

PYROSPOT DS 10N cal/DG 10N cal

Transfer radiation thermometers

Overview



Description and application

The digital DIAS transfer radiation thermometers PYROSPOT DS 10N cal/DG 10N cal are particularly long-term stable and high-precision calibrated devices that are specifically designed for inspection of black body calibration sources and for the traceable calibration of infrared temperature measurement devices.

The PYROSPOT DS 10N cal/DG 10N cal are equipped with a fixed optics; the smallest measurement field has a diameter of 3 mm at a measurement distance of 600 mm.

To compensate the Size Of Source Effect (SSE) of larger calibration sources, the devices have an individual protocol. The response time t_{95} of the pyrometer is set to 1 s (fixed) to guarantee a stable operation.

Via the included USB connection cable the devices can be connected to a computer. In this way the measured values can be visualized and the Size Of Source Effect (SSE) can be revised. The pyrometer can be aimed exactly to the measurement object by using the integrated through-lens sighting.

Scope of delivery

Transfer radiation thermometer set including:

- PYROSPOT DS 10N cal/DG 10N cal
- Clamp base with tripod adapter
- Manual
- Inspection sheet with 10 measurement points (traceable back to PTB national measurement standards), optional PTB calibration certificate
- "Size Of Source Effect" curve
- Plug connector with AC connection adapter for EU/US/UK/AU
- USB connection cable
- Software PYROSOFT Spot
- Plastic device case



PYROSPOT DS 10N cal/DG 10N cal

Transfer radiation thermometers

Technical data			Radiation temperature ³	Uncertainty ⁴
Type	DS 10N cal	DG 10N cal	in °C	in K
Temperature range	600 °C to 2500 °C	300 °C to 1800 °C	300.01	0.21
Spectral range	0.8 µm to 1.1 µm	1.5 µm to 1.8 µm	450.008	0.070
Fixed optics	with a = 600 mm, with quartz glass protection window		600.033	0.079
SSE correction (Emissivity ε)	0.900 to 1.100		750.03	0.12
Response time (t ₉₅)	1 s (fixed)		900.02	0.15
Measurement uncertainty ¹	0.5 % of measured value in °C + 1 K and specifications in inspection sheet (optional: PTB calibration certificate)		1051.48	0.92
Reproducibility ¹	0.1 % of measured value in °C + 0.5 K		1201.7	1.0
NETD ^{1,2}	0.1 K		1401.5	1.0
PC connection	via included USB connection cable		1600.9	1.1
Aiming	through-lens sighting		1801.0	1.2
Parameters	adjustable via software: SSE correction (emissivity), temperature unit °C or °F		Example: PTB Calibration Certificate Radiation temperatures and associated uncertainty (extract from PTB calibration certificate 73103 PTB 18 for PYROSPOT DG 10N cal, serial number 1110096) ³ Radiation temperature values: correspond to international temperature scale from 1990 (ITS-90) ⁴ Uncertainty: standard measurement uncertainty, multiplied with coverage factor k = 2	
Power supply	via included wall power supply 100 to 240 V AC			
Power consumption	max. 1.5 W			
Operating temperature	23 °C ± 3 K			
Storage temperature	0 °C to 70 °C			
Weight	approx. 520 g			
Housing	54 mm (H) × 54 mm (W) × 170 mm (L)			
Protection class	IP65 according to DIN EN 60529 and DIN 40050			
Test regulations	EN 55 011:1998, limit class A			
CE symbol	according to EU regulations			
Scope of delivery	please refer scope of delivery on page 1			

¹ T₀ = 23 °C. ² Noise equivalent temperature difference.

Fixed optics

	Aperture D [mm]	Measurement distance a [mm] = 600
Temperature range		Measurement field diameter M [mm]
DG 10N cal (300 °C to 1800 °C)	4.0	3.0
DS 10N cal (600 °C to 2500 °C)	6.0	3.0

Dimensional drawing pyrometer

