

CANNON® miniAV® Automatic Viscometer



- Meets all ASTM D 445 Precision Specifications
- Convenient and Affordable Automated Testing
- 100-Fold Range Tubes for Kinematic Viscosities Between 0.5 and 6,000* mm²/s
- Selectable Temperature Range Between 15° and 100°C
- Attractive and Compact Tabletop Unit—Save Space, Save Time, Save Money!

*Additional application-specific extended range tube designs available; some upper viscosity measurements may be limited by test temperature.



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CANNON® miniAV® Automatic Viscometer

Affordable D 445 Automation

The miniAV® from CANNON Instrument Company offers every laboratory an exciting new tool for convenient and highly accurate kinematic viscosity (Kin Vis) measurement. Occupying roughly the same footprint as a tabletop rotational viscometer, the miniAV automates the time-consuming sample measurement and viscometer tube wash/dry procedures associated with the ASTM D 445 method, freeing the laboratory technician for other duties. The miniAV has been designed as an affordable alternative to traditional labor-intensive manual Kin Vis measurement methods.

The miniAV performs in tandem with the proven VISCRO® II software for Windows® 98/NT®/XP®, providing convenient sample ID data entry, database maintenance, and powerful reporting and LIMS connectivity capabilities. Up to four miniAV® instruments can be connected to a single PC.



Operation

Operation of the miniAV is simple. The user fills the sample vial, places it in the vial holder beneath the viscometer, and raises it into position. Sample ID information is entered via the computer. The user initiates the test with a single mouse click. Without further operator intervention, the sample is drawn up into the viscometer tube, held for temperature equilibration, and then measured. Data is automatically transferred to the computer database via the RS-232 serial connection. The sample is then ejected as waste, and the sample vial becomes a wash station as solvent is automatically metered into the viscometer tube and then evacuated to complete the cleaning cycle. Following tube drying, the vial holder is lowered to its original position, ready to receive the next sample. Total cycle time for a test is about five to eight minutes depending on the viscosity.

Accuracy

The miniAV provides automatic Kin Vis testing within parameters specified by ASTM D 445/446 and ISO 3104/3105. The miniAV measures flow rates within ± 0.001 second by electronically timing the liquid meniscus as it moves between thermistor timing sensors. Bath temperature is controlled with accuracy better than $\pm 0.01^\circ\text{C}$ between 15° and 100° , as required by ASTM D 445/446. Dark or opaque liquids may be measured with the same precision as transparent fluids – without the need to change tubes.

Unlike non-traditional bench-top instruments which claim D445 correlation, the miniAV is truly a KinVis instrument. Using a capillary viscometer defined in D446, the miniAV performs equally well on Newtonian materials and fully formulated end products.

Features

The miniAV bath unit housing is only 10 inches wide, and the unit is less than 21 inches in height. Modular side panels swivel out for convenient maintenance/service. The modified Ubbelohde compound viscometer tube offers a 100-fold viscosity range (easily covering the range of 5 separate manual glass viscometers), and requires only 5-10 mL of sample (as little as three mL with Fast-Run tubes). The tube rests in a 1-liter temperature bath that also contains temperature and fluid level sensors, optional TE Cooler, heating element, and impellers that circulate bath fluid to ensure high temperature uniformity. Like its fully-automatic cousins in the CAV 2000 Series, the miniAV offers selectable temperatures between 15° and 100°C .

The instrument is shipped with an external power supply and waste receiver assembly. Convenient chromatography-type container lids may be used for connecting cap thread #38 reagent bottles to the miniAV.

Required Accessories

The miniAV requires a computer with the Windows® 98/NT®/XP® operating system. The user must provide a suitable non-pressurized solvent container for each solvent. For test temperatures below 40°C or for operation in high-ambient environments, TE Cooler is required; a thermoelectric cooler is available from CANNON.

miniAV® Automatic Viscometer Specifications

miniAV Dimensions:	254 mm wide x 305 mm deep x 598 mm high (10 x 12 x 23.5")
Power Supply Dimensions:	343 mm wide x 356 mm deep x 159 mm high (13.5 x 14 x 6.25")
Weight:	12.5 kg (27.5 lbs) without bath fluid, Power Supply and Waste Receiver
Shipping Weight:	51 kg (113 lbs) with all units/accessories
Operating Conditions:	15° - 30°C , 10%-90% RH non-condensing, Installation Category II, Pollution degree 2
Fuse Rating:	115V & 100V Units: M 250V 8A, 1-1/4 x 1/4"; 230V Unit: M 250V 4A, 1-1/4 x 1/4"
Compliance:	CE Mark: EMC directive (89/336/EEC); Low voltage directive (73/23/EEC); HI-POT (1900 VDC, 60 sec.)

miniAV® Order Information

Catalog #	Item Description
9725-A80	miniAV 115v 50/60 hz
9725-A81	miniAV 230v 50/60 hz
9725-A82	miniAV 100v 50/60 hz
P81-2450	Dostmann Thermometer, Calibrated, Single Channel Kit
P81-2451	Dostmann Thermometer, Calibrated, Digital Dual Channel Kit



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