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

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Temperature range (scalable via software)	-20 - 150°C
Spectral range	8 to 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

Innovative Infrared Technology

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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

S	20	20,5	21	21,5	22	22,5	23	23,5	24	29,5	35	46	57	68	(mm)
D	0	150	300	450	600	750	900	1050	1200	1350	1500	1800	2100	2400	(mm)
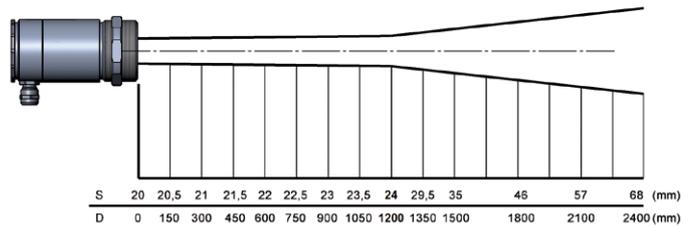
Connections

Analog mode of operation

Loop +
Laser +   (A) 4-20 mA
RxD   0-30 V DC / 500 mA
Loop -
Laser -
Shield

5-28 V DC
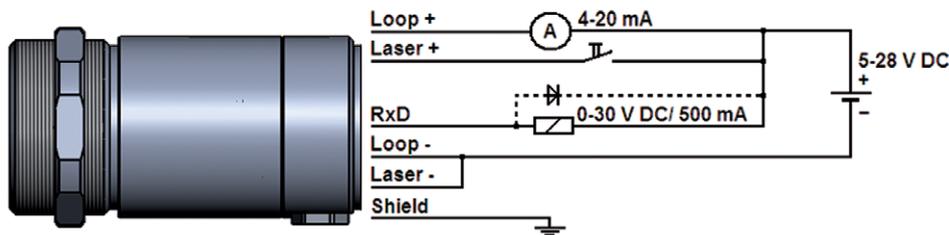
Digital mode of operation

Loop +	5V DC [white]
Laser +	
TxD	IN [yellow]
RxD	OUT [green]
Loop -	GND [brown]
Laser -	
Shield	Shield [black]

USB — PC
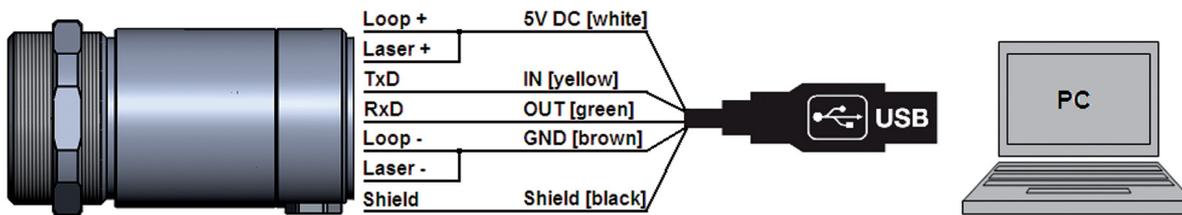
Dimensions

Dimensions CSlaser hs LT

SW 52
Ø 49,3
Ø 50
100
M 48 x 1,5
Ø 55
8
30
85,50
cable gland M 12 x 1,5
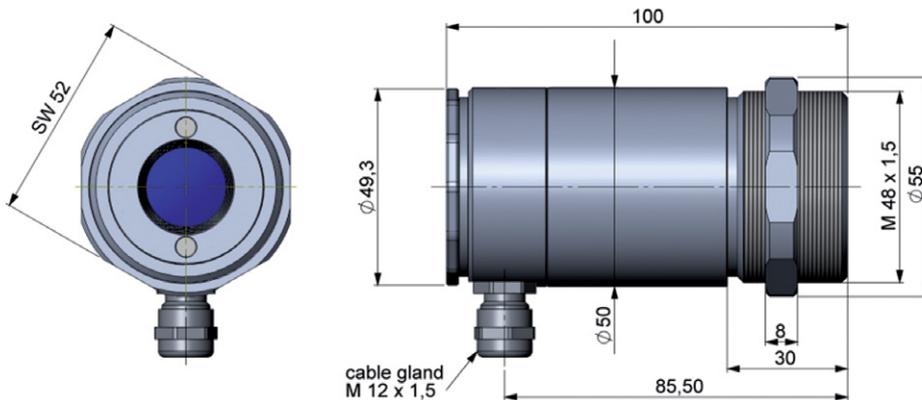
Electrical connections / emissivityadjustment (sensor back side)

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infrared thermometers

CE