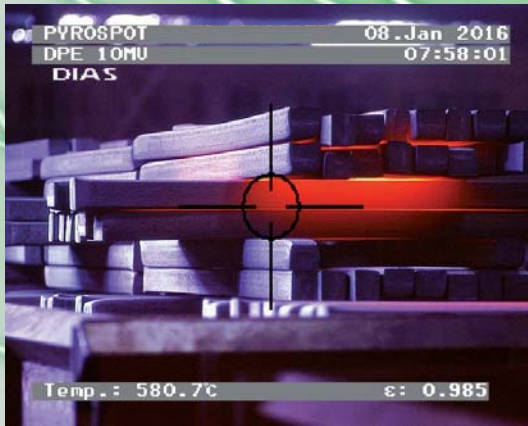


PYROSPOT DPE 10M/DPE 10MV

Pyrometers for industry and research

Overview

Digital pyrometers with RS-485 interface



Features

- For temperature measurements between 20 °C and 1000 °C
- Display and keys for display of the temperature and parameterization
- Operating temperature range up to 70 °C
- Vario optics with aiming light, through-lens sighting or color video module
- Short response times from 1.5 ms
- Standard 0/4 to 20 mA temperature linear output signal

Description and applications

The digital pyrometers PYROSPOT DPE 10M/DPE 10MV 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.

Use the optional integrated color video modul (DPE 10MV) to monitor visually the aiming of the pyrometer at the measurement object.

The parameters of the pyrometer are adjustable via push-buttons and display directly on the device or 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 control 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 | • Welding, forging |
| • Kiln engineering | • Hardening |
| • Soldering installations | • Sintering |
| • Ceramic industry | • Soldering |
| • Metal industry | • Quenching and tempering |



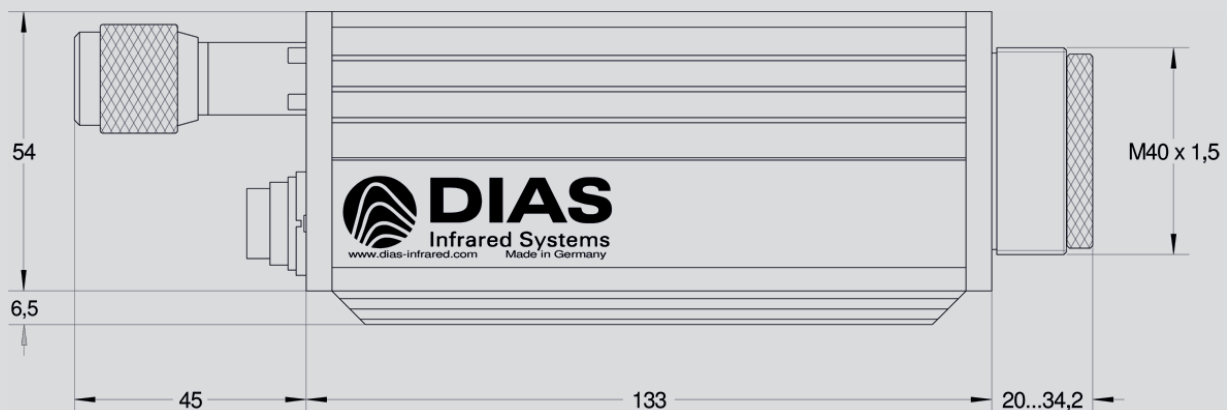
PYROSPOT DPE 10M/DPE 10MV

Pyrometers for industry and research

Technical data		
Type	DPE 10M/DPE 10MV	DPE 10M/DPE 10MV
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	measuring field diameters from 1.0 mm, 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 at the device or via interface	
Output	0/4 to 20 mA, switchable via software or adjustable at the device, temperature linear, max. burden 700 Ω	
Switching output/switching threshold	1 opto relais, R _{burden} min. 48 Ω (galvanically isolated)/adjustable within temperature range	
Interface	RS-485 (galvanically isolated), half duplex, baudrate up to 115 kBd, data protocol Modbus RTU	
Aiming	LED aiming light, laser aiming light, through-lens sighting or color video module	
Software	PYROSOFT Spot for Windows®, optional: PYROSOFT Spot Pro	
Parameters ⁴	emissivity, response time, temperature unit °C or °F, storage, sub temperature range, transmission, ambience compensation, video parameters, key lock	
User controls	Keys for „Parameter Menu“, „Enter“, „Up“ and „Down“, aiming light push-button, display	
Power supply	24 V DC ± 25 %	
Power consumption	max. 3.6 W (without load at switching output)	
Operating temperature	0 °C to 70 °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)	

¹T_{ambient} = 23 °C, ε = 1, t95 = 1 s. ²Noise equivalent temperature difference. ³T_{ambient} = 23 °C, ε = 1, t95 = 1 s, T_{Object} = 150 °C ⁴Adjustable via software and interface or directly at the device.

Dimensional drawing pyrometer

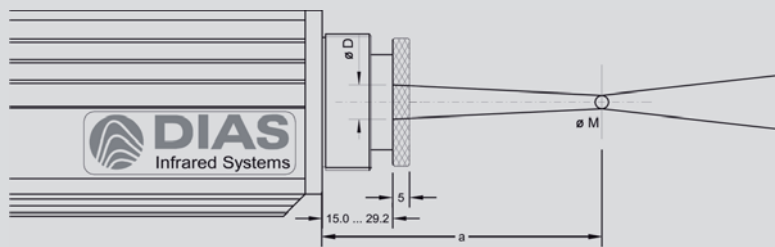


PYROSPOT DPE 10M/DPE 10MV

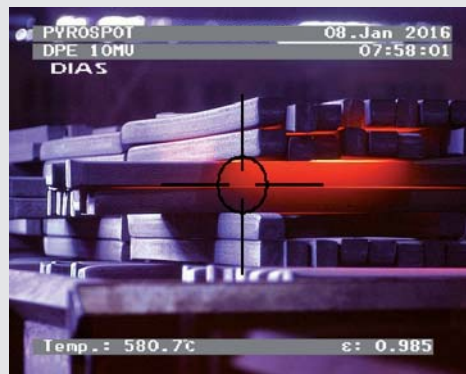
Pyrometers for industry and research

Vario optics					Part number			
Optics version	Temperature range	Measuring field diameter M [mm]	Measurement distance a [mm]	Aperture D [mm]	LED aiming light	Laser aiming light	Through-lens sighting	Video module
I	20 °C to 850 °C	1.2 to 2.0	130 to 150	11.6	5105101201	5105111201	5105121201	5105131201
	30 °C to 1000 °C	1.0 to 1.1			5105101202	5105111202	5105121202	5105131202
II	20 °C to 850 °C	1.9 to 3.9	230 to 380	11.6	5105102201	5105112201	5105122201	5105132201
	30 °C to 1000 °C	1.7 to 3.0			5105102202	5105112202	5105122202	5105132202
III	20 °C to 850 °C	3.3 to 9.0	360 to 800	11.6	5105103201	5105113201	5105123201	5105133201
	30 °C to 1000 °C	3.1 to 8.7			5105103202	5105113202	5105123202	5105133202
IV	20 °C to 850 °C	2.3 to 6.8	270 to 580	11.6	5105104201	5105114201	5105124201	5105134201
	30 °C to 1000 °C	2.0 to 4.2			5105104202	5105114202	5105124202	5105134202

Dimensional drawing vario optics



Color video module (DPE 10MV)



- PAL (50 Hz), optional NTSC (60 Hz)
- 628 × 586 pixels (PAL) or 510 × 496 pixels (NTSC)
- Composite video signal approx. 1 V_{ss} at 75 Ω (galvanically isolated)
- Target mark in size of measurement field, display of measurement, temperature, emissivity
- Exposure control automatically or manually



Image credit: Patryk Kosmider/Shutterstock.de, Deutsche Fotothek

Detailed view: Display

The digital display shows the current measurement value and the emissivity set.

Current measurement temperature



Set emissivity value

Status switching output

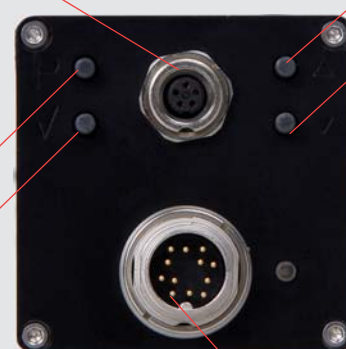
Detailed view: Rear side of the device

The parameters can be set by using the control keys at the rear side of the device. The value set is transferred directly.

Through-lens sighting, pilot light or video connector

Keys for „Up” and „Down”

Keys for „Parameter Menu” and „Enter”



Plug connection and interface

PYROSPOT DPE 10M

Pyrometers for industry and research

Electrical, mechanical and optical accessories (more accessories on request)		Part number	
Connection cable, 12 pin, angled 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	
Video connection cable	Length 2 m	3310A16521	
	Length 5 m	3310A16522	
	Length 10 m	3310A16523	
	Length 15 m	3310A16524	
	Length 20 m	3310A16525	
	Length 25 m	3310A16526	
	Length 30 m	3310A16527	
Interface adapter	RS-485 to USB	3310A14020	
Power supply PSU 15	24 V DC, 0.6 A	3310A12010	
Mounting angle	Adjustable	3310A21020	
Air purge unit	Stainless steel, purge air 0.1 to 0.5 bar, oil-free	3310A22020	
Window slide	without window	3310A21210	
Vacuum flange	KF 16	3310A24015	
	with quartz glass	3310A34021	
	with sapphire glass (scratch-proof)	3310A34051	
Cooling jacket	including air purge unit	3310A23031	
Mounting angle	for cooling jacket	3310A23036	
ATEX housing		3310A23100	
Handheld programming device DHP 1040	mobile device for pyrometer parameterization	3310A17010	
TFT display	TFT display industrial	3.5" with 2 m cable	3310A16110 3310A16120
Adapter	Video/USB	3310A14030	

Selected accessories – images

Mounting angle, adjustable

Part number: 3310A21020



Ball and socket mounting

Part number: 3310A21025



Cooling jacket

Part number: 3310A23031



Cooling plate

Part number: 3310A23020



Air purge unit

Part number: 3310A22020



ATEX housing

Part number: 3310A23100

