

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 ... 85 °C (50 °C with laser ON)
Storage temperature	–40 ... 85 °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 Ω 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)	–20 ... 150 °C
Spectral range	8–14 µm
Optical resolution (90 % energy)	50:1
System accuracy (at T _{amb} = 23 ± 5 °C and T _{obj} > 20 °C)	±1 % or ±1 °C ²⁾
Repeatability (at T _{amb} = 23 ± 5 °C and T _{obj} > 20 °C)	±0.3 % or ±0.3 °C ²⁾
Temperature resolution	0.025 K (at T _{obj} > 20 °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

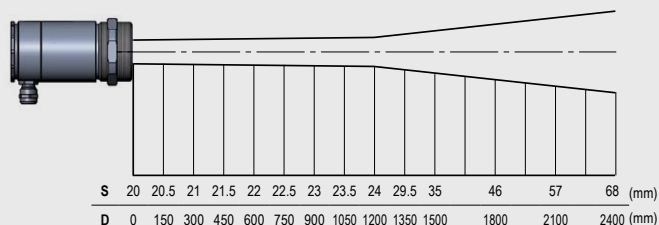
²⁾ Whichever is greater

Optical parameters

CSlaser hs LT optics

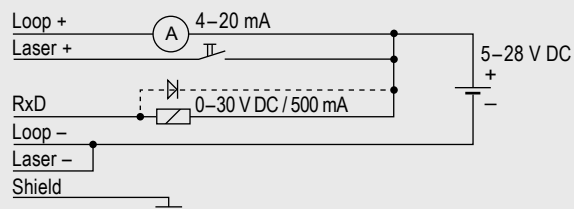
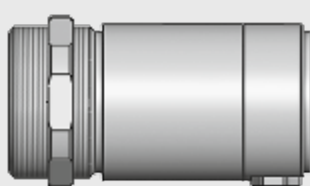
... SF	24 mm @ 1200 mm
... CF1	1.4 mm @ 70 mm
... CF2	3 mm @ 150 mm
... CF3	4 mm @ 200 mm
... CF4	9 mm @ 450 mm

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

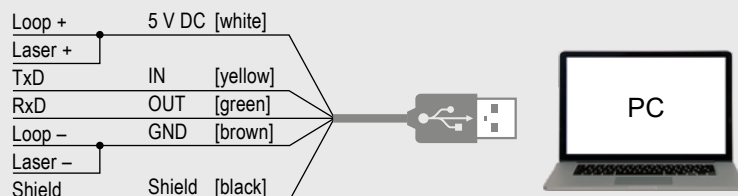
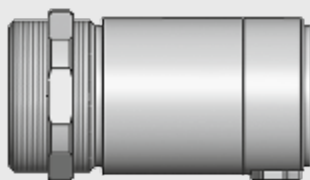


Connections

Analog mode of operation

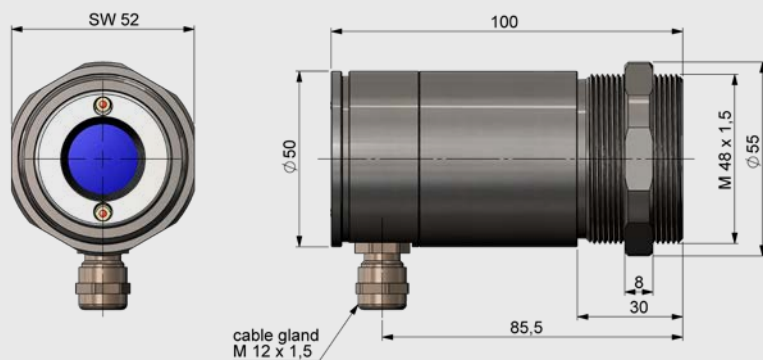


Digital mode of operation



Dimensions

Dimensions CSlaser hs LT



Electrical connections/
emissivity adjustment
(sensor back side)

