TE-BBR is a thermoelectrically-cooled bending beam rheometer for testing flexural creep of asphalt binders from ambient to –40 °C (± 0.03 °C). A crack seal option provides for low temperature characterization of crack seal "creep" under load for 0.5" thick specimens. TE-BBR meets or exceeds ASTM, AASHTO and SHRP provisions for flexural creep testing of asphalt binders.

Common Applications

- Flexural creep of asphalt binders
- Low temperature characterization of crack seal under load

TE-BBR

Thermoelectric Bending Beam Rheometer

For Low Temperature Flexural Creep Testing of Asphalt Binders
ASTM D6648, AASHTO T313, SHRP Binder Provisions

Product Features & Benefits

Precise, repeatable results

- Meets or exceeds ASTM, AASHTO and SHRP requirements for low temperature flexural creep testing of asphalt binders including ASTM D6648 and AASHTO T313
- Instrument sample supports feature specimen support strips 3 mm ± 0.30 mm in top radius
- Temperature range: ambient to –40 °C. Temperature stability: ± 0.03 °C with resolution of ± 0.01 °C.
- Resolves specimen beam deflection to 0.155 µm (1,550 Å)
- Resolves force to within 0.147 mN (0.015 g)

Reliable and versatile performance

- Installed instruments in operation in asphalt testing labs throughout the world
- Performance verified through ASTM round-robin testing
- Pneumatic pressure regulators allow operator to adjust pressure on main input line, air bearing and load shaft support
- Capable of measuring specimen beam loads from 0 g to 450 g
- Instrument provided with factory-calibration in an ISO 9001-registered laboratory
- 1 year warranty included with instrument purchase

Simple, automated testing

- Easy to use Windows-based operational software (included) controls the entire testing process and provides a visual display of stress and strain
- Simple data transfer via RS-232 interface (USB to RS-232 adapter available)
- Reports and graphs can be printed on any Windows®-compatible printer

Compact, self-contained unit

- TE-cooled with solid-state Peltier elements. Requires no pressurized coolants (a separate air-water heat exchanger is included) and is environmentally friendly.
- An integrated, self-contained bath cools using methanol or ethanol as the bath medium.

CANNON INSTRUMENT COMPANY
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TE-BBR Thermoelectric Bending Beam Rheometer

Ordering Information

TE-BBR Thermoelectric Bending Beam Rheometer consists of 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.

Description	Part #
100 VAC, 50/60 Hz	9728-V31
120 VAC, 50/60 Hz	9728-V30
240 VAC, 50/60 Hz	9728-V35

Accessories & Consumables

Description	Part #
BBR precision calibration kit (D6648 update): rugged carrying case containing a high precision gage block, precision-cut stainless steel thin beam and NIST-traceable calibration certificates	9728-V63
Complete BBR precision calibration kit: rugged carrying case containing a high precision gage block, precision-cut stainless steel thin beam, 1/4" compliance beam, four 100 g weights and NIST-traceable calibration certificates	9728-V60
Silicone rubber mold for BBR: simplifies the procedure for making asphalt beams	9728-V40
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
Crack seal kit: includes set of 5 modified beam supports, thin and thick beam (for calibration), installation hardware and documentation.	44.0675
Crack seal mold for BBR:	44.6262
Crack seal molds (6) for BBR:	44.6263
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 Unit** 73.7 cm x 71.1 cm x 55.9 cm (29 in x 28 in x 22 in) **Load Unit** 58.4 cm x 48.3 cm x 68.6 cm (23 in x 19 in x 27 in) **Air/Water Heat Exchanger** 49.5 cm x 40.6 cm x 48.3 cm (19.5 in x 16 in x 19 in) *add 15 cm (6 in) to front and rear dimensions for connection and airflow allowance
Weight	**Control Unit:** 49.9 kg (110 lb) **Load Unit:** 15.9 kg (35 lb) **Air/Water Heat Exchanger:** 68.0 kg (150 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)	136.4 kg (300 lb)
Max. throughput	6 results per hour
Sample capacity	1
Flexural creep stiffness range	20 MPa to 1 GPa
Sample supports	Specimen suppport 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	12.7 mm x 6.35 mm x 127 mm (0.5 in x 0.25 in x 5 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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