

# 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<br>(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><br>(at ambient temperature 23 ±5°C)                       | ±(0,5% of reading + 1°C)   |
| Repeatability <sup>1)</sup><br>(at ambient temperature 23 ±5°C)                         | ±(0,2% of reading + 1°C)   |
| Temperature resolution<br>(> 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 |

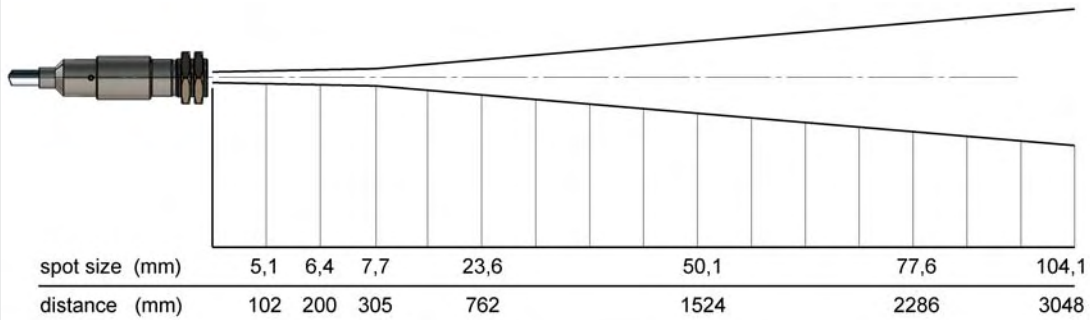
<sup>1)</sup> ε = 1, response time 1 s

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

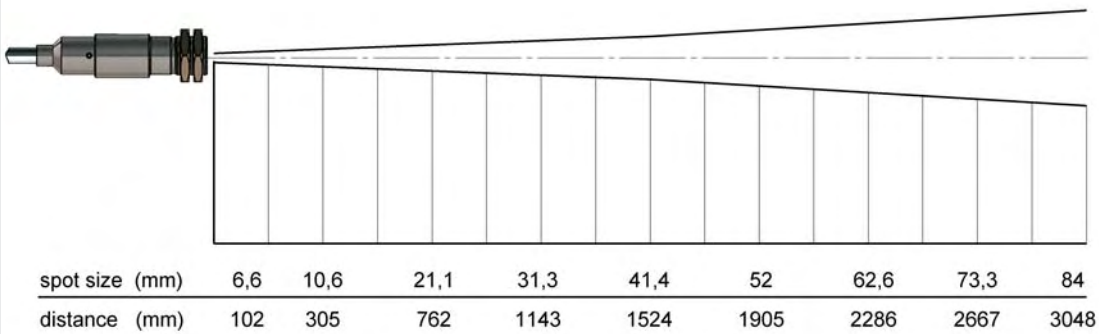
# optris® CT ratio 1M

## Optical specification

### CF-optics

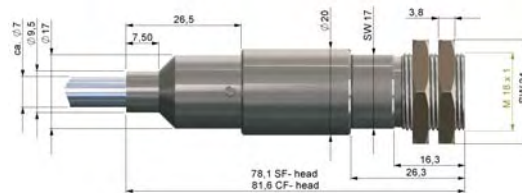


### SF-optics

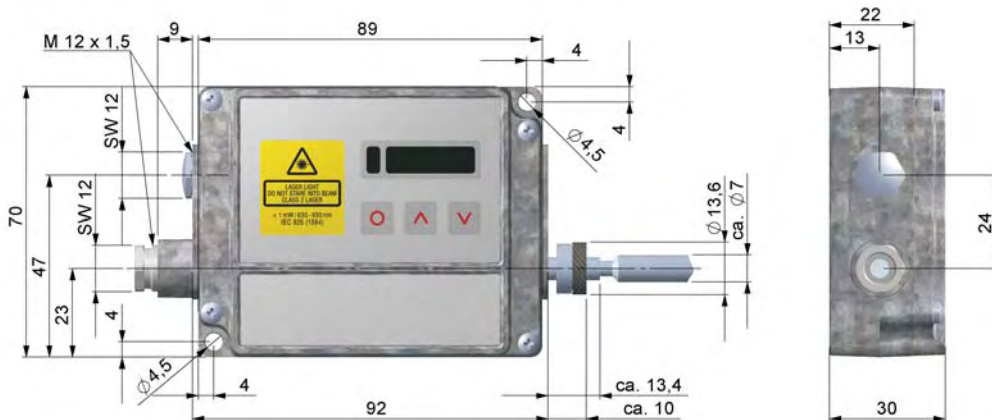


## Dimensions

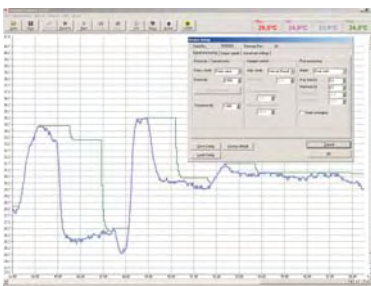
### Sensing head



### 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 sensor outputs
- The software CompactConnect allows to customize the sensor to application needs of the user