



ADVANCED PAVEMENTS TESTING SYSTEMS

Asphalt Binder

Rotational Viscometers

81-PV0118/C

Standard Rotational Viscometer



Rotational Viscometers

Standards ASTM D2196 | ASTM D4402 | AASHTO T316 | EN 13302

81-PV0118 SERIES

Apparent viscosity of unfilled asphalt binder is evaluated by a rotational viscometer which measures the torque generated by a calibrated spindle rotating at a selected speed into a bitumen sample heated at precise temperature in the range from ambient to 260° C. The measured relative resistance to rotation is converted, with a factor, into viscosity units, cP or mPa.s.

We offer two versions of viscometer:

81-PV0118/C

Rotational viscometer, standard version

81-PV0118/B

Rotational viscometer,
high performance version

The high-performance version features a superior level of test automation as further described.

main features

- > Data displayed:
 - Selected speed
 - Selected spindle
 - Viscosity reading
 - Percentage of full scale
- > Measurement of relative and absolute viscosity
- > Unit converter SI to CGS
- > AUTO-TEST with visual and audible malfunction alarm
- > AUTO-RANGE function
- > User-enabled calibration
- > 10 languages options
- > Accuracy 0,1% of full scale

Spindle models	Viscosity ranges (mPa.s)
TR8	50 - 170 k
TR9	250 - 830 k
TR10	500 - 1.7M
TR11	1K - 3.3 m



81-B0118/4 Spindle kit

81-PV0118/C

Rotational viscometer standard version

Technical specifications

- Viscosity range: 100-13,000,000cP
- Rotational speed range: 0.3-100 rpm
- Selectable speeds: 18
- Precision: $\pm 1\%$ of full scale

Resolution:

- Using low viscosity adapter: 0.01cP
- For viscosity lower than 10,000cP: 0.1cP
- For viscosity equal to or above 10,000cP: 1cP
- Repeatability: 0.2%

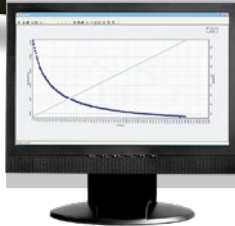
81-PV0118/B

High Performance Rotational Viscometer



main features

- > 12-key touchpad keyboard
- > Direct readout on a graphic display
- > Data displayed:
 - Selected speed
 - Selected spindle
 - Viscosity reading
 - Percentage of full scale
 - Sample temperature
 - Shear rate (with coaxial spindles)
 - Shear stress (with coaxial spindles)
 - Density (entered by the user)
 - Step program status
 - Analysis and visual characteristics (flow curves)
- Viscosity reading: dynamic viscosity (cP or mPa.s) or kinematic viscosity (cSt)
- > Program features:
 - Time to torque: target torque pre-setting device
 - Time to stop: target time pre-setting device
 - 10 working memories
 - Customizable options
 - Programmable
 - Multistep
 - Ramp
- > AUTO-TEST with visual and audible malfunction alarm
- > AUTO-RANGE function
- > Temperature reading
- > User-enabled viscosity and temperature calibration
- > 10 language options



Standards ASTM D2196 | ASTM D4402 | AASHTO T316 | EN 13302

81-PV0118/B

Rotational viscometer

High Performance version

Technical specifications

- Viscosity range: 100-40,000,000 cP
- Rotational speed range: 0.01-200 rpm
- Precision: $\pm 1\%$ of full scale

Resolution:

- Using low viscosity adapter: 0.01 cP
- For viscosity lower than 10,000 cP: 0.1 cP
- For viscosity equal to or above 10,000 cP: 1cP
- Repeatability: 0.2%

Thermometer features:

- Temperature margins: 0 to 100°C; 32 to 212°F
- Resolution: 0.1°C / 0.2°F
- Precision: $\pm 0.1^\circ\text{C}$;
- Type of probe: PT100

Accessories

(for both versions)

81-PV0118/T

Temperature control unit with temperature range from ambient plus 5°C to 300°C. 220-240V/50-60Hz/1ph

81-PV0118/TZ

As above but 110V/60Hz/1ph

81-PV0118/2

Aluminium disposable test chamber

81-PV0118/3

Stainless steel reusable test chamber

81-PV0118/4

Set of 4 stainless steel spindles. (TR8, TR9, TR10, TR11)

Description

The temperature control unit consist of a heating chamber that is used to work in conjunction with rotary viscometers at high temperatures. Viscosity of solid unfilled asphalt binders has to be measured at temperatures ranging from 34°C to 260° according to the Specifications of ASTM D4402. The heater holds the container with sample in which a suitable spindle is immersed and driven by the rotary viscometer to measure viscosity. A digital microprocessor control unit grants the required accuracy of test temperature.

Ordering information

81-PV0118/C

Rotational viscometer supplied with stand, boss head, spindle protection, spindle rack, power supply cable. 100-240V, 50-60 Hz, 1Ph.

81-PV0118/B

Rotational Viscometer, high performance version, calibration certificate, USB, WIFI, Bluetooth, temperature sensor, datalogger software and power supply cable. Viscosity range 100-40 000 000cP, rotational speed 0.01-200rpm. 100-240V/50-60 Hz/1ph.



Temperature control unit 81-PV0118/T

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At IPC Global we are proud of our products.

We are dedicated to supplying high quality, accurate, affordable, easy-to-use systems for Advanced Testing of asphalt, binders and other pavement materials.

As a valued customer of IPC Global you will receive continuous, expert support and advice for your instrument. Furthermore, we offer full installation and training in the correct operation of your IPC Global equipment.

For support from our expert Customer Care Team, contact your local IPC Global-Controls office/distributor or email ipcglobalsupport@controls-group.com.

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