MiniVisc 3000 Series
PORTABLE KINEMATIC VISCOMETERS
Solvent-free, simple to use, fast and accurate results

High accuracy 40C kinematic viscosity measurements for new and in-service oils
Lab-quality results when and where you need them
- Accuracy +/- 3% Relative Standard Deviation to NIST viscosity standards.

Solvent-free operation
- Fewer consumables, lower disposal costs and less environmental impact.
- Easy cleaning with the patented split-cell design – just wipe off the surfaces with a non-abrasive cleaning pad between samples.

Requires only a few drops of oil to test
- Obtain samples without impacting lubricant level; only a few drops (60 µL) of oil required. A positive displacement pipette is provided for the most precise, repeatable measurements.

Test even dark and sooty samples
- Innovative design allows testing of virtually any sample including dark and sooty or transparent samples without any pre-checks.

Portable, battery-powered design
- Fits easily into a toolbox or carrying bag and capable of operation for over six hours before recharge.

Expanded I/O capability
- Import sample lists and export measurement results via ViscTrack or AMS Oilview software.

ASTM compliance

Applications include:
- Machine Condition Monitoring – Increase availability of critical equipment by monitoring viscosity changes due to oil degradation and contamination. Avoid inadequate lubrication which causes adhesive wear in machinery and is a principal cause of equipment downtime.
- Quality Control for Fuel/Oil Production and Blending
- Incoming Inspection Quality Control

Principle of Operation
MiniVisc 3000 Series viscometers use a patented split cell design that enables measurement of kinematic viscosity using only a few drops (60 µL) of oil. When closed, the center pieces of the split cell form a funnel with a 100 micron gap allowing oil to flow down by gravity. Sensors along the funnel are triggered when oil flows by and flow time between two sensors is measured. The kinematic viscosity is then calculated. When opened, the split cell can be easily cleaned with a non-abrasive cleaning pad and it is ready for the next sample. The split cell is controlled at 40°C throughout the measurement.

\[ V_{40} = A^* (t_1 - t_0) + B \]

*A and B are calibration coefficients
MiniVisc 3000 Series Ordering Information

The MiniVisc 3000 includes the base viscometer, battery charger, USB cable, user’s manual DVD and ViscTrack software. The recommended 3050 Standard Accessories Kit SA1021 includes a positive displacement pipette, disposable pipette tips and cleaning pads for 192 samples, and two viscosity standards kits. The recommended 3000 Standard Accessories Kit SA1002 includes disposable 60 μL pipettes and cleaning pads for 100 samples, and two viscosity standards kits.

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<th>Description</th>
<th>Kit Included</th>
<th>Notes</th>
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<tr>
<td>SpectroVisc-Q3050</td>
<td>MiniVisc 3050 Portable Viscometer, 1-700 cSt. Requires SA1021 Accessories Kit.</td>
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<tr>
<td>SpectroVisc-Q3000</td>
<td>MiniVisc 3000 Portable Viscometer, 10-350 cSt. Requires SA1002 Accessories Kit.</td>
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<tr>
<td>Spectro-Q1100/Q3050</td>
<td>FluidScan 1100 Lubricant Condition Monitor &amp; MiniVisc 3050 Combo Kit. Requires SA1022 Accessories for Combo Kit.</td>
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<tr>
<td>Spectro-Q1000/Q3050</td>
<td>FluidScan 1000 Lubricant Condition Monitor &amp; MiniVisc 3050 Combo Kit. Requires SA1022 Accessories for Combo Kit.</td>
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PRODUCT INFORMATION

Applications
Lubricant oils (mineral and synthetic), coolants, glycol, and any Newtonian fluid within the measuring range

Output
Kinematic viscosity (cSt) @ 40°C
V100 viscosity calculation from Vl index input (3050 only)

Methodology
ASTM D 7279 modified, ASTM D 445 modified

Standard Analytical Range
3000: 10-350 cSt @ 40°C
3050: 1-700 cSt @ 40°C

Accuracy
3000:
≤ ± 3% of measured value over range 10-350 cSt
≤ ± 3% of measured value over range 1-350 cSt
≤ ± 5% of measured value for viscosity > 350 cSt
Accuracy specification is with use of user correction function.

3050:
≤ ± 3% of measured value over range 1-350 cSt
≤ ± 5% of measured value for viscosity > 350 cSt

Repeatability
3000:
≤ ± 3% RSD of measured value, typical
≤ ± 3% RSD of measured value, over range 1-350 cSt
≤ ± 5% RSD of measured value for viscosity > 350 cSt
RSD is Relative Standard Deviation.

3050:
≤ ± 3% RSD of value, typical
≤ ± 3% RSD of value, over range 1-350 cSt
≤ ± 5% RSD of measured value for viscosity > 350 cSt

Test Temperature Control
± 0.1°C

Calibration
Not required

OPERATIONAL SPECIFICATIONS

Sample Volume
60 μL (about 3-4 drops)

Solvents/Reagents
None

Ambient Operating Temperature
0°C to 40°C (32°F to 104°F)

Relative Humidity
10% to 80% r.h. non-condensing

Ambient Altitude
Up to 5,000 meters (16,404 feet)

USER INTERFACE SPECIFICATIONS

Display
Fixed angle color touchscreen display

Data Transfer
USB for software updates

Data Entry
Touchscreen

POWER REQUIREMENTS

Battery Power Source
Built in rechargeable lithium ion battery

Power
AC 110/240 V, 50/60 Hz, 10 Watts

Typical Runtime
6-8 hours with full charge

Recharge Time
2.5 hrs

MECHANICAL SPECIFICATIONS

Dimensions
152 mm (H) x 127 mm (W) x 203 mm (D)
(6.0 in x 5.0 in x 8.0 in)

Weight
1.8 kg (4.0 lbs)

Shipping Package Dimensions
7.9 cm (H) x 6.3 cm (W) x 5.5 cm (L)
(20 in x 16 in x 14 in)

Shipping Package Weight
4.9 kg (11 lbs)

COMPLIANCE

CE Mark: EMC Directive (2004/108/EC); RoHS

CONSUMABLES

P-11177 Positive displacement pipette, 10-100 μL
P-11178 Pipette tips for P-11177, package of 192
P-11201 Pipette tips for P-11177, package of 960
PV1011 Disposable non-abrasive cleaning pads, package of 500
P-11052 60 μL disposable pipettes, package of 500
PV1025 Visc 30 standard, 20 ml
PV1026 Visc 120 standard, 20 ml

A recommended solution set includes the FluidScan 1000, MiniVisc 3000 and FerroCheck 2000.