



Precise non-contact temperature measurement of metal from 50 °C to 1800 °C (122 °F to 3272 °F)

Features:

- Miniaturized Infrared Thermometer with 2.3 μm wave length range for measurements of metals, of secondary metal processing, metal oxides and ceramic materials
- Very small sensing head of 14 mm (0.6 in) diameter and 28 mm (1.1 in) length fits everywhere and is usable up to 85 °C (185 °F) ambient temperature without cooling
- Temperature measuring ranges from 50 °C to 1800 °C (122 °F to 3272 °F) and exposure times starting from 1 ms
- Short wave length range of 2.3 μm to reduce error of reading with measurements on materials with unknown emissivity



Measurement specifications

Temperature range (scalable via programming keys or software)	50 °C ... 400 °C (3ML) (122 °F ... 752 °F) 100 °C ... 600 °C (3MH) (212 °F ... 1112 °F) 150 °C ... 1000 °C (3MH1) ⁴⁾ (302 °F ... 1832 °F) 200 °C ... 1500 °C (3MH2) ⁴⁾ (392 °F ... 2732 °F) 250 °C ... 1800 °C (3MH3) ⁴⁾ (482 °F ... 3272 °F)
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Spectral range	2.3 μm
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Optical resolution (90 % energy)	22:1 (3ML) 33:1 (3MH) 75:1 (3MH1–3MH3)
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System accuracy ²⁾ (at ambient temp. 23 ±5 °C) (73 ±9 °F)	±(0.1 % of reading +1 °C) (±[0.1 % of reading +1.8 °F])
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Repeatability (at ambient temp. 23 ±5 °C) (73 ±9 °F)	±(0.1 % of reading +1 °C) (±[0.1 % of reading +1.8 °F])
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Temperature resolution (display)	0.1 K
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Exposure time ³⁾	1 ms (90 %)
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Emissivity/ Gain (adjustable via programming keys or software)	0.100 – 1.100
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Transmissivity/ Gain (adjustable via programming keys or software)	0.100 – 1.100
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Signal processing (parameter adjustable via programming keys or software, respectively)	Peak hold, valley hold, average; extended hold function with threshold and hysteresis
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Software	optris® Compact Connect
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¹⁾ $T_{object} > T_{sensing\ head} + 25\ °C (+77\ °F)$

²⁾ $\epsilon = 1$, response time 1 s

³⁾ With dynamic adaptation at low signal levels

⁴⁾ Specification valid at $T_{object} \geq$ start of measurement range +50 °C (+131 °F)

General specifications

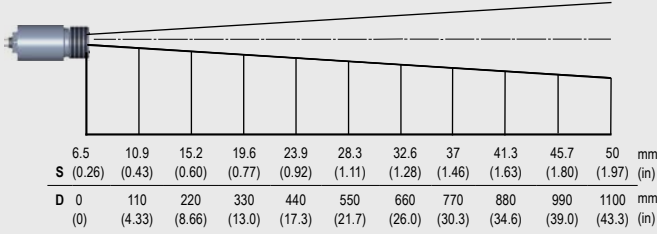
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20 °C to 85 °C (-4 °F to 185 °F) (sensing head) 0 °C to 85 °C (32 °F to 185 °F) (electronics)
Storage temperature	-40 °C to 125 °C (-40 °F to 257 °F) (sensing head) -40 °C to 85 °C (-40 °F to 185 °F) (electronics)
Relative humidity	10–95 %, non condensing
Vibration (sensor)	IEC 60068-2-6 (sinus shaped) IEC 60068-2-64 (broadband noise)
Shock (sensor)	IEC 60068-2-27 (25G and 50G)
Weight	40 g (1.4 oz) (sensing head) / 420 g (14.8 oz) (electronics)

Electrical Specifications

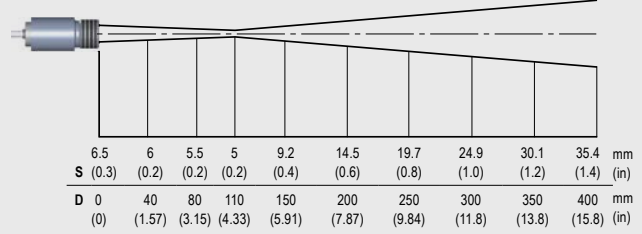
Outputs / analog	0/4–20 mA, 0–5/10 V, thermocouple J, K, alarm
Output / alarm	24 V / 50 mA (open collector)
Optional	Relay: 2 x 60 V DC/ 42 V AC _{eff.} ; 0.4 A; optically isolated
Outputs / digital	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
Output impedances	mA max. 500 Ω (with 8–36 V 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 (9.8 ft)
Power Supply	8–36 V DC
Current draw	Max. 100 mA

Optical specifications

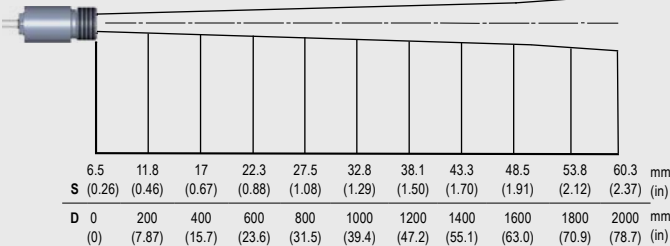
Optics CT 3ML SF, D:S = 22:1



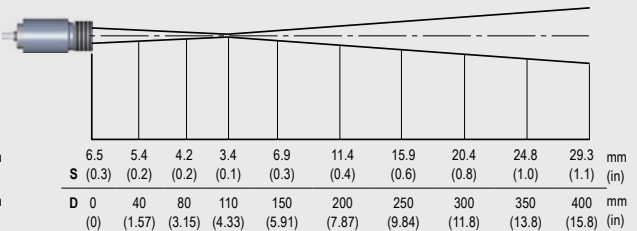
Optics CT 3ML CF, D:S = 22:1 (far field = 9:1)



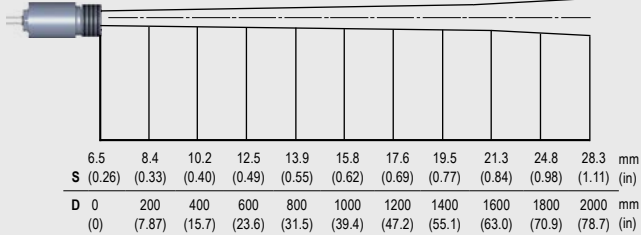
Optics CT 3MH SF, D:S = 33:1



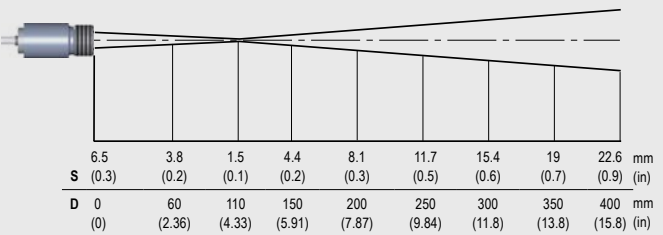
Optics CT 3MH CF, D:S = 33:1 (far field 11:1)



Optics CT 3MH1-H4 SF, D:S = 75:1

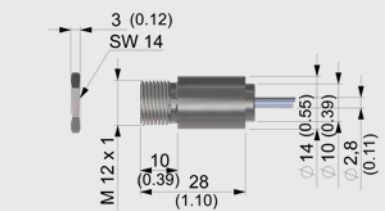


Optics CT 3MH1-H4 CF, D:S = 75:1 (far field 40:1)

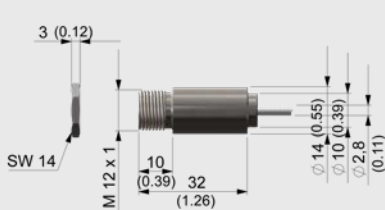


Dimensions

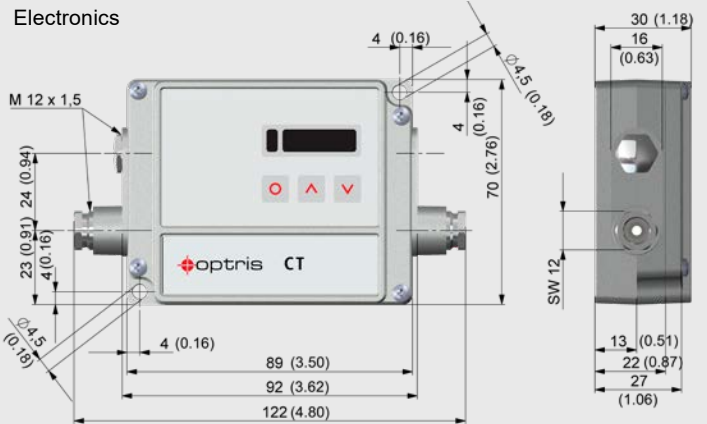
Sensing head (standard)



Sensing head (built-in CF lenses)

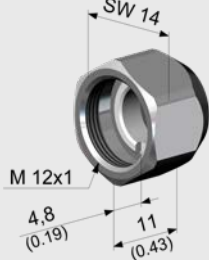


Electronics

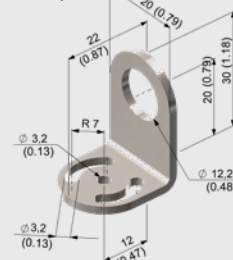


Accessories (examples)

CF-lens (ACCTCFHT)



Mounting bracket, fixed (ACCTCFB)



Air purge collar with integrated CF-lens (ACCTAPLCFHT)

