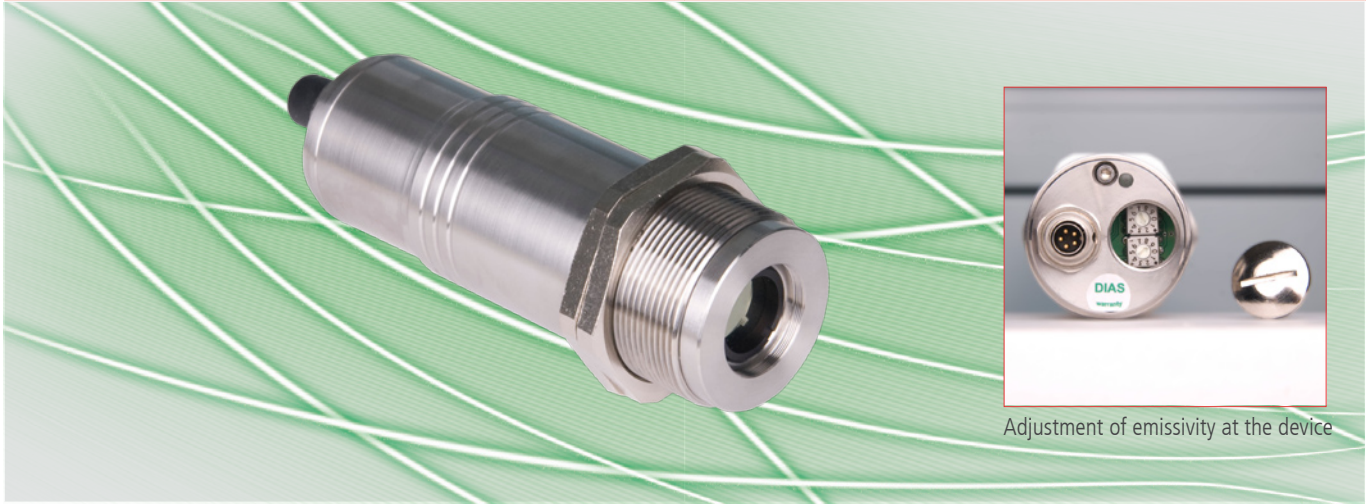


PYROSPOT Series 42

Pyrometers for industrial application

Overview

Digital 2-wire pyrometer with emissivity adjustment



Features

- For temperature measurements between -40°C and 2500°C
- Several spectral ranges
- Integrated or optional laser aiming light
- Adjustment of emissivity at the backside of the device
- Several fixed optics available
- Robust stainless steel housing

Description and applications

The digital pyrometers of PYROSPOT series 42 are specifically designed for industrial purpose. The devices are suitable for non-contact temperature measurements at several surfaces like steel, ceramics, paper, food or glass.

The solid body in stainless steel housing allows usage even under rough environmental conditions. With a fast response time (t_{95}) of only 10 ms or 100 ms these pyrometers are also suitable for fast measuring processes..

The optional or integrated laser aiming light allows exact alignment to the measuring object.

The temperature linear standard output signal of 4 to 20 mA allows easy implementation in existing measurement and control systems. Emissivity can be adjusted directly at the device.

Typical application areas:

DT 42L	DT 42G	DS 42N and DG 42 N
 • Nonmetals, coated metals • Paper and packaging • Building materials • Food industry • Plastics	 • Glass industry • Flat glass • Glass bottle manufacture • Liquid glass • Glass forms	 • Steelmaking • Glass • Ceramics • Furnace • Metal industry

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PYROSPOT Series 42

Pyrometers for industrial application

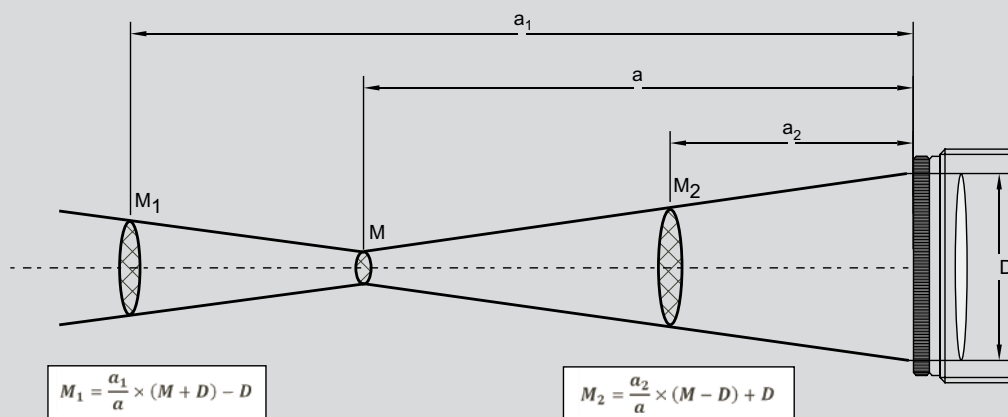
Technical data

Type	DT 42L	DT 42G	DS 42N	DG 42N
Temperature range	−40 °C to 1000 °C	100 °C to 1300 °C 500 °C to 2500 °C	600 °C to 1800°C 800 °C to 2500 °C	250 °C to 1300 °C 350 °C to 1800 °C
Spectral range	8 μm to 14 μm	5 μm	0,8 μm to 1,1 μm	1,5 μm to 1,8 μm
Sub temperature range	adjustable within temperature range, minimum span 50 °C			
Fixed optics (see table)	300, 2000	300, 800	210, 290, 650, 4000	210, 290, 650, 4000
Measurement uncertainty ¹	1 % of measured value in °C or 1 K ²		0.5 % of measured value in °C	
Reproducibility ¹	0.5 % of measured value °C or 0.5 K ²		0.1 % of measured value in °C	
NETD ³	< 0.1 K ⁴		< 0.1 K ¹	
Response time (t95)	100 ms, optional adjustable up to 100 s (factory-provided)		10 ms, optional adjustable up to 100 s (factory-provided)	
Emissivity	0.20 to 1.00, adjustable (factory setting: 1.00)		0.05 to 1.00, adjustable (factory setting: 1.00)	
Output	4 to 20 mA, temperature linear, max. burden: 500 Ω at 24 V			
Aiming	Laser aiming light (optional)		integrated laser aiming light	
Power supply	24 V DC ± 25 %, residual ripple 500 mV, laser 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 42L/DT 42G/DS 42 N/DG 42 N, manual, inspection sheet, two mounting screw nuts, connecting cable 5 m, 5 pin. More cable lengths available.			

¹ Details for black body radiator, $T_u = 23\text{ °C}$, $t_{95} = 1\text{ s}$. ² Whichever is higher value. ³ Noise equivalent temperature difference.

⁴ At $T_u = 23\text{ °C}$, $T_{\text{Object DT 42L}} = 100\text{ °C}$, $T_{\text{Object DT 42G}} = 250\text{ °C}$ respectively 700 °C

Calculation of measuring field diameter



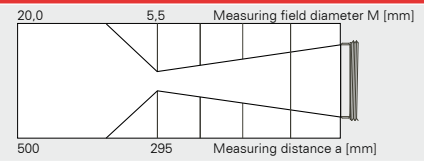
PYROSPOT Series 42

Pyrometers for industrial application

Fixed optics types

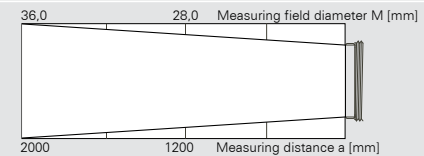
Optics 300 (sharp point at a = 295 mm measuring distance), aperture D Ø = 15 mm

Measuring distance a [mm]	0	100	200	260	295	400	500
Measuring field diameter M [mm]							
DT 42L (-40 °C to 1000 °C)	15.0	11.8	8.6	6.6	5.5	13.0	20.0



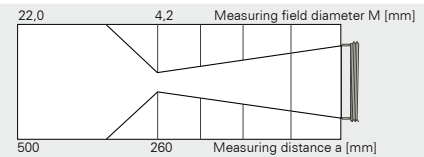
Optics 2000 (sharp point at a = 2000 mm measuring distance), aperture D Ø = 15 mm

Measuring distance a [mm]	0	800	1200	1800	2000	3000	4000
Measuring field diameter M [mm]							
DT 42L (-40 °C to 1000 °C)	15.0	24.0	28.0	34.0	36.0	57.0	80.0



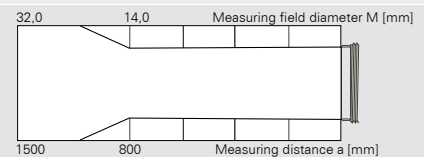
Optics 300 (sharp point at a = 260 mm measuring distance), aperture D Ø = 15 mm

Measuring distance a [mm]	0	100	200	260	295	400	500
Measuring field diameter M [mm]							
DT 42G (100 °C to 2500 °C)	15.0	10.8	6.7	4.2	5.5	15.0	22.0



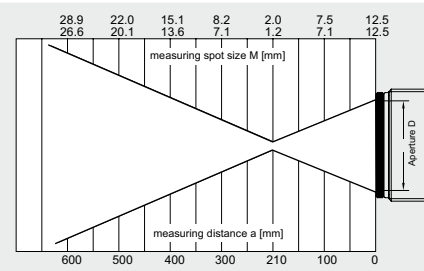
Optics 800 (sharp point at a = 800 mm measuring distance), aperture D Ø = 15 mm

Measuring distance a [mm]	0	300	600	800	1000	1500	2000
Measuring field diameter M [mm]							
DT 42G (100 °C to 2500 °C)	15.0	14.6	14.3	14.0	18.0	32.0	48.0



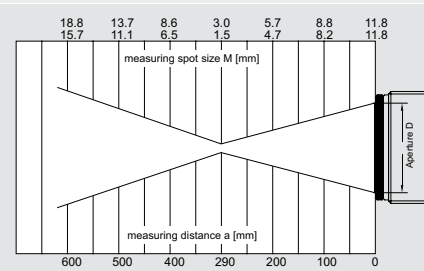
Optics 210 (sharp point at a = 210 mm measuring distance), aperture D Ø = 12.5 mm

Measuring distance a [mm]	0	100	210	300	400	500	600
Measuring field diameter M [mm]							
DS 42N (600 °C to 1800 °C)	12.5	7.5	2.0	8.2	15.1	22.0	28.9
DS 42N (800 °C to 2500 °C)	12.5	7.1	1.2	7.1	13.6	20.1	26.6
DG 42N (250 °C to 1300 °C)	12.5	7.5	2.0	8.2	15.1	22.0	28.9
DG 42N (350 °C to 1800 °C)	12.5	7.1	1.2	7.1	13.6	20.1	26.6



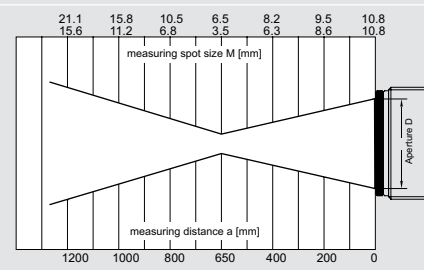
Optics 290 (sharp point at a = 290 mm measuring distance), aperture D Ø = 11.8 mm

Measuring distance a [mm]	0	100	200	290	400	500	600
Measuring field diameter M [mm]							
DS 42N (600 °C to 1800 °C)	11.8	8.8	5.7	3.0	8.6	13.7	18.8
DS 42N (800 °C to 2500 °C)	11.8	8.2	4.7	1.5	6.5	11.1	15.7
DG 42N (250 °C to 1300 °C)	11.8	8.8	5.7	3.0	8.6	13.7	18.8
DG 42N (350 °C to 1800 °C)	11.8	8.2	4.7	1.5	6.5	11.1	15.7



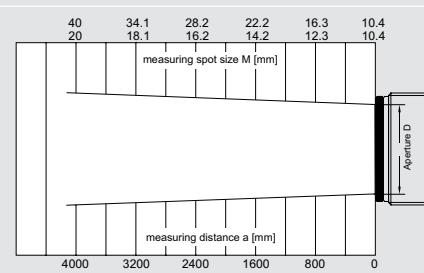
Optics 650 (sharp point at a = 650 mm measuring distance), aperture D Ø = 10.8 mm

Measuring distance a [mm]	0	200	400	650	800	1000	2000
Measuring field diameter M [mm]							
DS 42N (600 °C to 1800 °C)	10.8	9.5	8.2	6.5	10.5	15.8	21.1
DS 42N (800 °C to 2500 °C)	10.8	8.6	6.3	3.5	6.8	11.2	15.6
DG 42N (250 °C to 1300 °C)	10.8	9.5	8.2	6.5	10.5	15.8	21.1
DG 42N (350 °C to 1800 °C)	10.8	8.6	6.3	3.5	6.8	11.2	15.6



Optics 4000 (sharp point at bei a = 4000 mm measuring distance), aperture D Ø = 10.4 mm

Measuring distance a [mm]	0	400	800	1600	2400	3200	4000
Measuring field diameter M [mm]							
DS 42N (600 °C to 1800 °C)	10.4	13.4	16.3	22.2	28.2	34.1	40.0
DS 42N (800 °C to 2500 °C)	10.4	11.4	12.3	14.2	16.2	18.1	20.0
DG 42N (250 °C to 1300 °C)	10.4	13.4	16.3	22.2	28.2	34.1	40.0
DG 42N (350 °C to 1800 °C)	10.4	11.4	12.3	14.2	16.2	18.1	20.0



PYROSPOT Series 42

Pyrometers for industrial application

Electrical, mechanical and optical accessories¹

Connecting cable	length 2 m, 5 m, 10 m, 15 m, 20 m, 25 m or 30 m
Power supply PSU 15	24 V DC, 0,6 A
Digital display DD 200/210	for installation frame, with LED display
Mounting angle	fixed or adjustable
Ball and socket mounting	
Air purge unit	stainless steel, cleaning air 0.1 to 0.5 bar, oil free
Sighting tube	for air purge unit, 100 mm, 300 mm
Cooling jacket	stainless steel with integrated air purge unit and mounting angle
Vacuum flange	KF 16 with ZnSe window
Mirror	90°, including air flushing
Window slide	
Windows	protection window or for window slide, vacuum flange and cooling jacket, quartz glass, calcium fluoride, zinc selenide, sapphire glass, zinc sulfide
Emissivity enhancer	
Laser aiming light	header provided with thread

¹ More accessories on request.

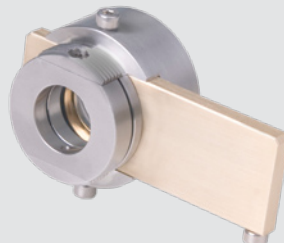
Mounting angle, adjustable

Order number: 3310A21011



Window slide (without window)

Order number: 3310A21210



Air purge unit for series 40/42/44

Order number: 3310A22010



Cooling jacket

Order number: 3310A23010



Power supply

Order number: 3310A12010



Digital display DD 200/210

Order number: 3310A13020/3310A13025



Technical details are subject to change. February 2013.



We are certified for many years according to ISO 9001

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