

The CMRV-4500 is a semi-automated mini-rotary viscometer for measuring low-temperature pumping viscosity from  $-5^{\circ}\text{C}$  to  $-40^{\circ}\text{C}$ . 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  $-5^{\circ}\text{C}$  to  $-40^{\circ}\text{C}$
- 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



2139 High Tech Road | State College | PA | 16803  
800-676-6232 | 814-353-8000 | Fax 814-353-8007

sales@cannoninstrument.com | [www.cannoninstrument.com](http://www.cannoninstrument.com)

# 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	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 9728-R40
	230 VAC 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)	<b>Unit:</b> 31.7 cm x 26.0 cm x 48.9 cm (12.5 in x 10.25 in x 19.25 in), including thermometer - need without <b>Air/Water Heat Exchanger:</b> 61 cm x 55.9 cm x 68.6 cm (24 in x 22 in x 27 in)
Weight	<b>Unit:</b> 8.6 kg (41 lb) <b>Air/Water Heat Exchanger:</b> 68 kg (150 lbs)
Shipping dimensions (W x D x H)	<b>Box 1:</b> 61.0 cm x 55.9 cm x 68.6 cm (24 in x 22 in x 27 in) <b>Box 2:</b> 58.4 cm x 48.3 cm x 68.6 cm (23 in x 19 in x 27 in)
Shipping weight	<b>Box 1:</b> 68.0 kg (150 lbs) <b>Box 2:</b> 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

CANNON Instrument Company\* provides a variety of physical property testing equipment and consumables (vials, bath fluids, and reference materials) for your testing needs. To learn more, contact [sales@cannoninstrument.com](mailto:sales@cannoninstrument.com).



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