

The CANNON® CAV® 4.2 is an automated, high throughput, dual-bath kinematic viscometer for ASTM D445. The CAV® 4.2 combines CANNON® quality and reliability with modern design and unique features to enhance lab productivity, reduce costs, and improve data quality.

Common Applications

- Formulated oil analysis
- Hydraulic oil analysis
- Additive analysis
- Marine fuel testing
- Base stock analysis
- Light and heavy fuel testing
- Waxes/paraffin
- Crude oil testing
- Glycols

CAV® 4.2

Dual-Bath Kinematic Viscometer

For Kinematic Viscosity of Transparent and Opaque Liquids
ASTM D445, ISO 3104, IP 71, ASTM D446, ISO 3105

Product Features & Benefits

D445 precision in a modern, dependable design

- Temperature range: 20 °C to 100 °C (15 °C to 150 °C with available options)
- Viscosity range: 0.5 mm²/s to 10,000 mm²/s in 100-fold increments
- Dual, independent modular baths provide easy maintenance access and simultaneous testing at two different temperatures
- Two independent, fully-accessible sample handlers ensure reliable, unattended processing of up to 24 tests per hour

Fully self-contained bench-top unit with flexible connectivity

- Simple, out-of-the-box installation. No external components required
- 35% smaller footprint conserves lab space
- Professional installation, VISCPRO® data storage and management software, viscometer tubes, standards, and high precision digital thermometer are included with each instrument
- A single unit can be run using the on-board computer, without need for an external PC, or a single PC can manage up to 4 units using VISCPRO® software

Reduced consumable costs

- Tube design reduces solvent usage and disposal costs by 50%
- Automated vial washing and drying reduces vial consumption and replaces manual washing

Easy change-out, versatile viscometer tubes

- Operators replace tubes in minutes, eliminating the need to schedule related service calls
- Single-point temperature calibration avoids tube recalibration costs and maximizes test flexibility

Status indicator bath lights

- Colored lights provide a simple remote indication of operational status

Flexible sample handling

- Multiple pre-defined/user-defined test methods can be run in the same sample tray
- High throughput selective zone heating preheats individual samples to any temperature from ambient to 100 °C



CAV[®] 4.2 Dual-Bath Kinematic Viscometer

Ordering Information

CAV[®] 4.2 Dual-Bath Kinematic Viscometer: includes two viscometer tubes, set of oil viscosity standards, case of glass vials, high precision digital thermometer with probe, VISCPRO[®] data storage/management software and professional installation. Specify viscometer tubes when ordering.

Description	Part #
100 VAC, 50/60 Hz, 1200 watts	9725-B30
115 VAC, 50/60 Hz, 1200 watts	9725-B35
230 VAC, 50/60 Hz, 1200 watts	9725-B40

Options

Description	Part #
Sample pre-heat zone assembly	68.0224
Sample pre-heat zone assembly (for use with metal sleeves for waxy samples)	68.0427
Sample carousel safety cover	68.0299
Third solvent input (both baths)	68.0400
Integrated thermoelectric bath cooling (per bath)	68.0412
Integrated high temperature bath (left)	68.0413
Integrated high temperature bath (right)	68.0414
External heated waste drain lines	81.2731

Accessories & Consumables

Description	Part #
Viscosity reference standards	various
Replacement silicone bath fluid, 1 L	9726-L40
Vials (glass); case of 144	9717-V01
Metal sleeves (for waxy samples); case of 14	68.0455
Pedestal base (fits up to two CAV 4.2 units)	68.0298

Product Specifications

Dimensions (W x D x H)	36 cm x 66 cm x 72 cm (14.25 in x 26 in x 28.5 in)
Weight	63 kg (140 lb)
Maximum throughput	24 tests per hour
Automated sample capacity	28 positions (2 x 14 positions)
Viscosity Range	0.5 mm ² /s to 10,000 mm ² /s in 100-fold increments (depending on viscometer tubes selected). Fast run tubes are also available.
Timing resolution	0.01 seconds (timing accuracy to ± 0.001 seconds)
Temperature Range & Accuracy	20 °C to 100 °C ± 0.01 °C Up to 150 °C, ± 0.03 °C with integrated high temperature bath option Down to 15 °C, ± 0.03 °C with integrated TE bath cooling option
Minimum Sample/Solvent Volume Required	8 mL sample/15 mL solvent per test
Operating Conditions	10% to 90% relative humidity, non-condensing. installation category II; pollution degree 2
Electrical Specifications	100 VAC, 50/60 Hz, 1200 watts; 115 VAC, 50/60 Hz, 1200 watts; 230 VAC, 50/60 Hz, 1200 watts
Compliance	CE Mark; EMC directive (89/336/EEC); Low voltage directive (73/23/EEC); HI-POT (1900 VDC, 60 sec.)
Additional standard features	Internal heated waste drain lines, dual solvent input

Viscometer Tubes

Standard Tubes	Fast Run Tubes	Standard Tubes	Fast Run Tubes
Kinematic Viscosity Range (mm ² /s or cSt)		Kinematic Viscosity Range (mm ² /s or cSt)	
0.5-50	0.5-5	10-1,000	10-100
1-100	1-10	15-1,500	15-150
2-200	2-20	20-2,000	20-200
3-300	3-30	30-3,000	30-300
4-400	4-40	40-4,000	40-400
5-500	5-50	50-5,000	50-500
6-600	6-60	60-60,00	60-600
7-700	-	-	80-800
8-800	8-80	100-10,000	100-1,000

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.



2139 High Tech Road • State College • PA • 16803
800-676-6232 • 814-353-8000 • Fax 814-353-8007
email: sales@cannoninstrument.com • www.cannoninstrument.com