

miniPV[®]-X

Dilute Solution Polymer Viscometer

For Dilute Solution Viscosity of Polymers in Organic Solvents and Aqueous Solutions
ASTM D1243, ASTM D1795, ASTM D2857, ASTM D3591, ASTM D4243, ISO 1628-1, ISO 5351

miniPV[®]-X is a fully-automated, single-bath, benchtop viscometer with a 10 position sample handler for unattended processing and testing of dilute solution viscosity of polymers in organic solvents and aqueous solutions. The Ubbelohde-style tube covers a dilute solution polymer viscosity range between 0.02 mm²/s [cSt] and 700 mm²/s [cSt] from 15 °C to 100 °C. Available tubes cover a kinematic viscosity range of 0.3 mm²/s [cSt] to 1,200 mm²/s [cSt] with extended KV range tubes available on request.

Common Applications

- Elastomers
- Plastics
- Thermoplastic elastomers
- Copolymers
- Biopolymers
- Polymer blends
- Oligomers
- Pre-polymers
- Resins
- Viscosity modifiers

Product Features & Benefits

Designed to meet specific polymer industry needs

- Compatible with organic solvents and aqueous solutions
- On-board software with specialized polymer calculations determines relative, inherent, reduced, specific and intrinsic viscosity as well as molecular weight
- Integrated TE cooling provides superb temperature control from 15 °C to 100 °C
- Dilute solution polymer viscosity range: 0.02 mm²/s [cSt] to 700 mm²/s [cSt]. Both single range and special dual range viscometer tubes are available
- Available kinematic viscosity tubes cover a range of 0.3 mm²/s [cSt] to 1,200 mm²/s [cSt] with extended range tubes available on request*

Compact, robust design

- Fits in roughly the same bench-top area as an analytical balance to conserve valuable lab space
- Proven CANNON[®] viscometer platform offers reliability and outstanding support
- Peltier cooling is environmentally friendly and requires no external refrigeration

Fully automated bench-top testing

- 10 position sample handler allows unattended operation
- Software controls the instrument and facilitates tasks such as calibration, data entry, method specification, calculation selection, report formatting and data exporting
- Single PC manages up to 4 instruments using VISCPRO[®] software
- Reduces operator to operator variability
- Automated vial washing & drying reduces vial consumption and replaces manual washing

Simplified maintenance & test versatility

- Modular bath for easy maintenance access
- Operators physically replace tubes in minutes, eliminating the need to schedule related service calls
- Single-point temperature calibration avoids need for tube recalibration and maximizes test flexibility
- Standard dual solvent input

*Upper viscosity measurements may be limited by test temperature and sample type.



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



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Ordering Information

miniPV[®]-X Dilute Solution Polymer Viscometer consists of the viscometer unit, 10 position sample carousel, external power supply and waste receiver assembly. One viscometer tube, one set of viscosity standards, a case of glass vials, a high precision digital thermometer with probe, VISCPRO[®] 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-C10
115 VAC, 50/60 Hz	9725-C11
230 VAC, 50/60 Hz	9725-C12

Options

Factory installed options (see NOTE) must be specified when ordering. Part numbers are listed below for field installable options.

Description	Part #
External heated waste drain line w/ external power supply	81.3115

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

Accessories & Consumables

Description	Part #
Viscosity reference standards	various
Replacement silicone bath fluid, 1 L	9726-L40
Vials [20 mL clear glass]; case of 40	81.3023
Vials [20 mL clear glass]; case of 144	65.0025
Vials [20 mL amber glass]; case of 144	81.2816
Screw cap lids [24 mm opening]; case of 144	65.0026
Viton sample cap liner with slits, 1 each	65.3888
Extra sample carousel	81.2326
Spare parts kit [1 year supply]	81.3030
CANNON [®] Solution Preparation System [SPS]	
	115 - 240V 9724-Z61

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.

Product Specifications

Dimensions [W x D x H]	Unit: 25.4 cm x 39.6 cm x 78.7 cm [10.0 in x 15.6 in x 30.5 in] Power Supply: 33.0 cm x 39.6 cm x 17.2 cm [13.0 in x 15.6 in x 6.8 in] Waste Receiver: 33.0 cm x 39.6 cm x 17.2 cm [13.0 in x 15.6 in x 6.8 in]
Weight	Unit: 24 kg [53 lb] Power Supply: 11 kg [24 lb] Waste Receiver: 6 kg [13 lb]
Shipping dimensions [W x D x H]	73.7 cm x 63.5 cm x 94.0 cm [29 in x 25 in x 37 in]
Shipping weight [with all items]	72 kg [159 lb]
Max. throughput	12 tests per hour
Automated sample capacity	10
Viscosity range	Dilute Solution: 0.02 mm ² /s [cSt] to 700 mm ² /s [cSt] Kinematic: 0.3 mm ² /s [cSt] to 1,200 mm ² /s [cSt]* *Range depends on viscometer tube selection. Extended range tubes are available for some applications.
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
Minimum sample/solvent volume	8 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

Size	Single Range Tubes	Part #	Dual Range Tubes	Part #
Dilute Solution Polymer Viscosity Range in mm ² /s [cSt]				
0	0.02 - 0.43	12.0566	-	-
0A	0.3 - 3	12.0549	0.3 - 3/ 0.5 - 5	12.0594
0B	0.15 - 2	12.0548	-	-
0C	0.2 - 1	12.0567	-	-
1	0.4 - 4	12.0550'	0.4 - 4/ 0.7 - 7	12.0602
1B	2 - 20	12.0551	2 - 20/ 3.5 - 35	12.0591
1C	1.3 - 13	12.0552	-	-
1D	0.8 - 8	12.0582	-	-
1E	0.5 - 5	12.0583	-	-
2	4 - 40	12.0553	4 - 40/ 7 - 70	12.0610'
2B	20 - 200	12.0554	-	-
2C	10 - 100	12.0565	-	-
3	40 - 400	12.0555	40 - 400/ 70 - 700	12.0592



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