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, Spectro-photometers 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**

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
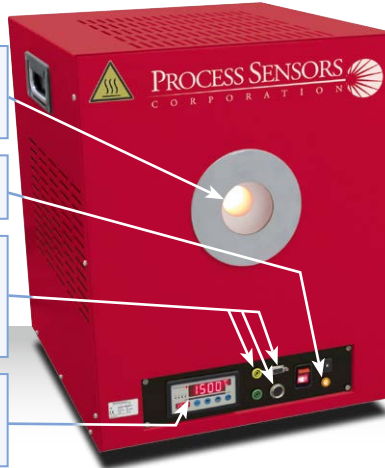- for measuring fields up to 24 mm

Fast ready for operation:
- in just 60 minutes on temperature

Connections:
- PC connection (serial interface)
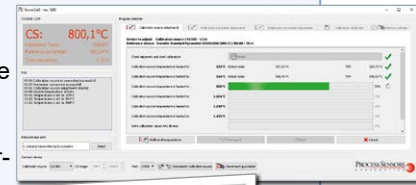- Pyrometer connection
- Analog output of the pyrometer

Temperature controller / display:
- Own controller for temperature specification and communication with pyrometers

Calibration and adjustment software included:
- for the pyrometric readjustment of the BBS1500-40
- to create calibration certificates

Technical Data

Temperature range	250°C to 1500°C (482 to 2732°F)		Display	LED display, red (actual value: 7 segment, H=13 mm / setpoint: dot matrix H=5 mm)
Temperature uniformity	Spot size Ø 10 mm: ±0.5°C Spot size Ø 24 mm: ±1.5°C		Display resolution	1°C on the device; 0.1°C via software
Stability	< ±0.5K over 30 min		Display accuracy	±0,2% +1K
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		Serial interface	RS485
			Power supply	200–240 V AC, 50-60 Hz, max. 3 kVA (connector: blue CEE connector)
Aperture	Ø 40 mm (1.57")		Housing	Steel, powder coated
Cavity	Silicon carbide, depth 225 mm		Device fuse	Automatic fuse 16 A slow
Emissivity	0.993 ±0.004 at wavelength ranges between 0.5 and 3.5 µm		Dimensions	534 x 427 x 495 mm (H x W x D)
			Weight	26 kg (57 lb.)
Heating elements	6 x Silicon carbide		Ambient temperature	0 to 35°C (32 to 95°F) Storage temp. -20 to 50°C (-4 to 122°F)
Method of control	PID controller with thermocouple type S		Relative humidity	No condensing conditions
Heating indication	Indicator lamp		CE label	According to EU directives for electromagnetic immunity

Reference Numbers

BBS1500-40	Calibration source BBS1500-40 (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 BBS1500-40, 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 BBS1500-40. 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 (Jul. 17, 2019)