

KINEMATIC VISCOSITY BATH WITH AUTOMATED SAMPLE MEASUREMENT



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BOHEMIA, NEW YORK • HOUSTON, TEXAS

KINEMATIC VISCOSITY BATH WITH AUTOMATED DETECTION & TIMING

Test Method

Kinematic viscosity is of primary importance in the design and selection of a wide range of petroleum products. Calibrated capillary viscometers are used to measure flow under gravity or vacuum at precisely controlled temperatures.

Features and Benefits

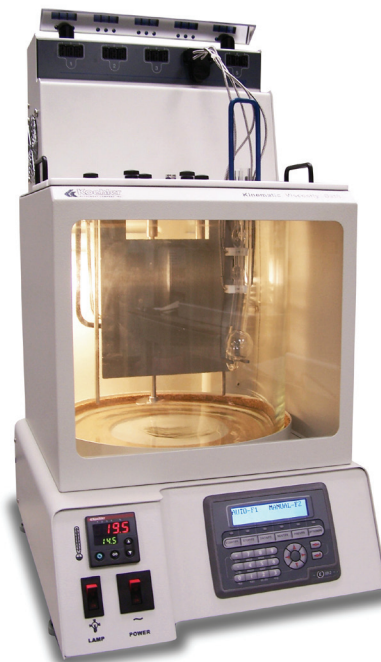
- Complete instrument and data acquisition system exclusively designed for conducting D445, IP 71 and related test methods
- Optical sensor detection system accurately measures sample flow and automatically calculates kinematic viscosity test results
- Powerful software system for PC platforms operating in Windows® 98 SE, 2000, NT, ME, and XP environments
- Option wireless data acquisition package available
- Automatic calculation and display of results in viscosity units or seconds
- Accommodates Ubbelohde, Cannon®-Fenske, and Reverse Flow viscometers
- High accuracy temperature control with dual digital displays show setpoint and actual bath temperature with selectable scale (°C or °F)
- Stand alone feature provides for automated testing without an external PC
- Integrated redundant overtemperature and low liquid level cut-off circuitry
- Software exports test data with graphs and test parameters directly to Microsoft® Excel or in ASCII file format for use with LIMS or any other spreadsheet program
- Integrated digital timing for easy measurement of sample efflux times

Kinematic Viscosity Bath

Koehler KV5000 series kinematic viscosity baths with the optical flow detection system provides automatic viscosity measurements of petroleum and petrochemical products. Each viscosity bath includes communication and power ports for each optical detection assembly, and can utilize up to five optical assemblies (K23780 series). Two additional positions are available for manual viscosity measurements, and all positions can be used in the manual mode. The modular design of the three types of optical assemblies allows the interchangeable use of any combination and size of Cannon®-Fenske, Reverse Flow, and Ubbelohde tubes in viscosity baths. The viscometer tubes are quickly installed and removed from the detection assemblies for cleaning and simple tube changes. Rugged construction of the optical detection system prevents corrosion and provides for easy maintenance. Stand alone operation allows automatic viscosity measurements and results calculations without an external PC. Temperature control uniformity is assured by means of motorized stirrer which provides complete circulation without turbulence. Microprocessor PID circuitry assures precise, reliable temperature control within ASTM specified tolerances throughout the operating range of the bath. Simple push-button controls and dual digital displays permit easy setting and monitoring of bath temperature. Two place calibration offset capability is provided. Connection of the built-in cooling coil to tap water or a recirculating water chiller facilitates temperature control at ambient or below ambient temperatures.

Viscosity Software

Software automatically downloads test data and calculates final test results from sample efflux times. Also included is a database for storing test data, determining test averages, standard deviations, and ASTM test repeatability as well as providing a method for tracking both instrument and viscometer tube calibrations. The sophisticated Windows®-based software package features an easy-to-navigate operation, a straightforward user interface, minimal draw on Windows® memory resources, and real-time data acquisition via an RS232 connection or wireless communication option. The final test results are exported with graphs and test analysis to Microsoft® Excel.



K23702-OS Kinematic Viscosity Bath (KV5000) with K23780-CF Optical Sensor and CF Routine Tube 378-025-C02-0S

Specifications

Conforms to the specifications of:

ASTM D445, D2170, D6074, D6158; IP 71, 319; ISO 3104; DIN 51550; FTM 791-305; NF T 60-100

Temperature range: Ambient to 150°C (302°F); -20°C to 150°C (-4°F to 302°F) with an external chiller. (Please contact Koehler for chiller options.)

Temperature display:

digital with 0.1°C/°F resolution, calibrate to 0.01°C/°F

Temperature control accuracy and uniformity:

Exceeds ASTM requirements

Integrated automatic timing on LCD microcomputer with optical sensors automatically measures sample efflux times

Automatic calculation and display of results in viscosity units or seconds

Communication: RS232 or Wireless

Viscometer ports: Seven total round 2" (51mm) ports

Bath Medium: Water or suitable heat transfer fluid

Ordering Information

Catalog No.		Order Qty
K23702-OS	KV5000 12" Kinematic Viscosity Bath, 115V 50/60Hz	
K23792-OS	KV5000 12" Kinematic Viscosity Bath, 220-240V 50/60Hz	
K23708-OS	KV5000 18" Kinematic Viscosity Bath, 115V 50/60Hz	
K23798-OS	KV5000 18" Kinematic Viscosity Bath, 220-240V 50/60Hz	
K23780-SFW	KV5000 Kinematic Viscosity Software Package	1
K23780-WLS	Wireless KV5000 Kinematic Viscosity Software Package	
K23780-CF	Optical Sensor for Cannon®-Fenske viscometers	1-5
K23780-RF	Optical Sensor for Reverse Flow viscometers	1-5
K23780-UB	Optical Sensor for Ubbelohde viscometers	1-5
	Please refer to the separate information page for the viscometers designed for use with the K23780 sensors.	



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