



HUMBOLDT

H-1642 Bending Beam Rheometer



System features include:

- Durable, corrosion-resistant construction
- Computerized control, data acquisition, and analysis
- PID temperature controller with digital display
- Two independent platinum RTDs for precise temperature control
- Mechanically-refrigerated cooling bath with environmentally-safe non-CFC coolant
- Integral LVDT and temperature-compensated load cell for accurate test results
- Patented air bearing ensures reliable loading with accurate, repeatable results
- Includes complete calibration kit with carrying case
- Includes ASTM/AASHTO-compliant specimen molds

The Bending Beam Rheometer (BBR) performs flexural tests on asphalt binder and similar specimens per ASTM D6648-01 and AASHTO T313-02. These tests, initially developed by the Strategic Highway Research Program (SHRP), consist of a constant force being applied to a specimen in a chilled fluid bath in order to derive specific rates of deformation at various temperatures. The complete BBR system consists of a fluid bath base unit, a three-point bend test apparatus, which is easily removed from the base unit for specimen loading and unloading, an external cooling unit with temperature controller and a calibration hardware kit with carrying case. The unit features an integral, stainless steel load frame and in-line, blunt-point loading shaft. The large, easy-to-read digital display shows load, displacement, and bath temperature for ease of setup and operation. Real-time displacement, loading, and temperature graphs are displayed during the test cycle and can be re-plotted and re-scaled as needed for easy viewing. Unit includes ASTM/AASHTO-compliant specimen molds and complete calibration kit with carrying case.

H-1642 Bending Beam Rheometer

Load Frame: Integral stainless steel frictionless construction

Loading Shaft: In-line stainless steel with blunt point

Test Load: Variable test range from 0 to 200g standard
System maintains required test load within $\pm 0.5g$ throughout the test cycle

Test Cycle Times: Cycle times for pre-load, recovery, and test load are completely operator-adjustable

Load Cell: 500g (temperature-compensated)

Mechanical Overload Protection: Standard

Test Weights: Calibrated and traceable to NIST

Sample Supports: 25mm (0.98 in.) diameter stainless steel spaced 4.00 in. (101.6mm) apart

LVDT Displacement Transducer: 0.25 in. (6.35mm) calibrated range to provide 2 μ m resolution throughout testing and verification range

Data Display: Large on-screen display of load, displacement, and bath temperature provides ease of setup and operation. Real-time displacement, loading, and temperature graphs are displayed during the test cycle and can be re-plotted and re-scaled as needed for easy viewing.

Cooling Unit: Included (non-CFC refrigerant)

Recommended Cooling Bath Fluid: Non-flammable ethylene glycol mixture

Operating Temperature: Ambient to $-40^{\circ}F$ ($-40^{\circ}C$)

Temperature Measurement: Platinum RTD

Power Requirements:

H-1642: 115VAC 50/60Hz Standard

H-1642.5F: 230VAC 50Hz Optional

Compressed Air Requirements: 50 psi (0.34 MPa) clean, dry air supply required

Apprx. Shipping Weight: 250 lbs. (115kg)

Specifications subject to change without notice

New Step Disk and Calibration Gaging Kit

The latest and probably the most useful innovation in the ATS Bending Beam Rheometer is the totally redesigned calibration step disk. The new disk design makes calibration of the BBR load frame easier and more reliable than ever before. The original notched step disk had a tendency to slide and distort the consistency of readings. The new design features a detent locking mechanism to prevent movement of the disk during calibration and incorporates a series of precision ball bearings as calibration steps.

Now, there is no longer the chance of recording a myriad of readings and the subsequent need to recalibrate. The new disk stays in place during the process, and the use of ball bearings means that there can be only one point of contact with the indicator pin, offering an unmatched level of precision and quality assurance.

The new calibration gaging kit includes the redesigned step disk, four 50g weights, two 2g weights, one certified confidence beam, one non-compliance beam, improved calibration software, and an attractive wooden carrying case.

