

Precise non-contact temperature measurement with precise aiming from 250 °C to 2200 °C (482 °F to 3992 °F)

Features:

- Accurate temperature measurements of metals, secondary metal processing and ceramic materials
- Double laser aiming marks real spot location at any distance
- Optical resolution up to 300:1 with selectable focus
- Temperature ranges from 250 °C to 2200 °C (482 °F to 3992 °F), measuring spots up from 0,45 mm (0.02 in) and response times up from 1 ms
- Usable up to 85 °C (185 °F) ambient temperature without cooling and automatic laser switch off at 50 °C (122 °F)
- Short measuring wavelength of 1.0 µm or 1.6 µm



General specifications

Environmental rating	IP 65 (NEMA-4) front mountable at vacuum processes (up to 10 ⁻³ mbar)
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 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)
Current draw (laser)	Max. 100 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)	485 °C ... 1050 °C (905 °F ... 1841 °F) (1ML) 650 °C ... 1800 °C (1202 °F ... 3272 °F) (1MH) 800 °C ... 2200 °C (1472 °F ... 3992 °F) (1MH1) 250 °C ... 800 °C (482 °F ... 1472 °F) (2ML) 385 °C ... 1600 °C (725 °F ... 2912 °F) (2MH) 490 °C ... 2000 °C (914 °F ... 3632 °F) (2MH1)
Spectral range	1.0 µm (1M) / 1.6 µm (2M)
Optical resolution (90% energy)	150:1 (1ML, 2ML) 300:1 (1MH, 1MH1, 2MH, 2MH1)
System accuracy ²⁾ (at ambient temp. 23 ±5 °C) (at ambient tem. 73 ±9 °F)	±(0.3 % of reading +2 °C) (±[0.3 % of reading +3.6 °F])
Repeatability (at ambient temp. 23 ±5 °C) (at ambient tem. 73 ±9 °F)	±(0.1 % of reading +1 °C) (±[0.1 % of reading +1.8 °F])
Temperature resolution	0.1 K
Exposure time ³⁾	1 ms (90 %)
Emissivity/ Gain (adjustable via sensor or software)	0.100–1.100
IR window correction (adjustable via 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

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

²⁾ ε = 1, Exposure time 1 s

³⁾ With dynamic adaptation at low signal levels

