

Two-wire infrared thermometer for temperature measurement of metals from 250 °C to 1600 °C (482 °F to 2912 °F)

Features:

- Accurate temperature measurements of metals, secondary metal processing and ceramic materials
- Temperature ranges from 250 °C to 1600 °C (482 °F to 2912 °F), measuring spots up from 0.5 mm (0.02 in) and response times up from 10 ms
- Standard two-wire interface for reliable data transfer and easy integration into a PLC
- Innovative double-laser sighting for exact marking of measurement targets
- Fast sensor parameterisation and real-time measurement via USB
- Dependable in ambient temperatures up to 85 °C (185 °F) without additional cooling



Measurement specifications

Temperature range (scalable via software)	250 °C ... 800 °C (482 °F ... 1472 °F) (2ML) 385 °C ... 1600 °C (725 °F ... 2912 °F) (2MH)
Spectral range	1.6 µm
Optical resolution (90 % energy)	150:1 (2ML) 300:1 (2MH)
System accuracy (at T _{amb} = 23 ±5 °C) (23 ±41 °F)	±(0.3 % of reading +2 °C) ±(0.3 % of reading ±3.6 °F)
Repeatability (at T _{amb} = 23 ±5 °C) (23 ±41 °F)	±(0.1 % of reading +1 °C) ±(0.1 % of reading 1.8 °F)
Temperature resolution	0.1 K
Response time (90 % signal)	10 ms
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⁾ In dependence on supply voltage

General specifications

Environmental rating	IP 65 (NEMA-4) front mountable at vacuum processes (up to 10 ⁻³ mbar)
Ambient temperature	-20 °C ... 85 °C (-4 °F ... 185 °F) (50 °C [122 °F] with laser ON)
Storage temperature	-40 °C ... 85 °C (-40 °F ... 185 °F)
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 (21.7 oz)

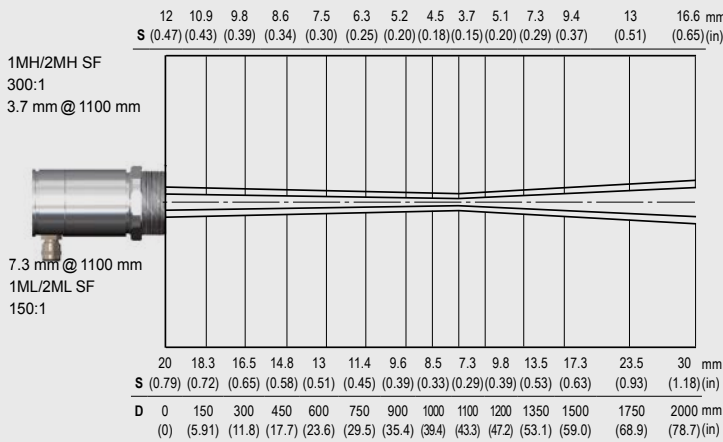
Electrical specifications

Output / analog	4 – 20 mA
Loop resistance	Max. 1000 Ω ¹⁾
Output / alarm	0 – 30 V / 500 mA (open collector)
Output / digital	Uni-/ bidirectional, 9.6 kBaud, 0/3 V Pegel, USB optional
Cable length (connector version only)	3 m / 8 m / 15 m (9.8 ft / 26.2 ft / 49.2 ft)
Current draw (laser)	45 mA at 5 V 20 mA at 12 V 12 mA at 24 V
Power supply	5 – 30 V DC

optris® CSLaser 2M

Optical parameter

Chart of SF optics



Further optics:

D:S = 300:1
(2MH)

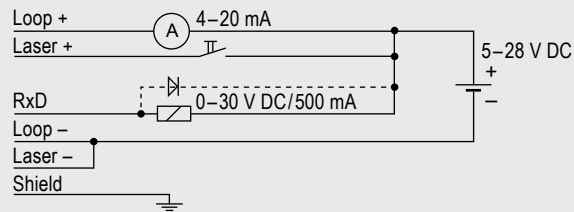
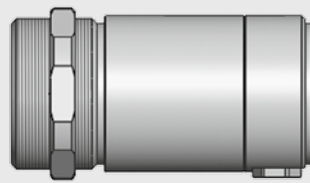
... CF2	0.5 mm @ 150 mm (0.02 @ 5.91 in)
... CF3	0.7 mm @ 200 mm (0.03 in @ 7.87 in)
... CF4	1.5 mm @ 450 mm (0.06 in @ 17.7 in)
... FF	12 mm @ 3600 mm (0.47 in @ 141 in)

D:S = 150:1
(2ML)

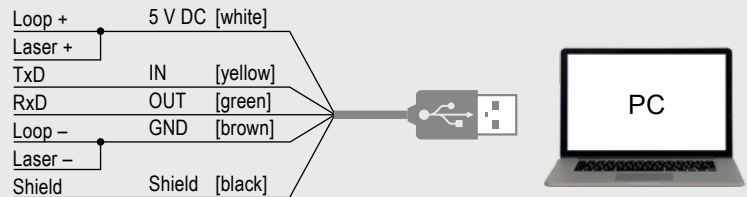
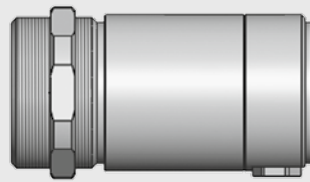
... CF2	1.0 mm @ 150 mm (0.04 in @ 5.91 in)
... CF3	1.3 mm @ 200 mm (0.05 in @ 7.87 in)
... CF4	3.0 mm @ 450 mm (0.12 in @ 17.7 in)
... FF	24 mm @ 3600 mm (0.94 in @ 141 in)

Connections

Analog mode of operation

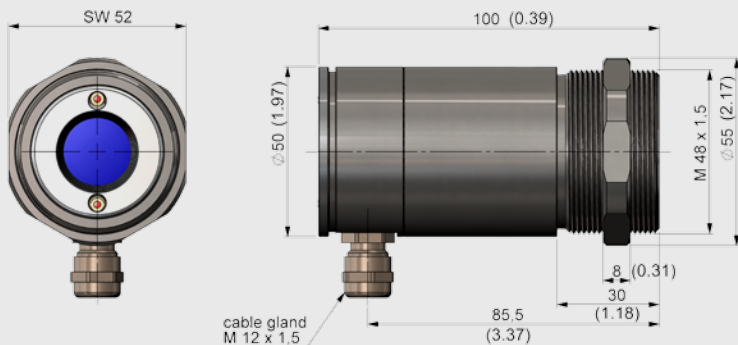


Digital mode of operation



Dimensions

Dimensions CSLaser LT



Electrical connections / emissivity adjustment (sensor back side)

