Manual or Automated: *CANNON has an answer for all of your kinematic viscosity testing needs . . .*

Manual

Semi-Automated

Fully Automated

	Operator Dependent Precision	High Precision (Near D445)			Highest Precision (meets ASTM D445)					
	Glass Viscometers & Baths	SimpleVIS® Portable Viscometers			miniAV® Laboratory Viscometers				CAV® Laboratory Viscometers	
	Best for infrequent viscosity testing and when operator-to-operator variability is not a concern	Designed for point of use testing. Features simple, on-screen navigation and a DC power option			A mid-market automation solution, miniAV® laboratory viscometers were 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				Designed for laboratory testing in large sample batches our flagship CAV® viscometers feature full automation of sampling, viscosity determination and viscometer tube cleaning. CAV 4.2 also automates sample vial washing and drying	
Model	**CT Baths & Glass Viscometers**	**SimpleVIS**	**SimpleVIS+**	**SimpleVIS II**	**miniQV-X**	**miniAV**	**miniAV-LT**	**miniAV-X**	**CAV-2100**	**CAV 4.2**
Key features	• Low up front cost • Versatile	• Lowest cost semi-automated testing • Portable	• Active cooling for quick temperature adjustments • Low cost semi-automated testing • Portable	• Sub-ambient temperature control • Low cost semi-automated testing • Portable	• Optimized for high throughput testing • 25 position unattended sample handling • Fully automated • Near D445 precision	• Lowest cost for fully automated testing • D445 precision • Option for sample pre-heating and heated drain line for waxy samples	• Sub-ambient temperature control • Fully automated • D445 precision	• 10 or 15 position unattended sample handling • Fully automated • D445 precision	• Two tubes provide up to 10,000-fold viscosity range in a single bath • 26 position (2 trays x 13) unattended sample handling • Fully automated • D445 precision • Option for sample pre-heating and heated drain line for waxy samples	• Dual bath for simultaneous testing at two temperatures in a 100-fold range • 28 position (2 trays x 14) unattended sample handling • Color, touch-screen interface • Fully automated • D445 precision • Option for sample pre-heating and heated drain line for waxy samples
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	Intermediate chemicals testing	In-service oil testing and other high speed applications	Various applications (formulation, refining processes, blending, final specification testing, testing of waxes)	Jet fuel QC	Various applications (formulation, refining processes, blending, final specification testing)	Various applications (formulation, refining processes, blending, final specification testing, testing of waxes)	Various applications (formulation, refining processes, blending, final specification testing, testing of waxes)
Sample handling capacity (max)	7 (CT series baths) 2 (TE series baths)	1	1	1	25	1	1	10/15	26	28
Temp range	-30 °C to 200 °C Varies by bath type selected	40 °C to 100 °C Two selected temps between 40 & 100 °C	40 °C to 100 °C Two selected temps between 40 & 100 °C	15 °C to 30 °C One selected temp between 15 & 30 °C	ambient* to 100 °C	ambient* to 100 °C 15 °C to 100 °C w/ cooling option	-20 to +30 °C	ambient* to 100 °C 15 °C to 100 °C w/ cooling option	ambient* to 100 °C 20 °C to 150 °C with bath options	ambient* to 100 °C 15 °C to 150 °C with bath options
Viscosity range	Varies by viscometer tube selected	**Standard:** 10 - 700 mm^2/s (cSt) at 40 °C and 5.5 - 200 mm^2/s (cSt) at 100 °C **Low range:** 1 - 70 mm^2/s (cSt) at 40 °C and 100 °C	**Standard:** 10 - 700 mm^2/s (cSt) at 40 °C and 5.5 - 200 mm^2/s (cSt) at 100 °C **Low range:** 1 - 70 mm^2/s (cSt) at 40 °C and 100 °C	**Standard:** 10 - 700 mm^2/s (cSt) **Mid range:** 2 - 140 mm^2/s (cSt) **Low range:** 1 - 70 mm^2/s (cSt)	5 to 800 mm^2/s (cSt) in 10-fold increments at 40 °C and 5 to 50 mm^2/s (cSt) in 10-fold increments at 100 °C	**Standard:** 0.5 to 10,000 mm^2/s (cSt) in 100-fold increments **Fast-run:** 0.5 to 1,000 mm^2/s (cSt) in 10-fold increments	1 to 10 mm^2/s (cSt)	**Standard:** 0.5 to 6,000 mm^2/s (cSt) in 100-fold increments **Fast-run:** 0.5 to 1,000 mm^2/s (cSt) in 10-fold increments	**Standard:** 0.5 to 10,000 mm^2/s (cSt) in 100-fold increments **Fast-run:** 1 to 800 mm^2/s (cSt) in 10-fold increments	**Standard:** 0.5 to 10,000 mm^2/s (cSt) in 100-fold increments **Fast-run:** 0.5 to 1,000 mm^2/s (cSt) in 10-fold increments
Up front cost	$ - $$	$	$	$	$$$	$$	$$$	$$ - $$$	$$$	$$$$

* Optional cooling is required for temperatures within 5 °C of ambient

If you have a special application: ***talk to us!***

In addition to the general purpose instruments featured here, CANNON offers viscometers to suit specific applications such as those requiring use of aggressive solvents. At CANNON we pride ourselves on working with our customers to tailor a solution that meets their specific needs.

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10 Best Reasons to Automate
Your Viscosity Testing Now!

Whether considering the move from manual to automated viscosity testing or simply to a higher level of automation than what you are currently using, there are many compelling benefits associated with automated instrumentation.

1

Automation removes subjectivity from viscosity measurement. The wide, 100-fold automated viscometer tube range (covering the range of 5-7 manual viscometers) eliminates the need to select the appropriate manual viscometer – just walk up and run your sample.

2

Automation reduces operator-to-operator variability. Computer controlled loading and electronic sample timing eliminate filling errors and the impact of operator timing technique on the test data.

3

Automation decreases mathematical errors. Automated viscosity calculation eliminates the human error associated with manual viscosity calculation.

4

Automation lessens operational inefficiency. Unattended sample processing and testing means operators are free to perform other critical laboratory tasks, improving overall lab efficiency.

5

Automation makes happier operators. Fully automated instruments perform the mundane tasks associated with viscosity measurement (such as viscometer washing, sample loading, timing etc.). Operators have more time for lab activities, such as result analysis or more complex testing, that make better use of their professional skill sets.

6

Automation saves time. Total test cycle times are reduced from the 30+ minutes commonly associated with manual methods to less than half that time.

In most cases the benefits associated with an automated viscometer completely offset the initial purchase price.

7

Automation saves calibration costs. Automated calibration of the viscometer eliminates the time and expense associated with manual viscometer calibrations.

8

Automation minimizes consumable usage and cost. Modern automated viscometers require less solvent and smaller sample volumes than manual methods or older automated options. In addition, many feature automated vial washing and drying which permits reuse of sample vials. These features significantly reduce lab consumable purchase costs and disposal fees.

9

Automation improves lab safety. Automated viscometer tubes are washed and dried in place, eliminating the likelihood of injuries from broken glass. Decreased solvent usage nearly eliminates operator exposure to hazardous solvents.

10

Automation offers improved traceability and reporting. Automatic recording of test parameters and results by the instrument software adds improved measurement traceability while built-in LIMS connectivity allows data to be sent anywhere.

Learn more: sales@cannoninstrument.com | www.cannoninstrument.com

To learn more about specific products, contact CANNON or visit our website at:

www.cannoninstrument.com

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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Kinematic Viscosity Measurement

From Manual to Automated

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