

# miniAV<sup>®</sup>-X

## Single-Bath Kinematic Viscometer

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

miniAV<sup>®</sup>-X is a fully-automated, single-bath, benchtop viscometer with a 10 position sample handler for unattended D445 processing. The Ubbelohde-style tube covers a 100-fold viscosity range at values between 0.5 mm<sup>2</sup>/s [cSt] and 6,000 mm<sup>2</sup>/s [cSt] from 15 °C to 100 °C [with available TE cooler].

### 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

#### D445 precision in a compact, robust design

- Temperature range: ambient to 100 °C [15 °C to 100 °C with available TE cooler]
- Viscosity range: 0.5 mm<sup>2</sup>/s [cSt] to 6,000 mm<sup>2</sup>/s [cSt]\* in 100-fold increments [easily covering the range of 5 separate manual glass viscometers]
- Fits in roughly the same bench-top area as an analytical balance
- Optional Peltier cooling is environmentally friendly and requires no external refrigeration
- A well tested CANNON viscometer platform offers reliability and dependable support

#### Fully automated bench-top testing

- 10 position sample handler allows unattended operation
- Affordable alternative to labor-intensive manual KV testing
- Up to 12 determinations/hour
- Single PC manages up to 4 instruments using VISCPRO<sup>®</sup> software

#### Reduced consumable costs

- ASTM D446/ISO 3105 Ubbelohde-style tube reduces solvent usage and disposal costs by 50%
- Automated vial washing & drying reduces vial consumption and replaces manual washing

#### Simplified maintenance & test versatility

- Modular bath for easy maintenance access
- 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
- Standard dual solvent input

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



Professional installation, software, a viscometer tube, standards and a high precision digital thermometer are included.



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## Ordering Information

miniAV<sup>®</sup>-X Single Bath Kinematic Viscometer consists of the viscometer unit, 10 position sample carousel, external power supply and waste receiver assembly. One viscometer tube, one set of oil viscosity standards, a case of glass vials, a high precision digital thermometer with probe, VISCPRD<sup>®</sup> data storage/management software and professional installation are also included. Specify desired factory installed options and viscometer tubes when ordering. Computer sold separately.

Description	Part #
100 VAC, 50/60 Hz	9725-A87
115 VAC, 50/60 Hz	9725-A85
230 VAC, 50/60 Hz	9725-A86

## 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 not included.

Description	Part #
TE bath cooling (external)*	81.2216
External heated waste drain line w/ external power supply*	81.3115

**NOTE:** Additional temperature calibration (for each temperature beyond the first) is also available at the time of ordering.

## Accessories & Consumables

Description	Part #
Viscosity reference standards	various
Replacement silicone bath fluid, 1 L	9726-L40
20 mL vials (glass); case of 40	81.3023
Extra sample carousel	81.2326
Spare parts kit (1 year supply)	81.2900
Pedestal base	68.0298

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).

## Product Specifications

Dimensions (W x D x H)	<b>Unit:</b> 25.4 cm x 43.7 cm x 52.6 cm [10.0 in x 17.2 in x 20.7 in] <b>Power Supply:</b> 33.0 cm x 39.6 cm x 17.2 cm [13.0 in x 15.6 in x 6.8 in] <b>Waste Receiver:</b> 33.0 cm x 39.6 cm x 17.2 cm [13.0 in x 15.6 in x 6.8 in]
Weight	<b>Unit:</b> 18 kg (40 lb) <b>Power Supply:</b> 11 kg (24 lb) <b>Waste Receiver:</b> 6 kg (13 lb)
Shipping dimensions (W x D x H)	73.7 cm x 63.5 cm x 94 cm [29 in x 25 in x 37 in]
Shipping weight (with all items)	63.5 kg (140 lb)
Max. throughput	12 tests per hour
Automated sample capacity	10
Viscosity range	0.5 mm <sup>2</sup> /s [cSt] to 6,000 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* Down to 15 °C, ± 0.03 °C* *temperatures within 5 °C of ambient and below require bath cooling
Minimum sample/solvent volume	5 mL sample*/15 mL solvent per test *as little as 3 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; 115 VAC, 50/60 Hz; 230 VAC, 50/60 Hz; 1,000 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	12.0581	0.5-5	12.0304	10-1,000	12.0294	10-100	12.0312
1-100	12.0287	1-10	12.0305	15-1,500	12.0302	15-150	12.0313
2-200	12.0288	2-20	12.0306	20-2,000	12.0295	20-200	12.0314
3-300	12.0289	3-30	12.0307	30-3,000	12.0296	30-300	12.0315
4-400	12.0290	4-40	12.0308	40-4,000	12.0297	40-400	12.0316
5-500	12.0291	5-50	12.0309	50-5,000	12.0298	50-500	12.0317
6-600	12.0292	6-60	12.0310	60-6,000	12.0303	60-600	12.0318
7-700	12.0578	-	-	-	-	80-800	12.0319
8-800	12.0293	8-80	12.0311	100-10,000	12.0299	100-1,000	12.0532



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