

# More Precision.



## optris® CT ratio 1M

Glass fiber ratio thermometer 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
- High optical resolution up to 60:1 with variable focus optics
- Built in laser marks even 1,3 mm small spot size
- Programmable 1 or 2 color mode

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 250°C 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 with head 400g electronics 420 g
Electrical specifications	
Outputs/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
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Alarm output	2 x open - collector (24 V/1 A)
Optional	relay: 2 x 60 V DC/42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Fiber cable length	2 m (standard), 5 m, 10 m, stainless steel armour, 400 μm fiber dia
Current draw	max. 160 mA
Power supply	8 - 36 V DC or USB powered
Optical aiming	Laser 635 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)	60:1
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> E = 1, response time 1s

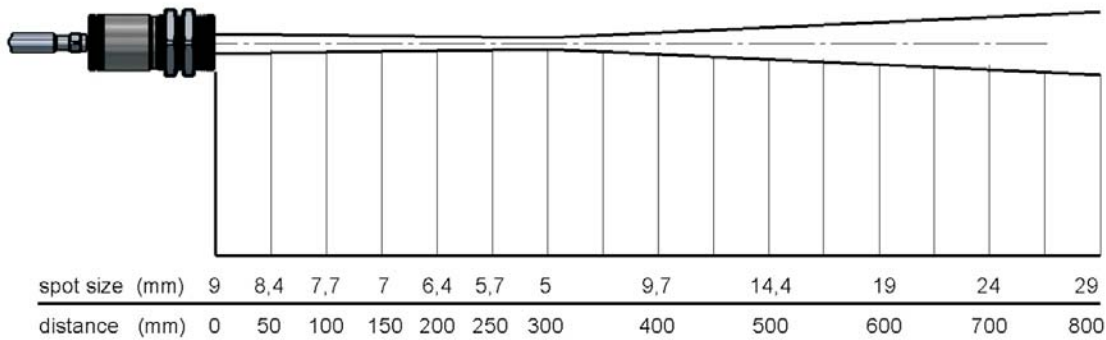
<sup>2)</sup> with dynamic adaptation at low signal levels

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## Optical specification

Variable focus optics								
sensor length (mm)		70	67	63	60	58	57	56
spot size (mm)		1,3	1,7	2,1	2,8	3,6	4,2	5,0
focus control @ distance (mm)		65	85	110	150	200	240	300

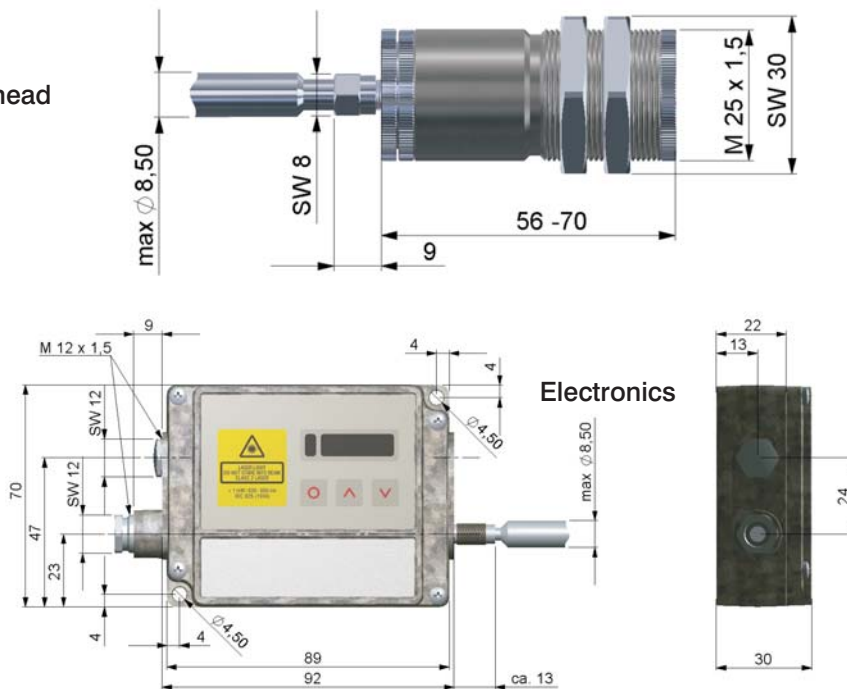
## Optical diagram



focus control @ 300 mm distance

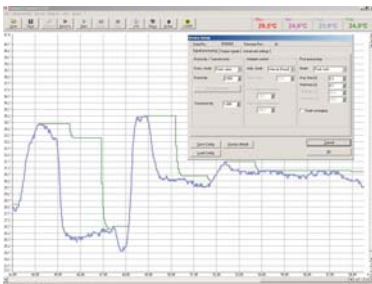
## Dimensions

### Sensing head



### Electronics

## CompactConnect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 5 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- The software CompactConnect allows to customize the sensor to application needs of the user

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Development and sales of portable and stationary infrared measuring instruments.

Specifications are subject to change without notice.  
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