

The CMRV-4500 is a semi-automated mini-rotary viscometer for measuring low-temperature pumping viscosity from $-5\text{ }^{\circ}\text{C}$ to $-40\text{ }^{\circ}\text{C}$. It has 9 test cells and is thermoelectrically-cooled via an external air/water heat exchanger.

Common Applications

- Drive line lubricants
- New engine oils
- Used automotive oils

CMRV-4500 Mini-Rotary Viscometer

For Low Temperature Pumping Viscosity of Engine Oils
ASTM D4684, ASTM D3829, ASTM D6821*, ASTM D6896, SAE J300

Product Features & Benefits

Reliable and accurate results

- Meets requirements of ASTM D4684, ASTM D3829, ASTM D6821* and ASTM D6896
- Meets latest SAE J300 specifications for low-temperature pumpability
- Reliable and accurate temperature control from $-5\text{ }^{\circ}\text{C}$ to $-40\text{ }^{\circ}\text{C}$
- High resolution optical encoder for digital detection of yield stress and viscosity
- Dry gas purge regulator maintains a frost-free environment throughout the precise, microprocessor-controlled cooling cycle

Compact, efficient design

- Benchtop unit measures yield stress and viscosity of drive line lubricants and engine oils
- Environmentally friendly (no freon gas), solid-state thermoelectric cooling removes temperature gradients to provide enhanced precision and uniform temperature across all 9 test cells
- Air/water heat exchanger provides a quiet, low-maintenance system without a need for potentially hazardous refrigerants
- High performance rotors with locking pins and carbon fiber shafts minimize test cell heat transfer
- Integrated drawer unit for convenient storage of CMRV accessories including rotors, weights, and cell caps.

Semi-automated testing

- Windows®-based VISCPRO® software offers preconfigured profiles for each SAE-specified oil grade and referenced ASTM method as well as the option for custom cooling profile configuration
- Software provides graphical representation of cooling profiles
- Viscosity and yield stress are automatically calculated and stored or exported via built-in LIMS output
- Optional multi-unit interface kit permits networking and control of up to four CMRV units from a single PC

*With optional drive line rotor kit



CMRV-4500 Mini-Rotary Viscometer

Ordering Information

CMRV-4500 Mini-Rotary Viscometer consists of the viscometer unit, air/water heat exchanger, 9 test cells, N105B oil viscosity calibration standard, a high precision digital thermometer with probe, cell caps and data storage/management software. Computer sold separately.

Description	Part #
100 VAC, 50/60 Hz	9728-R21
115 VAC, 50/60 Hz	9728-R22
230 VAC, 50/60 Hz	9728-R23

Accessories & Consumables

Description	Part #
Replacement rotor assembly	52.4506
High-performance drive line rotor kit [1]	52.4536
High-performance drive line rotor kit [set of 9]	52.4537
Rotor collar/cell cap [set of 1 each]	51.1015
Multi-unit interface kit	
	115 VAC 61.3527 and 9728-R40
	230 VAC 61.3528 and 9728-R45
Weight set [2.5 g increments] with weight cage for ASTM D6821	50.1020
Low temp viscosity calibration standard, N105B	9727-T10
Low temp viscosity standards for yield stress verification	
YS-30, yield stress 70 Pa ± 35 Pa at -30 °C	9727-T20
YS-35, yield stress 70 Pa ± 35 Pa at -35 °C	9727-T25
Spare parts kit [for one year]	52.4565
Thread with loop and ring set [9 pc]	50.92

Product Specifications

Dimensions [W x D x H]	Unit: 31.7 cm x 26.0 cm x 48.9 cm [12.5 in x 10.25 in x 19.25 in], including thermom - need without Air/Water Heat Exchanger: 47.0 cm x 34.8 cm x 34.0 cm [18.5 in x 13.7 in x 13.4 in]
Weight	Unit: 8.6 kg [41 lb] Air/Water Heat Exchanger: 1.8 kg [70 lbs]
Shipping dimensions [W x D x H]	Box 1: 61.0 cm x 55.9 cm x 68.6 cm [24 in x 22 in x 27 in] Box 2: 58.4 cm x 48.3 cm x 68.6 cm [23 in x 19 in x 27 in]
Shipping weight	Box 1: 68.0 kg [150 lbs] Box 2: 31.8 kg [70 lbs]
Max throughput	9 samples per test cycle
Automated sample capacity	9
Temperature range & accuracy	-5 °C to -40 °C ± 0.1 °C
Minimum sample volume	10 mL per test
Operating conditions	15 °C to 30 °C, 10% to 75% relative humidity (non-condensing), Installation Category II; Pollution Degree 2
Electrical specifications	100 VAC, 50/60 Hz; 115 VAC, 50/60 Hz; 230 VAC, 50/60 Hz; 400 watts power consumption [unit]; 1,100 watts power consumption [AWHE]
Compliance	CE Mark; EMC directive [2004/108/EC]; Low voltage directive [2006/95/EC]; HI-POT [1900 VDC, 60 sec.]; ROHS

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