

Two-wire infrared thermometer for temperature measurement from $-30\text{ }^{\circ}\text{C}$ to $1000\text{ }^{\circ}\text{C}$

Features:

- Temperature range from $-30\text{ }^{\circ}\text{C}$ to $1000\text{ }^{\circ}\text{C}$, measuring spots up from 1.4 mm and response times up from 150 ms
- Single-piece, robust design for easy installation into your process system
- 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 $85\text{ }^{\circ}\text{C}$ without additional cooling



General specifications

Environmental rating	IP 65 (NEMA-4) front mountable at vacuum processes (up to 10^{-3} mbar)
Ambient temperature	$-20 \dots 85\text{ }^{\circ}\text{C}$ ($50\text{ }^{\circ}\text{C}$ with laser ON)
Storage temperature	$-40 \dots 85\text{ }^{\circ}\text{C}$
Relative humidity	10–95 %, non condensing
Vibration	IEC 60068-2-6 (sinus shaped) IEC 60068-2-64 (broadband noise)
Shock	IEC 60068-2-27 (25G and 50G)
Weight	600 g

Electrical specifications

Output / analog	4–20 mA
Loop resistance	Max. $1000\text{ }\Omega$ ¹⁾
Output / alarm	0–30 V / 500 mA (open collector)
Output / digital	Uni-/ bidirectional, 9.6 kBaud, 0/3 V digital level, USB optional
Cable length (connector version only)	3 m / 8 m / 15 m
Current draw (laser)	45 mA at 5 V 20 mA at 12 V 12 mA at 24 V
Power supply	5–30 V DC

Measurement specifications

Temperature range (scalable via software)	$-30 \dots 1000\text{ }^{\circ}\text{C}$
Spectral range	8 – 14 μm
Optical resolution (90 % energy)	50:1
System accuracy (at $T_{\text{Amb}} = 23 \pm 5\text{ }^{\circ}\text{C}$)	$\pm 1\text{ }^{\circ}\text{C}$ or $\pm 1\text{ }^{\circ}\text{C}^2$
Repeatability (at $T_{\text{Amb}} = 23 \pm 5\text{ }^{\circ}\text{C}$)	$\pm 0.5\text{ }^{\circ}\text{C}$ or $\pm 0.5\text{ }^{\circ}\text{C}^2$
Thermal sensitivity (NETD)	0.1 K
Response time (90 % signal)	150 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, IRmobile app

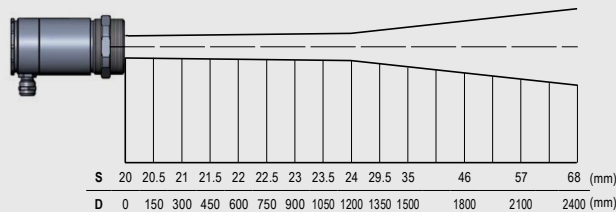
¹⁾ In dependence on supply voltage

²⁾ at object temperatures $>0\text{ }^{\circ}\text{C}$, $\varepsilon = 1$; whichever is greater

optris CSLaser LT

Optical parameter

SF optics, D:S = 50:1, 24 mm @ 1200 mm

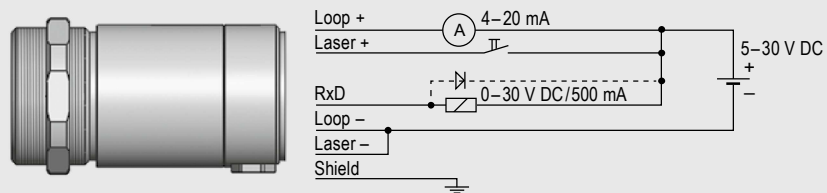


CSLaser LT optics

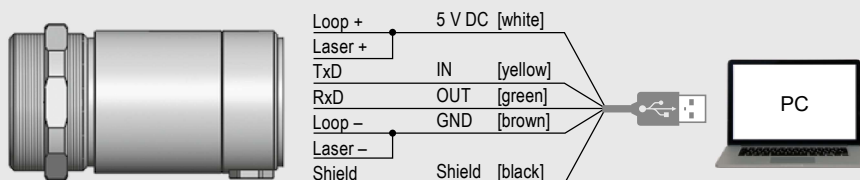
... SF	24 mm @ 1200 mm
... CF1	1.4 mm @ 70 mm
... CF2	3 mm @ 150 mm
... CF3	4 mm @ 200 mm
... CF4	9 mm @ 450 mm

Connections

Analog mode of operation



Digital mode of operation



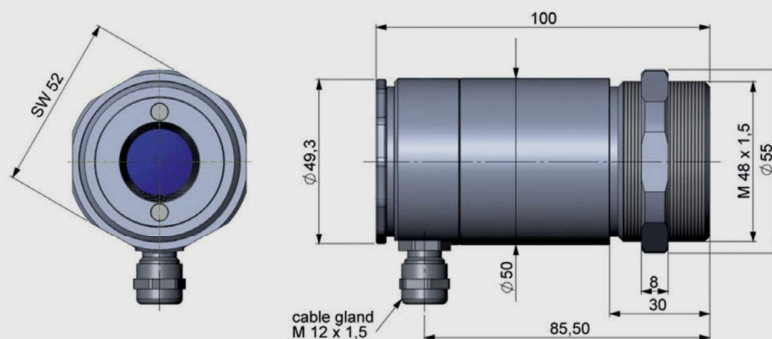
Software / App

The CSLaser LT can be connected to a smartphone via the IR app connector which is compatible with IRmobile app (Android) and CompactConnect software (Windows).



Dimensions in mm

Dimensions CSLaser LT



Electrical connections / emissivity adjustment (sensor back side)

