

Kinematic Viscosity

KV4000 constant temperature baths with integrated digital timing

- Microprocessor temperature control between ambient and 150°C (302°F)
- Integrated digital timing for easy measurement of sample efflux times
- KV4000 permits entry of viscometer constants for automatic calculation and display in viscosity units or seconds
- Dual digital displays show setpoint and actual bath temperature
- Selectable temperature scale - Fahrenheit or Celsius
- Integrated redundant overtemperature and low liquid level cut-off circuitry
- Conforms to ASTM D445, D2170 and related specifications

Constant temperature bath series with advanced temperature control circuitry and integrated timing features for convenient, accurate glass capillary viscometry determinations. 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. Baths accommodate seven glass capillary viscometers of various types. Viewing the viscometers is made easy by glare-free fluorescent illumination inside the bath and a baffle that provides a background for easy viewing. Temperature control uniformity is assured by means of motorized stirrer which provides complete circulation without turbulence. Connection of the built-in cooling coil to tap water or a recirculating water chiller facilitates temperature control at ambient or below ambient temperatures. Communications software (RS232, etc.) ramp-to-set, and other enhanced features are available at additional cost. Contact your Koehler representative for additional information.

Integrated Timing Features - On KV4000, the user can enter the viscosity constant for each viscometer on the front LCD control/display, and then get the test result in both efflux time and viscosity units automatically after stopping each timer. All timing functions are displayed in 0.01 or 0.1 second resolution and are accurate within 0.01%.

Bath Construction and Safety Features - Bath chamber is a clear borosilicate glass vessel enclosed in a polyester-epoxy finished steel housing. Top working surface has seven 2" (51mm) viscometer ports. Front viewing window assures safe, distortion-free viewing. Microprocessor temperature controller incorporates safety circuitry that interrupts power to the heaters in the event of an overtemperature condition or disconnection of the primary probe. For added safety, an adjustable redundant controller with separate sensor probe interrupts power if an overtemperature situation occurs. An integrated low-liquid sensor prevents operation of the bath if the bath liquid is not filled to the proper level, and cuts off power should it fall below during operation. Both overtemperature and low liquid level circuits will latch and prevent further operation of the bath until the fault is removed.



K23702 KV4000

specifications

Dimensions l x w x h, in. (cm)

12" Kinematic Viscosity Bath:

20.25x15.25x24.5 (51x39x62)

Net Weight: 78 lbs (35.5kg)

18" Kinematic Viscosity Bath:

20.25x15.25x30.5 (51x39x77)

Net Weight: 90 lbs (41kg)

Bath Capacity

12": 5.8 gal (22L)

18": 8.9 gal (33.7L)

Included Accessories

Port covers, Delrin® (7)

Thermometer holder

ordering information

catalog no.	model	electrical requirements	size
K23702	KV4000	115V 60Hz, single phase 12.6A	12" (30.5 cm)
K23792	KV4000	220-240V 50/60Hz, single phase 7.2A	12" (30.5 cm)
K23708	KV4000	115V 60Hz, single phase 12.6A	18" (46 cm)
K23798	KV4000	220-240V 50/60Hz, single phase 7.2A	18" (46 cm)

Kinematic Viscosity

KV5000 kinematic viscosity bath

The Koehler KV5000 series kinematic viscosity baths with the optical flow detection system provide automatic viscosity measurements of petroleum and petrochemical products. Includes communication and power ports for each optical detection assembly, and can utilize up to five optical assemblies. Two additional positions are available for manual viscosity measurements, and all positions can be used in the manual mode. The interchangeable Ubbelohde, Cannon® Fenske, and Reverse Flow viscometer tubes are quickly installed and removed from the detection assemblies for cleaning and simple tube changes. Allows automatic viscosity measurements and results calculation without an external PC. Motorized stirrer provides complete circulation without turbulence. Microprocessor PID circuitry assures precise, reliable temperature control within ASTM specified tolerances throughout the operating range. Simple push-button controls and dual digital displays permit easy setting and monitoring of temperature. Two place calibration offset capability is provided. Built-in cooling coil 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.

- Complete instrument and data acquisition system exclusively designed for conducting D445, IP71 and related test methods
- Optical sensor detection system accurately measures sample flow and automatically calculates kinematic viscosity results
- Powerful software system for PC platforms operating in Windows® 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 direct 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



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

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);

sub-ambient to 10°C with external cooling

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

Temperature control accuracy and uniformity:

Exceeds ASTM requirements

*Fully Automated Viscosity and Houillon Viscosity Instruments
Available, Inquire with Koehler Customer Service.*

ordering information

catalog no	model	description	order qty
K23702-OS	KV5000	12" Kinematic Viscosity Bath, 115V 60Hz,	1
K23792-OS	KV5000	12" Kinematic Viscosity Bath, 220-240V 50/60Hz	
K23708-OS	KV5000	18" Kinematic Viscosity Bath, 115V 60Hz	
K23798-OS	KV5000	18" Kinematic Viscosity Bath, 220-240V 50/60Hz	
K23780-SFW	KV5000	Kinematic Viscosity Software Package	1
K23780-WLS	KV5000	Kinematic Viscosity Software Package Wireless	
K23780-CF		Optical Sensor for Cannon®Fenske viscometers	1-5
378-025-C01-OS thru 378-700-C01-OS		Cannon®Fenske Routine Viscometers Size 25 - 700 (Specify Size when ordering)	1-5
K23780-RF		Optical Sensor for Opaque Reverse Flow viscometers	1-5
378-025-C02-OS thru 378-700-C02-OS		Cannon®Fenske Opaque Viscometers Size 25 - 700 (Specify Size when ordering)	
K23780-UB		Optical Sensor for Ubbelohde viscometers Ubbelohde Viscometers Size 0 - 5	1-5
378-000-C03-OS thru 378-005-C03-OS		(Specify Size when ordering)	1-5