Calibration Source CS1500

Temperature Source for Calibrating of Pyrometers

Highly stable and uniform precision calibration source for accurate calibrating of IR thermometers up to 1500°C.

- ■ **Adjustable temperature between 250 and 1500°C with 40 mm aperture**
- ■ **For precise calibration of pyrometers with spot sizes up to 24 mm**
- ■ **Setpoint in 1° increments with a temperature stability better than 0.5°C over 30 min**
- ■ **6 heating elements for very high temperature uniformity and heat flux**
- ■ **Cylindrical cavity for uniform temperature radiation**
- ■ **Set point and actual temperature values are displayed simultaneously**
- ■ **Auxiliary connections:**
  - Interface for communication via PC with software
  - Connection for supplying a Sensortherm pyrometer
  - Pyrometer analog output for analog calibration
- ■ **Cooling fan for safe enclosure operating temperature**
- ■ **Traceability to International Temperature Standard ITS 90**
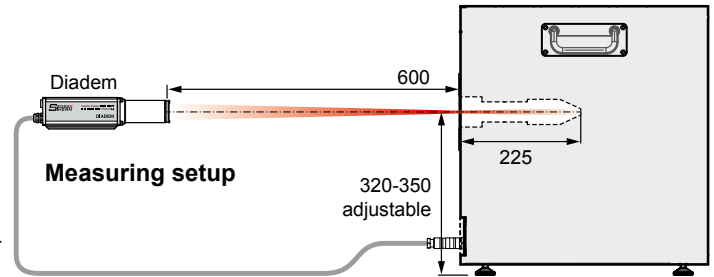 **when using a Diadem transfer standard pyrometer**

Characteristics / Application

The CS1500is a highly stable radiation source which is ideally used for the calibration of short wavelength pyrometers between 250 and 1500°C.

The pyrometer to be tested is compared with a transfer standard pyrometer for traceability to the international temperature scale ITS 90.

Set point and actual temperature values are displayed simultaneously. The set point can be easily changed using the arrow keys.

The actual value at the radiator reproduces the radiator temperature sufficiently accurate. The maximum temperature is reached in about 40 minutes, after additional 20 minutes, the indicated temperature uniformity is reached.

Diadem

600

225

320-350 adjustable

Measuring setup

Technical Data

Temperature range	250°C to 1500°C	Method of control	PID controller
Temperature uniformity	Spot size Ø 10 mm: ±0.5°C Spot size Ø 24 mm: ±1.5°C	Display actual value / setpoint / heating / temp. resolution	7 segment LED, 13 mm, red / dot matrix 5 mm, red / pilot light / temperature resolution 1°C
Stability	< ±0.5K over 30 min		
Display accuracy	±0.5%	Power supply	200–240 V AC, 50-60 Hz, max. 3 kVA
Heat up time	40 min. to reach 1450°C, additional 20 min. to reach specified stability	Housing	Steel, powder coated
		Device fuse	16 A slow blow fuse
Cavity	Silicon carbide	Housing dimension	534 x 427 x 495 mm (H x W x D)
Aperture	Ø 40 mm (1.57")	Weight	26 kg (57 lb.)
Depth	230 mm (up to front panel)	Ambient temperature	0–35°C (storage temp. -20–50°C)
Emissivity	0.993 ±0.004 at wavelength ranges between 500 and 3500 nm	Relative humidity	No condensing conditions
		CE label	According to EU directives for electromagnetic immunity
Heating elements	6 x Silicon carbide		

Transfer Standard Pyrometer DIADEM

Features:

- Display resolution 0.01°
- Accuracy only 0.15% of reading +1K

A transfer standard pyrometer (TSP) is a highly accurate and long-term stable pyrometer that is used for comparative measurements between the TS pyrometer and the pyrometer to be tested. Subsequently, the TSP temperature is transferred to the pyrometer to be tested.
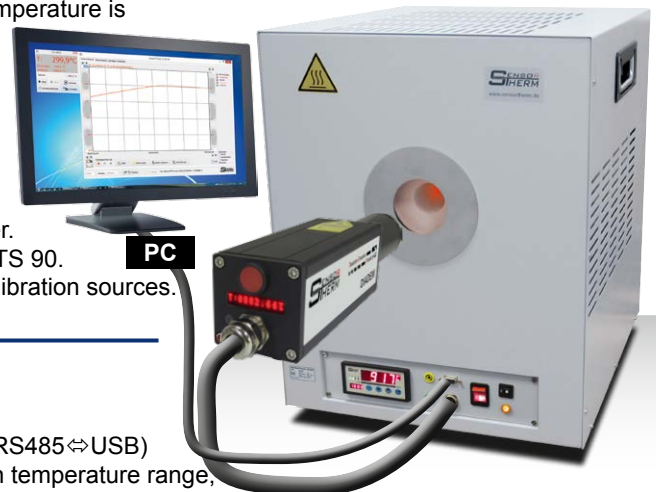
The **advantage of calibration with the CS1500 and the Transfer Standard Pyrometer** is that it produces a cost effective procedure with the highest possible calibration accuracy.

- The high temperature stability of the CS1500 enables precision temperature detection with the TS pyrometer and the transfer to the test pyrometer.
- Diadem pyrometers are traceable to the international temperature scale ITS 90. Additionally, they are transportable and easily verifiable as opposed to calibration sources.

Recommended TSP models:

Model DIADEM	Spectral range	Temperature range
DS09	0.7 – 1.1 µm	600 – 1500°C
DI16	1.45 – 1.8 µm	300 – 1500°C

Optics	Measuring distance
OD09-0A	600 mm

PC

Reference Numbers

CS1500	Calibration source CS1500 (incl. Software *SensorTools* and interface converter RS485⇔USB)
DIADEM DS09 / DI16	Precision Transfer Standard Pyrometer, to select with temperature range, optics and sighting system (laser targeting light or through lens sighting)
AL12-02	Pyrometer connection cable 2.5 m
WB (wiring box)	Ready-made connection kit with desktop power supply, connecting cables and interface converter

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

TÜV PROFI CERT ISO 9001
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SENSOR THERM