BBS1500-40
Blackbody Calibration Source
Large Aperture, Radiometric Temperature Source for Calibration of Pyrometers

Medium-High Temperature, High Emissivity / Uniformity Blackbody for Precision Calibration of IR Thermometers, Thermal Imaging Detectors and Cameras, Heat Flux Meters, Spectrophotometers and Radiometers up to 1500°C.

FEATURES

- Wide/adjustable temperature range from 250 to 1500°C (482 to 2732°F) with 40 mm (1.57”) aperture
- For precise calibration of pyrometers with spot sizes up to 24 mm
- Set point in 1° increments with a temperature stability of better than 0.5° over 30 min
- Fast heat up time - 1450°C in 40 minutes
- Cylindrical cavity for uniform temperature radiation
- Set point and actual temperature values are displayed simultaneously
- Auxiliary connections:
  - Interface for communication via PC with software
  - Pyrometer analog output for analog calibration
- Provides 24 V DC power to operate the Metis, Sirius or Diadem pyrometers
- Cooling fan for safe enclosure operating temperature
- Traceability to International Temperature Standard ITS 90 when using a Diadem transfer standard pyrometer

www.processsensorsIR.com
Calibration System BBS1500-40

The BBS1500 calibration system combines the features of a precisely controlled temperature source with the calibration and adjustment task. It communicates with connected pyrometers and transmits and receives measurement data for manual or fully automatic tasks:

- Pyrometric readjustment of the BBS1500
- Create calibration certificates
- Readjustment of pyrometers according to detected deviations via separately available software SensorCal3

Features

- **Large, stable temperature range:**
  - from 250 to 1500°C
  - for measuring fields up to 24 mm
- **Fast ready for operation:**
  - in just 60 minutes on temperature
- **Connections:**
  - PC connection (serial interface)
  - Pyrometer connection
  - Analog output of the pyrometer
- **Temperature controller / display:**
  - Own controller for temperature specification and communication with pyrometers

Technical Data

**Temperature range**
- 250°C to 1500°C (482 to 2732°F)

**Temperature uniformity**
- Spot size Ø 10 mm: ±0.5°C
- Spot size Ø 24 mm: ±1.5°C

**Stability**
- < ±0.5K over 30 min

**Heating-up time**
- Ca. 40 min. to reach 1300°C, from ca. 1300°C ca. 60 min, additional 20 min. to reach the specified stability

**Aperture**
- Ø 40 mm (1.57’’)

**Cavity**
- Silicon carbide, depth 225 mm

**Emissivity**
- 0.993 ±0.004 at wavelength ranges between 0.5 and 3.5 µm

**Heating elements**
- 6 x Silicon carbide

**Method of control**
- PID controller with thermocouple type S

**Heating indication**
- Indicator lamp

**Display**
- LED display, red (actual value: 7 segment, H=13 mm / setpoint: dot matrix H=5 mm)

**Display resolution**
- 1°C on the device; 0.1°C via software

**Display accuracy**
- ±0.2% +1K

**Serial interface**
- RS485

**Power supply**
- 200–240 V AC, 50-60 Hz, max. 3 kVA (connector: blue CEE connector)

**Housing**
- Steel, powder coated

**Device fuse**
- Automatic fuse 16 A slow

**Dimensions**
- 534 x 427 x 495 mm (H x W x D)

**Weight**
- 26 kg (57 lb.)

**Ambient temperature**
- 0 to 35°C (32 to 95°F)
- Storage temp. -20 to 50°C (-4 to 122°F)

**Relative humidity**
- No condensing conditions

**CE label**
- According to EU directives for electromagnetic immunity

Reference Numbers

BBS1500-40  Calibration source CS1500 (scope of delivery: incl. PC connection cable (interface converter RS485⇒USB), pyrometer connection cable (12-pin, 2.5 m), calibration software SensorCal3 for calibration and adjustment of the CS1500, evaluation and analysis software SensorTools)

SW3600  SensorCal3 software, activated for calibration and adjustment of Sensortherm pyrometers

Diadem DI16  Transfer Standard Pyrometer for checking and pyrometric calibration of the CS1500. Temperature range 250–1400°C, spectral range 1.45–1.8 µm, optics OD09-A0 with a: 600 mm, M: 1.6 mm (to select with laser targeting light or through lens view finder as sighting system)

AL12-02  Separate 12-pin pyrometer connection cable (2.5 m)

WB23-2-1-05 / -1-1-05  Wiring Box: additional pyrometer supply and PC connection kit, consisting of a connection box with 24 V power supply, 5 m pyrometer connection cable (12-pin connector) and a RS485 interface converter / RS232 interface converter

Process Sensors reserves the right to make changes in scope of technical progress or further developments.

Datasheet_BBS1500_CalibrationSource (Mar. 09, 2018)