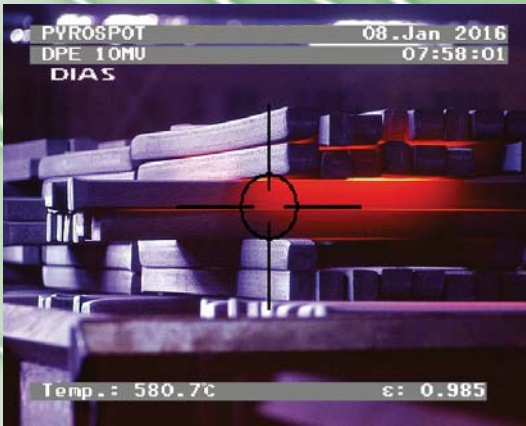


# PYROSPOT DPE 10M/DPE 10MV

## 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
- Kiln engineering
- Soldering installations
- Ceramic industry
- Metal industry
- Welding, forging
- Hardening
- Sintering
- Soldering
- Quenching and tempering



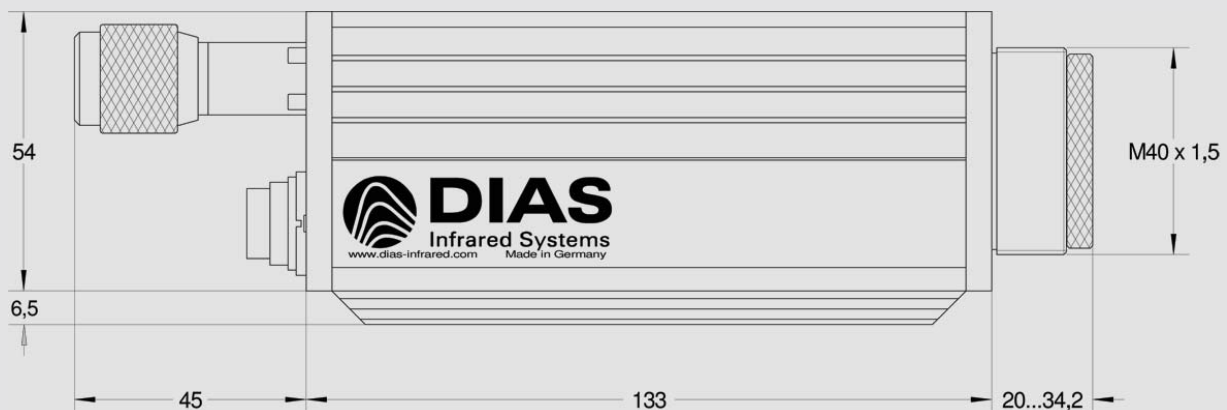
# PYROSPOT DPE 10M/DPE 10MV

## 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 <sup>1</sup> | up to 400 °C: 2 K, over 400 °C: 0.3 % of measured value + 1 K  |                  |
| Reproducibility <sup>1</sup>         | 0.1 % of measured value + 1 K  |                  |
| NETD <sup>2</sup>                    | 0.1 K <sup>3</sup>   |                  |
| 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 <sub>burden</sub> 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                           | emissivity, response time, temperature unit °C or °F, storage, sub temperature range, transmission, ambience compensation, video parameters, adjustable via software and interface |                  |
| User controls                        | aiming light push-button, four control keys, display   |                  |
| Power supply                         | 24 V DC ± 25 %   |                  |
| Power consumption                    | max. 5 W   |                  |
| 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®<br>(without connection cable, please order separately)                                  |                  |

<sup>1</sup>T<sub>ambient</sub> = 23 °C, ε = 1, t95 = 1 s. <sup>2</sup>Noise equivalent temperature difference. <sup>3</sup>T<sub>ambient</sub> = 23 °C, ε = 1, t95 = 1 s, T<sub>Object</sub> = 150 °C

### Dimensional drawing pyrometer

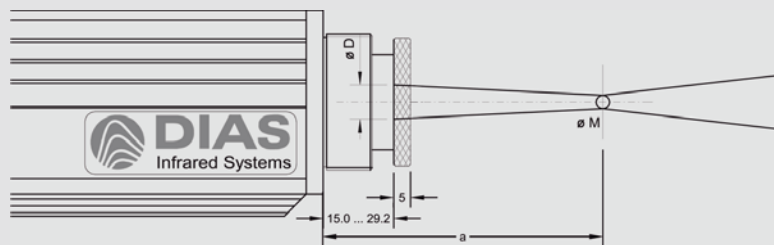


# PYROSPOT DPE 10M/DPE 10MV

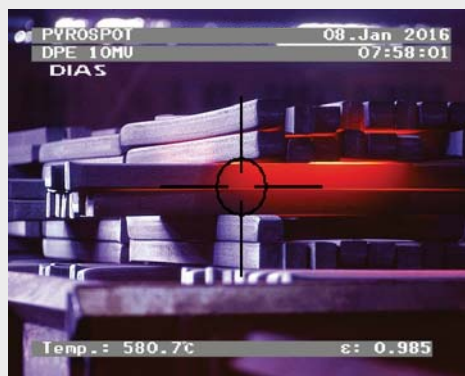
## Pyrometers for industry and research

| 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<sub>SS</sub> 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



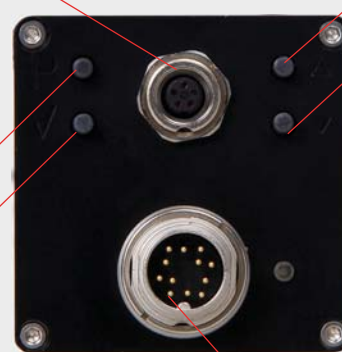
### Detailed view: Rear side of the device

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 <sup>1</sup> |   | 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            |
| Video connection cable                                      | length 2 m  | 3310A16521            |
| Interface module  | RS-485 to USB                                       | 3310A14020            |
| Power supply PSU 15   | 24 V DC, 0.6 A                                      | 3310A12010            |
| Mounting angle  | adjustable  | 3310A21020            |
| Air purge adapter   | 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 window                                  | 3310A34021            |
|   | with sapphire window (scratch-proof)                | 3310A34051            |
| TFT display/TFT display industrial                          | 3.5" with 2 m cable                                 | 3310A16110/3310A16120 |
| Adapter   | Video/USB   | 3310A14030            |

<sup>1</sup> 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

Order number: 3310A22020



#### Mirror 90°

Order number: 3310A24110

