PYROSPOT DT 40G
Pyrometers for application in glass industry

DIAS Infrared Systems

Overview

Digital 2-wire pyrometer with integrated USB interface
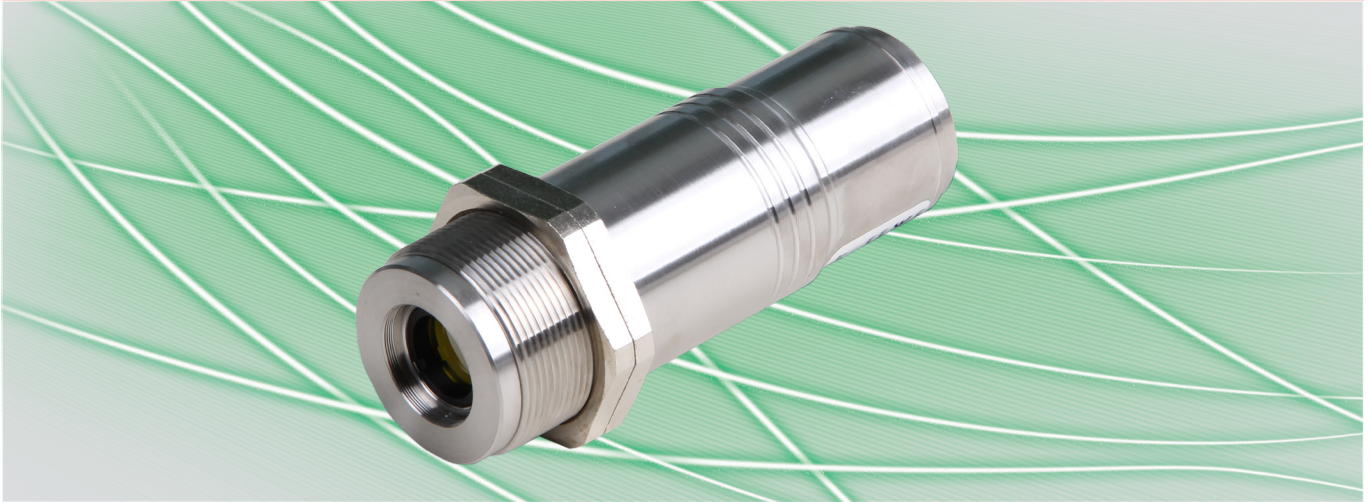
Features

- For temperature measurements between 100 °C and 2500 °C
- 4 to 20 mA temperature linear output
- Integrated USB interface for stand-alone-operation
- Maximum and minimum value storage
- Several fixed optics available
- Stainless steel housing

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Description and applications

The digital pyrometers PYROSPOT DT 40G are specifically designed for applications in glass industry. The devices are suitable for temperature measurement from 100 °C to 2500 °C on glass surfaces, float glass and liquid glass.

The solid body in stainless steel housing allows usage even under rough environmental conditions. With a fast response time from 60 ms (t_{95}) these pyrometers are also suitable for fast measuring rocesses. Several fixed optic types realize measuring field diameters from 1.6 mm.

The standard 4 to 20 mA temperature linear output signal allows easy implementation in existing measurement and control systems. The devices are equipped with integrated, galvanically isolated USB interface on the back. The USB interface simplifies parameterization and data evaluation via software, without needing an additional power supply.

The optional integrated LED aiming light enables exact alignment to the measuring object. The LED size is identical to measuring spot size and visible even at high temperatures.

Due to direct USB connection parameters like emissivity sub range, response time and data storage can be easily adjusted through the user friendly parameterization and evaluation software PYROSOFT Spot or optional handheld programming device DHP 1040.
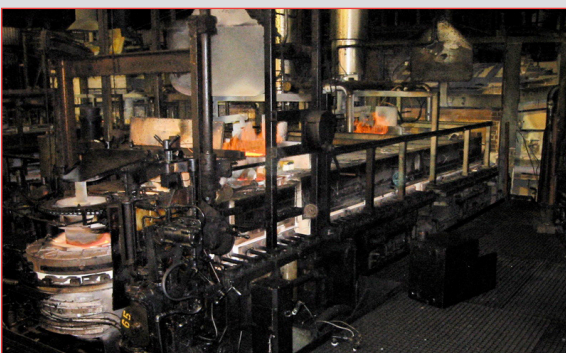
Typical application areas:

- Glass industry
- Flat glass
- Glass bottle production
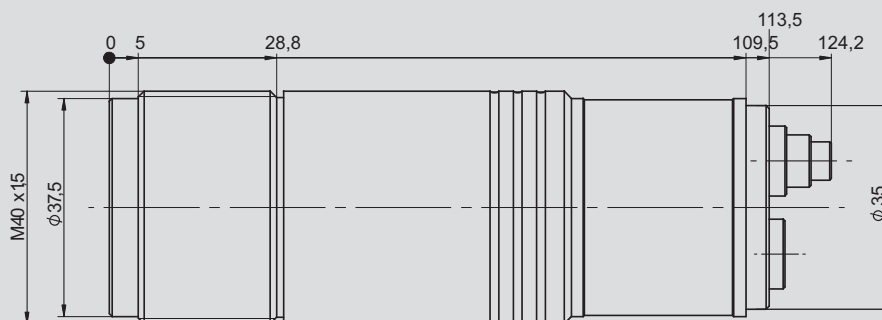- Liquid glass
- Glass forms

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Technical data

Type	DT 40G	DT 40G	DT 40G
Temperature range	100 °C to 1300 °C	200 °C to 1400 °C	500 °C to 2500 °C
Sub temperature range	adjustable within temperature range, minimum span 50 °C		
Spectral range	around 5 µm		
Optics	several fixed optics (Type 100, 300, 800 and 1200), aperture diameter D = 15 mm		
Distance ratio	50 : 1		
Measurement uncertainty [1]	1 % of meas. value in °C or 1 K		
Reproducibility [1]	0.5 % of meas. value in °C or 0.5 K		
NETD [2]	1.0 K [3]		
Response time (t_{95})	60 ms, adjustable up to 100 s, adjustable via USB interface		
Emissivity ε	0.200 to 1.000, adjustable via USB interface		
Data storage	maximum or minimum value storage, adjustable via USB interface		
Output	4 to 20 mA, adjustable via software, temperature linear, max. burden: 600 Ω at 24 V		
Interface	galvanically isolated USB interface		
Aiming	none or optional laser aiming light adaptor	none or optional integrated LED aiming light	
Software	PYROSOFT Spot for Windows®		
Parameters	emissivity, response time, data storage, sub range, adjustable via USB interface and software		
Power supply	24 V DC ± 25 %, residual ripple 500 mV, LED aiming light: 7 V to 30 V DC, < 200 mW		
Power consumption	max. 0.6 W (without aiming light)		
Operating temperature	0 °C to 70 °C		
Storage temperature	−20 °C to 70 °C		
Weight	appr. 450 g		
Dimensions	thread M40 × 1.5, length 125 mm		
Housing	stainless steel with plug connector		
Safety class	IP 65 (according to DIN EN 60529 and DIN 40050)		
CE symbol	according to EU regulations		
Scope of delivery	PYROSPOT DT 40G, manual, mounting screw nuts, inspection sheet, PYROSOFT Spot for Windows® (without connecting cable, please order separately)		

[1] For black body radiator, T_u = 23 °C, t_{95} = 1 s. Whichever is higher value. [2] Noise equivalent temperature difference. [3] T_u = 23 °C, ε = 1, t_{95} = 200 ms, t_{95} = 200 ms, $T_{Object (100 °C to 1300 °C)}$ = 250 °C, $T_{Object (200 °C to 1400 °C)}$ = 350 °C, $T_{Object (500 °C to 2500 °C)}$ = 700 °C.

Dimensional drawing

PYROSPOT DT 40G

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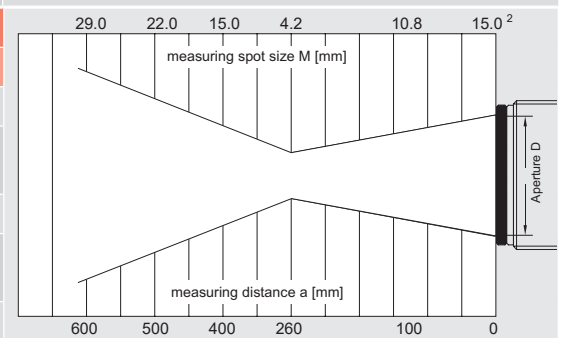**Infrared Systems**

Optics 100, 300 and 800

Optics 100 (sharp point at a = 95 mm measuring distance, marked bold)

Measuring distance a [mm]	0	50	**95**	150	200	250	300
Temperature range	Measuring field diameter M [mm]						
DT 40G (100 °C to 2500 °C) without LED aiming light	15	7.9	**1.6**	11	20	28	37
DT 40G (200 °C to 2500 °C) with LED aiming light [1]	13	7.1	**1.7**	11	18	26	34
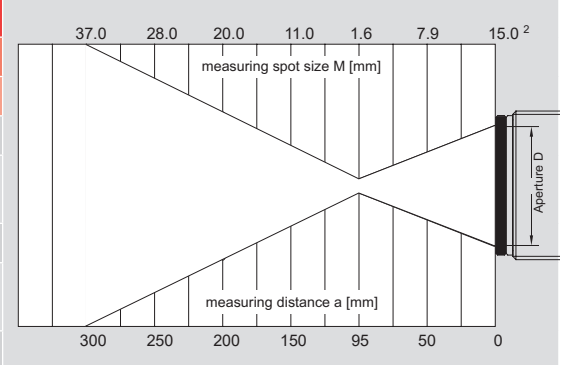
Optics 300 (sharp point at a = 250/260 mm measuring distance, marked bold)

Measuring distance a [mm]	0	100	**250**	**260**	400	500	600
Temperature range	Measuring field diameter M [mm]						
DT 40G (100 °C to 2500 °C) without LED aiming light	15	10.8	4.6	**4.2**	15	22	29
DT 40G (200 °C to 2500 °C) with LED aiming light	15	11	**4.5**	5.3	17	25	32

Optics 800 (sharp point at a = 800 mm measuring distance, marked bold)

Measuring distance a [mm]	0	300	500	600	**800**	1000	1200
Temperature range	Measuring field diameter M [mm]						
DT 40G (100 °C to 2500 °C) without LED aiming light	15	14.6	14.4	14.3	**14**	18	24
DT 40G (200 °C to 2500 °C) with LED aiming light	15	14.6	14.4	14.3	**14**	18	24
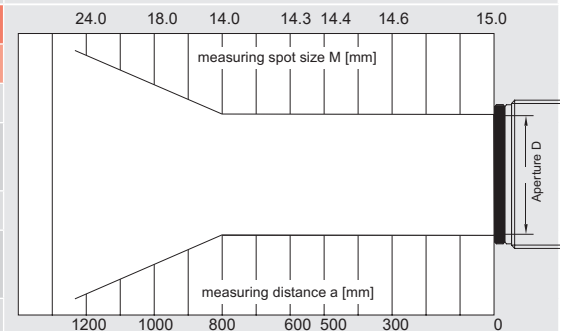
[1] With attachment lens tubus. Aperture D = 13 mm, length 24 mm, ⌀ 19 mm [2] Target size without LED aiming light.

Connection of a pyrometer with LED aiming light
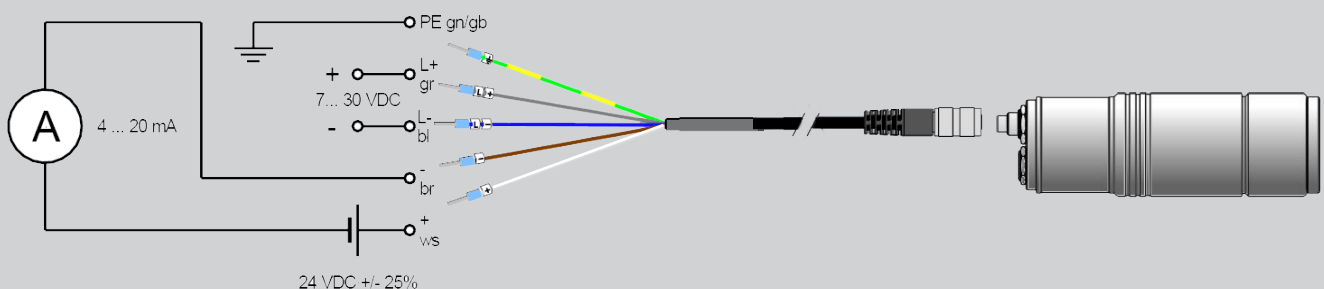
Order numbers

Device Optics	100	300	800
DT 40G (100 °C to 1300 °C)	4408541301	4408542301	4408543301
DT 40G (200 °C to 1400 °C)	4408541302, 4408551302 (LED)	4408542302, 4408552302 (LED)	4408543302, 4408553302 (LED)
DT 40G (500 °C to 2500 °C)	4408541303, 4408551303 (LED)	4408542303, 4408552303 (LED)	4408443303, 4408553303 (LED)
(LED = with LED aiming light)			

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Electrical, mechanical and optical accessories[1]		Order number
Connecting cable	length 2 m length 5 m length 10 m length 15 m length 20 m length 30 m	3310A11511 3310A11512 3310A11513 3310A11514 3310A11515 3310A11517
USB connecting cable	length 1.8 m, screened	3310A14010
Power supply	24 V DC, 0.6 A	3310A12010
Mounting angle	fixed adjustable	3310A21010 3310A21011
Air purge unit	stainless steel, purge air 0.1 to 0.5 bar, oil free	3310A22010
Water cooling jacket	stainless steel with integrated air purge unit	3310A23010
Vacuum flange	KF 16 with ZnSe window	3310A24010 3310A34041
Laser aiming light	provided with thread (only for pyrometer without integrated LED)	3310A33010
DHP 1040	mobile handheld programming device	3310A17010
[1] More accessories available.		

Selected accessories – pictures

Mounting angle, adjustable	Window slide	Air purge unit
Order number: 3310A21011	Order number: 3310A21210	Order number: 3310A22010

Water cooling jacket	Handheld programming device DHP 1040	Digital display DD 200/210
Order number: 3310A23010	Order number: 3310A17010	Order number: 3310A13020/3310A13025

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