

# More Precision.



## optris<sup>®</sup> CT ratio 1M

Glass fiber ratio thermometer for noncontact 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	sensing head: -20 - 250°C (70°C with laser ON) electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 250°C electronics: -40 - 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 (3 m) 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 Interfaces (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Optional	relay: 2 x 60 V DC/42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Digital I/O pins	two programmable in-/outputs; selectable as alarm output (open collector 24 V/1 A) or input for triggered signal output and peak-hold function
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 - 1800°C
Spectral range	0,7 - 1,1 μm
Optical resolution (95% Energy)	40:1
System accuracy <sup>1)</sup> (at ambient temperature 23 ±5°C)	±(0,5% of reading + 1°C)
Repeatability <sup>1)</sup> (at ambient temperature 23 ±5°C)	±(0,2% of reading + 1°C)
Temperature resolution (> 900°C)	0,1 K
Exposure time (95% signal) <sup>2)</sup>	5 ms - 10 s
Slope (adjustable via programming keys or software)	0.800 - 1.200
Emissivity (adjustable via programming keys or software)	0.100 - 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

<sup>1)</sup> ε = 1, response time 1 s

<sup>2)</sup> with dynamic adaptation at low signal levels

