CANNON INSTRUMENT COMPANY

From Manual to Automated

CANNON® has the answer to all your kinematic viscosity testing needs.

At CANNON, we tailor solutions to meet the specific application requirements of our customers.

	Manual	Semi-Automated		Fully Automated						
	Glass Viscometers & Baths Best for infrequent viscosity testing and when operator-to-operator variability is not a concern.	**SimpleVIS® Portable Viscometers** Designed for point-of-use testing. Features simple, on-screen navigation and a DC power option.		**mini Viscometers** A mid-market automation solution, mini laboratory viscometers are designed for testing in small to medium size sample batches. They feature full automation of sample loading, viscosity determination, viscometer tube cleaning, and sample vial washing and drying.				**CAV® Viscometers** Designed for laboratory testing in large sample batches, our flagship CAV viscometers feature full automation of sampling, viscosity determination, viscometer tube cleaning, and sample vial washing and drying.		**UltraVIS® Viscometer** Revolutionary design eliminates the expense of solvent and waste solvent disposal. It features full automation of sampling, viscosity determination, and tube cleaning.
										
	Glass Viscometers & Baths	SimpleVIS	SimpleVIS+	MiniAV®	MiniAV-HT	MiniAV-X	MiniQV®-X	CAV 4.1	CAV 4.2	UltraVIS 192
Key Features	• Low up front cost • Versatile • Sturdy and long-lasting design	• Lowest cost semi-automated testing • Meets D7279 and offers near D445 precision • Portable • Does not require an external PC • Weighs only 10 lb • Rugged, reliable design has only two moving parts	• Active cooling for quick temperature adjustments • Low cost semi-automated testing • Meets D7279 and offers near D445 precision • Portable • Rugged, reliable design has only two moving parts	• Lowest cost for fully automated testing • D445 precision • Option for sample preheating and heated drain line for waxy samples	• Developed specifically for asphalt kinematic viscosity at 60 °C and 135 °C • D445 precision • Up to 12 determinations per hour • Includes adjustable sample preheater and heated waste lines	• All the features of the miniAV but with 10-position, unattended sample handling • D445 precision	• Optimized for high throughput testing • Follows most D445 principles but with only one analysis for rapid output	• Single bath for simultaneous testing of two samples at the same temperature • Color, touchscreen interface • D445 precision • Option for sample preheating	• Dual bath for simultaneous testing at two different temperatures • Color, touchscreen interface • D445 precision • Option for sample preheating and heated drain line for waxy samples	• Solvent-free • Large, intuitive, color touchscreen • Fast analysis time: typically 2.5 minutes per test • FlowHub™ PC software for configurable LIMS output • Solid bath design, no bath fluid needed • Follows most D445 principles but with shorter flow times for rapid analysis
Application	Various applications (formulation, refining processes, blending, final specification testing)	Product chain of custody monitoring, contamination checks, point-of-use testing	Product chain of custody monitoring, contamination checks, point-of-use testing	Various applications (formulation, refining processes, blending, final specification testing, testing of waxes)	Asphalt binders, cements, cutbacks, and various applications (formulation, refining processes, blending, final specification testing)	Various applications (formulation, refining processes, blending, final specification testing)	In-service oil testing and other high speed applications	Various applications (formulation, refining processes, blending, final specification testing)	Various applications (formulation, refining processes, blending, final specification testing, heavy fuel oils, waxes)	In-service oil testing, used oil analysis, fleet maintenance, condition monitoring
Sample Handler Positions	7 (CT series baths) 2 (TE series baths)	1	1	1	1	10	25	28	28	192
Minimum Sample Volume	Varies by viscometer tube selected	0.5 ml	0.5 ml	5 ml (as little as 3 ml with fast-run tubes)	5 ml	5 ml (as little as 3 ml with fast-run tubes)	4-5 ml	8 ml (as little as 3 ml with fast-run tubes)	8 ml (as little as 3 ml with fast-run tubes)	10 ml
Minimum Solvent Volume	Varies by viscometer tube selected	10 ml	10 ml	15 ml	15 ml	15 ml	8 ml	15 ml	15 ml	0
Temp Range	-30 to 200 °C Varies by bath type selected	40 and 100 °C (or any two selected temps from 40–100 °C)	40 and 100 °C (or any two selected temps from 40–100 °C)	40–100 °C 15–40 °C w/ cooling option	40–150 °C	40–100 °C 15–40 °C w/ cooling option	40–100 °C	40–150 °C down to 20 °C with bath options	40–100 °C 15-150 °C with bath options	40 °C or 100 °C
Viscosity Range	Varies by viscometer tube selected	**Standard:** 10–700 mm^2/s (cSt) at 40 °C 5.5–200 mm^2/s (cSt) at 100 °C **Low range:** 2–70 mm^2/s (cSt) at 40 °C and 100 °C	**Standard:** 10–700 mm^2/s (cSt) at 40 °C 5.5–200 mm^2/s (cSt) at 100 °C **Low range:** 2–70 mm^2/s (cSt) at 40 °C and 100 °C	**Standard tubes:** 0.5–10,000 mm^2/s (cSt) in 100-fold increments **Fast-run tubes:** 0.5–1,000 mm^2/s (cSt) in 10-fold increments	0.5–10,000 mm^2/s (cSt) in 100-fold increments	**Standard tubes:** 0.5–6,000 mm^2/s (cSt) in 100-fold increments **Fast-run tubes:** 0.5–1,000 mm^2/s (cSt) in 10-fold increments	5–800 mm^2/s (cSt) in 10-fold increments at 40 °C and 5–50 mm^2/s (cSt) in 10-fold increments at 100 °C	**Standard tubes:** 0.5–10,000 mm^2/s (cSt) in 100-fold increments **Fast-run tubes:** 0.5–1,000 mm^2/s (cSt) in 10-fold increments	**Standard tubes:** 0.5–10,000 mm^2/s (cSt) in 100-fold increments **Fast-run tubes:** 0.5–1,000 mm^2/s (cSt) in 10-fold increments	5–50 mm^2/s (cSt) at 100 °C 30–680 mm^2/s (cSt) at 40 °C
Up Front Cost	$–$$	$	$	$$	$$–$$$	$$–$$$	$$$	$$$	$$$–$$$$	$$$$

In addition to the general purpose instruments featured here, we also offer viscometers to suit specialized applications such as those requiring the use of aggressive solvents.

Experience the Benefits of Automated Viscosity Testing

Increase Safety

Decreased solvent usage minimizes operator exposure to solvents.

Automated tube washing and drying helps reduce injuries from damaged tubes and broken glass.

Improve Accuracy

100-fold automated viscometer tube range eliminates the need to select the appropriate manual viscometer.

Computer-controlled loading and electronic sample timing reduces the impact of operator-to-operator variability.

Automated viscosity calculation provides reliable accuracy without the potential for human error.

Available LIMS connectivity improves traceability and reporting.

Save Time and Money

Automated viscometer calibration eliminates the time and expense of manual calibrations.

Less solvent and smaller sample volumes provide lower consumable usage for improved cost savings.

Reduced test cycle times deliver results in less than half the time of manual methods.

Unattended sample processing and testing frees operators to perform other important tasks.

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