

The TE-BBR Pro is the only programmable bending beam rheometer that allows high loads, up to 44 N, to be applied under truly controlled stress rates for asphalt binder research, mix design, forensic studies and repeated stress and creep recovery testing. Bath temperature is thermoelectrically controlled to $-40\text{ }^{\circ}\text{C}$. NOTE: This instrument is not designed to meet the low end force requirement (0.15 mN) of ASTM D6648 and AASHTO T313 and does not control strain.

Common Applications

- Asphalt binder research
- Asphalt mix design
- Asphalt forensic studies
- Repeated stress and creep recovery testing

TE-BBR Pro

Thermoelectric Bending Beam Rheometer

For Asphalt Binder Research, Mix Design, Forensic Studies and Repeated Stress and Creep Recovery

Product Features & Benefits

Precise, repeatable results

- Temperature controlled to $-40\text{ }^{\circ}\text{C}$
- Force is applied directly (unlike displacement controlled instruments) for outstanding stress accuracy and control
- 1 year warranty included with instrument purchase

Versatile test design options

- Adjustable span lengths (100 mm, 120 mm, 140 mm and 160 mm) and sample thickness (6.35 mm to 12.7 mm)
- Capable of measuring specimen beam loads from 0 g to 4.5 kg
- Specimen beam deflection capacity from -2.5 mm to 7.5 mm with resolution to $0.15\text{ }\mu\text{m}$ ($1,550\text{ \AA}$)
- Maximum force capacity of 44 N (4.5 kg) in any repeated cycle with resolution to within 1.4 mN (0.14 g)
- Totally programmable stress rates, stress profiles and test periods
- Loading rate can be trapezoidal or square waves with 1/4 second resolution
- Pneumatic pressure regulators allow the operator to adjust pressure on main input line, air bearing and load shaft

Automated operation and reporting

- Simple to use, Windows-based operational software (included) controls testing and provides a graphical display of stress and strain
- Acquired data is automatically stored for off-line analysis
- RS-232 interface easily transfers data and exports reports/graphs to any Windows®-compatible printer (USB to RS-232 adapter available)
- Loading and unloading profiles can be constructed for many cycles

Compact, environmentally friendly design

- TE-cooled with solid-state Peltier element. Requires no external refrigeration [e.g. compressors]. A separate air-water heat exchanger removes heat from the Peltier cooling device.
- An integrated, self-contained bath cools using methanol or ethanol as the bath medium. No pressurized, costly or hazardous refrigerants are required.



TE-BBR Pro Thermoelectric Bending Beam Rheometer

Ordering Information

TE-BBR Pro Thermoelectric Bending Beam Rheometer includes the bending beam rheometer with load unit, air/water heat exchanger, a complete precision calibration kit, a set of 6 aluminum molds with mylar separators and data storage/management software. Computer sold separately. Clean, dry air supply (80 psi) is also required.

Description	Part #
120 VAC, 50/60 Hz	9728-V36
240 VAC, 50/60 Hz	9728-V38

Accessories & Consumables

Description	Part #
Complete BBR precision calibration kit: rugged carrying case containing a high precision gage block, precision-cut stainless steel thin beam, 1/4" compliance beam, nine 500 g weights and NIST-traceable calibration certificates	44.0598
Aluminum mold for BBR: simplifies the procedure for making asphalt beams	44.6200
Aluminum molds (6) for BBR: simplifies the procedure for making asphalt beams	44.6205
Plastic strip set 12-ea 3/4"; 24-ea 1/2" strips	44.6250
Strip 1/2" x 7" plastic	44.6250.2
Strip 3/4" x 6-1/2" plastic	44.6250.3
Strip 1" x 7" plastic	44.6260

Product Specifications

Dimensions [W x D x H]	Control & Load Units 61 cm x 54 cm x 69 cm [24 in x 21.3 in x 27.2 in]* Air/Water Heat Exchanger 42 cm x 54 cm x 47 cm [16.5 in x 21.3 in x 18.5 in]* *add 15 cm [6 in] to rear dimensions for connection and airflow allowance
Weight	Control & Load Units: 61.2 kg [135 lb] Air/Water Heat Exchanger: 52.6 kg [116 lb]
Shipping dimensions [W x D x H]	Control & Load Units 101.6 cm x 81.3 cm x 121.9 cm [40 in x 32 in x 48 in] Air/Water Heat Exchanger 61.0 cm x 53.3 cm x 66.0 cm [24 in x 21 in x 26 in]
Shipping weight [with all items]	138.8 kg [306 lb]
Sample capacity	1
Sample supports	Specimen support strips 3 mm ± 0.30 mm in top radius
Bath volume	5 L [1.33 gal]
Temperature range	Ambient to -40 °C [± 0.03 °C stability; ± 0.01 °C resolution]
Sample dimensions	Thickness: 6.35 mm [0.25 in] to 12.7 mm [0.5 in] Length: Adjustable to 100 mm [3.9 in], 120 mm [4.7 in], 140 mm [5.5 in] or 160 mm [6.3 in]
Operating conditions	15 °C to 30 °C, 10% to 75% relative humidity [non-condensing], Installation Category II; Pollution Degree 2
Electrical specifications	120 VAC, 50/60 Hz; 240 VAC, 50/60 Hz; 1,800 watts power consumption
Compliance	CE Mark; EMC directive [2004/108/EC]; Low voltage directive [2006/95/EC]; HI-POT [1900 VDC, 60 sec.]; ROHS
Data output	RS-232

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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