

CAV<sup>®</sup>-2100 is a fully automated, single-bath laboratory viscometer with a 13-position sample handler for unattended D445 processing. Each of the two Atlantic-style tubes covers a 100-fold viscosity range at values between 0.5 mm<sup>2</sup>/s [cSt] and 10,000 mm<sup>2</sup>/s [cSt] from 20 °C to 150 °C [with available options].

#### 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<sup>®</sup>-2100

## Single-Bath Kinematic Viscometer

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

### Product Features & Benefits

#### D2270 Viscosity Index Calculation

- Viscpro software required for calculation

#### Reliable D445 precision

- Temperature range: ambient to 100 °C (20 °C to 150 °C with available bath options)
- Viscosity range: 0.5 mm<sup>2</sup>/s [cSt] to 10,000 mm<sup>2</sup>/s [cSt]\* in 100-fold increments [easily covering the range of 5 separate manual glass viscometers]
- Optional, environmentally friendly Peltier cooling requires no external refrigeration
- A well tested CANNON viscometer platform offers reliability and dependable support

#### Fully automated laboratory testing

- Fully visible/accessible 13-position sample handler ensures reliable, unattended processing of up to 24 determinations/hour
- Automation provides an alternative to labor-intensive manual testing and reduces operator to operator variability

#### Test versatility

- Two viscometer tubes, housed within the single instrument bath, enable a 10,000 fold viscosity range on a single instrument
- VISCPRO<sup>®</sup> PC software enables one PC to manage and control up to four instruments
- User-configurable reports may be viewed, printed, saved and exported
- Various sample handling options including heated sample trays, glass and plastic vials and cups
- A dual-solvent option is available

\*Some upper viscosity measurements may be limited by test temperature and sample type. Fast run [10-fold range] tubes are also available.

†Installation outside the domestic U.S. may incur additional charges.

Professional installation<sup>†</sup>, VISCPRO<sup>®</sup> data storage and management software, viscometer tubes, standards, and a high precision digital thermometer are included



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# CAV<sup>®</sup>-2100 Single-Bath Kinematic Viscometer

## Ordering Information

CAV<sup>®</sup>-2100 Single-Bath Kinematic Viscometer comes with two 13-position sample trays, service unit and solvent dispensing unit. Two viscometer tubes, one set of oil viscosity standards, a case of glass vials, a high precision digital thermometer with probe, VISCPRO<sup>®</sup> data storage/management software, a one year warranty and professional installation/training (within the domestic U.S.) are also included. Specify desired factory installed options and viscometer tubes when ordering. Computer sold separately.

Description	Part #
100 VAC, 50/60 Hz, 1750 W	9725-A15
115 VAC, 50/60 Hz, 1650 W	9725-A05
230 VAC, 50/60 Hz, 1750 W	9725-A10

## Options

Factory installed options (see NOTE) must be specified when ordering. Part numbers are listed below for field installable options. Field installation must be performed by factory-trained personnel (unless indicated by an asterisk \*). Field installation costs are additional.

Description	Part #
External CBC-1000 TE bath cooler [115 VAC]*	61.3600
External CBC-1000 TE bath cooler [230 VAC]*	61.3601
High temp [to 150 °C] bath option*	61.3427
10 solo cup sample holder	61.3670
Non-heated 20 vial sample holder*	61.3551
Exhaust collector box [for one bath]*	61.3575
Heated [to 80 °C] sample tray [left/right bath]*	61.3136/ 61.3150
High heat [to 135 °C] sample tray [left/right bath]*	61.3537/ 61.3538
Dual solvent option	61.5141
Enhanced vapor reduction system [EVRP]*	61.3645
Multi-unit interface kit*	61.3913
Heat exchange tube [for use with customer chiller]*	61.3599
Digital thermometer for heated or high heat tray*	61.3416

**NOTE:** Added temperature calibration [for each temperature beyond the first] is available for an added charge at the time of ordering.

## Accessories & Consumables

Description	Part #
Viscosity reference standards	various
Replacement silicone bath fluid, 10 cSt, 2.5 L	61.3430
Vials [glass]; case of 144	9717-V01
Vials [polypropylene]; pack of 1,000	61.3663
Vials [plastic, thin wall, 1x dipped NAP]; 1,000/pk	61.3661
Pedestal base [holds up to 2 units]	61.3422
Spare parts kit [for 2 years]	61.3620

## Product Specifications

Dimensions [W x D x H]	<b>Unit:</b> 30.5 cm x 72.7 cm x 124.5 cm [12.0 in x 35.0 in x 49.0 in] <b>Service Unit:</b> 17.8 cm x 50.8 cm x 35.6 cm [7.0 in x 20.0 in x 14.0 in] <b>Solvent Dispensing Unit:</b> 17.8 cm x 50.8 cm x 35.6 cm [7.0 in x 20.0 in x 14.0 in]
Weight	<b>Unit:</b> 215.5 kg [475.0 lb] <b>Service Unit:</b> 13.6 kg [30.0 lb] <b>Solvent Dispensing Unit:</b> 13.6 kg [30.0 lb]
Shipping dimensions [W x D x H]	58.4 cm x 111.8 cm x 152.4 cm [23.0 in x 44.0 in x 60.0 in]
Shipping weight [with all items]	242.7 kg [535.0 lb]
Max. throughput	24 tests per hour
Automated sample capacity	13 [1 x 13 positions]
Viscosity range	0.5 mm <sup>2</sup> /s [cSt] to 10,000 mm <sup>2</sup> /s [cSt] in 100-fold increments [depending on viscometer tube selection]. Fast run tubes are also available.
Timing resolution	0.01 s [timing accuracy to ± 0.001 s]
Temperature range & accuracy	20 °C to 100 °C ± 0.01 °C* Up to 150 °C, ± 0.03 °C [with high temp bath] *temperatures within 5 °C of ambient and below require bath cooling
Minimum sample/ solvent volume	12 mL sample*/21 mL solvent per test *as little as 4 mL with fast run tubes
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; 1750 watt power consumption 115 VAC, 50/60 Hz; 1650 watt power consumption 230 VAC, 50/60 Hz; 1750 watt power consumption
Compliance	CE Mark; EMC directive [2004/108/EC]; Low voltage directive [2006/95/EC]; HI-POT [1900 VDC, 60 sec.]; ROHS
Data output	RS-232 and RS-485

## Viscometer Tubes

Std Tubes	Part #	Fast Run Tubes	Part #	Std Tubes	Part #	Fast Run Tubes	Part #
KV Range in mm <sup>2</sup> /s [cSt]				KV Range in mm <sup>2</sup> /s [cSt]			
0.5-50	12.0041	-	-	10-1,000	12.0055	10-100	12.0374
1-100	12.0046	1-10	12.0383	15-1,500	12.0364	15-150	12.0373
2-200	12.0047	2-20	12.0382	20-2,000	12.0056	20-200	12.0372
3-300	12.0048	3-30	12.0381	30-3,000	12.0057	30-300	12.0371
4-400	12.0049	4-40	12.0380	40-4,000	<b>12.0077</b>	40-400	12.0370
5-500	12.0050	5-50	12.0379	50-5,000	<b>12.0078</b>	50-500	12.0369
6-600	12.0051	6-60	12.0378	70-7,000	<b>12.0528</b>	60-600	12.0368
7-700	12.0052	7-70	12.0377	80-8,000	<b>12.0529</b>	80-800	12.0366
8-800	12.0053	8-80	12.0376	100-10,000	<b>12.0079</b>	-	-

\*NOTE: Tubes listed in bold have metal tips for high viscosity materials in place of standard glass tips.

CANNON Instrument Company<sup>®</sup> 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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