

**Non-contact  
temperature measurement  
through flames from  
200 °C to 1650 °C  
(392 °F to 2912 °F)**

**Features:**

- Accurate temperature measurement through flames in the range from 200 °C to 1650 °C (392 °F to 2912 °F) to monitor workpieces inside ovens (heated with fire), to measure inside chemical reactors and to observe the brick temperature in combustion chambers
- Double laser aiming marks real spot location and spot size up from 1.6 mm (0.06 in) at any distance
- Optics 45:1 with selectable focus, compact sensor head size
- Usable up to 85 °C (185 °F) ambient temperature without cooling and automatic laser switch off at 50 °C (122 °F)
- Cooling and protection accessories for harsh environmental conditions



**General specifications**

Environmental rating	IP 65 (NEMA-4)
Ambient temperature <sup>1)</sup>	-20 °C ... 85 °C (-4 °F ... 185 °F) (sensing head) (50 °C [122 °F] with laser ON) -20 °C ... 85 °C (-4 °F ... 185 °F) (electronics)
Storage temperature	-40 °C ... 125 °C (-4 °F ... 257 °F) (sensing head) -40 °C ... 85 °C (-40 °F ... 185 °F) (electronics)
Relative humidity	10 – 95%, non condensing
Vibration	IEC 68-2-6: 3 G, 11 – 200 Hz, any axis
Shock	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	600 g (21.2 oz) (sensing head) 420 g (14.8 oz) (electronics)

**Electrical specifications**

Output / analog	0/4 – 20 mA, 0 – 5/ 10 V, thermocouple J, K
Output / alarm	24 V / 50 mA (open collector)
Optional	Relay: 2 x 60 V DC/ 42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Output / digital	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
Output impedances	mA max. 500 Ω (with 8 – 36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	Programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m (9.8 ft [standard], 26.2 ft, 49.2 ft)
Power supply	8 – 36 V DC
Current draw	max. 160 mA
Laser 635 nm	1 mW, ON/OFF via electronic box or software

**Measurement specifications**

Temperature range (scalable via programming keys or software)	200 °C ... 1450 °C (MT) (392 °F ... 2642 °F [MT]) 400 °C ... 1650 °C (MTH) (752 °F ... 2912 °F [MTH])
Spectral range	3.9 μm
Optical resolution (90 % energy)	45:1
System accuracy (at ambient temp. 23 ± 5 °C) (at ambient tem. 73 ± 9 °F)	± 1 % <sup>2) 3)</sup>
Repeatability (at ambient temp. 23 ± 5 °C) (at ambient tem. 73 ± 9 °F)	± 0.5 % or ± 0.5 °C <sup>3)</sup> (± 0.5 % or ± 0.9 °F <sup>3)</sup> )
Temperature resolution (digital)	0.1 K
Exposure time <sup>4)</sup> (90 % signal)	10 ms
Emissivity/ Gain (adjustable via programming keys or software)	0.100 – 1.100
IR window correction (adjustable via programming keys or software)	0.100 – 1.000
Signal processing (parameter adjustable via software)	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> For object temperatures above >300 °C

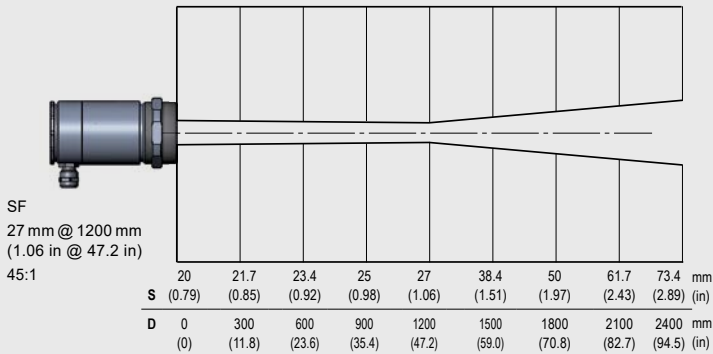
<sup>3)</sup> ε = 1, response time 1 s

<sup>4)</sup> With dynamic adaptation at low signal levels

# optris CTlaser MT

## Optical parameter

Chart SF optics, D:S = 45:1

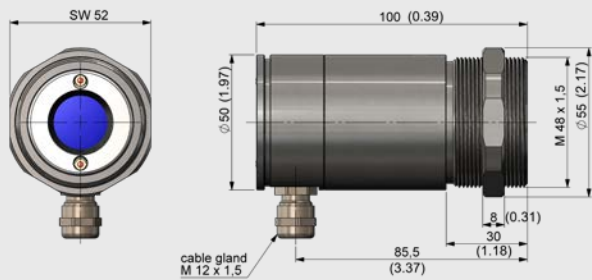


Further optics, D:S = 45:1

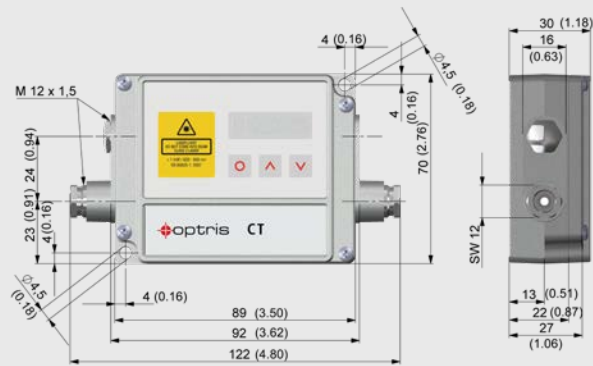
... SF	27 mm @ 1250 mm (1.06 in @ 49.2 in)
... CF1	1.6 mm @ 70 mm (0.06 in @ 2.76 in)
... CF2	3.4 mm @ 150 mm (0.13 in @ 5.91 in)
... CF3	4.5 mm @ 200 mm (0.18 in @ 7.87 in)
... CF4	10 mm @ 450 mm (0.39 in @ 17.7 in)

## Dimensions

### Sensing head



### Electronics



## Accessories

Mounting angle, adjustable  
in two axes (ACCTLAB)



Cooling housing  
(ACCJCTL)



Mounting angle for cooling housing,  
adjustable in two axes (ACCJAB)



Water cooling and air purge for  
sensing head (ACCTLW + ACCTLAP)



Mounting device for cooling housing  
(ACCTLRM)

