PYROSPOT DPE 10M

Pyrometers for industry and research

DIAS
Infrared Systems

Digital pyrometers with RS-485 interface

Features

- For temperature measurements between 20 °C and 1000 °C
- Keyboard and display for emissivity and temperature
- Temperature linear output 0/4 to 20 mA

- Aiming: aiming light or through-lens sighting
- Short response times from 1.5 ms
- Vario optics

Description and applications

The digital pyrometers PYROSPOT DPE 10M are specially designed for industry and research applications. The devices are suitable for temperature measurement from 20 °C on many different surfaces for example metals, ceramics or graphite.

The solid construction in form of a compact housing allows usage even under rough environmental conditions. With a short response time of only 1.5 ms (t95) these pyrometers are also suitable for fast measuring processes. The vario optics realise measuring field diameters from 1.0 mm.
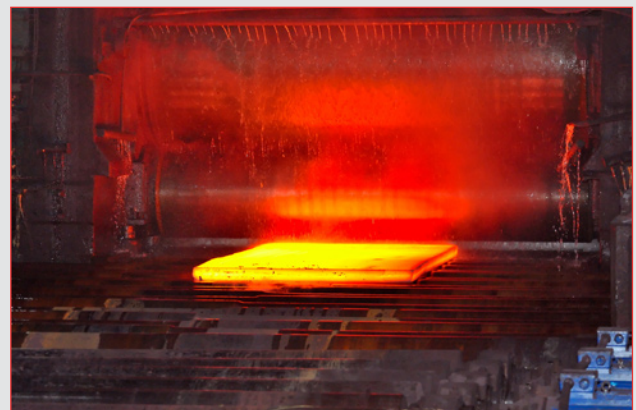
The integrated LED or laser aiming light or the alternative through-lens sighting enables to focus the measuring object exactly.

The emissivity is also adjustable via push-buttons and display directly on the device. All parameters can be easily adjusted to the application by using the convenient parameterizing and evaluation software PYROSOFT Spot.

The temperature linear standard output signal of 0/4 to 20 mA allows easy implementation in existing measurement and controll systems. The device is equipped with a galvanically isolated RS-485 interface which allows parameterising and software evaluation even in bus systems.

Typical pyrometer application areas:

- Steel industry
- Kiln engineering
- Soldering installations
- Ceramic industry
- Metal industry

- Welding, forging
- Hardening
- Sintering
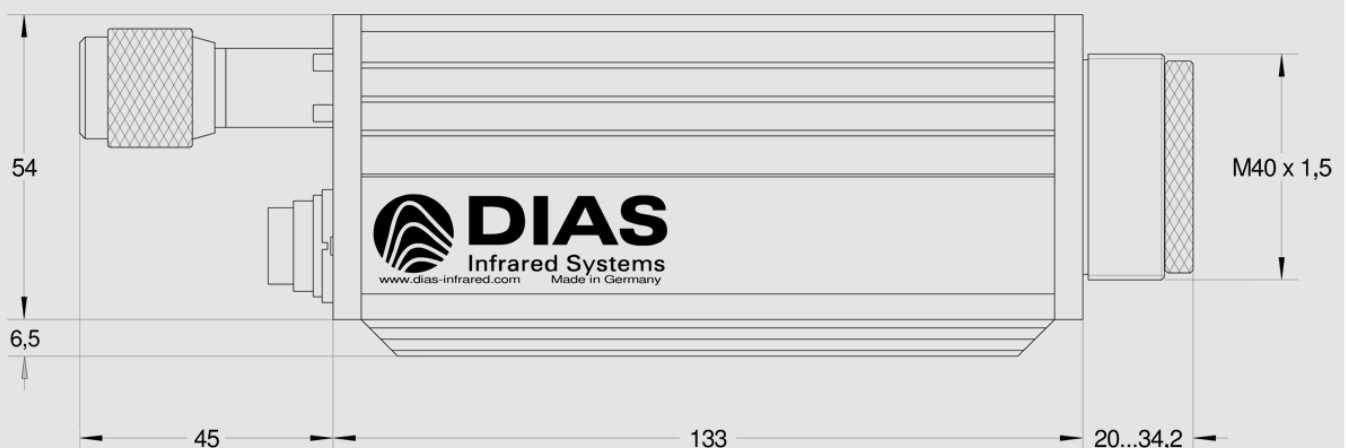- Soldering
- Quenching and tempering

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Technical data		
Type	**DPE 10M**	**DPE 10M**
Temperature range	20 °C to 850 °C	30 °C to 1000 °C
Sub temperature range	adjustable within temperature range, minimum span 50 °C	
Spectral range	3.0 µm to 5.0 µm	
Optics	vario optics	
Measurement uncertainty [1]	up to 400 °C: 2 K, over 400 °C: 0.3 % of measured value + 1 K	
Reproducibility [1]	0.1 % of measured value + 1 K	
NETD [2]	0.1 K [3]	
Response time (t95)	1.5 ms, adjustable up to 100 s	
Emissivity	0.010 to 1.000, adjustable at the device or via interface	
Storage	minimum and maximum value storage, adjustable via interface	
Output	0/4 to 20 mA, switchable via software, temperature linear, max. burden 700 Ω	
Interface	RS-485 (galvanically isolated), half duplex, baudrate up to 115 kBd, data protocol Modbus RTU	
Aiming	LED aiming light, laser aiming light or through-lens sighting	
Software	PYROSOFT Spot for Windows®, optional: PYROSOFT Spot Pro	
Parameters	emissivity, response time, temperature unit °C or °F, storage, sub temperature range, transmission, ambience compensation, adjustable via software and interface	
User controls	emissivity control push-buttons (resolution 0.001), aiming light push-button, display	
Power supply	24 V DC ± 25 %	
Power consumption	max. 9 W	
Operating temperature	0 °C to 55 °C	
Storage temperature	−20 °C to 70 °C	
Weight	appr. 520 g	
Dimensions	54 × 54 mm, length 170 mm	
Housing	compact housing with plug connector, display, push-buttons	
Safety class	IP 65 (DIN 40 050)	
CE symbol	according to EU regulations (EN 50 011)	
Scope of delivery	PYROSPOT DPE 10M, mounting screw nut, inspection sheet, manual, PYROSOFT Spot for Windows® (**without** connection cable, please order separately)	

[1] T_U = 23 °C, ε = 1, t95 = 1 s. [2] Noise equivalent temperature difference. [3] T_U = 23 °C, ε = 1, t95 = 1 s, T_{Object} = 150 °C
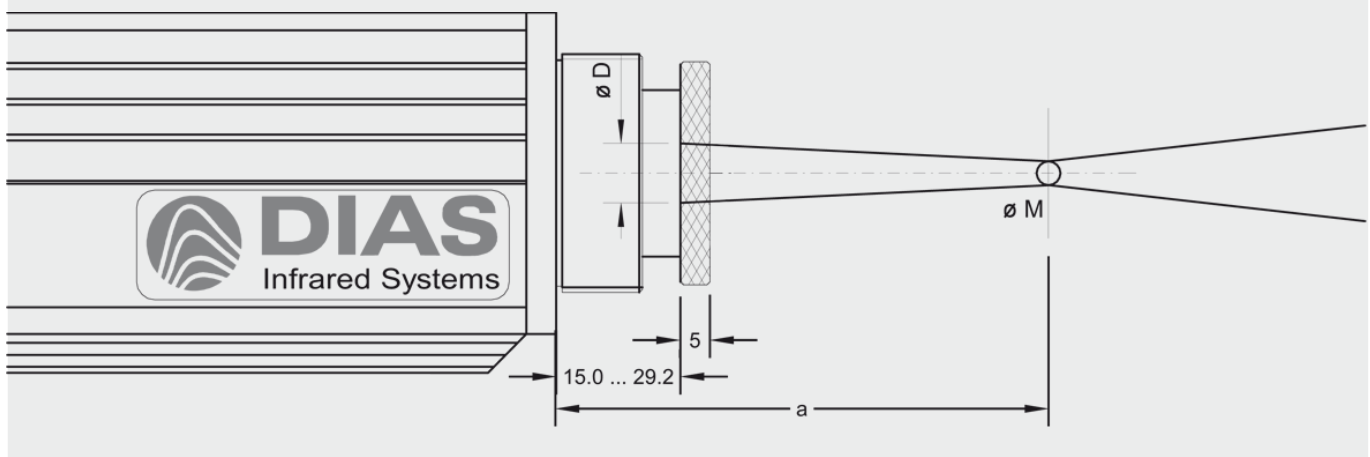
Dimensional drawing pyrometer
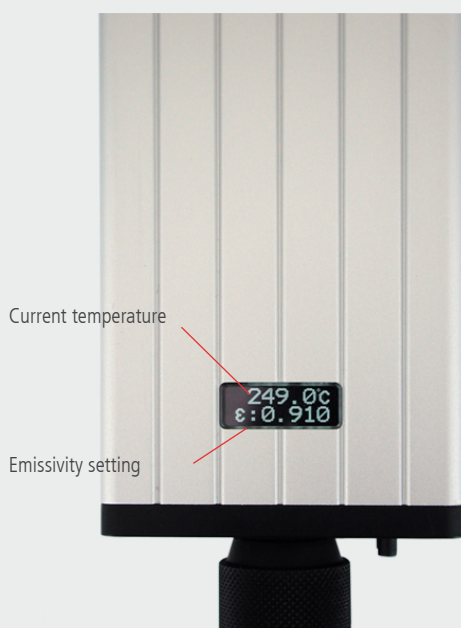
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Pyrometers for industry and research

| Vario optics | | | | | Order number | | |
Optics variant	Temperature range	Meas. field diameter M [mm]	Meas. distance a [mm]	Aperture D [mm]	LED aiming light	Laser aiming light	Through-lens sighting
I	20 °C to 850 °C	1.2 to 2.0	130 to 150	11.6	4105101201	4105111201	4105121201
	30 °C to 1000 °C	1.0 to 1.1			4105101202	4105111202	4105121202
II	20 °C to 850 °C	1.9 to 3.9	230 to 380	11.6	4105102201	4105112201	4105122201
	30 °C to 1000 °C	1.7 to 3.0			4105102202	4105112202	4105122202
III	20 °C to 850 °C	3.3 to 9.0	360 to 800	11.6	4105103201	4105113201	4105123201
	30 °C to 1000 °C	3.1 to 8.7			4105103202	4105113202	4105123202
IV	20 °C to 850 °C	2.3 to 6.8	270 to 580	11.6	4105104201	4105114201	4105124201
	30 °C to 1000 °C	2.0 to 4.2			4105104202	4105114202	4105124202

Dimensional drawing vario optics

Detailed view: display

The digital display shows current temperature value and emissivity setting.

Current temperature

Emissivity setting

Detailed view: back side

The emissivity can be adjusted by using the two keys on the back side of the device. The value settings will be stored automatically.

Through-lens sighting or aiming light push-button

Push-buttons for emissivity adjustment

Plug connector and interface

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Electrical, mechanical and optical accessories[1]		Order number
Connection cable, 12 pin, angulate plug	length 2 m	3310A11131
	length 5 m	3310A11132
	length 10 m	3310A11133
	length 15 m	3310A11134
	length 20 m	3310A11135
	length 25 m	3310A11136
	length 30 m	3310A11137
Interface module	RS-485 to USB	3310A14020
Power supply PSU 15	24 V DC, 0.6 A	3310A12010
Mounting angle	adjustable	3310A21020
Air purge adaptor	stainless steel, purge air 0.1 to 0.5 bar, oil-free	3310A22020
Window slide	without window	3310A21210
Vacuum flange	KF 16	3310A24015
	with calcium fluoride window	3310A34031
	with sapphire window (scratch-proof)	3310A34051
Mounting angle	for cooling jacket	3310A23036
DHP 1040	handheld programming device for parameterizing	3310A17010

[1] More accessories available.

Selected accessories

Mounting angle, adjustable
Order number: 3310A21020

Ball and socket mounting
Order number: 3310A21025

Cooling jacket
Order number: 3310A23031

Cooling plate
Order number: 3310A23020

Air purge unit for cooling jacket
Order number: 3310A22020

Mirror 90°
Order number: 3310A24110

Technical details are subject to change. November 2012.

We are certified for many years according to ISO 9001

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