optris infrared thermometers

optris® CTratio 1M

Glass fiber ratio thermometer for non-contact temperature measurement from 700°C to 1800°C

FEATURES

- 5 ms fast temperature measurements of hot objects
- Due to ratio principle insensitive to certain dust and partially observed targets; in general suppression of object emissivity changes
- Rugged sensing head withstands 250°C without cooling
- Built-in laser marks the actual spot size at any distance
- Programmable 1 or 2 color mode

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	Senisng head: -20°C bis 250°C Electronics: 0 - 85°C (70°C with laser ON)
Storage temperature	Sensing head: -40 - 250°C Electronics: -40°C - 85°C
Relative humidity	10 - 95%, non-condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	Fiber cable (3m) with head: 375 g, electronics: 420 g

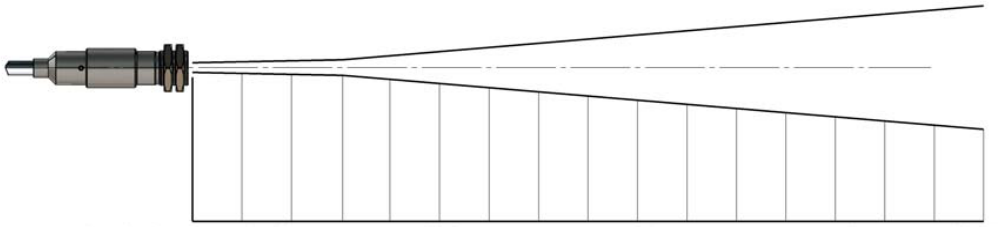
Electrical specifications	
Output/analog	0/4-20 mA, 0-5/10 V
Output impedances	mA max. 500Ω (with 5-36 V DC) mV min. 100 kΩ load impedance
Digital Interface (optional)	USB (Only for Programming)
optional	Relay: 2 x 60 V DC/42 V AC_{eff}; 0,4 A; optically isolated
I/O-Pins	Two programmable in-/outputs; selectable as alarm output (open collector 24 V/1 A), input for triggered signal output and peak-hold function or as analog input for external emissivity or slope adjustment
Fiberoptics length	3 m (standard), 6 m, 10 m, 15 m, 22 m stainless steel armour
Current draw	max. 200 mA
Power supply	8 - 36 V DC or USB powered
Aiming laser	Laser 650 nm, 1mW, ON/OFF via electronic box or software

Measurement specifications	
Temperature range	700°C to 1800°C
spectral range	0.7 - 1.1 µm
Optical resolution (95% energy)	40:1
System accuracy[1] (at ambient temperature 23 ± 5°C)	± (0.5% of reading + 1°C)
Repeatability (at ambient temperature 23 ± 5°C)	± (0.2% of reading + 1°C)
Temperature resolution (> 900°C)	0.1 K
Exposure time (95% signal)[2]	5 ms - 10 s
Slope (adjustable via programming keys or analog input)	0.800 - 1.200
Emissivity (adjustable via programming keys or analog input)	0.050 - 1.000
Signal processing (parameter adjustable via programming keys or software, respectively)	1 color / 2 color mode; attenuation monitoring / alarms; peak hold, valley hold, average; extended hold function with threshold and hysteresis

[1] *ε = 1, response time 1 s*
[2] *with dynamic adaptation at low signal levels*

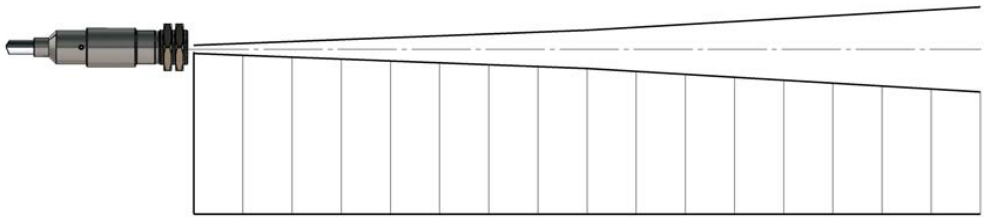
Optical specifications

CF-optics



spot size	(mm)	5,1	6,4	7,7	23,6	50,1	77,6	104,1
distance	(mm)	102	200	305	762	1524	2286	3048

SF-optics

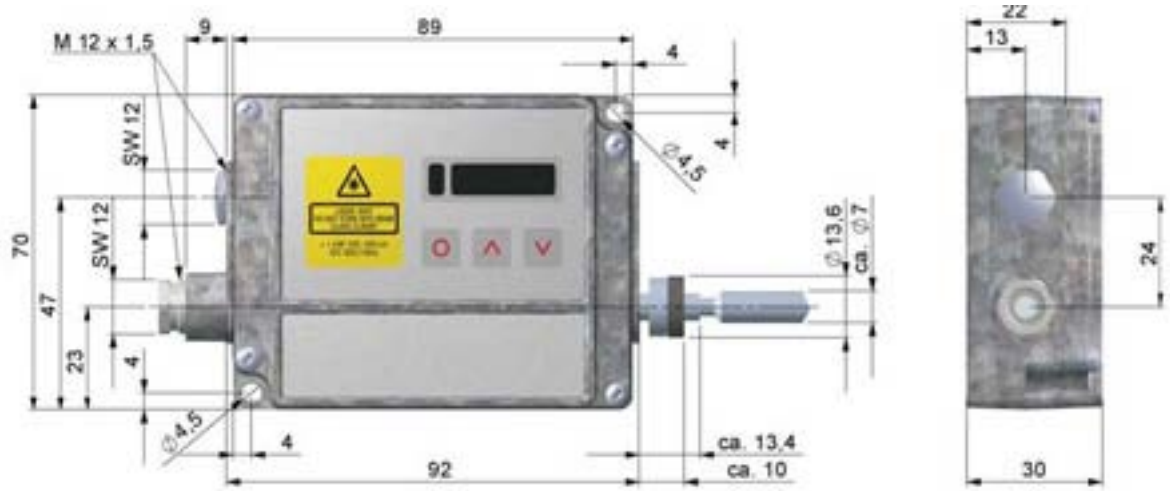


spot size	(mm)	6,6	10,6	21,1	31,3	41,4	52	62,6	73,3	84
distance	(mm)	102	305	762	1143	1524	1905	2286	2667	3048

Dimensions

Sensing head

Electronics



Änderungen vorbehalten
CTratio 1M-DS-E2013-04-A

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