

# PYROSPOT DS 44N/DG 44N

Pyrometers for Industrial Applications



- **Digital pyrometers for 250 °C to 2500 °C**
- **Several spectral ranges**
- **RS485 interface for bus system integration**
- **Maximum value storage**
- **Stainless steel housing with fixed or vario optics**

The digital pyrometers PYROSPOT DS 44N and PYROSPOT DG 44N 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 5 ms (t95) these pyrometers are also suitable for fast measuring processes.

Several fixed- or vario optic types realise measuring field diameters from 1.2 mm.

The integrated LED or laser aiming light enables to focus the measuring object exactly. The size of the LED aiming light is identical to the measuring field.

The temperature linear standard output signal of 0/4...20 mA allows easy implementation in existing measuring and controlling systems.

The DS 40N/DG 40N are equipped with integrated, galvanically isolated RS485 interface which allows parameterizing and software evaluation even in bus systems.

Via an USB module parameters like emissivity sub range, response time and storage can be easily adjusted by using the comfortable parameterizing and evaluation software PYROSOFT Spot.

Typical application areas:

- Steel industry
- Furnace industry
- Soldering applications
- Ceramic industry
- Metal industry

## Technical Data and Accessories

Technical data				
Type	DS 44N		DG 44N	
Temperature range	600 °C to 1800 °C	800 °C to 2500 °C	250 °C to 1300 °C	350 °C to 1800 °C
Sub temperature range	adjustable within temperature range, minimum span 51 °C			
Spectral range	0.8 μm to 1.1 μm		1.5 μm to 1.8 μm	
Optics	several fixed optics (type I, II, III and IV) or vario optics			
Distance ratio	200 : 1 or 100 : 1			
Measurement uncertainty	0.5 % of meas. value ( $T_{amb} = 23\text{ °C}$ , $\varepsilon = 1$ , $t_{95} = 1\text{ s}$ )			
Reproducibility	0.1 % of meas. value ( $T_{amb} = 23\text{ °C}$ , $\varepsilon = 1$ , $t_{95} = 1\text{ s}$ )			
NETD <sup>1</sup>	0.1 °C ( $T_{amb} = 23\text{ °C}$ , $\varepsilon = 1$ , $t_{95} = 1\text{ s}$ )			
Response time (t95)	5 ms, adjustable up to 10 s			
Emissivity	0.05 to 1.00, adjustable via interface			
Storage	maximum value storage, adjustable via interface			
Output	0/4...20 mA, adjustable, temperature linear, max. burden: 700 Ω at 24 V			
Interface	galvanically isolated RS485 interface, half duplex, max. 115 kB			
Software	PYROSOFT Spot for Windows®			
Aiming	integrated LED or laser aiming light			
Parameters	emissivity, response time, temperature unit °C or °F, storage, sub range, adjustable via interface and software			
Power supply	24 V DC ± 25 %			
Power consumption	max. 1.5 W			
Operating temperature	0 °C to 70 °C			
Storage temperature	-20 °C to 70 °C			
Weight	approx. 455 g			
Dimensions	thread M40 × 1.5, length 125 mm			
Housing	stainless steel with plug connector and protection window			
Safety class	IP 65 (DIN 40 050)			
CE symbol	according to EU regulations (EN 50 011)			
Scope of delivery	PYROSPOT DS 44N or DG 44N, manual, inspection sheet, PYROSOFT Spot for Windows® ( <b>without</b> connecting cable, please order separately)			

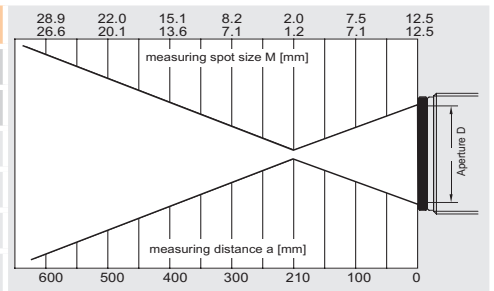
<sup>1</sup> Noise equivalent temperature difference.

Accessories, mechanical, electrical and optical <sup>1</sup>	
Connecting cable 12-pin	length 2 m, 5 m, 10 m, 15 m, 20 m, 25 m or 30 m
Interface module	RS485 to USB
Power supply	24 V DC, 1 A
Mounting angle	fixed or adjustable
Air purge unit	stainless steel, air pressure 0.2 to 1.0 bar, oil free
Water cooling jacket	with integrated air purge and mounting angle
Vacuum flange	KF 16 with quartz glass
Protection window	quartz glass or sapphire glass

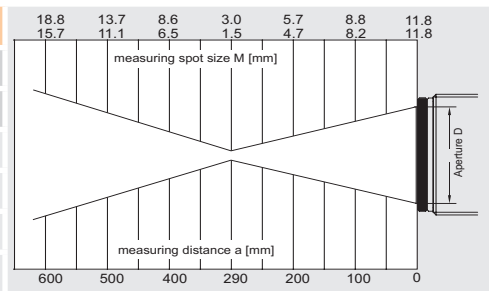
<sup>1</sup> Other accessories on request.

# Optic Types

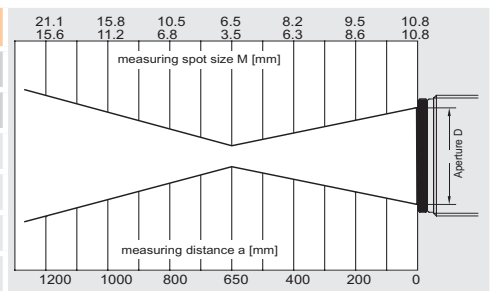
Optics I (sharp point at a = 210 mm measuring distance)							
Measuring distance a in mm	0	100	<b>210</b>	300	400	500	600
Measuring field diameter M in mm							
DS 44N (600 °C to 1800 °C)	12.5	7.5	<b>2.0</b>	8.2	15.1	22.0	28.9
DS 44N (800 °C to 2500 °C)	12.5	7.1	<b>1.2</b>	7.1	13.6	20.1	26.6
DG 44N (250 °C to 1300 °C)	12.5	7.5	<b>2.0</b>	8.2	15.1	22.0	28.9
DG 44N (350 °C to 1800 °C)	12.5	7.1	<b>1.2</b>	7.1	13.6	20.1	26.6



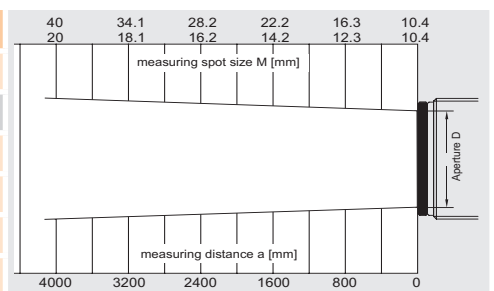
Optics II (sharp point at a = 290 mm measuring distance)							
Measuring distance a in mm	0	100	200	<b>290</b>	400	500	600
Measuring field diameter M in mm							
DS 44N (600 °C to 1800 °C)	11.8	8.8	5.7	<b>3.0</b>	8.6	13.7	18.8
DS 44N (800 °C to 2500 °C)	11.8	8.2	4.7	<b>1.5</b>	6.5	11.1	15.7
DG 44N (250 °C to 1300 °C)	11.8	8.8	5.7	<b>3.0</b>	8.6	13.7	18.8
DG 44N (350 °C to 1800 °C)	11.8	8.2	4.7	<b>1.5</b>	6.5	11.1	15.7



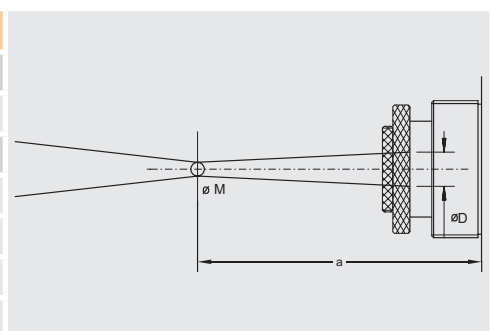
Optics III (sharp point at a = 650 mm measuring distance)							
Measuring distance a in mm	0	200	400	<b>650</b>	800	1000	1200
Measuring field diameter M in mm							
DS 44N (600 °C to 1800 °C)	10.8	9.5	8.2	<b>6.5</b>	10.5	15.8	21.1
DS 44N (800 °C to 2500 °C)	10.8	8.6	6.3	<b>3.5</b>	6.8	11.2	15.6
DG 44N (250 °C to 1300 °C)	10.8	9.5	8.2	<b>6.5</b>	10.5	15.8	21.1
DG 44N (350 °C to 1800 °C)	10.8	8.6	6.3	<b>3.5</b>	6.8	11.2	15.6



Optics IV (sharp point at a = 4400 mm measuring distance)							
Measuring distance a in mm	0	400	800	1600	2400	3200	<b>4000</b>
Measuring field diameter M in mm							
DS 44N (600 °C to 1800 °C)	10.4	13.4	16.3	22.2	28.2	34.1	<b>40</b>
DS 44N (800 °C to 2500 °C)	10.4	11.4	12.3	14.2	16.2	18.1	<b>20</b>
DG 44N (250 °C to 1300 °C)	10.4	13.4	16.3	22.2	28.2	34.1	<b>40</b>
DG 44N (350 °C to 1800 °C)	10.4	11.4	12.3	14.2	16.2	18.1	<b>20</b>

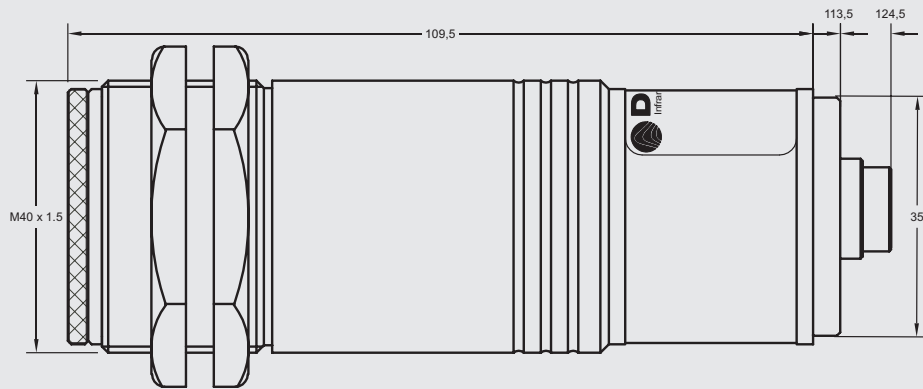


Vario optics							
Measuring distance a in mm	0	300	400	500	600	700	800
Optics pullout in mm	0	6.1	5.0	3.9	2.6	1.3	0
Measuring field diameter M in mm							
DS 44N (600 °C to 1800 °C)	10	3.0	4.0	5.2	6.5	7.5	8.6
DS 44N (800 °C to 2500 °C)	10	1.5	2.1	2.6	3.5	4.5	5.5
DG 44N (250 °C to 1300 °C)	10	3.0	4.0	5.2	6.5	7.5	8.6
DG 44N (350 °C to 1800 °C)	10	1.5	2.1	2.6	3.5	4.5	5.5



# Dimensions and Accessories

## Dimensions Pyrometer



## Accessories

### Mounting angle, adjustable



### Vacuum flange



### Cooling jacket with air purge and mounting angle



### Air purge unit



### Digital display



### Power supply



Technical details are subject to change without notice. February 2009.