

PYROSPOT DSF 44N/DGF 44N

Pyrometers with Fibre Cable 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 fibre optics connector**

The digital pyrometers PYROSPOT DSF 44N and DGF 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 fibre cable and 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.

The vario optics for fibre optical head realizes spot sizes from 0.7 mm diameter. Several Laser rejection filters are applicable.

The integrated red 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 44N / DG 44N 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	DSF 44N		DGF 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	optical head FOH II, aperture diameter 9 mm		
Distance ratio	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 ¹	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	adjustable, 0.05 to 1.00		
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 red 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 DSF 44N or DGF 44N, manual, inspection sheet, Software PYROSOFT Spot for Windows® (without connecting cable, fibre cable and optical head, please order separately)		

¹ Noise equivalent temperature difference.

Accessories, mechanical, electrical and optical ¹	
Connecting cable 5-pin	length 2 m, 5 m, 10 m, 15 m, 20 m, 25 m or 30 m
Interface module	RS485 to USB
Fibre cable	length 1.5 m, 2 m, 2.5 m, 5 m, 7.5 m, 10 m, 15 m or 20 m, stainless steel clad
Power supply	24 V DC, 1 A
Mounting angle	fixed or adjustable, for pyrometer
Mounting angle	adjustable, for FOH II
Air purge unit for FOH II	stainless steel, air pressure 0.2 to 1.0 bar, oil free
Mirror for FOH II	stainless steel, 90°
Protection window FOH II	quartz glass or sapphire glass
Laser rejection filter	940 nm, 1064 nm or on request

¹ Other accessories on request.

Optics Type FOH II

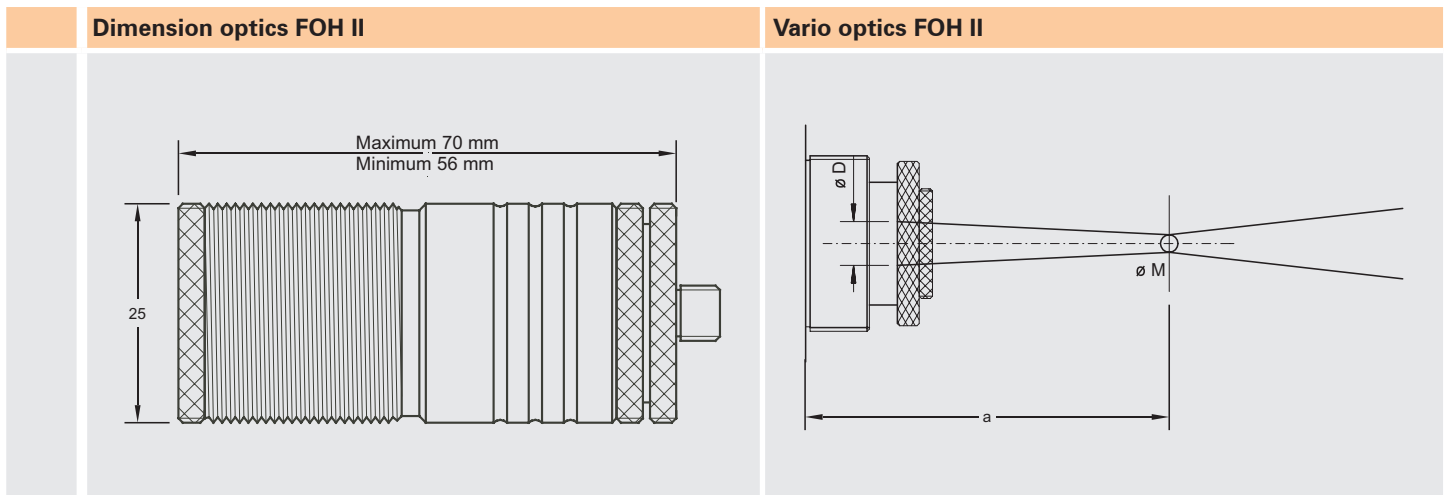
Optics FOH II-65 ¹									
Measuring distance a in mm	0	65	85	110	150	200	240	300	
Optics pullout in mm	0	14	11	7	4	2	1	0	
Optics length in mm	56	70	67	63	60	58	57	56	
Measuring spot size M in mm									
DSF 44N (600 °C to 1800 °C)	9	1.3	1.7	2.1	2.8	3.6	4.2	5.0	
DSF 44N (800 °C to 2500 °C)	9	0.7	0.9	1.1	1.4	1.8	2.1	2.5	
DGF 44N (250 °C to 1300 °C)	9	1.3	1.7	2.1	2.8	3.6	4.2	5.0	
DGF 44N (350 °C to 1800 °C)	9	0.7	0.9	1.1	1.4	1.8	2.1	2.5	

¹ Other optics on request.

Optics FOH II-250 ¹								
Measuring distance a in mm	0	250	300	400	600	800	1000	
Optics pullout in mm	0	13.1	12.5	11.0	9.5	8.9	8.5	
Optics length in mm	64.5	69.1	68.5	67.0	65.5	64.9	64.5	
Measuring spot size M in mm								
DSF 44N (600 °C to 1800 °C)	9	3.0	3.7	5.0	7.2	9.2	12	
DSF 44N (800 °C to 2500 °C)	9	1.7	2.1	2.7	4.4	5.5	6.8	
DGF 44N (250 °C to 1300 °C)	9	3.0	3.7	5.0	7.2	9.2	12	
DGF 44N (350 °C to 1800 °C)	9	1.7	2.1	2.7	4.4	5.5	6.8	

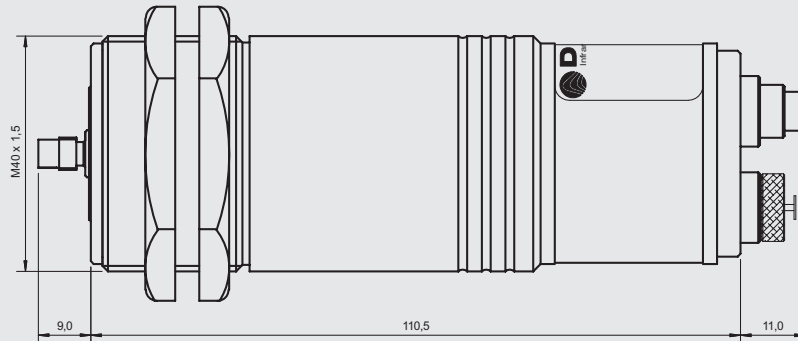
¹ Other optics on request.

Fibre cables for optics FOH II		
Measuring range	Diameter in μm	Clad
DSF 44N (600 °C to 1800 °C)	400	stainless steel
DSF 44N (800 °C to 2500 °C)	200	stainless steel
DGF 44N (250 °C to 1300 °C)	400	stainless steel
DGF 44N (350 °C to 1800 °C)	200	stainless steel



Dimensions and Accessories

Dimensions Pyrometer



Accessories

Mounting angle, adjustable



Mounting angle, adjustable, for FOH II



Mirror 90° for FOH II



Air purge unit for FOH II (optional with protection tube)



Digital display



Power supply



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