

optris® CSlaser hs LT

Two-wire IR thermometer for smallest differences in temperature of 0.025 K



FEATURES

- New performance standard for IR measurement of smallest temperature differences of 25 mK
- 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°C without additional cooling
- Wide power range: 5-28 V DC

General specifications

Environmental rating	IP 65 (NEMA-4) front mountable at vacuum processes (up to 10^{-3} mbar)
Ambient temperature	-20°C to 85°C (50°C with laser ON)
Storage temperature	-40°C to 85°C
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

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
Current draw (laser)	45 mA at 5 V 20 mA at 12 V 12 mA at 24 V
Power supply	5 - 28 V DC

Measurement specifications

Temperature range (scalable via software)	-20 - 150°C
Spectral range	8 to 14 μ m
Optical resolution (90 % energy)	50:1
System accuracy (at $T_{amb} = 23 \pm 5^\circ\text{C}$ and $T_{obj} > 20^\circ\text{C}$)	$\pm 1\%$ or $\pm 1^\circ\text{C}^2)$
Repeatability (at $T_{amb} = 23 \pm 5^\circ\text{C}$ and $T_{obj} > 20^\circ\text{C}$)	$\pm 0.3\%$ or $\pm 0.3^\circ\text{C}^2)$
Temperature resolution	0.025 K (at $T_{obj} > 20^\circ\text{C}$ and time constant > 0.2 s)
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

¹⁾ in dependence on supply voltage

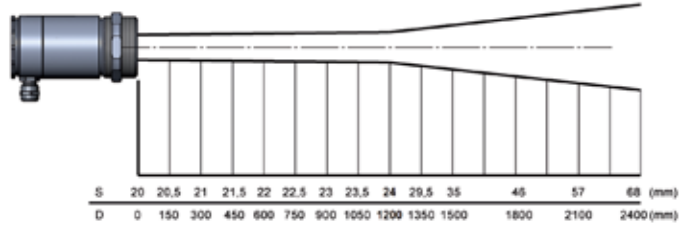
²⁾ whichever is greater

Optical parameter

CSlaser hs LT optics

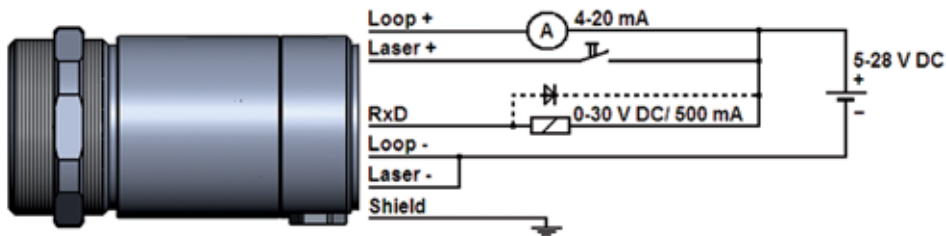
...SF	24 mm @ 1200 mm
...CF1	1.4 mm @ 70 mm
...CF2	3 mm @ 150 mm
...CF3	4 mm @ 200 mm
...CF4	9 mm @ 450 mm

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

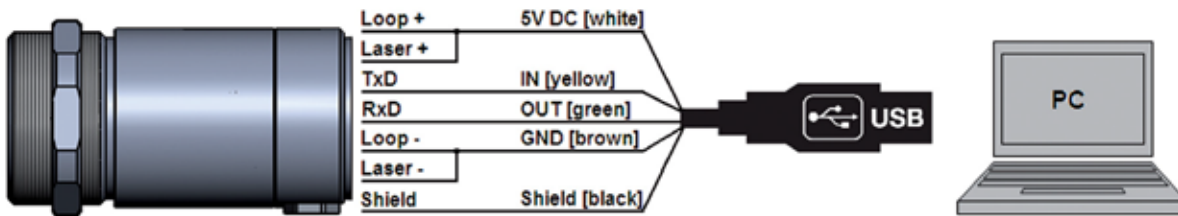


Connections

Analog mode of operation

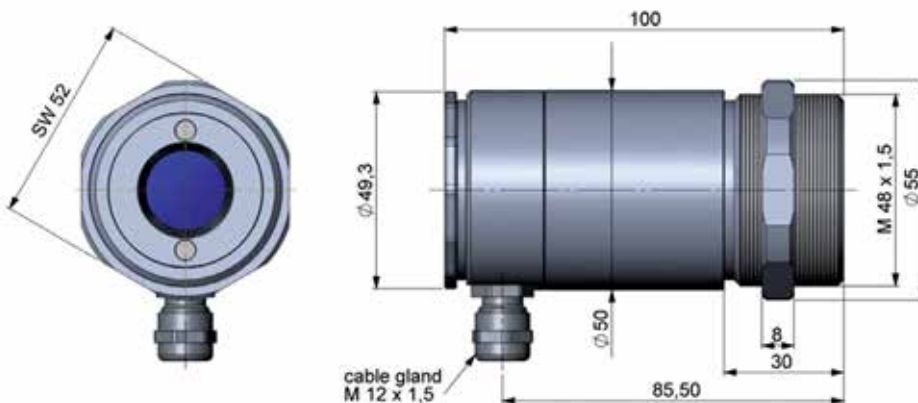


Digital mode of operation



Dimensions

Dimensions CSlaser hs LT



Electrical connections / emissivity adjustment (sensor back side)

