

optris® CTlaser MT

Non-contact temperature measurement
through flames from 200°C to 1650°C



FEATURES

- Accurate temperature measurement through flames in the range from 200°C to 1650°C 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 at any distance
- Optics 45:1 with selectable focus, compact sensor head size
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Cooling and protection accessories for harsh environmental conditions

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20°C to 85°C (sensing head, 50°C with laser ON) 0°C to 85 (electronics)
Storage temperature	-40 to 85°C (sensing head) -40°C to 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	600 g (sensing head) 420 g (electronics)

Electrical Specifications

Outputs/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 _{eff} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 5-36 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
Current draw	max. 160 mA
Power Supply	8-36 V DC
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) 400°C - 1650°C (MTH)
Spectral range	3.9 μm
Optical resolution (90 % energy)	45:1
System accuracy (at ambient temp. 23 ± 5°C)	± 1% ¹⁾²⁾
Repeatability (at ambient temp. 23 ± 5°C)	± 0.5% or ± 0.5°C ²⁾
Temperature resolution (digital)	0.1 K
Exposure time ³⁾ (90% signal)	10 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or soft- ware, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	optris Compact Connect

¹⁾ for object temperatures above 300°C

²⁾ $\epsilon = 1$, response time 1 s

³⁾ with dynamic adaptation at low signal levels

