 1.6 × 1200 mm for standard columns, pack of 25 pcs. including connection tube 1 m + 1 m.
- 1204: Precision True Bore Column, 1 pcs.
- 1011: Tip of 30 mm for Precision True Bore Column, 1 pcs.
- 5224: Vibrator unit portable.
- 7087: Syringe 1 ml capacity, div. 0.01 ml, stainless steel needle L = 102 mm.
- 7089: Stainless steel needle L = 102 mm, pack of 6 pcs.
- 7091: Silica gel 923, degree 923, 100-200 mesh, pack of 1 kg.
- 7342: Fluorescent Dyed Gel, pack of 40 g.
- 5226: Cleaning capillary.

Spare Parts

- 7086: UV light source.
- 5520: Clamps for spherical joints 28/12, pack of 2 pcs.
- 2426: Spherical joints 28/12, pack of 2 pcs.
- 5692: Measuring scale, pack of 2 pcs.

Lead, Acid and Salt Content

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ASTM D2547 (obs.)
ASTM D6470
IP 77 - IP 182 - IP 248
ISO 2083

ASTM D2547 (obs.) - IP 248 - ISO 2083 Lead in Gasoline Volumetric-Chromate Method.
Covers the volumetric determination of the total lead content of gasoline and other volatile distilled blended with lead alkyls within the concentration range of 0.04 to 1.1 gr of lead/litre.

ASTM D6470 - Standard Test Method for Salt in Crude Oils (Potentiometric Method).
This test method covers the determination of salt in crude oils. For the purpose of this test method, salt is expressed as % (m/m) NaCl (sodium chloride) and covers the range from 0.0005 % to 0.15 % (m/m).

IP 77
Determination of Salt Content by Extraction and Volumetric Titration.
This method is intended for the determination of total halide concentration of 0.002 to 0.02% wt, in crude petroleum, topped crude, residual cracking stock, and fuel oil.
It may also be applied to the estimation of seawater contamination of used turbine oil and of marine diesel fuel.

IP 182
Acidity (Inorganic) of Petroleum Products.
This method is intended to provide a measure of the inorganic (strong) acid content of used and unused lubricating oils, fuel oils, and petrolatums.
Misleading results may be obtained with oils containing additives.

LT/EA-244000/M
Determination of salt content – extraction

- Compact structure painted with anti-acid epoxy products equipped with clamps for glassware sustain.
- Two positions for the extraction glassware composed by:
  · Boiling flask 500 ml with stopcock;
  · Hopkins reflux condenser;
  · Thistle tube marked at 50 ml.
- Heating wire coiled around the boiling flask and protected by transparent plastic protection.
- Command panel with 2 independent switch and heating regulators.
- 2 × 600 ml recovery beakers.

Power Supply

- 220 or 115 Vac 50/60 Hz.

Max. consumption

- 500 Watt.

Spare Parts

- 3188: Heating wire, pack of 2 pcs.
- 1081: Boiling flask 500 ml with stopcock.
- 1083: Hopkins reflux condenser.
- 1079: Thistle tube marked at 50 ml.
- 1184: Recovery beaker 600 ml.

Ramsbottom



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ASTM D524
IP 14
ISO 4262

Ramsbottom Carbon Residue of Petroleum Products.
This test method covers the determination of the amount of carbon residue left after evaporation and pyrolysis of an oil, and is intended to provide some indication of relative coke-forming propensity.

LT/RCR-98000/M
Ramsbottom ASTM D524

- Compact structure made in painted steel with vibration free feet.
- Cast iron block furnace equipped with 5 wells, 63.5 mm diameter.
- Stainless steel cover with double layer insulting material connect to furnace block.
- Direct contact armoured heating element 1700 W grants working temperatures up to 550°C +/- 5°C.
- Front panel incorporate the block temperature display (0,1°C resolution) and the control bulb digital display (0,1°C resolution).
- Independent switch for: on/off (main) , heating, cooling fan.
- Lateral stainless steel control bulb stand-by support for checking the temperature provided with the unit.
- Control bulb made in stainless steel, weight 24 gr., for checking the temperature provided with the unit.

Weight

- 21 kg

Dimensions

- 320 × 330 × 310 mm

Power supply

- 220 or 115 Vac, 50/60 Hz

Accessories

- LAB-100-981: glass coking bulb of heat-resistant glass, pack of 10 pcs.
- LAB-100-982: sample charging syringe 10 ml made in glass with Luer lock and needle 150 × 1.5 mm
- LAB-100-983: stainless steel tongs for removing glass coking bulb from coking furnace
- LAB-100-984: coking bulb filling device made in stainless steel

Spare Parts

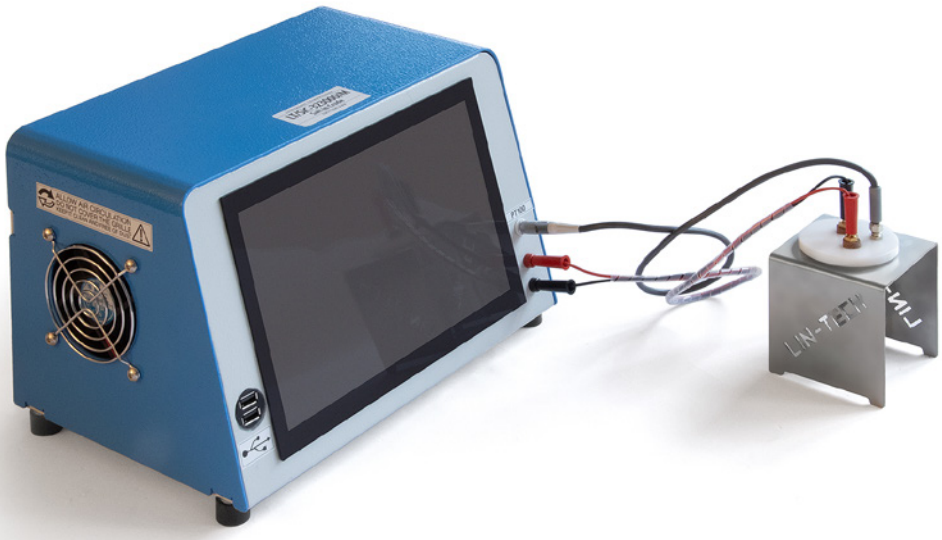
- LAB-100-985: control bulb
- LAB-140-003: thermocouple for furnace
- LAB-140-003/CR: thermocouple for control bulb

Optional Accessories

- LT/B-2470/BCA200: analytical balance
  · capacity: 210 g
  · readability: 0.1 mg
  · linearity: ±0.2 mg
  · repeatability: ±0.05 mg
  · response time: 6/10 sec.
  · pan diameter: 80 mm
  · calibration: internal

Salt in Crude

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ASTM D3230
IP 265

Standard Test Method for Salts in Crude Oil (Electrometric Method).
Determination of the approximate chloride (salts) concentration in crude oil. The range of concentration covered is 3.5 mg/kg to 500 mg/kg or 1.0 lb/1000 bbl to 150 lb/1000 bbl (PTB) as chloride concentration/ volume of crude oil.
This test method measures conductivity in the crude oil due to the presence of common chlorides, such as sodium, calcium, and magnesium.
Other conductive materials may also be present in the crude oil.

LT/SIC-323000/M
Manual Apparatus Determination of the Salts Concentration in Crude Oil

- Benchtop control unit with TFT colour display 10" high brightness.
- Linetronic Technologies software show the salt concentration in g/m³ or PTB, the temperature of solution, calibration process and result browser, with 2 decimals resolution.
- Temperature resolution 0.01°C, temperature range readable -50°C up to +150°C (limited exposure <10 sec. to avoid permanent degrade of insulators).
- Typical test time of less than 30 seconds.
- Able to detect salts in concentration between 0 and 430 g/m³ – 0 and 151 PTB.
- Virtual keyboard for insert operator and sample name.
- Supplied with beakers, sensor support stands, stainless steel electrodes.
- Pre-calibrated for immediate use for ASTM D3230.
- Connection:
  · 2 × usb;
  · 1 × RJ45 for ethernet.

Power Supply
- 90/240 Vac.
- Power cable with shuko plug.

Tools Required for Routine Calibration
- 17562: PTB Calibration tool on 8 points – electronic.
- 3013: Calibration decade box - PT100 Simulator.
- 3102: Kit of connectors and cables.

Spare Parts
- 2609: Glass beaker, pack of 10 pcs.
- 3150: PT100 temperature sensor.
- 17103: Cover made in plastic material complete with stainless-steel electrodes.
- 17103-RKIT: Kit of insulators and assembly screws made in PA66 for cell, kit contain material for 10 replacements.

Accessories
- 7703: Crude oil mechanical sampling pipette 1-10 ml.
- 7711: Diamond tips, 10 ml, for pipetman sampling pipette, autoclavable, pack of 240 pcs.
- 7704: Bag of 10 filters for 10 ml sampling pipette.
- 7708: Wall auto-adhesive plastic support.
- 7707: Multi table-holder for pipette.

Reference Sample Salt in Crude
- 7760: Refined neutral oil, method ASTM D3230, product nature: refined oil, pack of 250 ml.
- 7759: Salts, mixed solution (dilute), method ASTM D3230, pack of 250 ml.

Smoke Point

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ASTM D1322
IP 57

Smoke Point of Kerosine and Aviation Turbine Fuel.
This test method covers a procedure for determination of the smoke point of kerosine and aviation turbine fuel.

LT/SP-253000/M
Smoke Point ASTM D1322

- Brass lamp painted in black
- Millimetric white scale on a black background
- Window with mobile glass
- Brass candle with oil tank and cotton wick 180 mm long
- Micrometric setting

Accessories

- LAB-102-531: cotton wick, pack of 50 pcs.

Spare Parts

- LAB-102-532: candle with oil tank
- LAB-102-533: concave glass
- LAB-102-534: brass lamp
- LAB-102-535: millimetric scale

Sulfonation Number

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LAB-101-201




LAB-101-222


LAB-101-229 -230 -231



LT/DB-428005/M



ASTM D1019 (obs.)
IP 145 (obs.)
ISO 3840

Olefinic Plus Aromatic Hydrocarbons in Petroleum Distillates

This method covers the determination of olefinic plus aromatic hydrocarbons in gasolines, naphtas, kerosenes and other petroleum distillates that are substantially free from butanes and that have a 90% not over 600 F.

LT/SA-120000/M
Sulfonation Number Apparatus ASTM D1019, composed by:

- LT/CF-122000-R/M: centrifuge
  - · touch screen easy to read
  - · rotor and adapters list on memory
  - · timer count up/down, from 0 or at "set RPM/RCF"
  - · progressive acceleration and braking selectable
  - · lid locking and holding and lid dropping protection
  - · microprocessor controlled
  - · program data protection through password selectable
  - · induction motor maintenance free
  - · max. speed 3000 RPM / 2425 RCF
  - · noise level low than 60 dB
  - · 15 memories + pre-heating program & overheating protection
  - · power supply: 220-240 Vac / 50 - 60Hz, 1400 Watt
- LT/DB-428000/M: thermostatic shaking bath
  - · outer body in steel coated in epoxy anti-acid epoxy paint
  - · double wall heat insulation with mineral fibre
  - · internal chamber in seamless stainless steel with rounded corners for efficient circulation and cleaning and draining tap
  - · stainless steel hinged anti condensation lid
  - · speed of shaking is set with electronic variator from 35 – 150 movements per minute with digital indicator
  - · digital display P.I.D. thermostat
  - · temperature range from +5°C above room temperature to +99,9°C accuracy to ±0,5°C to +37°C.
  - · display precision 0,1°C.
  - · additional thermostat with visual alarm and manual resetting
  - · cooling coil with relevant joint for connection to an external cooling source
  - · overall dimensions: L 725 × D 325 × H 387 mm
  - · internal dimensions tank: L 366 × D 254 × H 150 mm
  - · excursion of the tank: 24 mm (12+12)
  - · nominal volume: 26 litres
  - · rack for ice water jar 4 positions and rack for sulfunation flask 4 positions included
  - · weigth: 27 kg
  - · illuminated two phase main switch
  - · power: 1000 W
  - · power supply: 230 V - 50 Hz
- LAB-101-201: 4 ice water jar
- LAB-101-222: 4 buckets
- LAB-101-229: 4 standard sulfonation flask 100 ml graduated to 0.2 ml

Accessories

- LT/B-2470/BC200: balance
- LT/CB-40800/M-10: cryostat up to -10°C
- LAB-101-230: precision sulfonation flask 10 ml, pack of 4
- LAB-101-231: precision sulfonation flask 5 ml, pack of 4

Spare Parts

- LAB-101-201: ice water jar, pack of 4
- LAB-101-229: standard sulfonation flask, pack of 4

Humidity Cabinet

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ASTM D 1748

Rust Protection by Metal Preservatives in the Humidity Cabinet.
This test method is used for evaluating the rust-preventive properties of metal preservatives under conditions of high humidity.

LT/HC-250000/M
Humidity Cabinet - ASTM D 1748

- Double wall thermostatic cabinet made of 18/8 stainless steel
- Hinged cover consisting of two layers of desized cotton cloth mounted on an aluminium frame
- Desized cotton cloth conforming to military specification MIL C-5646F
- Water level regulating system for automatic adjustment of the water level consisting of one 20 litres carboy, 2000 ml Erlenmeyer flask, glass and rubber tubing
- Low-level water device
- Air supply and metering system:
  - air filter
  - needle valve
  - rotameter
  - pressure gauge
  - pressure regulator
  - filtering trap and tubing
- Tank equipped with draining tap
- Electric heating with 2 armoured stainless steel immersion heaters
- Lin-Tech operating software Lab-Link running in Windows® ambient:
  - TFT/LCD 8"
  - resolution 800 × 640 and 16.2 M colours
  - USB Port
  - storage capacity for more than 60'000 analysis
- Temperature controlled by PID with over-temperature alarm and temperature sensor with provision for calibration
- Air flow rate automatically monitored
- Humidity sensor
- Rotating stage at 1/3 rpm geared by and electric motor for the suspension of 33 steel test panels by means of the suspension hooks
- Circular drip pan mounted on the rotating stage

Power Supply
- 220 Vac 50/60 Hz

Dimensions
- cm 80 × 80 × 100

Weight
- kg 60

Accessories
- LAB-102-502: steel test panel
- LAB-102-504: dummy panel made of PMMA
- LAB-102-507/A: aluminium oxide cloth 240 grit, pack of 100
- LAB-102-508: silica sand, pack of 1 kg
- LAB-102-509: PH paper

Spare Parts
- LAB-102-515: desized cotton cloth
- LAB-102-510: air diffuser stones not certified
- LAB-102-503: suspension hooks
- LAB-110-020: heater
- LAB-140-002: PT100 probe

Rust-preventing Characteristics

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LT/RP-194000/M

ASTM D665 - D3603 - D5534
DIN 51585
IP 135
ISO 7120

ASTM D665 - IP 135
Rust-preventing Characteristics of Inhibited Mineral Oil in the Presence of Water

ASTM D3603 - Rust-preventing Characteristics of Steam Turbine Oil in the Presence of Water (Horizontal Disk Method)

ASTM D5534 - Standard Test Method for Vapour-phase Rust-preventing Characteristics of Hydraulic Fluids

DIN 51585 - ISO 7120
Determination of Rust-preventing Characteristics in the Presence of Water in Petroleum Products, Lubricants Oils, Petroleum Oils and Other Fluids

LT/RP-194000-4/M
Rust Prevention Test Bath - 4 places
LT/RP-194000-6/M
Rust Prevention Test Bath - 6 places

- Compact and solid structure painted with anti-epoxy products, oil bath completely made in stainless steel with a capacity of 16 litres with double wall insulation
- 2 × armoured stainless steel heaters with heating capacity 2000 Watt
- Temperature controlled by PT100 A class and Lin-Tech managing software
- Safety systems:
  · overheating alarm
  · low level liquid
  · overflow system
- Available 4 or 6 test positions and include:
  · cover with holes for test beaker immersion
  · thermometer bath support
  · stirring bars with solid independent transmission PBB pulley-belt-bearing system
  · independent test timer
- Linetronic Management software running on 7" High-brightness TFT:
  · pre-setting for ASTM methods D665, D3606 and D5
  · customizable analysis parameters, temperature, time, RPM
  · 2 × USB for connecting mouse, keyboard and software update
- End-test audible alarm
- Automatic stand-by prevent evaporation of bath medium and power wast
- Temperature reachable : + 90 °C
- RPM setting: 0-1000 RPM

Power supply
- 220Vac 50/60Hz

Dimensions
- cm 65 × 35 × 65

Weight
- 4 positions: 42 kg
- 6 positions: 48 kg

Accessories for ASTM D665
- LAB-101-172: beaker 400 ml
- LAB-101-941-AB: beaker cover made in Plexiglas® for method A and B
- LAB-101-941-C: beaker cover made in PCTFE for method C
- LAB-101-942: test specimen made in steel
- LAB-101-943: test specimen holder made in Plexiglas®
- LAB-101-944: test specimen holder made in Teflon
- LAB-101-945: t-shaped stirrer for methods A and B, made in stainless steel
- LAB-101-946: T-shaped stirrer for method C, made in stainless steel
- T-AS9C: thermometer ASTM 9C
- T-IP21C: thermometer IP 21C

Accessories for ASTM D3603 - D5534
- LAB-101-172: beaker 400 ml
- LAB-101-955: beaker cover made in Plexiglas® complete with specimen holder
- LAB-101-951: horizontal test specimen made in steel
- LAB-101-952: vertical test specimen made in steel
- LAB-101-952/C: cap for vertical test specimen
- LAB-101-956: test specimen holder made in Teflon
- LAB-101-954: washer
- LAB-101-957: T-shaped stirrer made in stainless steel
- T-AS9C: thermometer ASTM 9C IP 15C
- T-IP21C: thermometer IP 21C

Optional Accessories
- LAB-101-940: grinding and polishing device complete with chuck
- LAB-101-947: aluminium oxide paper 150 grit, pack of 100
- LAB-101-948: aluminium oxide paper 240 grit, pack of 100

Spare Parts
- LAB-110-012: heater
- LAB-140-002: PT100 probe
- LAB-160-014: digital thermoregulator
- LAB-150-015: static relay

Particulate Contamination

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LT/PC-155000/M



3794



1000015



LT/DO-248000/N-20



1000462



5500



1286

ASTM D5452

Particulate Contamination in Aviation Fuels.
This test method covers the gravimetric determination by filtration of particulate contaminant in a sample of aviation turbine fuel delivered to a laboratory.

LT/PC-155000/M
Manual apparatus for Particulate Contamination in Aviation Fuels by Laboratory Filtration - ASTM D5452

- Aluminium structure with anti-vibrating feet according to ASTM D5452.
- 5 litres stainless steel sample tank with drainage tap.
- Metallic funnel with filter support and base for fine closing of the membrane.
- 5 litres graduated cylindrical vacuum bottles for receive sample.
- Grounding system and vacuum connection tube included.
- Include: 100 pcs. of 0.8 micron membrane filters 47 mm diameter made of cellulose acetate.

Weight

- 9 kg

Dimensions

- Length 62 cm
- Width 36 cm
- Height 89 cm

Accessories

- 3794: Diaphragm Vacuum Pump.
  - For U.S. Air Force T.O. 42B-1-1 Jet Fuels Filter Test Time.
  - 100% oil-free transfer and maintenance-free.
  - Pure transfer, evacuation and compression.
  - Highly compatible with vapours and condensation.
  - Chemically-resistant.
  - Therefore, suitable for highly aggressive or corrosive gases and vapours.
  - Environmentally friendly.
  - Delivery (l/min): 30.
  - Ultimate vacuum (mbar abs.): 100.
  - Operating pressure (bar g): 0.5.
  - Connectors for tube (mm): ID 10.
  - Power Supply: 230 Vac 50 Hz - IP20.
  - Weight: kg. 3.95.
  - Dimensions: length 36,1 cm, height 14,1 cm, width 10,2 cm.
- 3012: Digital Stopwatch.
- 1000015: Analytical Balance.
  - Capacity: 220 g.
  - Linearity: ±0.2 mg.
  - Response time: 4/6 sec.
  - Calibration: internal.
  - Readability: 0.1 mg.
  - Repeatability: ±0.05 mg.
  - Pan diameter: 80 mm.
  - LCD display with small decimal digits.
  - Membrane keyboard, water proof and solvent resistant, easy to use with TARE, ON/OFF, PRINT and MENU.
  - Indication of the reached stable weight.
  - Bar-graph indicator of dosage and remaining capacity of the balance.
  - Parameters configurable by menu: reading in g (grams), lb (pound), oz (ounce), ct (carats), pcs (pieces), % (percentage).
  - Full scale automatic calibration with internal and/or external mass.
  - Weighing underneath the balance.
  - Selectable response time: "fast/slow".
  - Data output: RS232 I/O adjustable.
  - Operating temperature: 18° ~ 35°C.
  - Power supply: 100 ~ 240 VAC.
  - Power consumption: 200 mA.
  - Dimensions: width 21,6 cm, depth 38 cm, height 36 cm.
  - Weighing chamber dimensions: width 18 cm, depth 17 cm, height 24 cm.
  - Net weight: 7 kg.
  - Power supply: 230/115 Vac 50 Hz.
- 1000462: Laboratory solvent dispenser.
  - Wash capacity up to 1 lt.
  - Filter container made in stainless steel, 25 mm diameter.
  - Filter 0.45 µm, 25 mm diameter (P/n 5237), pack of 100 pcs.
  - Borosilicated glass flask.
  - PTFE High quality seal.
- 5237: Omnipore PTFE filters.
  - 25 mm diameter.
  - 0.45 µm.
  - pack of 100 pcs.
- LT/DO-248000/N-20: Mini-oven.
  - 20 liters capacity.
  - Natural convection, for temperature from: +5° ambient up to +200°C.
  - Power supply 220 Vac 50/60 Hz.

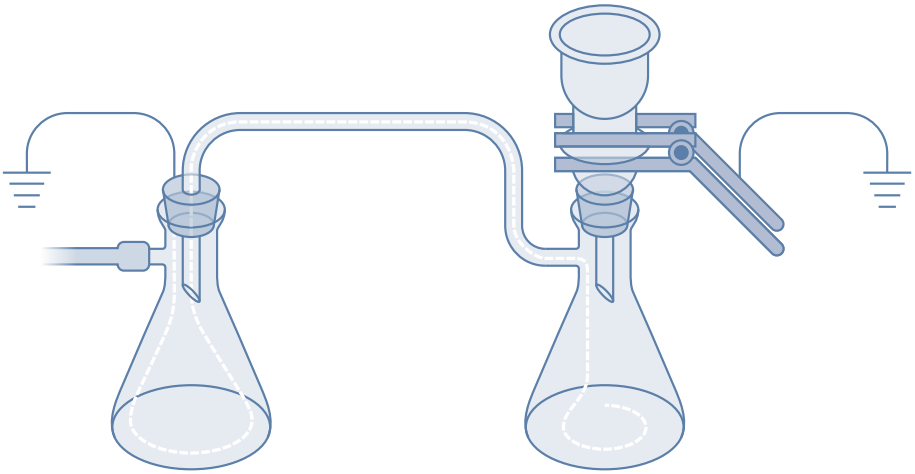
Spare Parts

- 7101: membrane filters 0.8 micron, pack of 100 pcs.
- 7164: rubber stopper, pack of 2 pcs. and tube for connection.
- 7166: grounding system.
- 1286: vacuum bottle 5 lt. capacity.
- 2168: 5 lt filling container made in stainless steel with stopper for spillage.
- 5499: stainless steel forceps for manage the test strips.
- 5500: metallic filter funnel supported by a base with support for closing of the tightness membrane, ASTM D5452.

Particulate Contamination

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3794+



1000462



LT/DO-248000/N-8

ASTM D6217

Standard Test Method for Particulate Contamination in Middle Distillate Fuels by Laboratory Filtration.

This test method covers the determination of the mass of particulate contamination in a middle distillate fuel by filtration. This test method is suitable for all No. 1 and No. 2 grades in Specifications D396, D975, D2880 and D3699 and for grades DMA and DMB in Specification D2069.

2645
Manual Apparatus for Filter Assembly

- 2 × 2000 ml vacuum flask made of glass with side welded nozzle for filtrations under vacuum with rubber stopper, vacuum connection tube.
- Glass funnel set with filter support 47 mm and upper receiver with 250 ml graduated capacity.
- Double grounding system for connection to laboratory ground.
- Flat-bladed forceps for manage the filters.
- Nylon membrane filters, 47 mm diameter, nominal pore size of 0.8 µm.
- Graduated cylinders 100 ml and 1000 ml capacity.
- 18 pcs. of Petri Dishes with cover to protect the membrane filters.

Spare Parts

- 7537: Glass Petri dishes 60 × 12 mm, pack of 18 pcs.
- 7699: Nylon membrane filters, 47 mm diameter, nominal pore size of 0.8 µm, pack of 100 pcs.
- 2645-r: Set of 2 rubber stoppers with holes for ASTM D6217 apparatus.

Accessories

- 3794+: Diaphragm vacuum pump, for U.S. Air Force T.O. 42B-1-1 Jet Fuels filter test time.
  - 100% oil-free transfer and maintenance-free.
  - Pure transfer, evacuation and compression.
  - Highly compatible with vapours and condensation.
  - Chemically-resistant; therefore, suitable for highly aggressive or corrosive gases and vapours.
  - Environmentally friendly.
  - Delivery: 30 l/min.
  - Ultimate vacuum: 100 mbar abs.
  - Manual regulator with analog vacuum gauge 0-1200 mbar.
  - Operating pressure: 0.5 bar g.
  - Connectors for tube: ID 10 mm.
  - Power Supply: 230 Vac 50 Hz - IP20.
  - Weight: kg. 3.95.
  - Dimensions: 36,1 × 14,1 × 10,2 cm.
- 1000462: Laboratory solvent dispenser.
  - Wash capacity up to 1 lt.
  - Filter container made in stainless steel 25 mm diameter.
  - Filter 0.45 µm, 25 mm diameter (P/n 5237), pack of 100 pcs.
  - Borosilicated glass flask.
  - PTFE High quality seal.
- 5237: Omnipore PTFE filters, 25 mm diameter, 0.45 µm, pack of 100 pcs.
- 2596: Sampling container, 1 liter capacity, made of glass with screw cap, pack of 4 pcs.
- LT/DO-248000/N-8: Mini-oven.
  - 8 liters capacity.
  - Natural convection.
  - For temperature from: +5 ambient up to +200°C.
  - Power supply 220 Vac 50/60 Hz.
- 1000015: Semi Micro Analytical Balance.
  - Capacity: 100 g.
  - Linearity: +/- 0,03 mg.
  - Response time: 6/8 sec.
  - Calibration: internal.
  - Division: 0,01 mg.
  - Repeatability: +/- 0,03 mg.
  - Pan diameter: 80 mm.
  - LCD display with small decimal digits.
  - Membrane keyboard, water proof and solvent resistant, easy to use with TARE, ON/OFF, PRINT and MENU.
  - Indication of the reached stable weight.
  - Bar-graph indicator of dosage and remaining capacity of the balance.
  - Parameters configurable by menu: reading in g (grams), lb (pound), oz (ounce), ct (carats), pcs (pieces), % (percentage).
  - Full scale automatic calibration with internal and/or external mass.
  - Weighing underneath the balance.
  - Selectable response time: "fast/slow".
  - Data output: RS232 I/O adjustable.
  - Operating temperature: 18° ~ 35°C.
  - Power supply: 230 Vac (-15/+20%) 50 Hz.
  - Power consumption: 200 mA.
  - Dimensions: 21,0 × 34,0 × 32,0 cm.
  - Weighing chamber dimensions: 18,0 × 17,0 × 22,0 cm.
  - Net weight: 6,6 kg.

Sediment in Crude and Fuel Oils

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ASTM D473
DIN 51789
IP 53
ISO 3735

Sediment in Crude and Fuel Oils
by Extraction Method.
Covers the determination of sediment in crude oils and fuel oils by extraction with toluene.
The precision applies to a range of sediment levels from 0.01 to 0.40 % mass, although higher levels may be determined.

LT/SE-113000/M
Sediment in Crude and Fuel Oils by Extraction Apparatus - ASTM D473

- 1000 ml Erlenmeyer flask
- Stainless steel basket supporting an extraction thimble of alundum
- Cooling metal coil
- Water cup

Accessories

- LT/HD-1280/S6: heating device unit 600 W
- LT/B-2470/ BC150: balance
  · capacity: 210 g
  · readability: 0.1 mg
  · linearity: ± 0.2 mg
  · repeatability: ±0.05 mg
  · response time: 6/10 sec.
  · pan diameter: 80 mm
  · calibration: internal

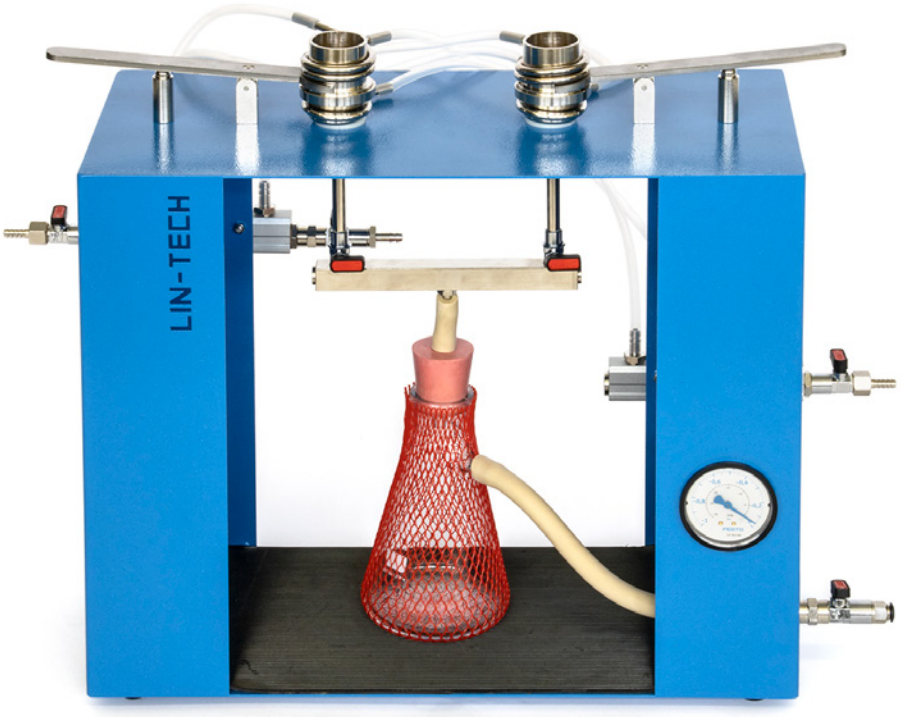
Spare Parts

- LAB-101-131: stainless steel basket
- LAB-101-132/1000: Erlenmeyer flask 1000 ml
- LAB-101-133: extraction thimble of alundum, pack of 3
- LAB-101-134: water cup
- LAB-130-009: cooling coil

Total Sediment Tester

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ASTM D4870
IP 375 - IP 390 (proc.A)
ISO 10307

Determination of Total Sediment in Residual Fuels

This test method covers the determination of total sediment up to 0.40 % m/m for distillate fuel oils containing residual components and to 0.50 % m/m in residual fuel oils having a maximum viscosity of 55 cSt (mm2/s) at 100°C.

LT/TST-115200/M
Total Sediment Tester - ASTM D4870

- Benchtop thermostatic steel cabinet painted with anti-epoxy products.
- Double filtration cells equipped with heating/cooling coils.
- Hold-down spring actioned mechanism for apply correct pressure to brass cup and filters.
- Rear piping for heating steam/oil and cooling water with ball tap.
- Vacuum manifold with independent application valve.
- Vacuum flask 500 ml with protection mesh for residual recover.
- Vacuum manometer 0…-1 bar.

Weight

- 15 Kg

Dimensions

- Width 61 cm
- Depth 25 cm
- Height 50 cm

Spare Parts

- 1542: Flask, 500 ml, pack of 2 pcs.
- 7229: Sintered disk, pack of 2 pcs.
- 11119: Bored flask stopper, pack of 2 pcs.
- 1542/T: Tube for venting, pack of 2 pcs.
- 7453/1: Connection tube, pack of 1 meter.

Steam Generator

- 1000464: Professional laboratory steam generator.
  · Steam pressure indicator.
  · Water level indicator.
  · Solenoid steam flow valve with adjuster knob.
  · Automatic safety water tap.
  · Boiler: inox 3,4 lt.
  · Autonomy: 3.0 hours.
  · Steam Pressure: 2,8 - 3 bar.
  · Heating Power: 1,45 Kw.
  · Power Supply: 230 V - 50/60 Hz, 115 V - 60 Hz.

Accessories Vacuum Source

- 7577: Compact diaphragm air pump.
  · Vacuum and compression application.
  · Flow rate max. 7 l/min, pressure max. 2.5 bar rel.
  · Ultimate Vacuum max. 130 mbar (abs.).
  · Weight 1.3 kg.
  · Dimensions 7,5 × 11,9 × 15,6 cm.
  · Valve Material FKM, diaphragm PTFE coated.
  · 6 mm connector and silencer included.
  · Adjustable speed control and maintenance free.
  · Universal power supply 100-240 Vac 50-60 Hz.
- 3794: Diaphragm Vacuum Pump, for U.S. Air Force T.O. 42B-1-1 Jet Fuels Filter Test Time.
  · 100% oil-free transfer and maintenance-free.
  · Pure transfer, evacuation and compression.
  · Highly compatible with vapours and condensation.
  · Chemically-resistant, therefore suitable for highly aggressive or corrosive gases and vapours.
  · Environmentally friendly.
  · Delivery (l/min): 30.
  · Ultimate vacuum (mbar abs.): 100.
  · Operating pressure (bar g): 0.5.
  · Connectors for tube (mm): ID 10.
  · Power supply: 230 V - 50 Hz, 115 V - 60 Hz.
  · Weight: kg 3.95.
  · Dimensions: 36,1 × 14,1 × 10,2 cm.

Thermometers

- T-AS25C: Thermometer ASTM 25C.
- T-AS1C: Thermometer ASTM 1C.
- T-AS11C: Thermometer ASTM 11C, to be used in combination with 5862.
- T-AS22C: Thermometer ASTM 22 C, IP 24 C.

Digital Thermometer

- 3096: Digital thermometer reader with LCD display for PT100, PT1000, resolution 0.01°C, accuracy 0.01°C, read up to +650°C.
- 3779: PT100 sensor for immersion, temperature range -196…+500°C, 3 mm diameter, 300 mm length.

Total Sediment Tester

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1000464


3794


3408


1000015

General Accessories

- 1057: Dessicator made in glass, 200 mm diameter with tap plate made in porcelain.
- 5838: Stirring rods 150 × 4 mm approx., pack of 10 pcs.
- 2455: Glass beaker 50 ml capacity with spout, pack of 5 pcs.
- 3146: Magnetic stirrer hotplate.
  - Uniform heat distribution with coated aluminium alloy heating plate.
  - Excellent resistance to chemicals.
  - Maximum temperature 370°C.
  - Accepts up to 15 liter flasks.
  - Dimensions: 155 mm diameter.
  - Electronic speed regulation up to 1500 rpm.
  - Excellent speed control, even at low speeds.
  - SpeedServo™ ensures constant speed even when the viscosity changes.
  - High power PCM-type driving magnet.
  - 220 Vac 50 / 60 Hz, with power cable.
- 3653: Portable warm air blower, 220 Vac, 300 Watt power for heat up to +300°C.
- 3408: Motor stirrer with RPM regulator, 220 Vac, complete with base and shaft.
- 1000015: Analytical balance.
  - Capacity: 220 g.
  - Linearity: ±0.2 mg.
  - Response time: 4/6 sec.
  - Calibration: internal.
  - Readability: 0.1 mg.
  - Repeatability: ±0.05 mg.
  - Pan diameter: 80 mm.
  - LCD display with small decimal digits.
  - Membrane keyboard, water proof and solvent resistant, easy to use with TARE, ON/OFF, PRINT and MENU.
  - Indication of the reached stable weight.
  - Bar-graph indicator of dosage and remaining capacity of the balance.
  - Full scale automatic calibration with internal and/or external mass.
  - Parameters configurable by menu: reading in g (grams), lb (pound), oz (ounce), ct (carats), pcs (pieces), % (percentage).
  - Weighing underneath the balance.
  - Selectable response time: "fast/slow".
  - Data output: RS232 I/O adjustable.
  - Operating temperature: 18° ~ 35°C.
  - Power supply: 100 ~ 240 Vac.
  - Power consumption: 200 mA.
  - Dimensions: 21,6 × 38 × 36 cm.
  - Weighing chamber dimensions: 18 × 17 × 24 cm.
  - Net weight: 7 kg.
  - Power supply: 230/115 Vac, 50 Hz.
- LT/DO-248000/N-20: Mini-oven.
  - 20 liters capacity.
  - Natural convection.
  - For temperature from: +5°C ambient up to +200°C.
  - Power supply 220 Vac 50/60 Hz.
- 2557: PetriSlide, for holds filter securely in place.
  - 20 mm diameter × 20 mm.
  - Pack of 18 pcs.
  - Made in glass.
  - Transparent cover allows microscopic examination.
  - Not treated surface.
- 2454: Weighing bottle.
  - Borosilicate 3.3 glass, low form.
  - White labelling area.
  - 80 ml capacity.
  - 80 × 30 mm.
- 7339: Filter GFA, 47 mm diameter, porosity 1,6 µm, pack of 100 pcs.
- 5455: Tweezers made in SS, length 120 mm.
- 2371: Luer-Lock syringe 50 ml with needle.
- 2182: Conical flask, pack of 10 pcs.
- 2183: Air condenser made in glass with rubber stopper, pack of 10 pcs.
- LAB-115200-055: Silicon stoppers for conical flask, unbored, pack of 10 pcs.
- 2372: Micro burette made in glass with Schell Bach background, 5 ml capacity and 0.02 ml division.
- LT/TB-144000/M: Bench top laboratory liquid bath.
  - Bench top instrument completely made in stainless-steel and double chamber insulation.
  - Internal stainless-steel bath with capacity of 45 Liters, equipped with double-insulation and fully immersion stainless-steel heater.
  - Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +150°C, resolution 0,1°C and stability +/- 0.1°C (with cover).
  - Motorized stirrer grant uniformity and stability.
  - Manually settable overtemperature cut-off alarm.
  - Stainless-steel cover with thermoplastic insulated handle.
  - Footprint: width 50 cm, depth 50,5 cm, height 49,2 cm.
  - Internal dimensions: width 40 cm, depth 33 cm, height 30 cm.
  - Power supply: 220 Vac 50/60 Hz or 115 Vac 50/60 Hz.
  - Max. consumption: 1600 Watt.
- 7058: Silicone oil, kinematic viscosity 50mm²/s at 25°C, for working up to +150°C, can of 20 Lt.
- 5944: Stainless steel cover for LT/TB-144000/M that permit to housing 6 × small 50 ml conical flask, equipped with 1 × thermometer port and 6 × small covers with central hole.
- 2522: Hexadecane distribution funnel made in glass with orifice tip, pack of 5 pcs.
- 5148: Magnetic stirring bar 25 mm length covered in PTFE, pack of 5 pcs.
- 5849: Spatula with polypropylene bevelled ends for scrap the conical flask, pack of 3 pcs.
- 5862: Metal block of brass 40 × 40 mm for heating plate temperature measurement.
- 3012: Digital stopwatch.

Total Sediment Tester



LT/DO-248000/N-20



LT/TB-144000/M

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Application Table

Part Number	**ASTM D4870**	**ISO 10307-1**	**ISO 10307-2**	**IP 375**	**IP 390**
1000464	•	•		•	
7577	•	•		•	
3794	•	•		•	
T-AS25C	•	•		•	
T-AS1C	•		•	•	•
T-AS11C	•		•	•	•
T-AS22C	•		•	•	•
3096	*As alternative*		*As alternative*	*As alternative*	*As alternative*
3779	*As alternative*		*As alternative*	*As alternative*	*As alternative*
1057	•	•		•	
3146	•		•	•	•
3653	•		•	•	•
3408	•	•	•	•	•
1000015	•	•	•	•	
LT/DO-248000/N-20	•	•		•	
5838	•	•	•	•	•
2455	•	•		•	
2557	•		•	•	
2454		•			
7339	•	•		•	
5455	•	•		•	
2371	•	•		•	
LT/TB-144000/M + 5944 + 7058	•		•	•	•
2182	•	•	•	•	•
2183	•	•	•	•	•
LAB-115200-055	•		•	•	•
2372	•		•	•	•
2522	•		•	•	•
5148	•		•	•	
5849	•		•	•	•
5862	•		•	•	•
3012	•	•	•	•	•

Sulfur in Petroleum Oils
Quartz-tube Method

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ASTM D1551 (obs.)
DIN 51768
IP 63

Sulfur In Petroleum Oils
(Quartz-tube Method)
Determines the sulfur content within the range 0.1 to 5% by weight in petroleum oils which cannot be burned completely in a wick lamp.

LT/QT-146000/M
Quartz Tube Sulfur Apparatus

- Two-place instrument mounted on a plate painted with epoxy products
- Electric stainless steel furnace with two independent places
- Two digital thermoregulators with thermocouple
- Two scrubbers
- Trap equipped with two inlet cocks for air or oxygen and two outlet cocks for combustion tubes made in transparent quartz
- Tubes provided with tapered connections at the inlet side and spherical connections at the delivery side
- Set of primary and secondary absorbers on support
- Vacuum collector with two regulating valves
- Two flow-off valves
- Two LPG Meker lamps
- Flame filter mesh for combustion tubes
- Included 20 porcelain boat

Accessories

- LT/VP-8618/K: diaphragm vacuum pump
  · 100% oil-free transfer
  · pure transfer, evacuation and compression
  · compatible with vapours and condensation
  · chemically-resistant gases and vapours
  · maintenance-free
  · environmentally friendly
  · delivery 6 l/min
  · ultimate vacuum 100 mbar abs.
  · connectors for tube ID 4 mm
  · power supply: 230V - 50Hz / 115V - 60Hz
  · weight: kg 1.9
  · dimensions: 164 × 141 × 90 mm
- LAB-101-466: flowmeter

Spare Parts

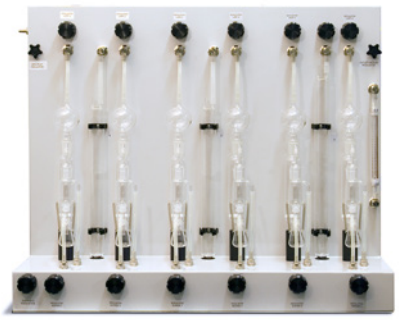
- LAB-101-461: quartz tube combustion
- LAB-101-462/A: primary absorber glassware
- LAB-101-462/B: secondary absorber glassware
- LAB-101-463: scrubber glass
- LAB-101-464: porcelain boat
- LAB-101-465: glass trap
- LAB-160-014: digital thermoregulator
- LAB-140-003: thermocouple K

Sulfur in Petroleum Products Lamp Method

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LT/SL-153000/M



LT/SL-152000/M

ASTM D1266
IP 107

Sulfur in Petroleum Products (Lamp Method).
This test method covers the determination of total sulfur in liquid petroleum products in concentrations from 0.01 to 0.4 mass %. A special sulfate analysis procedure permits the determination of sulfur in concentrations as low as 5 mg/kg.

LT/SL-152000/M
Sulfur Lamp - 6 places - ASTM D1266

- Structure made in plate painted with epoxidic products
- Valve on the vacuum regulator
- Metallic collectors for the vacuum lines
- Gate valves for vacuum and gas
- 6 valves on the vacuum lines
- 6 valves on the burners line
- 1 valve on the chimney line
- 1 flowmeter on the vacuum line

LT/SL-153000/M
Sulfur Lamp - 2 places - ASTM D1266

- Structure made in plate painted with epoxidic products
- Valve on the vacuum regulator
- Metallic collectors for the vacuum lines
- Gate valves for vacuum and gas
- 2 valves on the vacuum lines
- 2 valves on the burners line
- 1 valve on the chimney line
- 1 flowmeter on the vacuum line

Accessories

- LAB-101-492/L: wick for liquid products, pack of 10 m
- LAB-101-492/A: wick for aromatics products, pack of 10 m
- LT/VP-8618/K: pump for vacuum for SL-153000/M
  · vacuum 100 mBar (ABS)
  · flow 6 l/min
  · power supply 230 Vac 50 Hz
  · protection class: IP44
- LT/VP-246000/SA3: pump for vacuum for SL-152000/M
  · vacuum 100 mBar (ABS)
  · flow 20 l/min
  · power supply 230 Vac 50 Hz

Spare Parts

- LAB-101-492: wick for liquid products, pack of 10 m
- LAB-101-493: wick for aromatics, pack of 10 m
- LAB-101-499: chimney
- LAB-101-495: absobiting tube with porous baffle
- LAB-101-496: drop filter
- LAB-101-498/A: flask for liquids products
- LAB-101-498/B: flask for aromatics

Vapour Pressure of Petroleum Products Reid Method

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ASTM D323
IP 69
ISO 3007

ASTM D323 - IP 69 - ISO 3007
Vapour Pressure of Petroleum Products (Reid Method)

This test method covers procedures for the determination of vapour pressure of gasoline, volatile crude oil, and other volatile petroleum products. Procedure A is applicable to gasoline and other petroleum products with a vapour pressure of less than 180 kPa (26 psi). Procedure B may also be applicable to these other materials, but only gasoline was included in the interlaboratory test program to determine the precision of this test method. Neither procedure is applicable to liquefied petroleum gases or fuels containing oxygenated compounds other than methyl-butyl ether (MTBE). Procedure C is for materials with a vapour pressure of greater than 180 kPa (26 psi) and procedure D for aviation gasoline with a vapour pressure of approximately 50 kPa (7 psi).

Lower side: Liquid Chamber LT/RC-179000-A - One Opening

- Made of high-quality stainless steel, long time corrosion resistant.
- Internal and external fine polishing for excellent drop drain.
- Upper connection ½" fitting.
- The inner surface of the coupling end shall be sloped to provide complete drainage when inverted.

Upper side: Vapour Chamber LT/RC-179000-B - ASTM D323

- Made of high-quality stainless steel, long time corrosion resistant.
- Internal and external fine polishing for excellent drop drain.
- Fittings lower connection ½" / upper connection ½" (with optional adapter ¼" on request).
- Volume of approx. 520 cc.

Lower side: Liquid Chamber LT/RC-179000-C - Two Openings

- Made of high-quality stainless steel, long time corrosion resistant.
- Internal and external fine polishing for excellent drop drain.
- Upper connection ½" fitting with 12.7 straight-through full-opening valve.
- The inner surface of the coupling end shall be sloped to provide complete drainage when inverted.
- 6.35 mm valve positioned near bottom.
- Volume of approx. 130 cc.

General Specification

- Inside diameter 51 mm
- External diameter 57 mm
- Vapour chamber: inside lenght 253 mm external lenght 268 mm

Accessories

- LT/TB-177000/M: thermostatic bath
- LAB-101-793/100: pressure gauge double scale, 0-100 kPa and 0-15 Psi
- LAB-101-793/200: pressure gauge double scale, 0-200 kPa and 0-30 Psi
- LAB-101-793/300: pressure gauge double scale, 0-300 kPa and 0-45 Psi
- LAB-101-793/700: pressure gauge double scale, 0-700 kPa and 0-100 Psi
- T-AS18C: thermometer ASTM 18C
- LAB-179-006: sample transfer tool, rubber stopper + 2 tubes

Spare Parts

- LAB-101-792-A: gasket for chamber, pack of 10
- LAB-101-792-B: gasket for pressure gauge, pack of 10 pcs.

Calibrated Glass Capillary Kinematic Viscometers

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U-Tube Viscometers type BS/U, for transparent liquids, with certificate, length 300 mm, sample volume 13~40 ml

Article	Size	Constant	Range
1619/00	O	0.001	0.3 - 1 mm^2/s
1619/01	A	0.003	0.9 - 3 mm^2/s
1619/02	B	0.01	2 - 10 mm^2/s
1619/03	C	0.03	6 - 30 mm^2/s
1619/04	D	0.1	20 - 100 mm^2/s
1619/05	E	0.3	60 - 300 mm^2/s
1619/06	F	1.0	200 - 1000 mm^2/s
1619/07	G	3.0	600 - 3000 mm^2/s
1619/08	H	10	2000 - 10'000 mm^2/s

Miniature U-Tube Viscometers, for transparent liquids, with certificate, length 250 m, sample volume 4 ml

Article	Size	Constant	Range
1622/01	M1	0.001	0.2 - 1 mm^2/s
1622/02	M2	0.005	1 - 5 mm^2/s
1622/03	M3	0.015	3 - 15 mm^2/s
1622/04	M4	0.04	8 - 40 mm^2/s
1622/05	M5	0.1	20 - 100 mm^2/s

Suspended-Level Viscometers BS/IP/SL, for transparent liquids, with certificate, length 330 m, sample volume 22~40 ml

Article	Size	Constant	Range
1625/01	1	0.01	3.5 - 10 mm^2/s
1625/02	1A	0.03	6 - 30 mm^2/s
1625/03	2	0.1	20 - 100 mm^2/s
1625/04	2A	0.3	60 - 300 mm^2/s
1625/05	3	1.0	200 - 1000 mm^2/s
1625/06	3A	3.0	600 - 3000 mm^2/s
1625/07	4	10	2000 - 10'000 mm^2/s
1625/08	4A	30	6000 - 20'000 mm^2/s
1625/09	5	100	20'000 - 100'000 mm^2/s

Suspended-Level Shortened Form Viscometers, for transparent liquids, with certificate, length 250 mm, sample volume 10 ml

Article	Size	Constant	Range
1628/01	1	0.0008	1.05 min mm^2/s
1628/02	2	0.003	2.1 - 3 mm^2/s
1628/03	3	0.01	3.8 - 10 mm^2/s
1628/04	4	0.03	6 - 30 mm^2/s
1628/05	5	0.1	20 - 100 mm^2/s
1628/06	6	0.3	60 - 300 mm^2/s
1628/07	7	1.0	200 - 1000 mm^2/s
1628/08	8	3.0	600 - 3000 mm^2/s
1628/09	9	10	2000 - 10'000 mm^2/s

Shell Pattern Shortened Form Viscometers, suspended level, with certificate

Article	Size	Constant	Range
1629/01	1	0.0008	1.05 min mm^2/s
1629/02	2	0.003	2.1 - 3 mm^2/s
1629/03	3	0.01	3.8 - 10 mm^2/s
1629/04	4	0.03	6 - 30 mm^2/s
1629/05	5	0.1	20 - 100 mm^2/s
1629/06	6	0.3	60 - 300 mm^2/s
1629/07	7	1.0	200 - 1'000 mm^2/s
1629/08	8	3.0	600 - 3'000 mm^2/s
1629/09	9	10	2'000 - 10'000 mm^2/s

Miniature Suspended-Level Viscometers, for transparent liquids, with certificate, length 330 mm, sample volume 4 ml

Article	Size	Constant	Range
1631/01	1	0.003	0.6 - 3 mm^2/s
1631/02	2	0.01	2 - 10 mm^2/s
1631/03	3	0.03	6 - 30 mm^2/s
1631/04	4	0.1	20 - 100 mm^2/s
1631/05	5	0.3	60 - 300 mm^2/s
1631/06	6	1.0	200 - 1'000 mm^2/s
1631/07	7	3.0	600 - 3'000 mm^2/s

Cannon-Fenske Routine, for transparent liquids, with certificate, length 250 mm, sample volume 7 ml

Article	Size	Constant	Range
1634/01	25	0.002	0.5 - 2 mm^2/s
1634/02	50	0.004	0.8 - 4 mm^2/s
1634/03	75	0.008	1.6 - 8 mm^2/s
1634/04	100	0.015	3 - 15 mm^2/s
1634/05	150	0.035	7 - 35 mm^2/s
1634/06	200	0.1	20 - 100 mm^2/s
1634/07	300	0.25	50 - 250 mm^2/s
1634/08	350	0.5	100 - 500 mm^2/s
1634/09	400	1.2	240 - 1'200 mm^2/s
1634/10	450	2.5	500 - 2500 mm^2/s
1634/11	500	8	1600 - 8'000 mm^2/s
1634/12	600	20	4'000 - 20'000 mm^2/s
1634/13	650	20	10'000 - 50'000 mm^2/s
1634/13	700	100	20'000 - 10'0000 mm^2/s

U-Tube Reverse Flow Viscometer BS/IP/RF, for opaque liquids, with certificate, length 275 mm, sample volume 12~25 ml

Article	Size	Constant	Range
1637/01	1	0.003	0.6 - 3 mm^2/s
1637/02	2	0.01	2 - 10 mm^2/s
1637/03	3	0.03	6 - 30 mm^2/s
1637/04	4	0.1	20 - 100 mm^2/s
1637/05	5	0.3	60 - 300 mm^2/s
1637/06	6	1.0	200 - 1'000 mm^2/s
1637/07	7	3.0	600 - 3'000 mm^2/s
1637/08	8	10	2'000 - 10'000 mm^2/s
1637/09	9	30	6'000 - 30'000 mm^2/s
1637/10	10	100	20'000 - 100'000 mm^2/s
1637/11	11	300	60'000 - 300'000 mm^2/s



Calibrated Glass Capillary Kinematic Viscometers

Cannon-Fenske Opaque, for opaque liquids, with certificate, length 295 mm, sample volume 12 ml

Article	Size	Constant	Range
1641/01	25	0.002	0.5 - 2 mm²/s
1641/02	50	0.004	0.8 - 4 mm²/s
1641/03	75	0.008	1.6 - 8 mm²/s
1641/04	100	0.015	3 - 15 mm²/s
1641/05	150	0.035	7 - 35 mm²/s
1641/06	200	0.1	20 - 100 mm²/s
1641/07	300	0.25	50 - 250 mm²/s
1641/08	350	0.5	100 - 500 mm²/s
1641/09	400	1.2	240 - 1'200 mm²/s
1641/10	450	2.5	500 - 2500 mm²/s
1641/11	500	8	1600 - 8'000 mm²/s
1641/12	600	20	4'000 - 20'000 mm²/s
1641/13	650	50	10'000 - 50'000 mm²/s
1641/14	700	100	20'000 - 100'000 mm²/s

ASTM Ubbelohde, for transparent liquids, with certificate, length 283 mm, sample volume 18 ml

Article	Size	Constant	Range
1643/01	0	0.001	0.3 - 1 mm²/s
1643/02	0C	0.003	0.6 - 3 mm²/s
1643/03	0B	0.005	1 - 5 mm²/s
1643/04	1	0.01	2 - 10 mm²/s
1643/05	1C	0.03	6 - 30 mm²/s
1643/06	1B	0.05	10 - 50 mm²/s
1643/07	2	0.1	20 - 100 mm²/s
1643/08	2C	0.3	60 - 300 mm²/s
1643/09	2B	0.5	100 - 500 mm²/s
1643/10	3	1.0	200 - 1'000 mm²/s
1643/11	3C	3.0	600 - 3'000 mm²/s
1643/12	3B	5.0	1'000 - 5'000 mm²/s
1643/13	4	10	2'000 - 10'000 mm²/s
1643/14	4C	30	6'000 - 30'000 mm²/s
1643/15	4B	50	10'000 - 50'000 mm²/s
1643/16	5	100	20'000 - 100'000 mm²/s

Cannon-Ubbelohde Viscometers, for transparent liquids, with certificate, length 335 mm, sample volume 11 ml

Article	Size	Constant	Range
1647/01	25	0.002	0.5 - 2 mm²/s
1647/02	50	0.004	0.8 - 4 mm²/s
1647/03	75	0.008	1.6 - 8 mm²/s
1647/04	100	0.015	3 - 15 mm²/s
1647/05	150	0.035	7 - 35 mm²/s
1647/06	200	0.1	20 - 100 mm²/s
1647/07	300	0.25	50 - 250 mm²/s
1647/08	350	0.5	100 - 500 mm²/s
1647/09	400	1.2	240 - 1'200 mm²/s
1647/10	450	2.5	500 - 2500 mm²/s
1647/11	500	8.0	1600 - 8'000 mm²/s
1647/12	600	20	4'000 - 20'000 mm²/s
1647/13	650	45	9'000 - 45'000 mm²/s
1647/14	700	100	20'000 - 100'000 mm²/s

Ubbelohde Dilution Viscometers ASTM/IP, with certificate, length 385 mm, sample volume 8~40 ml

Article	Size	Constant	Range
1651/01	25	0.002	0.5 - 2 mm²/s
1651/02	50	0.004	0.8 - 4 mm²/s
1651/03	75	0.008	1.6 - 8 mm²/s
1651/04	100	0.015	3 - 15 mm²/s
1651/05	150	0.035	7 - 35 mm²/s
1651/06	200	0.1	20 - 100 mm²/s
1651/07	300	0.25	50 - 250 mm²/s
1651/08	350	0.5	100 - 500 mm²/s
1651/09	400	1.2	240 - 1'200 mm²/s
1651/10	450	2.5	500 - 2500 mm²/s
1651/11	500	8.0	1600 - 8'000 mm²/s
1651/12	600	20	4'000 - 20'000 mm²/s
1651/13	650	45	9'000 - 45'000 mm²/s
1651/14	700	100	20'000 - 100'000 mm²/s

Cannon-Ubbelohde Semi-Micro Viscometers ASTM/IP, with certificate, length 335 mm, sample volume 1~20 ml

Article	Size	Constant	Range
1655/01	25	0.002	0.4 - 1.0 mm²/s
1655/02	50	0.004	0.8 - 4.0 mm²/s
1655/03	75	0.008	1.6 - 8.0 mm²/s
1655/04	100	0.015	3 - 15 mm²/s
1655/05	150	0.035	7 - 35 mm²/s
1655/06	200	0.1	20 - 100 mm²/s
1655/07	300	0.25	50 - 250 mm²/s
1655/08	350	0.5	100 - 500 mm²/s
1655/09	400	1.2	240 - 1'200 mm²/s
1655/10	450	2.5	500 - 2'500 mm²/s
1655/11	500	8.0	1600 - 8'000 mm²/s
1655/12	600	20	4'000 - 20'000 mm²/s

ASTM Cannon Manning Semi-Micro Viscometers, with certificate, length 275 mm, sample volume 1 ml

Article	Size	Constant	Range
1659/01	25	0.002	0.4 - 1.0 mm²/s
1659/02	50	0.004	0.8 - 4.0 mm²/s
1659/03	75	0.008	1.6 - 8.0 mm²/s
1659/04	100	0.015	3 - 15 mm²/s
1659/05	150	0.035	7 - 35 mm²/s
1659/06	200	0.1	20 - 100 mm²/s
1659/07	300	0.25	50 - 250 mm²/s
1659/08	350	0.5	100 - 500 mm²/s
1659/09	400	1.2	240 - 1'200 mm²/s
1659/10	450	2.5	500 - 2'500 mm²/s
1659/11	500	8.0	1600 - 8'000 mm²/s
1659/12	600	20	4'000 - 20'000 mm²/s

ASTM Zeitfuchs Cross-Arm Viscometers, for transparent and opaque liquids, with certificate, length 295mm, sample volume 3 ml

Article	Size	Constant	Range
1663/01	1	0.003	0.6 - 3 mm²/s
1663/02	2	0.01	2 - 10 mm²/s
1663/03	3	0.03	6 - 30 mm²/s
1663/04	4	0.1	20 - 100 mm²/s
1663/05	5	0.3	60 - 300 mm²/s
1663/06	6	1.0	200 - 1'000 mm²/s
1663/07	7	3.0	600 - 3'000 mm²/s
1663/08	8	10	2'000 - 10'000 mm²/s
1663/09	9	30	6'000 - 30'000 mm²/s
1663/10	10	100	20'000 - 100'000 mm²/s

Pinkevitch Viscometer, for transparent liquids, with certificate, length 269 mm, sample volume 10 ml

Article	Size	Constant	Range
1669/01	0	0.0017	0.6 - 1.7 cSt
1669/02	1	0.0085	1.7 - 8.5 cSt
1669/03	2	0.027	5.4 - 27 cSt
1669/04	3	0.065	13 - 65 cSt
1669/05	4	0.14	28 - 140 cSt
1669/06	5	0.35	70 - 350 cSt
1669/07	6	1.0	200 - 1'000 cSt
1669/08	7	2.6	520 - 2'600 cSt
1669/09	8	5.3	1'060 - 5'300 cSt
1669/10	9	9.9	1'980 - 9'900 cSt
1669/11	10	17.0	3'400 - 17'000 cSt

Ubbelohde (DIN) Viscometers, for transparent liquids, with certificate, length 300 mm, sample volume 25 ml

Article	Size	Constant	Range
1671/01	0a	0.005	0.8 - 5
1671/02	I	0.01	1.2 - 10
1671/03	Ia	0.05	5 - 50
1671/04	II	0.1	10 - 100
1671/05	IIa	0.5	50 - 500
1671/06	III	1.0	100 - 1'000
1671/07	IIIa	5.0	500 - 5'000
1671/08	IV	10.0	1'000 - 10'000
1671/09	IVa	50.0	> 5'000

Cannon-Manning Vacuum Capillary Viscometers, with certificate, length 245 mm

Article	Size	Constant	Range
1676/01	4	0.0002	0.0036 – 0.08 Pa.s
1676/02	5	0.0006	0.012 – 0.24 Pa.s
1676/03	6	0.002	0.036 – 0.8 Pa.s
1676/04	7	0.01	0.12 – 2.4 Pa.s
1676/05	8	0.02	0.36 – 8.0 Pa.s
1676/06	9	0.06	1.2 – 24 Pa.s
1676/07	10	0.2	3.6 – 80 Pa.s
1676/08	11	0.6	12 – 240 Pa.s
1676/09	12	2.0	36 – 800 Pa.s
1676/10	13	6.0	120 – 2'400 Pa.s
1676/11	14	20.0	360 – 8'000 Pa.s

Asphalt Institute Vacuum Capillary Viscometers, with certificate, length 245 mm

Article	Size	Constant	Range
1677/01	25	0.2	4.2 – 80 Pa.s
1677/02	50	0.8	18 – 320 Pa.s
1677/03	100	3.2	60 – 1280 Pa.s
1677/04	200	12.8	240 – 5'200 Pa.s
1677/05	400	50	960 – 20'000 Pa.s
1677/06	400Rc	50	960 – 140'000 Pa.s
1677/07	800Rc	200	3'800 – 580'000 Pa.s

Modified Koppers Vacuum Capillary Viscometers, with certificate, length 270 mm

Article	Size	Constant	Range
1678/01	25	0.2	4.2 – 80 Pa.s
1678/02	50	0.8	18 – 320 Pa.s
1678/03	100	3.2	60 – 1'280 Pa.s
1678/04	200	12.8	240 – 5'200 Pa.s
1678/05	400	50	960 – 20'000 Pa.s

Master Viscometers, with certificate, length 420~580 mm

Article	Size	Constant
1690/01	0	0.001
1690/02	0C	0.003
1690/03	0B	0.005
1690/04	1	0.01
1690/05	1C	0.03
1690/06	1B	0.05
1690/07	2	0.1
1690/08^	2C	0.3
1690/09	2B	0.5
1690/10	3	1.0
1690/11	3C	3.0
1690/12	3B	5.0
1690/13	4	10
1690/14	4C	30
1690/15	4B	50
1690/16	5	100

B.R.T.A. Viscometer

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LT/BV-14000-2/M



IP 72
IP 502
EN 12846
EN 13357

Viscosity Cutback Bitumen.
Measure of the viscosity by determining the time of efflux of 50 ml of a cutback bitumen, at 40°C, through a dedicated orifice.

LT/BV-14000-2/M
Digital B.R.T.A. Viscometer IP 72
2 Place

- Water bath made in stainless steel 18/8, insulated double wall, front opened jacket
- Digital thermoregulator PID with over temperature alarm and PT100 A probe
- Lid with double stainless steel heater
- Motor Stirrer with shaft
- Atmospheric drain with drain cock
- Cooling coil with relevant joints for the connection to an external cooling source
- Calibrated brass oil cup with orifice no.2 included (for each place)

Power Supply

- 220 Vac 50/60 Hz

Dimensions

- cm 45 × 50 × 85

Weight

- kg 25

Accessories

- LAB-100-141: calibrated brass cup with orifice diam. 4
- LAB-100-142: calibrated brass cup with orifice diam. 10
- LAB-100-144: go/not go gauge diam. 4
- LAB-100-145: go/not go gauge diam. 10
- LAB-100-143: receiver made in glass, pack of 5 pcs.
- LAB-100-332: digital stopwatch

Thermometers

- T-IP8C: thermometer IP 8C Redwood Low Range 0 °C …+45 °C Div. 0.2

Silicon Oil

- LAB-100-371/50: silicon oil viscosity approx. 50 mm^2 / S @ 25 °C, suitable for working temperatures up to +150 °C, can of 25 litres

Spare Parts:

- LAB-140-002: o-ring small for filling stopper, pack of 3 pcs.
- LAB-100-140: calibrated brass cup with orifice diam. 2
- LAB-100-146: go/not go gauge diam. 2

Low Temperatures Viscometer Bath

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CE



LT/VB-44000/M -45000/M

ASTM D445
ASTM D2532
ASTM D2983
ASTM D5133

Viscosity change after standing at low temperature of aircraft turbine lubricants.
Covers the determination of the kinematic viscosity of aircraft turbine lubricants at low temperature and the percent change of viscosity after a 3 and a 72h standing period at low temperature.

Low temperature, low shear rate, viscosity/ temperature dependence of lubricating oils using a temperature scanning-technique.
This test method covers the measurement of the apparent viscosity of engine oil at low temperatures.

LT/VB-44000/M
Bench top laboratory liquid bath for low temperatures

- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation.
- Stainless steel bath with liquid capacity about 18 litres.
- Over-temperature light and heating cut-off manually settable.
- Double stage motor compressors system CFC free able to cool down the bath to -40°C
- Bath cover with 5 test positions, 51 mm diameter.
- Cooling fan for electronic parts, stirrer motor grant homogeneity/uniformity.
- Managed by a Touch Screen Panel PC by means of the Lab-Link software running in Windows® ambient:
  · TFT/LCD 8" high resolution;
  · 2 × Usb ports for peripherical connection;
  · Switchable temperature from °C to °F.
- Power consumption: 2100 Watt.
- Power supply: 220 Vac 50/60 Hz.

LT/VB-45000/M
Bench top laboratory liquid bath for low temperatures

- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation.
- Stainless steel bath with liquid capacity about 18 litres.
- Over-temperature light and heating cut-off manually settable.
- Double stage motor compressors system CFC free able to cool down the bath to -70°C.
- Bath cover with 5 test positions, 51 mm diameter.
- Cooling fan for electronic parts, stirrer motor grant homogeneity/uniformity.
- Managed by a Touch Screen Panel PC by means of the Lab-Link software running in Windows® ambient:
  · TFT/LCD 8" high resolution;
  · 2 × Usb ports for peripherical connection;
  · Switchable temperature from °C to °F.
- Power consumption: 2300 Watt.
- Power supply: 220 Vac 50/60 Hz.

Low Temperatures Viscometer Bath



LT/VB-47000/M

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CE

LT/VB-47000/M
Digital viscometer bath for low temperatures ASTM D2983

- Liquid bath with heating / cooling coil.
- Bath cover with 6 on-line holes.
- Light and resistant structure fitted with front squared window and light.
- Cooling is controlled by a motor compressor with ecological gas CFC free.
- Support for Brookfield head.
- Heating is provided by an electric immersion stainless steel heater.
- Integrated touch screen panel pc for control bath:
  · TFT/LCD 8";
  · Resolution 1024 × 768 and 256 k colours;
  · 2 × USB Port;
- PID with over temperature alarm and PT100A probe.
- LabLink software running in Windows© ambient.
- Motor stirrer.
- Power supply: 220Vac 50/60Hz.
- Cord cable 220 Vac.
- User manual.
- Temperatures: in °C / °F.
- Cooling capacity: from ambient temperature up to -75 °C.

LT/VB-47445/M
Digital viscometer bath for low temperatures ASTM D2983, D445, D2532

- Liquid bath with heating / cooling coil.
- Bath cover with 5 on-line holes for capillary accomodation and reduction rings for test cell ASTM D2532 / D2932.
- Light and resistant structure fitted with front squared window and light.
- Cooling is controlled by a motor compressor with ecological gas CFC free.
- Support for Brookfield head.
- Heating is provided by an electric immersion stainless steel heater.
- Integrated touch screen panel pc for control bath:
  · TFT/LCD 8";
  · resolution 1024 × 768 and 256 k colours;
  · 2 × USB port.
- PID with over temperature alarm and PT100A probe.
- LabLink software running in Windows© ambient.
- Motor stirrer.
- Power supply: 220 Vac 50/60 Hz.
- Temperatures in °C / °F.
- Cooling capacity: from ambient temperature up to -75 °C.

Accessories for ASTM D2532 / D2983

- LAB-100-472: test cells made in glass, pack of 6 pcs.
- LAB-100-473: cell cover made in glass, pack of 6 pcs.
- LAB-100-474: test cells stoppers made in PTFE with hole for spindle introduction, pack of 6 pcs.
- LAB-100-475: spindle clips for hold the spindle during the conditioning time, pack of 6 pcs.
- LAB-100-476: metal forceeps for hold stopper, pack of 6 pcs.
- T-AS122C: thermometer ASTM 122C -45°C…-35°C div. 0.1°C
- T-AS123C: thermometer ASTM 123C -35°C…-25°C div. 0.1°C
- T-AS124C: thermometer ASTM 124C -25°C…-15°C div. 0.1°C
- T-AS125C: thermometer ASTM 125C -15°C…-5°C div 0.1°C
- LAB-100-371/C: propylene glycol, Kinematic viscosity ~44 mm^2/s at 25°C, can of 25 litres, for cooling

Accessories for ASTM D445

- LAB-100- 373 T&O: viscometer holders PTFE for Cannon-Fenske, pack of 5 pcs.
- LAB-100- 374: viscometer holders in metal for Ubbelohde/BS
- LAB-100-371/C: Propylene Glycol – Kinematic viscosity ~44 mm^2/s at 25°C, can of 25 litres – for cooling
- T-AS72C: thermometer ASTM 72C -19.4°C…-16.6°C div. 0.05°C
- T-AS73C: thermometer ASTM 73C -41.4°C…-38.5°C div. 0.05°C
- T-AS74C: thermometer ASTM 74C -55.4°C…-52.6°C div. 0.05°C

Spare parts

- LAB-100-472: test cells - pack of 12 pcs.
- LAB-100-473: cells cover
- LAB-100-474: test stoppers
- LAB-140-006: PT100 probe
- LAB-110-012: heater
- LAB-160-015: digital thermoregulator
- LAB-150-015: static relay

Redwood Viscometer

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LT/RV-12000/M

IP 70 (obs.)

Redwood Viscosity

No. 1 Determines viscosity of oils not exceeding 2000 seconds at the test temperature.
No. 2 Determines viscosity of oils exceeding 2000 seconds at the test temperature.

LT/RV-12000/M
Digital Redwood Viscometer no. 1
IP 70 (obs.)

- Water bath made in stainless steel 18/8, insulated double wall, front opened jacket
- Lid with stainless steel heater
- Stirrer
- Cooling coil
- Digital thermoregulator PID with over temperature alarm and PT100 A probe
- Calibrated brass oil cup with orifice no. 1
- Fitted with closing-ball-ended

LT/RV-12100/M
Digital Redwood Viscometer no. 1
IP 70 (obs.) - 2 places
LT/RV-12200/M
Digital Redwood Viscometer no. 2
IP 70 (obs.) - 2 places

- Water bath made in stainless steel 18/8, insulated double wall, front opened jacket
- Digital thermoregulator PID with over temperature alarm and PT100 A probe
- Lid with double stainless steel heater
- Motor stirrer with shaft
- Atmospheric drain with drain cock
- Cooling coil with relevant joints for the connection to an external cooling source
- Calibrated brass oil cup

Power Supply

- 220Vac 50/60 Hz

Dimensions

- cm 50 × 50 × 70

Weight

- kg 25

Accessories

- LAB-100-103: Kohlrausch receiving flask 50 ml, pack of 3
- LAB-100-332: digital stopwatch
- LAB-100-161: filter funnel with stainless steel wire mesh

Thermometers

- T-IP8C: thermometer IP 8C Redwood low range 0 °C …+45 °C div. 0.2
- T-IP9C: thermometer IP 9C Redwood medium range +40 °C …+85 °C div. 0.2
- T-IP10C: thermometer IP 10C Redwood high range +76 °C …+122 °C div. 0.2

Silicon Oil

- LAB-100-371/50: silicon oil - viscosity approx. 50 mm^2/S @ 25 °C suitable for working temperatures up to +150 °C - Can of 25 litres

Spare Parts

- LAB-120-001: o-ring set for oil cup composed by 1 o-ring big and 1 o-ring medium
- LAB-120-002: o-ring small for filling stopper, pack of 3
- LAB-120-003: closing ball ended rod

Saybolt Viscometer

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LT/SV-18000-2/M

ASTM D88
ASTM D7496
ASTM E102
IP 55
FTM 791-0304
JIS K 2207

ASTM D88 Saybolt Viscosity
Covers the measurement of viscosities of petroleum products at temperature between 21° and 99°C (70° ~ 210°F)

ASTM D7496
This test method utilizes the Saybolt Furol viscometer to measure the consistency of emulsified asphalt. It is applicable to all the emulsified asphalts specified in Specifications D977 and D2397.

ASTM E 102 Saybolt Viscosity
Covers the measurement of viscosities of petroleum products at temperature between 121° and 232°C (250° ~ 450°F)

LT/SV-18000-2/M
Digital Saybolt Viscometer
Two Positions D88

LT/SV-18102-2/M
Digital Saybolt Viscometer
Two Positions D88 + E102

LT/SV-18000-4/M
Digital Saybolt Viscometer
Four Positions D88

LT/SV-18102-4/M
Digital Saybolt Viscometer
Four Positions D88 + E102

- Bench top instrument with steel structure painted with anti-epoxy products.
- Stainless steel bath with atmospheric drain and thermometer port.
- Stainless steel heater 800 Watt with motor stirrer for granting stability and uniformity.
- Digital thermo-regulator display with PID temperature control and PT100 probe A Class for easily check the bath temperature with 0.1°C resolution.
- Safety thermostat manually settable to prevent over-heating.
- Cooling serpentine with 8 mm joints for connect tap water or cold circulator.
- Calibrated brass oil cup, 1 cup for each test place, suitable for stainless steel flowing orifice Universal and Furol, polished and calibrated.
  · Universal with diameter 1.76 mm (art. 5368).
  · Furol with diameter 3.15 mm (art.5370).

Temperature Range
- Ambient to +99,9°C (D88).
- Ambient to +232°C (E102).

Power Supply
- 230 Vac or 115 Vac 50/60 Hz.

Consumption
- 800 Watt (D88)
- 1600 Watt (E102).

Dimensions
- 2 positions: 41.0 × 32.0 × 63.0 cm.
- 4 positions: 60.0 × 32.0 × 63.0 cm.

Weight
- 2 positions: 27 kg.
- 4 positions: 37 kg.

Orifices
- LAB-100-165: Universal orifice with diameter 1.76 mm.
- LAB-100-166: Furol orifice with diameter 3.15 mm.

Spare Parts
- 5815: Saybolt oil cup made in brass with hexagonal nut.

Thermometers ASTM D88
- T-AS17C: Thermometer ASTM 17C, range +19…+27°C, div. 0,1°C, propylene carbonate filled.
- T-AS18C: Thermometer ASTM 18C IP 23C, range +34…+42°C, div. 0,1°C, propylene carbonate filled.
- T-AS19C: Thermometer ASTM 19C, range +49…+57°C, div. 0,1°C, propylene carbonate filled.
- T-AS20C: Thermometer ASTM 20C, range +57…+65°C, div. 0,1°C, propylene carbonate filled.
- T-AS21C: Thermometer ASTM 21C, range +79…+87°C, div. 0,1°C, propylene carbonate filled.
- T-AS22C: Thermometer ASTM 22C IP 24C, range +95…+103°C, div. 0,1°C , propylene carbonate filled.

Saybolt Viscometer



LT/SV-18000-4/M

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CE

Accessories

- 5364: Filter funnel with stainless steel wire mesh 150.
- 5437: Silicone stopper with cord, pack of 10 pcs.
- 7224: Spare stainless-steel wire mesh 75.
- 1754: Saybolt glass flask calibrated 60 ml, pack of 2 pcs.
- 5610: Thermometer support.
- 5694: Withdrawal tube.
- 2382: Suction pipette.
- 5647: Orifice wrench.
- 5609: Cup wrench.
- 3665: Digital stopwatch multi-channel.
  - · 2 independent channels.
  - · 6 digits display.
  - · Maximum setting 99 hrs, 59 min, 59 secs.
  - · Start-Stop and countdown.
  - · Alarm at countdown end.
  - · Clock 12 o 24 hours format, with date and alarm clock.
- 3680: Digital stopwatch multi-channel.
  - · 4 independent channels.
  - · Maximum setting 99 hrs, 59 min, 59 secs.
  - · Four countdown channels.
  - · Stopwatch channel, and a time-of-day channel that work with an uncompromising 0,01% accuracy.
  - · T1 through T4 may be started simultaneously or individually.
- LT/CB-40810/M-PLUS: Laboratory cryostat bath for temperatures up to -10°C.
  - · Pump for external circulating option.
  - · Solid steel structure coated in epoxy anti-acid paint with upper side made in stainless-steel.
  - · Internal chamber in seamless stainless steel with rounded corners for efficient circulation.
  - · Easy cleaning thanks to atmospheric drain on the bottom of the chamber.
  - · Control head equipped with digital display showing set and actual temperature, display resolution 0,1°C.
  - · Temperature range from -10°C to +99,9°C accuracy to ±0,5°C to +37°C.
  - · Manual safety thermostat against overtemperature.
  - · Circulating pump: prevalence 4 m / 2 l-min ~ prevalence 1 m / 12 l-min.
  - · Weight: 20 kg, empty.
  - · Dimensions: width 33.5 × depth 47.0 × height 63.0 cm.
  - · Capacity 8 liters.
  - · Power supply: 220 Vac or 115 Vac 50/60 Hz.
  - · Max. consumption: 1500 Watt.
  - · DIN 12880 class 2 construction type.

Accessories for ASTM E102

- 5448: Displacement ring.
- 5441: Protective cover.

Thermometers ASTM E102

- T-AS77F: Thermometer ASTM 77F.
- T-AS108F: Thermometer ASTM 108F.
- T-AS78F: Thermometer ASTM 78F.
- T-AS109F: Thermometer ASTM 109F.
- T-AS79F: Thermometer ASTM 79F.
- T-AS80F: Thermometer ASTM 80F.
- T-AS81F: Thermometer ASTM 81F.

Viscometer Bath

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LT/VB-37000/M



LT/VB-39000/M

ASTM D445 - ASTM D446 - ASTM D2170
EN 12595
IP 71-1 - IP 71-2 - IP 319
ISO 3104 - ISO 3105

LT/VB-37000/M
Digital Viscometer Bath

- Used for measuring oils viscosity by Cannon-Fenske, Ubbelohde and similar capillary.
- Working temperature from ambient to +70°C.
- Transparent tank.
- Cover with 5 holes 51 mm.
- Control box on the cover
- Digital display with over te.mperature alarm and PT100A probe, resolution 0.1°C.
- Stainless steel heater and motor stirrer.
- Stand-by covers.

Power Supply
- 220Vac 50/60 Hz

Dimensions and Weight
- 50 cm diameter × h 60 cm
- kg 12

LT/VB-39000/M
Visual + Thermostatic Bath
Max. Temperature +200°C

- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation.
- Stainless steel bath 16 liters capacity with double window for internal inspection, cover made stainless steel with 5 holes 51 mm for introduction of viscosity capillaries, 1 hole for bath thermometer and cooling coil connections for external cooling source.
- Temperature and stirring controlled by Julabo® heating head able to heat up to +200°C with a display resolution of 0.01°C.
- Over-temperature cut-off manually settable, low-liquid alarm.
- Back light with main switch for easy check the capillaries.
- Rear drain cock for easily drain out the bath medium.
- Stand-by covers made in plastic material with small handle.

Dimensions and Weight
- Length 48 cm, width 34 cm, height 62 cm
- kg 24

Power Supply
- 220 Vac or 115 Vac 50/60 Hz

Max. Consumption
- 2000 Watt

LT/VB-39006/M
Visual + Thermostatic Bath
Max. Temperature +200°C

- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation.
- Stainless steel bath 16 liters capacity with double window for internal inspection, cover made stainless steel with 6 holes 51 mm for introduction of viscosity capillaries, 1 hole for bath thermometer and cooling coil connections for external cooling source.
- Temperature and stirring controlled by Julabo® heating head able to heat up to +200°C with a display resolution of 0.01°C.
- Over-temperature cut-off manually settable, low-liquid alarm.
- Back light with main switch for easy check the capillaries.
- Rear drain cock for easily drain out the bath medium.
- Stand-by covers made in plastic material with small handle.

Dimensions and Weight
- Length 48 cm, width 34 cm, height 62 cm
- kg 24

Power Supply
- 220 Vac or 115 Vac 50/60 Hz

Max. Consumption
- 2000 Watt

Spare Parts
- 7901.0936: motor for pump
- 7901.2882: pump complete
- 7901.0942: heating element 220 V – 2000 W
- 7605.0092: heating element 115 V – 1000 W

Standard Accessories Æ 50 mm
- 7257: U-Tube Viscometer holder, size O to F, 1 pc.
- 7651: U-Tube Viscometer holder, size G and H, 1 pc.
- 7653: Suspended-Level Viscometer holder for sizes 1 to 4, 1 pc.
- 7654: Suspended-Level Viscometer holder for sizes 4a and 5, 1 pc.
- 7655: Suspended-Level short form Viscometer holder for sizes 1 to 9, 1 pc.
- 7659: Shell pattern suspended level Viscometer holder for sizes 1 to 9, 1 pc.
- 7007: Cannon-Fenske viscometer Holder, pack of 5 pcs.
- 7255: U-tube reverse flow Viscometer Holder, 1 pc.
- 7258: Cannon-Fenske Opaque Viscometer Holder, 1 pc.
- 7254: Ubbelohde viscometer holder size 0 to 4
- 7656: Ubbelohde viscometer holder size 4C to 5
- 7657: Master Viscometer holder, size 0 to 4, 1 pc.
- 7658: Master Viscometer holder, size 4C to 5, 1 pc.
- 7660: Modified Koppers vacuum viscometer rubber holder, sizes 25 to 400, 1 pc.
- 1363: Cannon-Fenske Opaques, Ubbelohde, Suspended Level viscometers operating kit
- 20700-1: Vacuum control system for Viscous samples, bitumen viscometers Asphalt, Bitumen and Bituminous binders. ASTM D445 / D2170 / D2171
  - · Touch screen operating unit with integrated timer and vacuum pump
  - · User-friendly software with independent selectable vacuum outlet up to -400 mbar
  - · 4 × rear manifold for vacuum connection and external vacuum glass bottle reservoir
  - · Timer function after release of vacuum for precise measurement of viscosity up to 0.01s, accuracy 0.1%
  - · Power supply 220 Vac 50/60Hz

Extra Accessories
- 16984: metal cover with n° 5 holes Æ 60mm, for LT/VB-39000
- 16985: metal cover with n° 6 holes Æ 60mm, for LT/VB-39500
- 6029: adapter made in POM-C for reduce the hole diameter from 60 to 50 mm, pack of 2 pcs.

Accessories Æ 60 mm
- 7652: Universal Viscometer Holder, 1 pc, Æ 60mm

Viscometer Tube Cleaner and Dryer





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CE

LT/VC-48100/M
Heated capillary viscometers tube cleaner and dryer, 6 places

Instrument composed by:

- Bench top single chassis instrument completely realized in stainless steel.
- Integrated touch screen panel pc managed by Linetronic Software running on Windows® basis able to:
  · running multiple cleaning cycles;
  · programming the solvent/air heating temperature;
  · settable timer for solvent and air action;
  · estimation of the remaining solvent;
  · automatic diagnostic and errors display;
  · software settable air/solvent action.
- Solvent tank made in stainless steel with 2 litres capacity removable with fast connections.
- Large front door equipped with tempered glass inspection window, gull-wing vertical opening for easily access to the washing chamber.
- Washing chamber with 6 (six) independent positions with manual operating valve, recovery disk and holding-down spring system.
- Air connection system composed by pressure regulator and integrated air level monitoring system.
  Need to be connected to external air-pressure line.
- Removable stainless steel recovery tank equipped with rear drain tap for used solvent

Power supply

- 220 or 115 Vac

Dimensions

- cm 720 × 520 × 600

Weight

- kg 50

Spare Parts

- LAB-48100-17007: static relay 40 A
- LAB-48100-17161: heating element 800 W
- LAB-48100-5274: silicon adapter for capillary tube

Dean and Stark

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LT/DS-109000/M



LT/DS-109500/M

ASTM D95
IP 74
ISO 9029

ASTM D95, IP 74
Water in Petroleum Products
and Bituminous Materials by Distillation.
This test method covers the determination of water in the range from 0 to 25 % volume in petroleum products, tars, and other bituminous materials by the distillation method.

LT/DS-109000/M
Manual apparatus for Water in Petroleum Products and Bituminous Materials by Distillation

- Metallic case structure painted with anti-acid products equipped with 1 × heating mantle 250 Watt with steel rod and clamp for glassware.
- Main switch and heating regulator.
- 500 ml round bottom flask and Liebig Condenser, 400 mm, made in glass.
- Graduated 10 ml receiver type A, made in glass.

Dimensions and Weight
- 24 cm diameter × 105 cm height.
- 5 kg.

Power supply
- 220 or 115 Vac 50 / 60 Hz.

Max. consumption
- 250 W.

LT/DS-109500/M
Manual apparatus for Water in Petroleum Products and Bituminous Materials by Distillation, 5 places

- Metallic case structure painted with anti-acid products equipped with 5 × heating mantle 300 Watt with steel rod and clamp for glassware.
- 5 × main switch and heating regulator.
- 5 × 500 ml round bottom flask and Liebig Condenser, 400 mm, made in glass.
- 5 × graduated 10 ml receiver type A, made in glass.

Dimensions and Weight
- Width 105 × depth 58 × height 105 cm.
- 56 kg.

Power supply
- 220 or 115 Vac 50 / 60 Hz.

Max. consumption
- 1300 W.

Accessories
- 1175: Receiver type B 25 ml, 0.1 div. with siphon and 24/40 connection (D95-D4006).
- 1171: Receiver type E, 5 ml, 0.1 div. (D95-D4006).
- 1172: Receiver type E, 5 ml, 0.05 div. (D95-D4006).
- 1173: Receiver type E, 10 ml, 0.1 div. (D95-D4006).
- 1174: Receiver type F, 2 ml, 0.05 div. (D95).

Spare Parts
- 2175: Receiver type A, 10 ml, 0.2 div. with siphon (D95-D4006).
- 5460: Clamp for glassware, with corks.
- 1178: Round bottom flask 500 ml, pack of 3 pcs.
- 2185: Liebig condenser 400 mm, pack of 3 pcs.



1171 – 1174

Dew Point

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LT/DP-172000/M



LT/DP-172000/M + 5177

ASTM D1142

Water Vapour Content of Gaseous Fuels by Measurement of Dew Point Temperature.
This test method covers the determination of the water vapour content of gaseous fuels by measurement of the dew-point temperature and the calculation there from of the water vapour content.

LT/DP-172000/M
Dew Point Apparatus, manual instrument

- Laboratory support painted with anti-acid products holding the instrument body made in stainless steel equipped with ¼" regulating valve.
- Refrigerant chamber made in copper with 2 × ¼"gas needle valve.
- Plexiglas® Window with stainless steel regulating mirror.
- Stainless steel manometer diam. 60 mm, double scale 0 – 160 bar / 0 – 2300 bar.
- Thermometer housing in aluminium.
- User manual making part of scope of supply.

Accessories

- 5801: Transport case made in aluminium with foam.
- 5472: Flexible junction according to EN ISO 6251 with quick couplings.
- 5177: Tripod support, for portable.
- T-AS33C: Thermometer ASTM 33C IP 20C, range -38°…+42°C, div. 0,2°C, propylene carbonate filled.
- T-AS114C: Thermometer ASTM 114C IP 14C, range -80°…+20°C, div. 0,5°C, toluene filled.

Spare Parts

- 5184: Pressure gauge 0 – 230 psi / 0 – 16 bar.

Accessories - Pressure Gauges

- 5181: Pressure gauge 0 – 23 psi / 0, 1.6 bar.
- 5183: Liquid filled pressure gauge 0 – 23 psi / 0 – 1.6 bar.
- 5186: Liquid filled pressure gauge 0 – 230 psi / 0 – 16 bar.
- 5187: Pressure gauge 0 – 2300 psi / 0 – 160 bar.
- 5188: Liquid filled pressure gauge 0 – 2300 psi / 0 – 160 bar.



5801

Water in Crude Oil by Distillation

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LT/WD-110000/M



LT/WD-115000/M

ASTM D4006
IP 358
ISO 9029

Water in Crude Oil by Distillation.
This test method covers the determination of water in crude oil by distillation.

LT/WD-110000/M
Water in Crude Oil Distillation Apparatus - ASTM D4006

- Metallic case structure painted with anti-acid products equipped with 350 Watt heating element, rod and clamp for glassware.
- Main switch and heating regulator.
- Round bottom flask 1000 ml, Liebig condenser 400 mm and drying tube (empty).
- Receiver type E, graduated with capacity of 5 ml.
- Weight: 5 kg.
- Dimensions: 24.0 cm diameter, height 115.0 cm.
- Power supply: 220 Vac or 115 Vac 50/60 Hz.
- Max. consumption: 350 Watt.

LT/WD-115000/M
Water in Crude Oil Distillation Apparatus - ASTM D4006 - 5 positions

- Metallic case structure painted with anti-acid products equipped with 350 Watt heating element, rod and clamp for glassware.
- Main switch and heating regulator.
- 5 × round bottom flask 1000 ml, 5 × Liebig condenser 400 mm and 5 × drying tube (empty).
- 5 × receiver type E, graduated with capacity of 5 ml.
- Weight: 56 kg.
- Dimensions: length 105.0 cm × width 58.0 cm × height 115.0 cm.
- Power supply: 220 Vac or 115 Vac 50/60 Hz.
- Max. consumption: 1750 Watt.

Accessories

- 1175: Receiver type B, 25 ml, 0.1 ml div., with siphon and 24/40 connection (ASTM D95-D4006).
- 1171: Receiver type E, 5 ml, 0.1 ml div. (ASTM D95-D4006).
- 1173: Receiver type E, 10 ml, 0.1 ml div. (ASTM D95-D4006).
- 2175: Receiver type A, 10 ml, 0.2 ml div., with siphon (ASTM D95-D4006).
- 1174: Receiver type F, 2 ml, 0.05 ml div. (ASTM D95).

Spare Parts

- 1172: Receiver type E, 5 ml, 0.05 div (ASTM D95-D4006).
- 1569: Round bottom flask, 1000 ml, pack of 3 pcs.
- 2185: Liebig condenser, 400 mm, pack of 3 pcs.
- 7238: Drying tube (empty), complete with stopper.

Water Reaction of Aviation Fuels

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ASTM D1094
DIN 12685 (obs.)
ISO 4788

ASTM D1094
Water Reaction of Aviation Fuels.
This test method covers the determination of the presence of water miscible components in aviation gasoline and turbine fuels, and the effect of these components on volume change and on the fuel-water.

LT/WR-253700/M
Water Reaction Interface of Aviation Fuels
ASTM D1094

- 4 × cylinders in glass from 100 ml div.1 ml with glass cap
- Shaker to vertical movement with a timer 0-99 minutes/seconds
- Fixing table for accommodate up to 4 cylinders

Power supply

- 220 Vac 50-60Hz
- 300 W

Dimensions

- width: 55 cm
- height: 57 cm
- depth: 35 cm

Weight

- kg 50

Spare Parts

- LAB-253-701: glass cylinder graduated, 100 ml, div. 1 ml

Water Washout Characteristics of Lubricating Greases

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ASTM D1264
IP 215
ISO 1109

Water Washout Characteristics of Lubricating Greases.
This test method covers the evaluation of the resistance of a lubricating grease to washout by water from a bearing, when tested at 38 and 79°C (100 and 175°F) under the prescribed laboratory conditions. It is not to be considered the equivalent of service evaluation tests.
This test method may not be suitable for some greases containing highly volatile components.

LT/WW-205600/M
Water Washout Grease Apparatus
ASTM D1264

- Bench top instrument with metallic case structure painted with anti-acid products and double chamber insulation.
- Stainless steel bath 1,4 Liters capacity with removable cover for internal inspection and hole for bath thermometer.
- Integrated water pump for delivery 300 ml/min water to the spray nozzle.
- Temperature controlled by Linetronic's control board with PT100 A class, stainless steel immersion heaters and manually settable over-temperature protection system and low-level liquid protection.
- Mechanical bearing block assembly with easy-screw system for demounting, assembly and cleaning the apparatus.
- Front analog flowmeter with needle valve for fine regulation of 2.5-25 l/h – 0.7-6.9 ml/sec and water-line filter for easy collect the washed grease.
- Touch screen display waiting time/analysis time, rpm, bath temperature.
  · Bath temperature pre-set +38° and +79°C, or user definable up to +100°C.
  · RPM pre-set at 600 as per method, or user definable from 0-1000.
  · Initial and final weight can be added for complete report output.

Power Supply
- 220 or 115 Vac 50/60 Hz

Max. Consumption
- 450 Watt

Dimensions & Weight
- width: 55 cm
- height: 43 cm
- depth: 40 cm
- kg 15

Accessories
- T-AS34C: thermometer ASTM 34C IP 21C, range +25°…+105°C, Div. 0,2°C, propylene carbonate filled.

Consumable
- 7240: bearing 6204, pack of 5 pcs.

Spare Parts
- 16735: cover for bearing.
- 7242: bearing block assembly.
- 2358: flowmeter with needle valve, range 3 - 25 nl/h H_2O.



7242

Drop Melting Point

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ASTM D127
IP 133

Drop Melting Point of Petroleum Wax Including Petrolatum.
This test method covers the determination of the drop melting point of petroleum wax. It is used primarily for petrolatums and other microcrystalline wax.

LT/DM-210000/M
Drop Melting Point of Petroleum Wax, Including Petrolatum - ASTM D127

- Painted structure with control box including main switch, heating power regulation and hot warming lamp.
- Bath made through tempered glass beaker 1500 ml capacity.
- Bath cover made of plastic material equipped with hole for test tube introduction, hole for bath thermometer and hole for medium filling.
- Test tube 25 mm diameter, length 150 mm.
- Set of stoppers for glass and thermometer holding.

Power supply

- 220 or 115 Vac 50/60 Hz

Power consumption

- 1000 Watt

Accessories

- T-AS14C: Thermometer ASTM 14C IP 17C, range +38°…+82°C, div. 0,1°C, propylene carbonate filled.
- T-AS34C: Thermometer ASTM 34C IP 21C, range +25°…+105°C, div. 0,2°C, propylene carbonate filled.
- T-AS61C: Thermometer ASTM 61C IP 63C, range +32°…+127°C, div. 0,2°C, propylene carbonate filled.

Spare Parts

- 2093: Test tube ASTM made in glass, 25 mm diameter,150 mm height, pack of 10 pcs.
- 2158: Glass bath 1500 ml.
- 5464: Stopper series, pack of 3 pcs.
- 15577: Plastic POM cover.

Wax Melting Point

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ASTM D87
IP 55

Melting Point of Petroleum Wax
(Cooling Curve).
This test method covers the determination of the melting point (cooling curve) of petroleum wax. It is unsuitable for waxes of the petrolatum group, microcrystalline waxes, or blends of such waxes with paraffin wax or scale wax.

LT/WM-209000/M
Wax Melting Point ASTM D87

- Stainless steel water bath with steel tub 51 × 114 mm (forming the air bath).
- Silicone stoppers, one with hole for thermometer.
- Glass test tube 25 mm diameter × 100 mm, calibrated to 50.8 mm.
- Stopper for suspend the glass test tube.
- Stopper for test tube thermometer.

Accessories

- 3012: Digital stopwatch.
- T-AS14C: Thermometer ASTM 14C IP 17C, range +38°…+82°C, div. 0,1°C, propylene carbonate filled.
- T-AS14F: Thermometer ASTM 34C IP 21C, range +25°…+105°C, div. 0,2°C, propylene carbonate filled.

Spare Parts

- 2174: Glass test tube calibrated, pack of 10 pcs.
- 5509: Test tube stopper series, pack of 10 pcs.

Oil and Solvent in Wax

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CE



1000015

ASTM D721 - ASTM D3235
DIN 51571
IP 158

ASTM D721 - DIN 51571 - IP 158
Oil Content of Petroleum Waxes
This test method covers the determination of oil in petroleum waxes having a congealing point of 30°C (86°F) or higher as determined in accordance with Test Method D938, and containing not more than 15 % of oil.

ASTM D3235
Solvent Extractables in Petroleum Waxes
This test method covers the determination of solvent extractable in petroleum waxes.



Also available as a heating unit only.

LT/WA-218000/M
Oil and Solvent in Wax Apparatus

- Heating unit made in stainless.
  · Double layer structure with heating chamber.
  · Heating by irradiation bulb.
  · Inspection window in polymethylmethacrylate with open/close knob.
  · Collector for air distribution with 4 delivery position.
  · Digital thermoregulator with PT100 Class A for temperature monitoring.
  · Air filter and flowmeter with regulation valve.
- Cooling unit made in stainless steel.
  · Double layer structure with insulating material.
  · Internal stainless-steel tank with plastic anti-condensing cover and 3 stand-by cover cap.
  · Filling hole with cover cap and thermometer holder.
  · Air pressure regulation system with pressure gauge.
  · Cooling connection with internal nickel-plated serpentine.
  · Cryostat to –34°C required.
  · Pressurized air must be supplied.

Power supply
- 220 Vac 50/60 Hz.

Spare Parts
- 7309: Air filters, for vacuum/compression system, pack of 10 pcs.

Accessories
- T-AS71C: Thermometer ASTM 71C IP 72C, range -37°…+21°C, div. 0,5°C, propylene carbonate filled.
- 1565: Filter stick assembly (test tube+air inlet glass tube and filter).
- 1567: Weighing bottles 15ml with stopper, pack of 4 pcs.

- 1000015: Analytical balance.
  · Capacity: 220 g.
  · Readability: 0.1 mg.
  · Linearity: ±0.2 mg.
  · Repeatability: ±0.05 mg.
  · Response time: 4/6 sec.
  · Pan diameter: 80 mm.
  · Calibration: internal, every 3 hours or at temperature change.
  · Internal weighing cell with magnetic compensation and anti-shock system.
  · LCD display with small decimal digits.
  · Membrane keyboard, water proof and solvent resistant, easy to use with TARE, ON/OFF, PRINT and MENU.
  · Indication of the reached stable weight.
  · Bar-graph indicator of dosage and remaining capacity of the balance.
  · Parameters configurable by menu: reading in g (grams), lb (pound), oz (ounce), ct (carats), pcs (pieces), % (percentage).
  · Full scale automatic calibration with internal and/or external mass.
  · Weighing underneath the balance, selectable response time: "fast/slow".
  · Data output: RS232 I/O adjustable.
  · Printing protocol (GLP/GMP/GCP/ISO) with password protection.
  · Operating temperature: 18° ~ 35°C.
  · Power supply: 100 ~ 240 Vac.
  · Power consumption: 200 mA.
  · Dimensions: width 21.6 × depth 38.0 × height 36.0 cm.
  · Weighing chamber dimensions: width 18.0 × depth 17.0 × height 24.0 cm. Weight: 7 kg.
  · CE Marked.

Thermometers ASTM IP

ASTM	IP	Name	Range+T°	Division mm	Immersion mm	Lenght mm
1C	-	Partial immersion	-20 +150°C	1	76	322
1F	-	Partial immersion	0 +302°F	2	76	322
2C	62C	Partial immersion	-5 +300°C	1	76	390
2F	62F	Partial immersion	20 +580°F	2	76	390
3C	73C	Partial immersion	-5 +400°C	1	76	415
3F	73F	Partial immersion	20 +760°F	2	76	415
5C	1C	Cloud and Pour	-38 +50°C	1	108	230
5F	1F	Cloud and Pour	-36 +120°F	2	108	230
6C	2C	Low Cloud and Pour	-80 +20°C	1	76	230
6F	2F	Low Cloud and Pour	-112 +70°F	2	76	230
7C	5C	Low Distillation	-2 +300°C	1	Total	385
7F	-	Low Distillation	30 +580°F	2	Total	385
8C	6C	High Distillation	-2 +400°C	1	Total	385
8F	-	High Distillation	30 +760°F	2	Total	385
9C	15C	Low Pensky Martens	-5 +110°C	0.5	57	290
9F	15F	Low Pensky Martens	20 +230°F	1	57	290
10C	16C	High Pensky Martens	90 +370°C	2	57	290
10F	16F	High Pensky Martens	200 +700°F	5	57	290
11C	28C	Cleveland Open Flash	-6 +400°C	2	25	310
11F	28F	Cleveland Open Flash	20 +760°F	5	25	310
12C	64C	Density-Wide Range	-20 +102°C	0.2	Total	420
12F	64F	Density-Wide Range	-5 +215°F	0.5	Total	420
13C	47C	Loss on Heat	115 +170°C	0.5	Total	155
14C	17C	Wax Melting Point	38 +82°C	0.1	79	375
14F	17F	Wax Melting Point	100 +180°F	0.2	79	375
15C	60C	Low Softening Point	-2 +80°C	0.2	Total	395
15F	-	Low Softening Point	30 +180°F	0.5	Total	395
16C	61C	High Softening Point	30 +200°C	0.5	Total	395
16F	-	High Softening Point	85 +392°F	1	Total	395
17C	-	Saybolt Viscosity	19 +27°C	0.1	Total	275
17F	-	Saybolt Viscosity	66 +80°F	0.2	Total	275
18C	23C	Reid Vapour Pressure	34 +42°C	0.1	Total	275
18F	23F	Reid Vapour Pressure	94 +108°F	0.2	Total	275
19C	-	Saybolt Viscosity	49 +57°C	0.1	Total	275
19F	-	Saybolt Viscosity	120 +134°F	0.2	Total	275
20C	-	Saybolt Viscosity	57 +65°C	0.1	Total	275
20F	-	Saybolt Viscosity	134 +148°F	0.2	Total	275
21C	-	Saybolt Viscosity	79 +87°C	0.1	Total	275
21F	-	Saybolt Viscosity	174 +188°F	0.2	Total	275
22C	24C	Oxidation Stability	95 +103°C	0.1	Total	275
22F	24F	Oxidation Stability	204 +218°F	0.2	Total	275
23C	-	Engler Viscosity	18 +28°C	0.2	90	212
24C	-	Engler Viscosity	39 +54°C	0.2	90	237
25C	-	Engler Viscosity	95 +105°C	0.2	90	212
26C	-	Stability Test	130 +140°C	0.1	Total	463
27C	-	Turpentine Distillation	147 +182°C	0.5	76	301
28C	31C	Kinematic Viscosity	36.6 +39.4°C	0.05	Total	305
28F	31F	Kinematic Viscosity	97.5 +102.5°F	0.1	Total	305
29C	34C	Kinematic Viscosity	52.6 +55.4°C	0.05	Total	305
29F	34F	Kinematic Viscosity	127.5 +132.5°F	0.1	Total	305
30F	32F	Kinematic Viscosity	207.5 +212.5°F	0.1	Total	305
33C	20C	Low Aniline Point	-38 +42°C	0.2	50	420
33F	-	Low Aniline Point	36.5 +107.5°	0.5	50	420
34C	21C	Medium Aniline Point	25 +105°C	0.2	50	420
34F	-	Medium Aniline Point	77 +221°F	0.5	50	420
35C	59C	High Aniline Point	90 +170°C	0.2	50	420
35F	-	High Aniline Point	194 +338°F	0.5	50	420
36C	-	Titer Test	-2 +68°C	0.2	45	405
37C	77C	Solvents Distillation	-2 +52°C	0.2	100	395
38C	78C	Solvents Distillation	24 +78°C	0.2	100	395
39C	79C	Solvents Distillation	48 +102°C	0.2	100	395
40C	80C	Solvents Distillation	72 +126°C	0.2	100	395
41C	81C	Solvents Distillation	98 +152°C	0.2	100	395
42C	82C	Solvents Distillation	95 +255°C	0.5	100	395
43C	65C	Kinematic Viscosity	51.6 -34°C	0.1	Total	420
43F	65F	Kinematic Viscosity	-61 -29°F	0.2	Total	420

ASTM Thermometers

ASTM	IP	Name	Range+T°	Division mm	Immersion mm	Lenght mm
44C	29C	Kinematic Viscosity	18.6 +21.4°C	0.05	Total	305
44F	29F	Kinematic Viscosity	66.5 +71.5°F	0.1	Total	305
45C	30C	Kinematic Viscosity	23.6 +26.4°C	0.05	Total	305
45F	30F	Kinematic Viscosity	74.5 +79.5°F	0.1	Total	305
46C	66C	Kinematic Viscosity	48.6 +51.4°C	0.05	Total	305
46F	66F	Kinematic Viscosity	119.5 +124.5°	0.1	Total	305
47C	35C	Kinematic Viscosity	58.6 +61.4°C	0.05	Total	305
47F	35F	Kinematic Viscosity	137.5 +142.5°	0.1	Total	305
48C	90C	Kinematic Viscosity	80.6 +83.4°C	0.05	Total	305
48F	90F	Kinematic Viscosity	177.5 +182.5°	0.1	Total	305
49C	-	Stormer Viscosity	20 +70°C	0.2	65	305
50F	-	Gas Calorimeter Inlet	54 +101°F	0.1	Total	468
51F	-	Gas Calorimeter Inlet	69 +116°F	0.1	Total	468
52C	-	Butadiene Boiling Point	-10 +5°C	0.1	Total	162
54C	18C	Congealing Point	20 +100.6°	0.2	Total	310
54F	18F	Congealing Point	68 +213°F	0.5	Total	310
56C	-	Bomb Calorimeter	19 +35°C	0.02	Total	600
56F	-	Bomb Calorimeter	66 +95°F	0.05	Total	600
57C	-	Tag Closed	-20 +50°C	0.5	57	287
57F	-	Tag Closed	-4 +122°F	1	57	287
58C	-	Tank	-34 +49°C	0.5	Total	305
58F	-	Tank	-30 +120°F	1	Total	305
59C	-	Tank	-18 +82°C	0.5	Total	305
59F	-	Tank	0 +180°F	1	Total	305
60C	-	Tank	77 +260°C	1	Total	305
60F	-	Tank	170 +500°F	2	Total	305
61C	63C	Petrolatum Melting Point	32 +127°C	0.2	79	380
61F	-	Petrolatum Melting Point	90 +260°F	0.5	79	380
62C	-	Precision	-38 +2°C	0.1	Total	379
62F	-	Precision	-36 +35°F	0.2	Total	379
63C	-	Precision	-8 +32°C	0.1	Total	379
63F	-	Precision	18 +89°F	0.2	Total	379
64C	-	Precision	25 +55°C	0.1	Total	379
64F	-	Precision	77 +131°F	0.2	Total	379
65C	-	Precision	50 +80°C	0.1	Total	379
65F	-	Precision	122 +176°F	0.2	Total	379
66C	-	Precision	75 +105°C	0.1	Total	379
66F	-	Precision	167 +221°F	0.2	Total	379
67C	-	Precision	95 +155°C	0.2	Total	379
67F	-	Precision	203 +311°F	0.5	Total	379
68C	-	Precision	145 +205°C	0.2	Total	379
68F	-	Precision	293 +401°F	0.5	Total	379
69C	-	Precision	195 +305°C	0.5	Total	379
69F	-	Precision	383 +581°F	1	Total	379
70C	-	Precision	295 +405°C	0.5	Total	379
70F	-	Precision	563 +761°F	1	Total	379
71C	72C	Oil in Wax	-37 +21°C	0.5	76	355
71F	72F	Oil in Wax	-35 +70°F	1	76	355
72C	67C	Kinematic Viscosity	19.4 -16.6°C	0.05	Total	305
72F	67F	Kinematic Viscosity	-2.5 +2.5°F	0.1	Total	305
73C	68C	Kinematic Viscosity	41.4 -38.6°C	0.05	Total	305
73F	68F	Kinematic Viscosity	42.5 -37.5°F	0.1	Total	305
74C	69C	Kinematic Viscosity	55.4 -52.6°C	0.05	Total	305
74F	69F	Kinematic Viscosity	67.5 -62.5°F	0.1	Total	305
75F	-	Anti-freeze Freezing Point	-35 +35°F	0.5	100	408
76F	-	Anti-freeze Freezing Point	-65 +5°F	0.5	100	408
77F	-	Saybolt Viscosity	245 +265°F	0.5	Total	275
78F	-	Saybolt Viscosity	295 +315°F	0.5	Total	275
79F	-	Saybolt Viscosity	345 +365°F	0.5	Total	275
80F	-	Saybolt Viscosity	395 +415°F	0.5	Total	275
81F	-	Saybolt Viscosity	445 +465°F	0.5	Total	275
82C	-	Fuel Rating. Engine	-15 +105°C	1	30	162
82F	-	Fuel Rating. Engine	0 +220°F	2	30	162
83C	-	Fuel Rating. Air	15 +70°C	1	40	171
83F	-	Fuel Rating. Air	60 +160°F	1	40	171
84C	-	Fuel Rating. Orifice Tank	25 +80°C	1	249	383
84F	-	Fuel Rating. Orifice Tank	75 +175°F	1	249	383
85C	-	Fuel Rating. Surge	40 +150°C	1	181	310
85F	-	Fuel Rating. Surge	100 +300°F	2	181	310
86C	-	Fuel Rating. Mix	95 +175°C	1	35	167
86F	-	Fuel Rating. Mix	200 +350°F	2	35	167
87C	-	Fuel Rating. Coolant	150 +205°C	1	40	172
87F	-	Fuel Rating. Coolant	300 +400°F	1	40	172
88C	-	Vegetable Oil Flash	10 +200°C	1	57	287
88F	-	Vegetable Oil Flash	50 +392°F	2	57	287
89C	-	Solidification Point	-20 +10°C	0.1	76	370
90C	-	Solidification Point	0 +30°C	0.1	76	370
91C	-	Solidification Point	20 +50°C	0.1	76	370
92C	-	Solidification Point	40 +70°C	0.1	76	370
93C	-	Solidification Point	60 +90°C	0.1	76	370
94C	-	Solidification Point	80 +110°C	0.1	76	370
95C	-	Solidification Point	100 +130°C	0.1	76	370
96C	-	Solidification Point	120 +150°C	0.1	76	370
97C	-	Tank	-18 +49°C	0.5	Total	305
97F	-	Tank	0 +120°F	1	Total	305
98C	-	Tank	16 +82°C	0.5	Total	305
98F	-	Tank	60 +180°F	1	Total	305
99C	-	Weathering Test	-50 +5°C	0.2	35	302
99F	-	Weathering Test	-55 +40°F	0.5	35	302
100C	-	Solidification Point	145 +205°C	0.2	76	370
101C	-	Solidification Point	195 +305°C	0.5	76	370
102C	83C	Solvents Distillation	123 +177°C	0.2	100	395
103C	84C	Solvents Distillation	148 +202°C	0.2	100	395
104C	85C	Solvents Distillation	173 +227°C	0.2	100	395
105C	86C	Solvents Distillation	198 +252°C	0.2	100	395
106C	87C	Solvents Distillation	223 +277°C	0.2	100	395
107C	88C	Solvents Distillation	248 +302°C	0.2	100	395
108F	-	Saybolt Viscosity	270 +290°F	0.5	Total	175
109F	-	Saybolt Viscosity	320 +340°F	0.5	Total	175
110C	83C	Kinematic Viscosity	133.6 +136.4°C	0.05	Total	305
110F	-	Kinematic Viscosity	272.5 +277.5°F	0.1	Total	305
111C	-	Tar Acids Distllation	170 +250°C	0.2	100	395
112C	-	of Benzene	4 +6°C	0.02	Total	215
112C	89C	Softening Point Wide Range	-1 +175°C	0.5	Total	405
113F	89F	Softening Point Wide Range	30 +350°F	1	Total	405
114C	14C	Aviation Fuel Freezing Point	-80 +20°C	0.5	Total	300
116C	-	Bomb Calorimeter	18.9 +25.1°C	0.01	Total	609
117C	-	Bomb Calorimeter	23.9 +30.1°C	0.01	Total	609
118C	-	Kinematic Viscosity	28.6 +31.4°C	0.05	Total	305
118F	-	Kinematic Viscosity	83.5 +88.5°F	0.1	Total	305
119C	-	Anti-Freeze Freezing Point	38.3 -30°C	0.1	100	420
119F	-	Anti-Freeze Freezing Point	-37 -22°F	0.2	100	420
120C	92C	Kinematic Viscosity	38.6 +41.4°C	0.05	Total	305
121C	32C	Kinematic Viscosity	98.6 +101.4°C	0.05	Total	305
122C	94C	Brookfield Viscosity	-45 -35°C	0.1	Total	305
123C	95C	Brookfield Viscosity	-35 -25°C	0.1	Total	305
124C	96C	Brookfield Viscosity	-25 -15°C	0.1	Total	305
125C	97C	Brookfield Viscosity	-15 -5°C	0.1	Total	305
126C	71C	Kinematic Viscosity	27.4 -24.6°C	0.05	Total	305
126F	71F	Kinematic Viscosity	17.5 -12.5°F	0.1	Total	305
127C	99C	Kinematic Viscosity	21.4 -18.6°C	0.05	Total	305
128C	33C	Kinematic Viscosity	-1.4 +1.4°C	0.05	Total	305
128F	33F	Kinematic Viscosity	29.5 +34.5°F	0.1	Total	305
129C	36C	Kinematic Viscosity	91.6 +94.4°C	0.05	Total	305
129F	36F	Kinematic Viscosity	197.5 +202.5°F	0.1	Total	305

ASTM	IP	Name	Range+T°	Division mm	Immersion mm	Lenght mm
1C	-	Partial immersion	-20 +150°C	1	76	322
1C	5C	Cloud and Pour	-38 +50°C	1	108	230
1F	5F	Cloud and Pour	-36 +120°F	2	108	230
2C	6C	Low Cloud and Pour	-80 +20°C	1	76	230
2F	6F	Low Cloud and Pour	-112 +70°F	2	76	230
3C	-	Demulsification	-1 +105°C	0.5	Total	-
3F	-	Demulsification	30 +220°F	1	Total	-
4C	-	Crude Oil Distillation	-4 +360°C	2	Total	310
5C	7C	Low Distillation	-2 +300°C	1	Total	385
6C	8C	High Distillation	-2 +400°C	1	Total	385
8C	-	Flushing Case Low	0 +45°C	0.2	65	340
9C	-	Flushing Case Low	40 +85°C	0.2	65	340
14C	114C	Aviation Fuel Freezing Point	-80 +20°C	0.5	Total	300
15C	9C	Low Pensky Martens	-5 +110°C	0.5	57	290
15F	9F	Low Pensky Martens	20 +230°F	1	57	290
16C	10C	High Pensky Martens	90 +370°C	2	57	290
16F	10F	High Pensky Martens	200 +700°F	5	57	290
17C	14C	Wax Melting Point	38 +82°C	0.1	79	375
17F	14F	Wax Melting Point	100 +180°F	0.2	79	375
18C	54C	Congealing Point	20 +100.6°C	0.2	Total	310
20C	54C	Low Aniline Point	-38 +42°C	0.2	50	420
21C	33C	Medium Aniline Point	25 +105°C	0.2	50	420
22C	34C	Oxidation	195 +205°C	0.1	100	300
23C	18C	Reid Vapour Pressure	34 +42°C	0.1	Total	275
23F	18F	Reid Vapour Pressure	94 +108°F	0.2	Total	275
24C	22C	Oxidation Stability	95 +103°C	0.1	Total	275
24F	22F	Oxidation Stability	204 +218°F	0.2	Total	275
28C	11C	Cleveland Open Flash	-6 +400°C	2	25	310
28F	11F	Cleveland Open Flash	20 +760°F	5	25	310
29C	44C	Kinematic Viscosity	18.6 +21.4°C	0.05	Total	305
29F	44F	Kinematic Viscosity	66.5 +71.5°F	0.1	Total	305
30C	45C	Kinematic Viscosity	23.6 +26.4°C	0.05	Total	305
30F	45F	Kinematic Viscosity	74.5 +79.5°F	0.1	Total	305
31C	28C	Kinematic Viscosity	36.6 +39.4°C	0.05	Total	305
31F	28F	Kinematic Viscosity	97.5 +102.5°F	0.1	Total	305
32C	121C	Kinematic Viscosity	98.6 +101.4°C	0.05	Total	305
32F	30F	Kinematic Viscosity	207.5 +212.5°F	0.1	Total	305
33C	128C	Kinematic Viscosity	-1.4 +1.4°C	0.05	Total	305
33F	128F	Kinematic Viscosity	29.5 +34.5°F	0.1	Total	305
34C	29C	Kinematic Viscosity	52.6 +55.4°C	0.05	Total	305
34F	29F	Kinematic Viscosity	127.5 +132.5°F	0.1	Total	305
35C	47C	Kinematic Viscosity	58.6 +61.4°C	0.05	Total	305
35F	47F	Kinematic Viscosity	137.5 +142.5°F	0.1	Total	305
36C	129C	Kinematic Viscosity	91.6 +94.4°C	0.05	Total	305
36F	129F	Kinematic Viscosity	197.5 +202.5°F	0.1	Total	305
37C	-	Sludge	144 +156°C	0.2	100	270
38C	-	Penetration	23 +27°C	0.1	Total	260
39C	-	Density	-1 -38°C	0.1	Total	440
39F	-	Relative Density	30 +100°F	0.2	Total	440
40C	-	Drop Point Low	20 +120°C	1	100	250
41C	-	Drop Point Low	30 +100°F	1	100	250
42C	-	Breaking Point	20 +120°C	0.5	250	370
43C	-	FP Cut-Back (Int)	10 +110°C	0.5	-	305
43F	-	FP Cut-Back (Int)	50 +230°F	1	-	305
44C	-	FP Cut-Back (Ext)	15 +121°C	0.5	-	305
44F	-	FP Cut-Back (Ext)	60 +250°F	1	-	305
45C	-	Refractometer	15 +30°C	0.2	22	160
46C	-	Gravity Balance	14.5 +21°C	0.1	Total	160
46F	-	Gravity Balance	58° +70°F	0.2	Total	160
47C	13C	Loss on Heating	115 +170°C	0.5	Total	155
48C	-	Tank Low	-38 +30°C	0.5	Total	310
49C	-	Tank Medium	-15 +40°C	0.5	Total	310
50C	-	Tank High	10 +65°C	0.5	Total	310
51C	-	Tank Heated Fuel	35 +120°C	0.5	Total	310
52C	-	Tank Bitumen	90 +260°C	1	Total	310
53C	-	Tank Cargo	0 +80°C	0.5	Total	310
59C	35C	High Aniline Point	90 +170°C	0.2	50	420
60C	15C	Low Softening Point	-2 +80°C	0.2	Total	395
61C	16C	High Softening Point	30 +200°C	0.5	Total	395
62C	2C	Partial Immersion	-5 +300°C	1	76	390
62F	2F	Partial Immersion	20 +580°F	2	76	390
63C	61C	Petrolatum Melting Point	32 +127°C	0.2	79	380
64C	12C	Density-Wide Range	-20 +102°C	0.2	Total	420
64F	12F	Density-Wide Range	-5 +215°F	0.5	Total	420
65C	-	Kinematic Viscosity Low	51.6 -34°C	0.1	Total	420
65F	43F	Kinematic Viscosity	-61 -29°F	0.2	Total	420
66C	46C	Kinematic Viscosity	48.6 +51.4°C	0.05	Total	305
66F	46F	Kinematic Viscosity	119.5 +124.5°F	0.1	Total	305
67C	72C	Kinematic Viscosity	19.4 -16.6°C	0.05	Total	305
67F	72F	Kinematic Viscosity	-2.5 +2.5°F	0.1	Total	305
68C	73C	Kinematic Viscosity	41.4 -38.6°C	0.05	Total	305
68F	73F	Kinematic Viscosity	42.5 -37.5°F	0.1	Total	305
69C	74C	Kinematic Viscosity	55.4 -52.6°C	0.05	Total	305
69F	74F	Kinematic Viscosity	67.5 -62.5°F	0.1	Total	305
71C	126C	Kinematic Viscosity	27.4 -24.6°C	0.05	Total	305
71F	126F	Kinematic Viscosity	17.5 -12.5°F	0.1	Total	305
72C	71C	Oil in Wax	-37 +21°C	0.5	76	355
72F	71F	Oil in Wax	-35 +70°F	1	76	355
73C	3C	Partial Immersion	-5 +400°C	1	76	415
73F	3F	Partial Immersion	20 +760°F	2	76	415
74C	-	Abel Oil Cup Wide Range	-35 +70°C	0.5	61	310
74F	-	Abel Oil Cup Wide Range	-35 +160°F	1	61	310
75C	-	Abel Water Bath Wide Range	-30 +80°C	0.5	89	310
75F	-	Abel Water Bath Wide Range	-25° +180°F	1	89	310
76C	-	Engler Viscosity	10 +55°C	0.5	93	240
77C	37C	Solvents Distillation	-2 +52°C	0.2	100	395
78C	38C	Solvents Distillation	24 +78°C	0.2	100	395
79C	39C	Solvents Distillation	48 +102°C	0.2	100	395
80C	40C	Solvents Distillation	72 +126°C	0.2	100	395
81C	41C	Solvents Distillation	98 +152°C	0.2	100	395
82C	42C	Solvents Distillation	95 +255°C	0.5	100	395
83C	102C	Solvents Distillation	123 +177°C	0.2	100	395
84C	103C	Solvents Distillation	148 +202°C	0.2	100	395
85C	104C	Solvents Distillation	173 +227°C	0.2	100	395
86C	105C	Solvents Distillation	198 +252°C	0.2	100	395
87C	106C	Solvents Distillation	223 +277°C	0.2	100	395
88C	107C	Solvents Distillation	248 +302°C	0.2	100	395
89C	113C	Softening Point Wide Range	-1 +175°C	0.5	Total	405
89F	113F	Softening Point Wide Range	30 +350°F	1	Total	405
90C	48C	Kinematic Viscosity	80.6 +83.4°C	0.05	Total	305
90F	48F	Kinematic Viscosity	177.5 +182.5°F	0.1	Total	305
92C	120C	Kinematic Viscosity	38.6 +41.4°C	0.05	Total	305
93C	110C	Kinematic Viscosity	133.6 +136.4°C	0.05	Total	305
94C	122C	Brookfield Viscosity	-45 -35°C	0.1	Total	305
95C	123C	Brookfield Viscosity	-35 -25°C	0.1	Total	305
96C	124C	Brookfield Viscosity	-25 -15°C	0.1	Total	305
97C	125C	Brookfield Viscosity	-15 -5°C	0.1	Total	305
99C	127C	Kinematic Viscosity	21.4 -18.6°C	0.05	Total	305
100C	-	Kinematic Viscosity	78.6 81.4°C	0.05	Total	305
101C	-	Medium Pensky Martens	20 +150°C	1	57	290

Pressure Gauges

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CE



- Nominal Diameter 150 mm
- Custodia – Outer Case
- Case and ring made in stainless steel AISI 304 with bayonet lock
- Outer case protection grade (according EN 60529): IP 55
- Protection: made in tempered glass
- Security feature: watertight rubber stopper
- Connection (according EN 837-1): ½"
- Sensing element: Stainless-steel AISI 316L
- Welding of the manometric element: electric made in controlled atmospheric
- Movement: made in stainless steel
- Scale angle: 270°
- Overpressure admitted: 130% of esv (occasionally)
- Index: made in aluminium for micrometric regulation
- Internal scale: made in aluminium with Linetronic Logo personalized range scale etched and parallax eliminator
- Accuracy/precision (according EN 837-1): +/- 0.6 % referred to esv
- Usable temperature range: -30° up to +210°C

ASTM D323		
LAB-101-793/100	Pressure gauge double scale 0-100 kPa, 0-15 Psi	kPa: Long line each 1 kPa / short each 2 kPa / numbered each 10 kPa Psi: Long line each 0.5 Psi / short each 0.1 Psi / numbered each 1 Psi Accuracy 0.6 kPa / 0.09 Psi
LAB-101-793/200	Pressure gauge double scale 0-200 kPa, 0-30 Psi	kPa: Long line each 5 kPa / short each 1 kPa / numbered each 20 kPa Psi: Long line each 1 Psi / short each 0.2° Psi / numbered each 2 Psi Accuracy 1.2 kPa / 0.18 Psi
LAB-101-793/300	Pressure gauge double scale 0-300 kPa, 0-45 Psi	kPa: Long line each 5 kPa / short each 1 kPa / numbered each 25 kPa Psi: Long line each 1 Psi / short each 0.2° Psi / numbered each 5 Psi Accuracy 1.8 kPa / 0.27 Psi
LAB-101-793/700	Pressure gauge double scale 0-700 kPa, 0-100 Psi	kPa: Long line each 10 kPa / short each 2 kPa / numbered each 50 kPa Psi: Long line each 1 Psi / short each 0.5 Psi / numbered each 10 Psi Accuracy 4.2 kPa / 0.60 Psi
ASTM D1267		
LAB-101-742/700	Pressure Gauge double scale 0-700 kPa, 0-100 Psi	kPa: Long line each 10 kPa / short each 2 kPa / numbered each 50 kPa Psi: Long line each 1 Psi / short each 0.5 Psi / numbered each 10 Psi Accuracy 4.2 kPa / 0.60 Psi
LAB-101-742/1750	Pressure Gauge double scale 0-1750 kPa, 0-250 Psi	kPa: Long line each 10 kPa / short each 5 kPa / numbered each 100 kPa Psi: Long line each 5 Psi / short each 1 Psi / numbered each 25 Psi Accuracy 10.5 kPa / 1.50 Psi
LAB-101-742/2000	Pressure Gauge double scale 0-2000 kPa, 0-285 Psi	kPa: Long line each 10 kPa / short each 5 kPa / numbered each 100 kPa Psi: Long line each 2 Psi / short each 1 Psi / numbered each 20 Psi Accuracy 12.0 kPa / 1.71 Psi
LAB-101-742/3500	Pressure Gauge double scale 0-3500 kPa, 0-500 Psi	kPa: Long line each 50 kPa / short each 10 kPa / numbered each 250 kPa Psi: Long line each 10 Psi / short each 2 Psi / numbered each 50 Psi Accuracy 21.0 kPa / 3.00 Psi

Steam Generators

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CE



1000464



1000158



1000160

1000464
Mini Laboratory Steam Generator

- Steam pressure indicator.
- Water level sensor.
- Solenoid steam flow valve with adjuster knob.
- Automatic safety water tap.
- Boiler: inox 3,4 litres.
- Autonomy: 3.0 hours.
- Steam pressure: 2,8-3 bar.
- Heating power: 1,45 Kw.
- Power supply: 230 V - 50/60 Hz, 115 V - 60 Hz.

1000158
Laboratory Steam Generator

- Steam supply: 5.2 kg / h.
- Heating power: 4 Kw.
- Power supply: 230 V – 1 ph - 50 Hz.
- Pressure: 4.5 bar.
- Steam temperature: ~ +149°C.
- Internal boiler capacity: 8.5 litres.
- Water: rear water tank of 20 litres.
- Supply include: delivery tube 2 meters.

1000160
Industrial Steam Generator

- Steam supply: 19.5 kg / h.
- Heating power installed: 15-18 Kw.
- Steam temperature @ 3.5 bar: 152°C.
- Power supply: 400 V – 3 ph - 50 Hz.
- Working pressure: 5 bar,
  max. working pressure: 5,5 bar.
- Water: must be connected to a water line
  (boiler capacity 10 liters).
- Supply include: delivery tube 3 meters.

Cryostats and Low Temperature Thermostatic Baths and Circulators

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LT/CB-41810/M


LT/CB-40830/M


LT/CB-40810/M-PLUS

Laboratory Cryostat Baths

- Solid steel structure coated in epoxy anti-acid paint with upper side made in stainless-steel.
- Internal chamber in seamless stainless steel with rounded corners for efficient circulation.
- Easy cleaning thanks to atmospheric drain on the bottom of the chamber.
- Control head equipped with digital display showing set and actual temperature, display resolution 0,1°C.
- Manual safety thermostat against overtemperature.
- Power supply: 220 Vac or 115 Vac 50/60 Hz.
- Max. consumption: 1500 Watt.
- Cord cable with schuko plug.
- DIN 12880 class 2 construction type.

LT/CB-40...

- Weight: 20 Kg (empty).
- Dimensions:
  width 33,5 × depth 47,0 × height 63,0 cm.
- Internal bath dimensions:
  width 10,5 × depth 12,5 × height 15,0 cm.
- Capacity: 8 liters.
- Temperature range from
  -10°C / -20°C / -30°C to +99,9°C
  accuracy to ±0,5°C to +37°C.

LT/CB-40810/M
For temperatures up to **-10°C**
LT/CB-40820/M
For temperatures up to **-20°C**
LT/CB-40830/M
For temperatures up to **-30°C**

- Circulating pump: flow 3.5 L/min
  ~ prevalence 70 cm.

LT/CB-40810/M-PLUS
For temperatures up to **-10°C**
LT/CB-40820/M-PLUS
For temperatures up to **-20°C**
LT/CB-40830/M-PLUS
For temperatures up to **-30°C**

- Circulating pump:
  prevalence 4 m - 2 L/min
  ~ prevelance 1m - 12 L/min.

LT/CB-41...

- Weight: 30 Kg (empty).
- Dimensions:
  width 38,5 × depth 49,5 × height 63,0 cm.
- Internal bath dimensions:
  width 24,4 × depth 14,5 × height 15,0 cm.
- Capacity: 18 liters.
- Temperature range from
  -10°C / -20°C / -30°C to +99,9°C
  accuracy to ±0,5°C to +37°C.

LT/CB-41810/M
For temperatures up to **-10°C**
LT/CB-41820/M
For temperatures up to **-20°C**
LT/CB-41830/M
For temperatures up to **-30°C**

- Circulating pump: flow 3.5 L/min
  ~ prevalence 70 cm.

LT/CB-41810/M-PLUS
For temperatures up to **-10°C**
LT/CB-41820/M-PLUS
For temperatures up to **-20°C**
LT/CB-41830/M-PLUS
For temperatures up to **-30°C**

- Circulating pump:
  prevalence 4 m - 2 L/min
  ~ prevelance 1m - 12 L/min.

Muffle Furnace

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CE



Muffle Furnace for Laboratory and Tempering Application

- Insulation heat made in ceramics fibre in order to get a speed heating with a limited energetic consumption.
- Heating muffle unthreaded from the back, in an only cast of refractory cordieletic material to provide for thermal jolts.
- Resistors in Kanthal.
- Lateral opening door with pressure wedge and with a stop device for electric feeding when it opens, allowing the worker, during the loading and unloading of the muffle, to act with the utmost safety avoiding the contact with the burning part.
- Control panel is positioned on the furnace bottom containing a digital visualized thermoregulator and safety switch for system protection – Gefran 1200.
- Internal chamber made with ceramic fibres with direct-welded posterior exhaust for fume extraction.
- Max. temperature +1100°C in 40 minutes (heating rate 26-27 °C/min).

LT/FT-273000/M

- Single Phase Tension: 220 Vac
- Power: 2.2 Kw
- Max. temperature + 1100°C
- Encumbrance dimensions:
  Width 375 mm
  Depth 510 mm
  Height 580 mm
  Weight 35 Kg
- Useful inside dimensions:
  Width 100 mm
  Depth 300 mm
  Height 100 mm

LT/FT-274000/M

- Single Phase Tension: 220 Vac
- Power: 2.7 Kw
- Max. temperature + 1100°C
- Encumbrance dimensions:
  Width 375 mm
  Depth 605 mm
  Height 580 mm
  Weight 40 Kg
- Useful inside dimensions:
  Width 100 mm
  Depth 400 mm
  Height 100 mm

LT/FT-275000/M

- Single Phase Tension: 220 Vac
- Power: 3.5 Kw
- Max. temperature + 1100°C
- Encumbrance dimensions:
  Width 375 mm
  Depth 755 mm
  Height 580 mm
  Weight 50 Kg
- Useful inside dimensions:
  Width 100 mm
  Depth 500 mm
  Height 100 mm

LT/FT-276000/M

- Single Phase Tension: 220 Vac
- Power: 4.2 Kw
- Max. temperature + 1100°C
- Encumbrance dimensions:
  Width 375 mm
  Depth 855 mm
  Height 580 mm
  Weight 60 Kg
- Useful inside dimensions:
  Width 100 mm
  Depth 600 mm
  Height 100 mm

Oven



LT/DO-248000/N



LT/DO-248000/T



LT/DO-248000/F

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LT/DO-248000/N
Natural Ventilation Oven
LT/DO-248000/F
Drying Oven

- Professional natural or forced ventilation oven suitable for all thermostatic applications where a specific precision is needed.
- Outer body in steel coated in epoxy anti-acid paint.
- Inner structure in stainless steel AISI 304 with rounded corners.
- Double insulation door with silicone seal to prevent heat loss.
- Thermal insulation with mineral fibre.
- Digital display P.I.D. thermostat to ensure good stability.
- Temperature range from +5°C ambient to +280°C, model from 40 to 120 litres.
- Temperature range from +5°C ambient to +200°C, model from 8 to 20 litres.
- Accuracy to ± 1.5°C at +105°C, model from 40 to 120 litres forced ventilation.
- Accuracy to ± 2°C at +105°C, model from 40 to 120 litres natural ventilation.
- Accuracy to ± 1°C at +105°C model from 8 to 20 litres.
- Display precision ±1°C.
- For further protection the oven is equipped with visual alarm security thermostat, range from +50°C to +280°C and manual resetting.
- Steel shelves adjustable in height.
- Panel commands isolated.
- Heating elements are not in contact with internal chamber but are in an ante-chamber to guarantee uniform heating.
- Illuminated two phase main switch.
- Built according to C.E.I. normative (66-5).
- 2 class, DIN 12880.

LT/DO-248000/N-8

- Mini-oven.
- 8 liters capacity.
- Natural convection.
- For temperature from +5° ambient up to +200°C.
- With one SS shelve .

LT/DO-248000/N-20

- Mini-oven.
- 20 liters capacity.
- Natural convection.
- For temperature from +5° ambient up to +200°C.
- With one SS shelve.

LT/DO-248000/T-8

- Mini-incubator.
- 8 liters capacity.
- Natural convection.
- For temperature from +5° ambient up to +80°C.
- Tempered glass window 17 × 17 cm.
- With one SS shelve.

LT/DO-248000/T-20

- Mini-incubator.
- 20 liters capacity.
- Natural convection.
- For temperature from +5° ambient up to +80°C.
- Tempered glass window 24 × 24 cm.
- With one SS shelve.

Power supply

- 115 Vac 50/60 Hz.
- 220 Vac 50/60 Hz.

Accessories

- LAB-248000/1: tempered inspection glass window 200 × 200 mm.
- LAB-248000/2: internal light with temperature protection glass and switch.
- LAB-248000/3: internal shelves made in stainless steel.

Article	Volume in litres	Internal dimensions W × D × H in mm	External dimensions W × D × H in mm	Included shelves	Watt	Weight Kg
LT/DO-248000/N-8	8	208 × 202 × 220	465 × 400 × 370	1	240	16
LT/DO-248000/N-20	20	285 × 252 × 285	550 × 450 × 433	1	400	22
LT/DO-248000/N-40	40	348 × 312 × 367	686 × 515 × 575	1	700	35
LT/DO-248000/N-60	60	408 × 372 × 422	746 × 605 × 605	2	1000	40
LT/DO-248000/N-80	80	458 × 372 × 472	796 × 605 × 680	2	1000	45
LT/DO-248000/N-120	120	498 × 477 × 512	836 × 710 × 720	2	1600	50
LT/DO-248000/F-40	40	348 × 312 × 367	686 × 515 × 575	1	700	35
LT/DO-248000/F-60	60	408 × 372 × 422	746 × 605 × 605	2	1000	40
LT/DO-248000/F-80	80	458 × 372 × 472	796 × 605 × 680	2	1000	45
LT/DO-248000/F-120	120	498 × 477 × 512	836 × 710 × 720	2	1600	50
LT/DO-248000/N-250	250	593 × 522 × 797	956 × 760 × 1025	2	2500	90
LT/DO-248000/F-250	250	593 × 522 × 797	956 × 760 × 1025	2	2500	90
LT/DO-248000/N-400	400	693 × 607 × 980	901 × 759 × 1487	2	3000	140
LT/DO-248000/F-400	400	693 × 607 × 980	901 × 759 × 1487	2	3000	140
LT/DO-248000/N-700	700	693 × 607 × 1470	901 × 759 × 1977	3	6000	180
LT/DO-248000/F-700	700	693 × 607 × 1470	901 × 759 × 1977	3	6000	180

Thermostatic Baths

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LT/TB-176000/M



LT/TB-177000/M



LT/TB-220000/M

ASTM D323 - D972 - D1267 - D1657 -D1838
IP 12 - IP 69 - IP 161 - IP 410

LT/TB-176000/M
Thermostatic bath – Table Top

- Bench top instrument completely made in stainless-steel.
- Internal stainless-steel bath with capacity of 45 liters, equipped with double-insulation and fully immersion stainless-steel heater.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +90°C, resolution 0,1°C and stability +/- 0.1°C (with cover).
- Motorized stirrer grant uniformity and stability.
- Manually settable overtemperature cut-off alarm.
- Stainless-steel cover with thermoplastic insulated handle.
- Support which allows the immersion of 2 vapour pressure cylinders.

Dimensions
- Width 37 cm
- Depth 37 cm
- Height 72 cm

Internal Dimensions
- Width 21 cm
- Depth 26.7 cm
- Height 53 cm

Max. Consumption
- 2000 Watt

Power Supply
- 220 Vac or 115 Vac 50/60 Hz

LT/TB-177000/M
Thermostatic Bath - Floor Model

- Floor stand instrument completely made in stainless-steel.
- Internal stainless-steel bath with capacity of 70 liters, equipped with double-insulation and fully immersion stainless-steel heater.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +90°C, resolution 0,1°C and stability +/- 0.1°C (with cover).
- Motorized stirrer grant uniformity and stability.
- Manually settable overtemperature cut-off alarm.
- Stainless-steel cover with thermoplastic insulated handle.
- Support which allows the immersion of 3 vapour pressure cylinders.

Dimensions
- Width 50,5 cm
- Depth 50 cm
- Height 105 cm

Internal Dimensions
- Width 40 cm
- Depth 35 cm
- Height 61 cm

Max. Consumption
- 2000 Watt

Power Supply
- 220 Vac or 115 Vac 50/60 Hz

LT/TB-220000/M
High Temperature Thermostatic Bath

- Bench top steel structure painted with anti-epoxy products.
- Internal bath made in stainless steel with a depth of approx. 375 mm.
- Liquid capacity of approx. 45 liters with atmospheric drain for easy clean.
- Stainless steel heaters with total 4000 W heating power.
- Motor stirrer with propeller for grant uniformity and stability.
- Digital thermoregulatory with PID function with 0,1 °C resolution, PT100 A class temperature sensor.
- Manually settable overtemperature safety device with red alarm lamp.
- Integrated cooling coil for external water/cooling circuit connection.
- Temperature range: ambient up to +250°C.
- Temperature uniformity:
  · 0,10°C < +50°C
  · 0,25°C < +100°C
  · 0.50°C > +100°C
  uniformity and stability are granted with cover installed.
- Security feature available on request: liquid level sensor.
- Instrument supplied with:
  · Power cable 3 wire without plug;
  · Stainless steel cover.

Dimensions
- 70 × 35 × 60 cm

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