

PYROSPOT Series 80

Portable pyrometers for high-temperature application

200 °C to 2500 °C



PYROSPOT Series 80 portable

Handheld pyrometer for high-temperature application



- ✓ Measurement temperatures from 200 °C to 2500 °C
- ✓ Integrated video module
- ✓ Color TFT display with measurement spot mark
- ✓ User controls for parameterization
- ✓ Operation possible with protective gloves
- ✓ Vario optics for measurement distances between 0.65 m and 12 m
- ✓ Small measuring field diameters from 3.5 mm
- ✓ Minimization of emissivity caused measurement errors
- ✓ Temperature resistant and shock resistant housing

Description and application

The digital pyrometers of the PYROSPOT series 80 portable are robust handheld devices for the mobile use in the industry. They are suitable for temperature measurements from 200 °C, for example on metals, graphite or ceramic.

The color video module enables together with the integrated 2.5" TFT display a very convenient aiming of the pyrometer even at high measurement temperatures. The robust portable pyrometers, that are specifically suitable for processes for the winning and working of metals, minimize measurement errors at a very low, not known or varying emissivity.

The devices PYROSPOT DG 80NV portable measure temperatures from 200 °C to 2000 °C at short wavelengths within the spectral range from 1.5 µm to 1.8 µm. The pyrometers PYROSPOT DS 80NV portable work at 0.8 µm to 1.1 µm wavelength and enable temperature measurements from 550 °C to 2500 °C.

If there are very harsh ambient conditions, where the optics can contaminate or if the measurement field of the pyrometer is not filled completely, the ratio pyrometer PYROSPOT DSR 80NV portable is available. It measures temperatures between 500 °C and 1800 °C at a wavelength of 0.7 µm to 1.1 µm.

The devices are very fast with response times starting at five milliseconds (t95). All pyrometers have a vario optics with a distance ratio up to 200 : 1.

Use the four user controls beneath the TFT display to adjust all important pyrometer parameters. An integrated measured data storage allows the storage of up to 999 data records. Data for evaluation can be transferred to an external computer via the USB interface.



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Technical data			
Device type	DS 80NV portable	DG 80NV portable	DSR 80NV portable
Temperature range (Distance ratio)	550 °C to 1500 °C (200:1) (Bestellnummer: 5800031301)	200 °C to 1200 °C (200:1) (Bestellnummer: 5801031304)	500 °C to 1200 °C (50:1) (Bestellnummer: 5802031301)
	600 °C to 1800 °C (200:1) (Bestellnummer: 5800031302)	250 °C to 1500 °C (200:1) (Bestellnummer: 5801031305)	600 °C to 1400 °C (100:1) (Bestellnummer: 5802031302)
	800 °C to 2500 °C (200:1) (Bestellnummer: 5800031303)	350 °C to 2000 °C (200:1) (Bestellnummer: 5801031306)	700 °C to 1800 °C (200:1) (Bestellnummer: 5802031203)
Spectral range	0.8 µm to 1.1 µm	1.5 µm to 1.8 µm	0.7 µm to 1.1 µm
Emissivity ε	0.050 to 1.000	0.050 to 1.000	0.050 to 1.000, adjustable in 1 channel mode
Ratio correction	–	–	0.800 to 1.200 (K factor)
Response time t95	5 ms (min.), adjustable up to 100 s		
Data storage	momentary/maximum value storager (maximum 999 data records)		
Measurement uncertainty ¹⁾	0.5 % of measured value in °C		
Reproducibility ¹⁾	0.1 % of measured value in °C	0.1 % of measured value in °C	0.2 % of measured value in °C
Ambience temperature dependence, static ¹⁾	< 0.05 K/K (T _{ambience})	< 0.05 K/K (T _{ambience})	< 0,1 K/K (T _{ambience})
Transmittance	50 % to 100 %		
NETD ^{1,2)}	0.1 K ¹⁾		
Interface	USB, Modbus RTU		
Aiming	6.35 cm (2.5") – TFT display with visible measurement field mark		
Parameters	adjustable via user controls or via interface and software: emissivity, K factor (DSR 80NV portable), transmittance, response time, temperature unit °C or °F, data storage settings, exposure time of the video image		
Operation via two-staged push-button	Stage 1: Turn on/off pyrometer Stage 2: Save measured value		
Power supply	4 protected lithium-ion battery á 3.7 V, 2800 mAh		
Running time	approximately 15 h		
Operating temperature	0 °C to 50 °C (battery recharging: 0 °C to 40 °C)		
Storage temperature	–20 °C to 60 °C		
Weight	approximately 800 g (incl. battery, without transport case)		
Housing	aluminium / plastic (approximately 230 mm x 135 mm x 85 mm)		
Protection class	IP 50 according to DIN EN 60529 and DIN 40050		
Test regulations	EN 55 011: 1998, limit class A		
CE symbol	according to EU regulations		
Scope of delivery	DS 80NV portable/DG 80NV portable/DSR 80NV portable, user manual, inspection sheet, software PYROSOFT Spot, USB cable, USB power pack, lithium-ion battery (4 pieces) set, transport case		

¹⁾ Specifications for black body radiator, T_{ambience} = 23 °C, t95 = 1 s. ²⁾ Noise equivalent temperature difference.

Accessories	
Part number	Description
3310A14088	USB cable, length: 1.8 m
3310A12081	lithium-ion battery (4 pieces) set
3310A12080	external power pack for lithium ion batteries
3310A12085	USB power pack
3310A27080	transport case
3310A23810	device and glare protection

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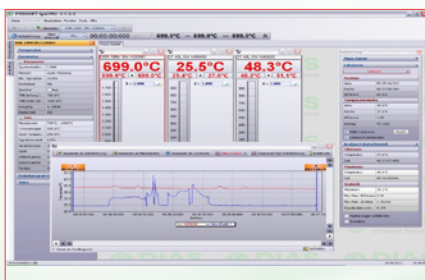
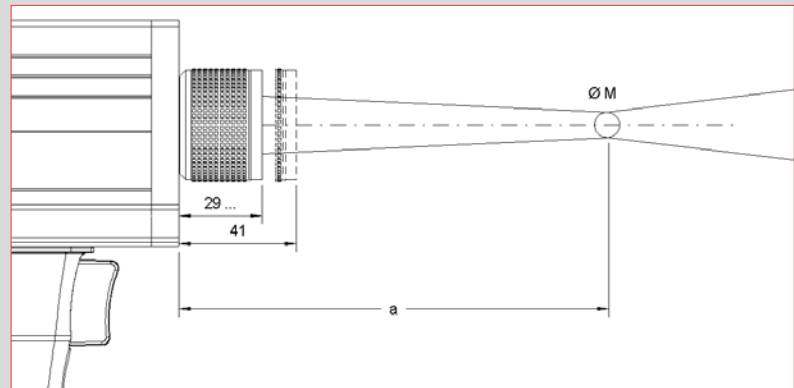
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Optical data of vario optics

Measurement distance a [mm]		a = 650	a = 1000	a = 4000	a = 12000
Measurement field diameter M [mm]					
DS 80NV portable	550 °C to 1500 °C	3.5	5	20	60
	600 °C to 1800 °C				
	800 °C to 2500 °C				
DG 80NV portable	200 °C to 1200 °C	3.5	5	20	60
	250 °C to 1500 °C				
	350 °C to 2000 °C				
DSR 80NV portable	500 °C to 1200 °C	14	20	80	240
	600 °C to 1400 °C	7	10	40	120
	700 °C to 1800 °C	3.5	5	20	60

Please note:

The measurement object has to be at least as large as the measurement field at the current measurement distance.



Software PYROSOFT Spot

For evaluation and processing of measured data obtained DIAS provides two variants for its pyrometer **PYROSPOT**. These are the free Windows software **PYROSOFT Spot** and the pay version **PYROSOFT Spot Pro**. Both versions allow the transfer of the measured value of the pyrometers (offline data acquisition of the saved data, but also online data acquisition).

Further functions are:

- Parameterization of the pyrometer
- Visualization of the measured values
- Minimum, maximum, average value over complete recording
- Extensive statistical analysis of measurement data¹⁾
- Trigger functions¹⁾
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- Export of the measured values as text file and generation of Excel tables
- Report and print functions

¹⁾only available for PYROSOFT Spot Pro