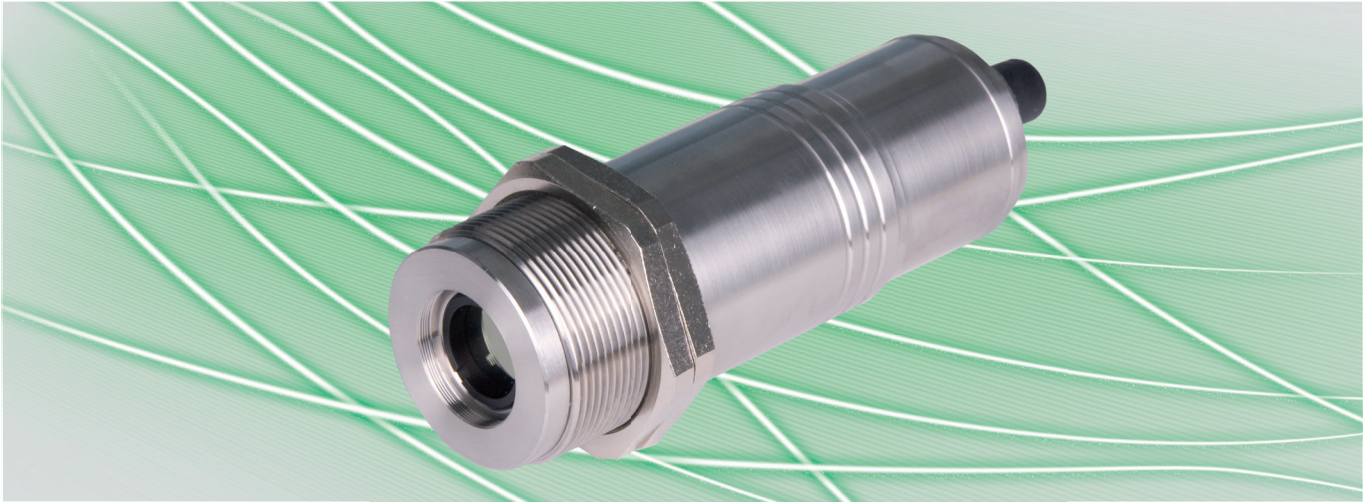


PYROSPOT DS 42N and DG 42N

Pyrometers for industrial application

Overview

Pyrometer with emissivity adjustment



Features

- Digital 2-wire pyrometers for 250 °C to 2500 °C
- Several spectral ranges
- Integrated laser aiming light
- Several fixed optics available
- Stainless steel housing
- Temperature linear output from 4 to 20 mA

Descriptions and applications

The digital pyrometers PYROSPOT DS 42N and PYROSPOT DG 42N are especially designed for industrial purpose. The devices are suitable for high temperature measurement from 250 °C of many different surfaces for example metals, ceramics or graphite.

The solid body in stainless steel housing with protection window for optics allows usage even under rough environmental conditions.

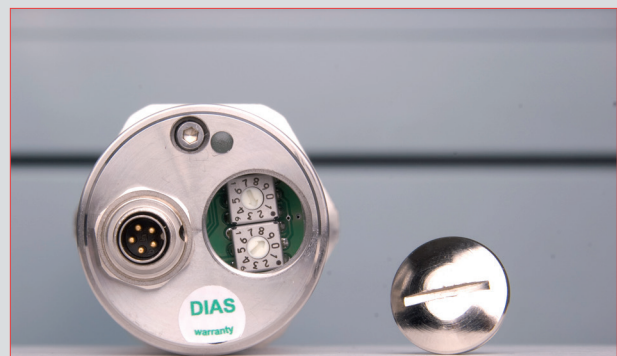
With a fast response time of only 10 ms (t_{95}) these pyrometers are also suitable for fast measuring processes. Several fixed optic types realise measuring field diameters from 1.2 mm.

The integrated laser aiming light enables to focus the measuring object exactly.

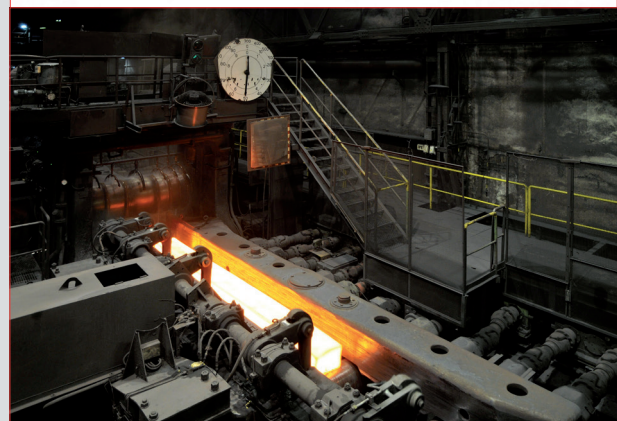
The temperature linear standard output signal of 4 to 20 mA allows easy implementation in existing measuring and controlling systems. Emissivity can be adjusted directly at the device.

Typical application areas:

- Steemaking
- Glass
- Ceramics
- Furnace
- Metal industry



Emissivity can be adjusted directly at the device



PYROSPOT DS 42N and DG 42N

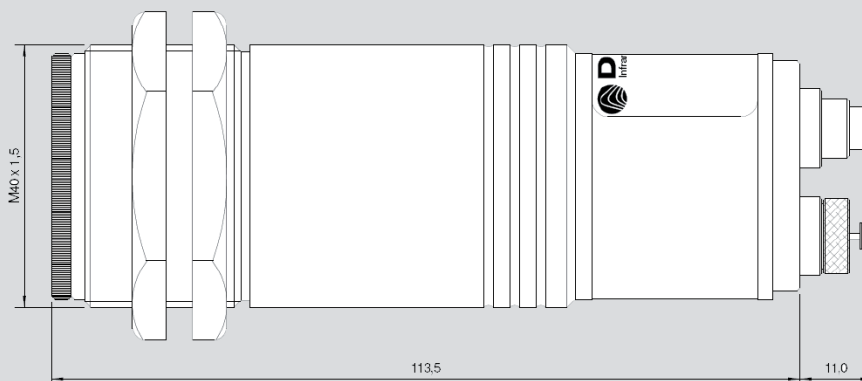
Pyrometers for industrial application

Technical data

Type	DS 42N		DG 42N	
Temperature range	600 °C to 1800 °C	800 °C to 2500 °C	250 °C to 1300 °C	350 ° to 1800 °C
Sub temperature range of analog output	optional factory-set: adjustable within temperature range, minimum span 50 °C			
Spectral range	0.8 µm to 1.1 µm		1.5 µm bis 1.8 µm	
Optics (Order numbers)	210 (4420061001), 290 (4420062001), 650 (4420063001), 4000 (4420064001)	210 (4420061002), 290 (4420062002), 650 (4420063002), 4000 (4420064002)	210 (4421061001), 290 (4421062001), 650 (4421063001), 4000 (4421064001)	210 (4421061002), 290 (4421062002), 650 (4421063002), 4000 (4421064002)
Measurement uncertainty ¹	0.5 % of measured value in °C + 1 K			
Reproducibility ¹	0.1 % of measured value in °C + 0.5 K			
NETD ^{1,2}	0.1 K			
Response time (t ₉₅)	10 ms, optional factory-set up to 100 s			
Emissivity	0.050 to 1.00, adjustable (factory setting when delivered: 1.00)			
Data storage	maximum value storage, optionally adjustable ex works			
Output	4 to 20 mA, temperature linear, max. burden: 500 Ω at 24 V			
Aiming	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 DS 42N or DG 42N with optics, manual, inspection sheet, two mounting screw nuts, connecting cable 5 m, 5 -pin. Other cable lengths on request.			

¹ Specifications for black body radiators, T₀ = 23 °C, ε = 1, t₉₅ = 1 s. ² Noise equivalent temperature difference.

Dimensional drawing



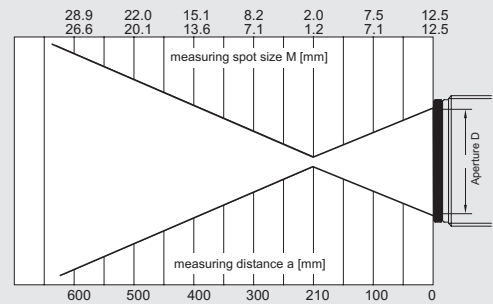
PYROSPOT DS 42N and DG 42N

Pyrometers for industrial application

Optics 210, 290, 650 and 4000

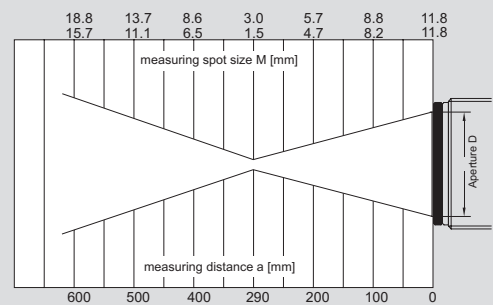
Optics 210 (sharp point at a = 210 mm measuring distance)

Measuring distance a [mm]	0	100	210	300	400	500	600
Temperature range	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
Aperture D Ø	12.5						



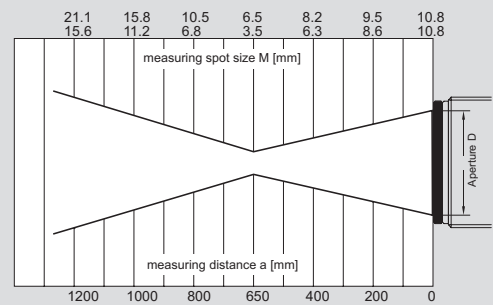
Optics 290 (sharp point at a = 290 mm measuring distance)

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



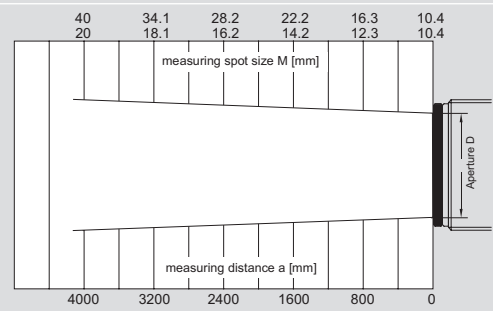
Optics 650 (sharp point at a = 650 mm measuring distance)

Measuring distance a [mm]	0	200	400	650	800	1000	1200
Temperature range	Measuring field diameter M [mm]						
DS 42N (600 °C bis 1800 °C)	10.8	9.5	8.2	6.5	10.5	15.8	21.1
DS 42N (800 °C bis 2500 °C)	10.8	8.6	6.3	3.5	6.8	11.2	15.6
DG 42N (250 °C bis 1300 °C)	10.8	9.5	8.2	6.5	10.5	15.8	21.1
DG 42N (350 °C bis 1800 °C)	10.8	8.6	6.3	3.5	6.8	11.2	15.6
Aperture D Ø	10.8						

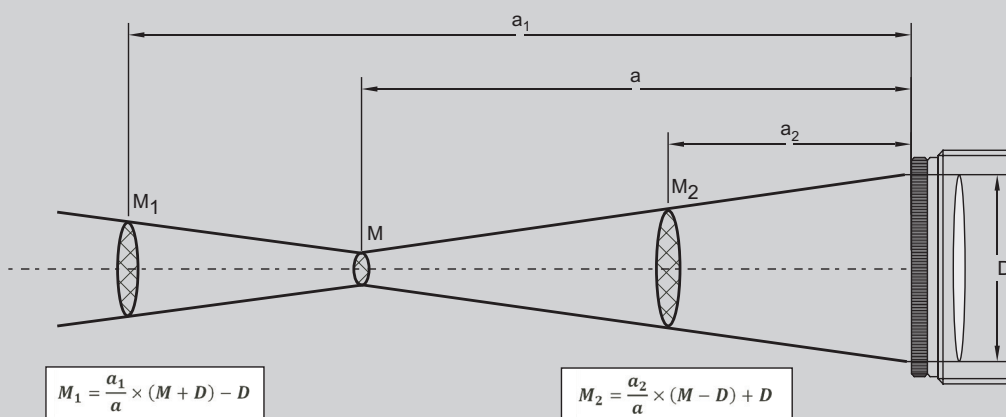


Optics 4000 (sharp point at a = 4000 mm measuring distance)

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



Calculation of measuring field diameter



PYROSPOT DS 42N and DG 42N Pyrometers for industrial application

Electrical, mechanical and optical accessories¹

Connecting cable	(3310A1151X)	length 2 m, 5 m, 10 m, 15 m, 20 m, 25 m or 30 m
Power supply PSU 15	(3310A12010)	24 V DC, 0,6 A
Digital display DD 200/210	(3310A13020/3310A13025)	for installation frame, with LED display
Mounting angle	(3310A21010, 3310A21011)	fixed or adjustable
Ball and socket mounting	(3310A21012)	
Air purge unit	(3310A22010)	stainless steel, cleaning air 0.1 to 0.5 bar, oil free
Sighting tube	(3310A22030, 3310A22035)	for air purge unit, 100 mm, 300 mm
Cooling jacket	(3310A23010)	stainless steel with integrated air purge unit and mounting angle
Vacuum flange	(3310A24010)	KF 16 with ZnSe window
Mirror	(3310A24110)	90°, including air flushing
Window slide	(3310A21210)	
Windows	(3310A340X1)	Protection window or for window slide and vacuum flange, quartz glass, calcium fluoride, zinc selenide, sapphire glass, zinc sulfide

¹ More accessories on request.

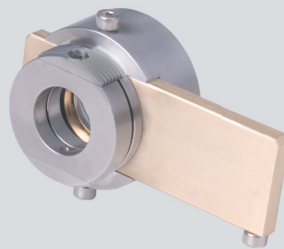
Mounting angle, adjustable

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



Technische Änderungen vorbehalten. Technical details are subject to change. 05.05.20



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