

**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 (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 ¹⁾	-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 _{eff} ; 0.4 A; optically isolated
Output / digital	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
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 (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 % ^{2) 3)}
Repeatability (at ambient temp. 23 ±5 °C) (at ambient tem. 73 ±9 °F)	±0.5 % or +0.5 °C ³⁾ (±0.5 % or +0.9 °F 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
IR window correction (adjustable via programming keys or software)	0.100–1.000
Signal processing (parameter adjust- table via software)	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

