

CAV[®]-2100

Single-Bath Kinematic Viscometer

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

CAV[®]-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 mm²/s (cSt) and 10,000 mm²/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

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 mm²/s (cSt) to 10,000 mm²/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[®] 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[†],
VISCPRO[®] data storage and
management software,
viscometer tubes, standards,
and a high precision digital
thermometer are included



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Ordering Information

CAV[®]-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[®] 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 Gallon | 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) | Unit: 30.5 cm x 72.7 cm x 124.5 cm (12.0 in x 35.0 in x 49.0 in) Service Unit: 17.8 cm x 50.8 cm x 35.6 cm (7.0 in x 20.0 in x 14.0 in) Solvent Dispensing Unit: 17.8 cm x 50.8 cm x 35.6 cm (7.0 in x 20.0 in x 14.0 in) |
| Weight | Unit: 215.5 kg (475.0 lb) Service Unit: 13.6 kg (30.0 lb) Solvent Dispensing Unit: 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 ² /s (cSt) to 10,000 mm ² /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 ² /s (cSt) | | | | KV Range in mm ² /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 | 12.0077 | 40-400 | 12.0370 |
| 5-500 | 12.0050 | 5-50 | 12.0379 | 50-5,000 | 12.0078 | 50-500 | 12.0369 |
| 6-600 | 12.0051 | 6-60 | 12.0378 | 70-7,000 | 12.0528 | 60-600 | 12.0368 |
| 7-700 | 12.0052 | 7-70 | 12.0377 | 80-8,000 | 12.0529 | 80-800 | 12.0366 |
| 8-800 | 12.0053 | 8-80 | 12.0376 | 100-10,000 | 12.0079 | - | - |

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

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.



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