

**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 systeme
- 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
- Wide power range: 5–28 V DC



**Measurement specifications**

Temperature range (scalable via software)	-20 °C ... 150 °C (-4 °F ... 302 °F)
Spectral range	8 – 14 µm
Optical resolution (90 % energy)	50:1
System accuracy (at T <sub>amb</sub> = 23 ±5 °C and T <sub>Obj</sub> >20 °C) (at T <sub>amb</sub> 73 ±41 °F and T <sub>Obj</sub> >68 °F)	±1 % or ±1 °C <sup>2)</sup> (±1 % or ±34 °F <sup>2)</sup> )
Repeatability (at T <sub>amb</sub> = 23 ±5 °C and T <sub>Obj</sub> >20 °C) (at T <sub>amb</sub> 73 ±41 °F and T <sub>Obj</sub> >68 °F)	±0.3 % or ±0.3 °C <sup>2)</sup> (±0.3 or ±32.5 °F <sup>2)</sup> )
Temperature resolution	0.025 K (at T <sub>Obj</sub> >20 °C and time constant >0.2 s) (0.025 K [at T <sub>Obj</sub> >68 °F 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

<sup>1)</sup> In dependence on supply voltage

<sup>2)</sup> Whichever is greater

**General specifications**

Environmental rating	IP 65 (NEMA-4) front mountable at vacuum processes (up to 10 <sup>-3</sup> 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)

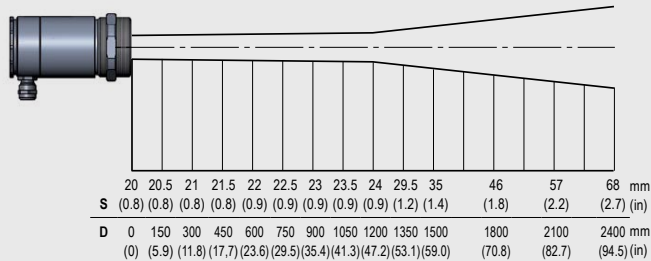
**Electrical specifications**

Output / analog	4 – 20 mA
Loop resistance	Max. 1000 Ω <sup>1)</sup>
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 hs LT

## Optical parameter

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

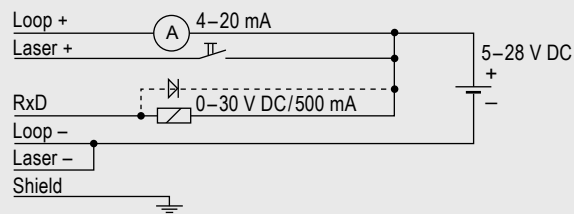
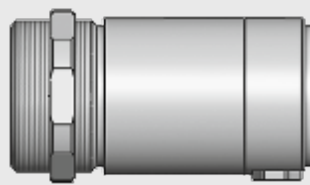


CSLaser hs LT optics

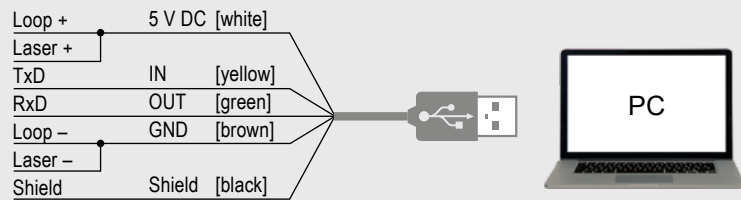
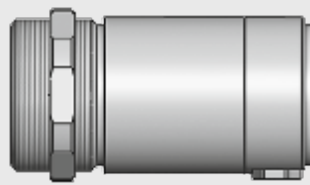
... SF	24 mm @ 1200 mm (0.9 in @ 47.2 in)
... CF1	1.4 mm @ 70 mm (0.0 in @ 2.8 in)
... CF2	3 mm @ 150 mm (0.1 in @ 5.9 in)
... CF3	4 mm @ 200 mm (0.2 in @ 7.9 in)
... CF4	9 mm @ 450 mm (0.4 in @ 17.7 in)

## Connections

Analog mode of operation

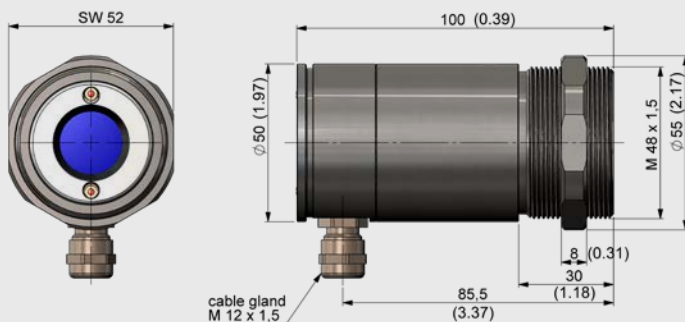


Digital mode of operation



## Dimensions

Dimensions CSLaser LT



Electrical connections / emissivity adjustment (sensor back side)

