

**Glass fiber ratio thermo-  
meter for non-contact  
temperature measurement  
from 700 °C to 1800 °C**

**Features:**

- 5 ms fast temperature measurements of hot objects
- Insensitive to certain dust and partially observed targets due to ratio principle; 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 modes



**General specifications**

Environmental rating	IP 65 (NEMA-4)
Ambient temperature <sup>1)</sup>	-20 °C ... 250 °C (sensing head) -20 °C ... 85 °C (electronics) (70 °C with laser ON)
Storage temperature	-40 °C ... 250 °C (sensing head) -40 °C ... 85 °C (electronics)
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	375 g (fiber cable (3 m) with head) 420 g (electronics)

**Electrical Specifications**

Output / analog	0/4 – 20 mA, 0 – 5/ 10 V
Optional	Relay: 2 x 60 V DC/ 42 V AC <sub>eff.</sub> ; 0.4 A; optically isolated
Digital Interface	USB (only for Programming) (optional)
Output impedances	mA max. 500 Ω (with 5–36 V DC) mV min. 100 kΩ load impedance
I/O-Pins	Two programmable in-/outputs; selectable as alarm output (open collector 24 V/1 A), input for triggered signal output and peakhold 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
Power supply	8–36 V DC or USB powered
Current draw	Max. 200 mA
Aiming laser	Laser 650 nm, 1 mW, 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>2)</sup> (at ambient temp. 23 ±5 °C)	±(1 % of reading +1 °C)
Repeatability (at ambient temp. 23 ±5 °C)	±(0.5 % of reading +1 °C)
Temperature resolution (>900 °C)	0.1 K
Exposure time (95 % signal) <sup>3)</sup>	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
Software	optris® Compact Connect

<sup>1)</sup> The functioning of the LCD display may be limited in ambient temperatures below 0 °C

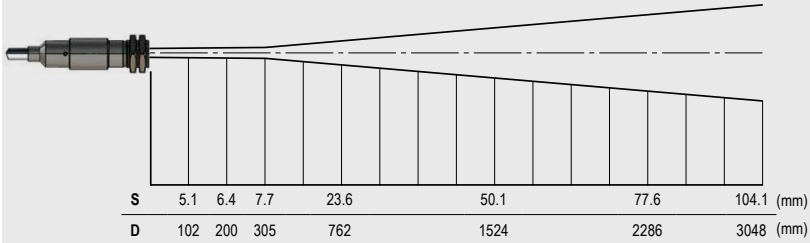
<sup>2)</sup>  $\epsilon = 1$ , response time 1 s

<sup>3)</sup> With dynamic adaptation at low signal levels

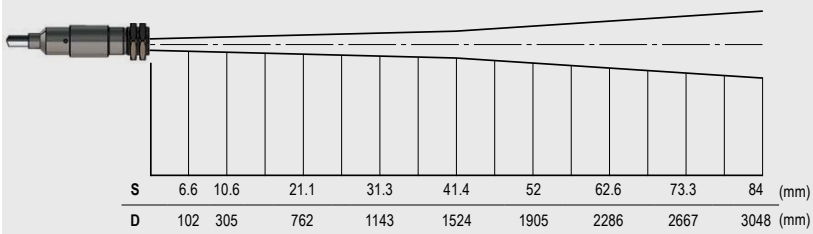
# optris® CTratio 1M

## Optical specifications

### CF2-optics



### SF-optics



## Dimensions

### Sensing head



### Electronics

