

PYROSPOT DY 10G/DY 10GV

Pyrometer for application in glass industry

Overview

Digital pyrometers with RS-485 interface



Features

- For temperature measurements between 100 °C and 2500 °C
- Display and keys for displaying the temperature and parameterizing
- Vario optics with aiming light, through-lens sighting or video color module
- Short response times from 30 ms
- Standard 0/4 to 20 mA temperature linear output signal

Description and applications

The digital pyrometers PYROSPOT DY 10G/DY 10GV are specially designed for industry and research applications. The devices are suitable for temperature measurement from 100 °C especially in glass industry, for example on glass surfaces, float glass or liquid glass.

The solid construction in form of a compact housing allows usage even under rough environmental conditions. With a short response time of only 30 ms (t95) these pyrometers are also suitable for fast measuring processes. The vario optics realize measuring field diameters from 1.3 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 (DY 10GV) to monitor 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 parameterizing and software evaluation even in bus systems.

Typical pyrometer application areas:

- Glass industry (in general)
- Float glass
- Glass bottle production
- Liquid glass
- Glass forms

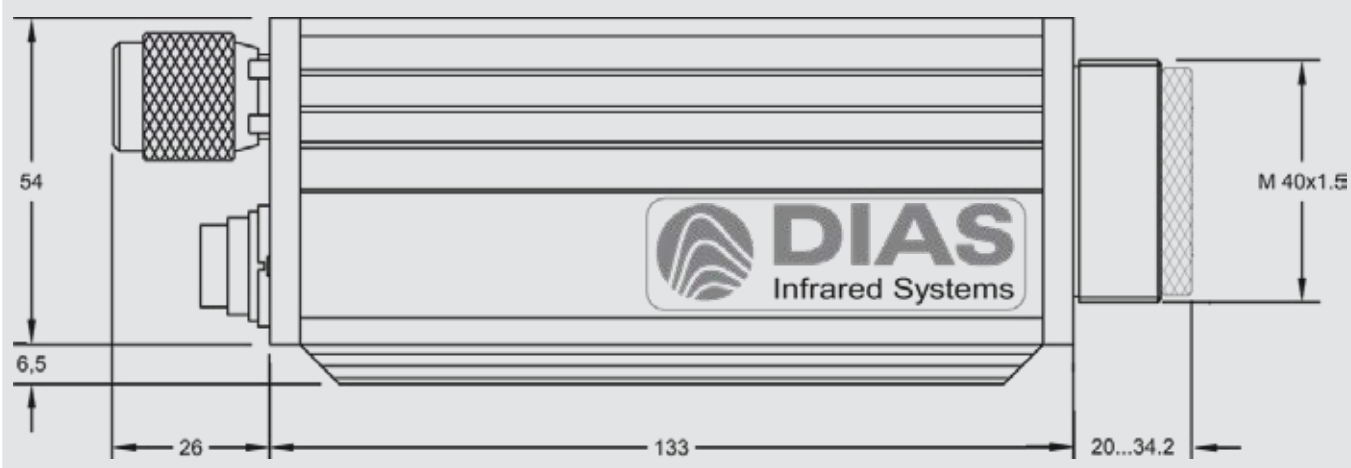
PYROSPOT DY 10G/DY 10GV

Pyrometer for application in glass industry

Technical data		
Type	DY 10G/DY 10GV	DY 10G/DY 10GV
Temperature range	100 °C to 1400 °C	500 °C bis 2500 °C
Sub temperature range	adjustable within temperature range, minimum span 50 °C	
Spectral range	around 5 µm	
Optics	vario optics, measuring field diameters from 1.3 mm, distance ratio approx. 100 : 1	
Measurement uncertainty ¹	0.6 % of measured value in °C or 1 K ³	
Reproducibility ¹	0.3 % of measured value in °C or 0,5 K ³	
NETD ²	0.2 K ⁴	
Response time (t95)	30 ms, adjustable up to 100 s via RS-485 interface or directly at the device	
Emissivity	0.200 to 1.000, adjustable via RS-485 interface or directly at the device	
Data Storage	minimum/maximum value storage, adjustable via RS-485 interface or directly at the device	
Output	0/4 to 20 mA, switchable via RS-485 interface or directly at the device, temperature linear, max. burden 700 Ω	
Interface	RS-485 (galvanically isolated), half duplex, baudrate up to 115 kBd, data protocol Modbus RTU	
Switching output/Switching threshold	1 opto relay, R _{Burden} min. 48 Ω (galvanically isolated)/adjustable within temperature range	
Aiming	LED aiming light, laser aiming light, through-lens sighting or color video module (DY 10GV)	
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 parameter, adjustable via via RS-485 interface or directly at the device	
User controls	aiming light push-button, four control keys, display	
Power supply	24 V DC ± 25 %, residual ripple 500 mV	
Power consumption	max. 2.0 W	
Operating temperature	0 °C to 70 °C	
Storage temperature	-20 °C to 70 °C	
Weight	appr. 500 g	
Dimensions	54 × 54 mm, length 170 mm	
Housing	compact housing with plug connector, display and push-buttons	
Safety class	IP65 (DIN 40 050, DIN EN 60529)	
CE symbol	according to EU regulations (EN 50 011)	
Scope of delivery	PYROSPOT DT 10G, mounting screw nut, inspection sheet, manual, PYROSOFT Spot for Windows® (without connection cable, please order separately)	

¹ Specifications for black body radiator T₀ = 23 °C, ε = 1, t95 = 1 s. ² Noise equivalent temperature difference. ³ Whichever is higher value. ⁴ At T₀ = 23 °C, t95 = 100 ms, ε = 1, T_{Object} (100 °C to 1400 °C) = 300 °C, T_{Object} (500 °C to 2500 °C) = 700 °C.

Dimensional drawing pyrometer

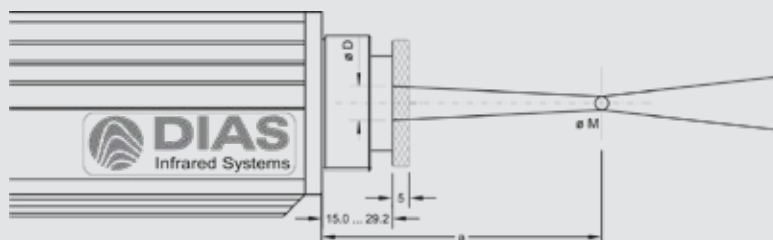


PYROSPOT DY 10G/DY 10GV

Pyrometer for application in glass industry

Vario optics					Part number			
Optics	Temperature measurement range	Measuring field diameter M [mm]	Meas. distance a [mm]	Aperture D [mm]	LED aiming light	Laser aiming light	Through-lens sighting	Color video module
I	100 °C to 1400 °C	1.3 to 1.8	135 to 150	11.6	5106501201	5106511201	5106521201	5106531201
	500 °C to 2500 °C				5106501202	5106511202	5106521202	5106531202
II	100 °C to 1400 °C	1.7 to 2.6	180 to 220	11.6	5106502201	5106512201	5106522201	5106532201
	500 °C to 2500 °C				5106502202	5106512202	5106522202	5106532202
III	100 °C to 1400 °C	2.4 to 4.5	250 to 370	11.6	5106503201	5106513201	5106523201	5106533201
	500 °C to 2500 °C				5106503202	5106513202	5106523202	5106533202
IV	100 °C to 1400 °C	2.8 to 5.9	290 to 500	11.6	5106504201	5106514201	5106524201	5106534201
	500 °C to 2500 °C				5106504202	5106514202	5106524202	5106534202
V	100 °C to 1400 °C	4.3 to 15	440 to 1200	11.6	5106505201	5106515201	5106525201	5106535201
	500 °C to 2500 °C				5106505202	5106515202	5106525202	5106535202

Dimensional drawing vario optics



Color video module (DY 10GV)



- 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



Detailed view: Display

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

Current measurement temperature

Set emissivity value



Status switching output

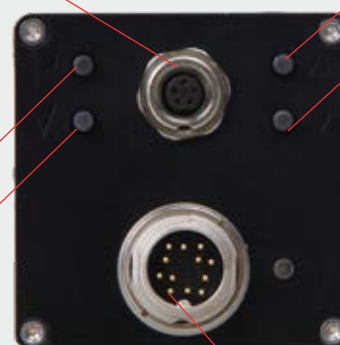
Detailed view: Rear side of the device

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 DY 10G/DY 10GV

Pyrometer for application in glass industry

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
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 zinc selenide window	3310A34041
TFT display/TFT display industrial	3.5" with 2 m cable	3310A16110/3310A16120
Adapter	Video/USB	3310A14030

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

Order number: 3310A22020



Mirror 90°

Order number: 3310A24110



Phone: +49 351 896 74-0
 Fax: +49 351 896 74-99
 Email: info@dias-infrared.de
 Internet: www.dias-infrared.com

DIAS Infrared GmbH
 Pforzheimer Straße 21
 01189 Dresden
 Germany