

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 ¹⁾	-20... 85 °C (sensing head, 50 °C with laser ON) -20 ... 85 °C (electronics)
Storage temperature	-40 ... 85 °C (sensing head) -40 ... 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	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
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 ... 1450 °C (MT) 400 ... 1650 °C (MTH)
Spectral range	3.9 μm
Optical resolution (90 % energy)	45:1
System accuracy (at ambient temp. 23 ± 5 °C)	± 1 % ^{2) 3)}
Repeatability (at ambient temp. 23 ± 5 °C)	± 0.5 % or ± 0.5 °C ³⁾
Temperature resolution (digital)	0.1 K
Exposure time ⁴⁾ (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 software, respectively)	Peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	optris Compact Connect

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

²⁾ For object temperatures above >300 °C

³⁾ ε = 1, response time 1 s

⁴⁾ With dynamic adaptation at low signal levels

