

CANNON TE-BBR SD is a thermoelectrically cooled bending beam rheometer for testing flexural creep of asphalt binders from ambient to  $-40^{\circ}\text{C}$  ( $\pm 0.03^{\circ}\text{C}$ ). A crack seal option provides for low temperature characterization of crack seal "creep" under load for 0.5" thick specimens.

TE-BBR SD 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 SD

## Thermoelectric Bending Beam Rheometer

For Low Temperature Flexural Creep Testing of Asphalt Binders  
ASTM D6648; AASHTO T 313, SHRP Binder Provisions

### 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 T 313
- Instrument sample supports feature specimen support strips 3 mm ( $\pm 0.30$  mm) in top radius
- Temperature range: ambient to  $-40^{\circ}\text{C}$
- Temperature stability:  $\pm 0.03^{\circ}\text{C}$  with resolution of  $\pm 0.01^{\circ}\text{C}$
- Resolves specimen beam deflection to  $0.155\ \mu\text{m}$  ( $1,550\ \text{\AA}$ )
- Resolves force to within 0.147 mN (0.015 g)

### Reliable and Versatile Performance

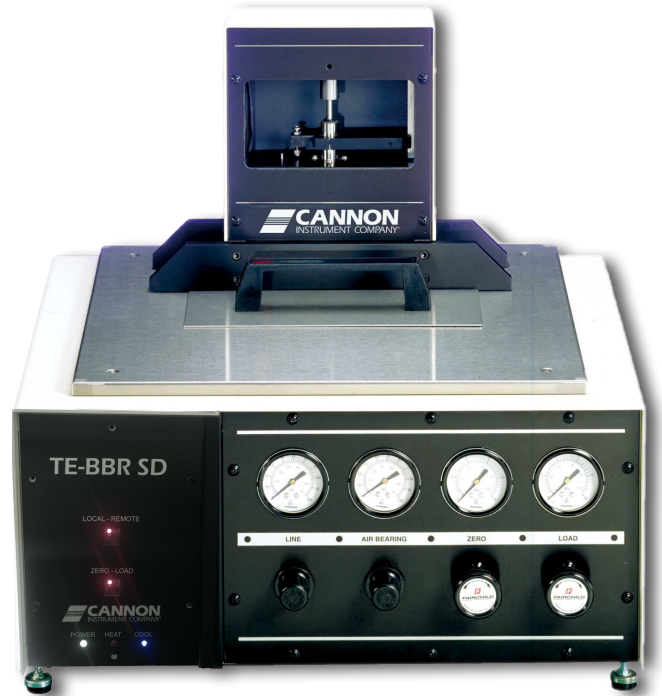
- Installed instruments in operation in asphalt testing labs throughout the world
- Performance verified through ASTM round-robin testing
- Pneumatic pressure regulators allow operator to adjust pressure on main input line, air bearing, and load shaft support
- Capable of measuring specimen beam loads from 0 to 500 g
- Instrument provided with factory-calibration in an ISO 9001 registered laboratory
- Digital thermometer and probe included with instrument purchase, along with a one year warranty

### Simple, Automated Testing

- Easy-to-use Windows<sup>®</sup>-based operational software (included) controls the entire testing process and provides a visual display of stress and strain
- Simple data transfer via USB
- 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



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# TE-BBR SD | Thermoelectric Bending Beam Rheometer

## Ordering Information

TE-BBR SD 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, a digital thermometer with probe, 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 #
Complete TE-BBR SD precision calibration kit: rugged carrying case containing a high precision gage block, precision-cut stainless steel thin beam, ¼" compliance beam, four 100 g weights and NIST-traceable calibration certificates	9728-V60
Silicone rubber mold for TE-BBR SD: simplifies the procedure for making asphalt beams	9728-V40
Aluminum mold for TE-BBR SD: simplifies the procedure for making asphalt beams	44.6200
Aluminum molds (6) for TE-BBR SD: simplifies the procedure for making asphalt beams	44.6205
Crack seal kit: includes set of 6 modified beam supports, thin and thick beam (for calibration), installation hardware and documentation	44.0675
Crack seal mold for TE-BBR SD	44.6262
Crack seal molds (set of 6) for BBR	44.6263
Plastic strip set: 12 each ¾" strips and 24 each ½" strips	44.6250
Strip, ½" x 7" Plastic	44.6250.2
Strip ¾" x 6 ½" Plastic	44.6250.3

## 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 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	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	USB

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](mailto:sales@cannoninstrument.com).



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