

TE-BBR Thermoelectric Bending Beam Rheometer

Specifications for TE-BBR Thermoelectric Bending Beam Rheometer

The TE-BBR shall meet or exceeds ASTM, AASHTO, and SHRP provisions for low temperature flexural creep testing of asphalt binders including ASTM D6648, AASHTO T 313, SHRP binder provisions.

The TE-BBR shall be supplied, complete in place, with the required equipment, accessories, and services for immediate standard operation. Bid shall include the following:

- TE-BBR unit (additional requirements below)
- Complete calibration kit, including a gage block, thin beam, thick beam, four (4) each 100 gram masses, and a carrying case
- Digital thermometer with probe, with a one-year warranty
- Current Certificate of Calibration for the temperature probe, masses, and beams
- PC with Windows 11, compatible for use with the TE-BBR with installed software/ computer interface with BBR. PC shall include all necessary accessories for use, including monitor, keyboard, and mouse.
- Set up, installation, initial calibration, and training at HDOT Materials Testing and Research Branch, 2530 Likelike Highway, Honolulu, HI 96819

Bid must include Hawaii General Excise Tax (GET). Also include all applicable fees, shipping/handling, delivery, and other charges associated with this solicitation in the price submitted.

In addition, TE-BBR shall meet the following requirements:

1. Comply with provisions for Test Methods:
 - ASTM D6648, AASHTO T313
2. Power Supply
 - Use standard 120 Vac, 60 Hz wall outlets
3. Temperature Range and Accuracy:
 - Temperature Range: Ambient to - 40 °C
 - Temperature stability: +/-0.03 °C with resolution of +/- 0.01 °C

4. Throughput Capability
 - 6 results per hour
5. Flexural Creep Stiffness Range:
 - 20 MPa to 1 GPa
6. Sample Supports:
 - Specimen support strips 3mm +1-0.30 mm in top radius
7. Testing and Performance:
 - Resolves specimen beam deflection to 0.155 μm (1550 \AA)
 - Resolves force to within 0.147 mN (0.015 g)
 - Capable of measuring specimen beam loads from 0 g to 450 g
 - Performance verified in ASTM round-robin testing
8. Data Storage/ Software/ Computer Interface
 - Include easy-to-use Windows-based operational software that controls the entire testing process, data storage and management, and provides a visual display of stress and strain
 - Capable of simple data transfer via USB interface
9. Compact, self-contained unit:
 - TE-cooled with solid-state Peltier elements. Requires no pressurized coolants and not dependent on any refrigeration components
 - Uses an integrated, self-contained bath that cools using methanol or ethanol as the bath medium
10. Additional Requirements:
 - The instrument must be provided with factory-calibration in an ISO 9001-registered laboratory
 - The instrument manufacturer must provide after-sale technical support

NOTICE TO BIDDERS

Bidders are advised that they must provide with the bid sufficient documentation, specifications, drawings, etc. to allow the agency to evaluate the offered apparatus for conformance to these specifications and requirements. Failure to provide said documentation may result in that bid being rejected.

Bidders are further advised that a demonstration of the apparatus bid may be required by the agency prior to the award to determine compliance. **Bidders are advised to carefully read spec sheet to ensure your instrument meets the above requirement before bidding.**