

**Two-wire infrared thermometer for temperature measurement of glass from 200 °C to 1650 °C (392 °F to 3002 °F)**

**Features:**

- Accurate glass temperature measurements on flat glass lines, container glass machines, bulb manufacturing and car glass finishing
- Measuring spots up from 1.6 mm (0.06 in) and response times up from 30 ms
- 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



**Measurement specifications**

Temperature range (scalable via software)	200 °C ... 1650 °C (392 °F ... 3002 °F)
Spectral range	5.0 µm
Optical resolution (90 % energy)	45:1
System accuracy (at T <sub>amb</sub> = 23 ±5 °C) (23 ±41 °F)	±1 % or ±1 °C <sup>2)</sup> (±1 % or ±1.8 °F <sup>2)</sup> )
Repeatability (at T <sub>amb</sub> = 23 ±5 °C) (23 ±41 °F)	±0.5 or ±0.5 °C <sup>2)</sup> (±0.5 or ±0.9 °F <sup>2)</sup> )
Temperature resolution	0.1 K
Response time (90 % signal)	30 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)

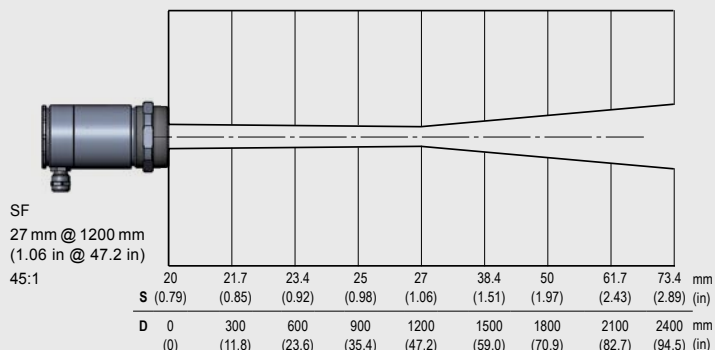
**Electrical specifications**

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 G5HF

## Optical parameter

Chart of SF optics, D:S = 45:1

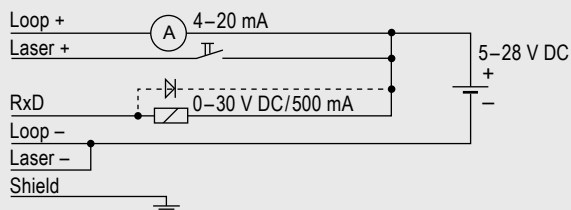
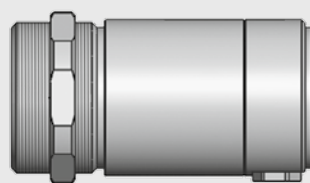


Further optics, D:S = 45:1

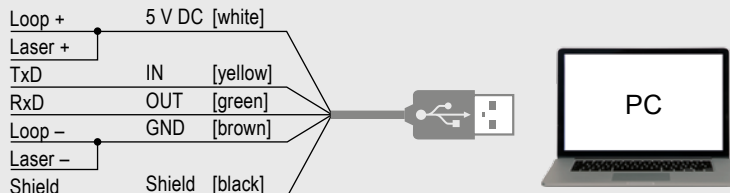
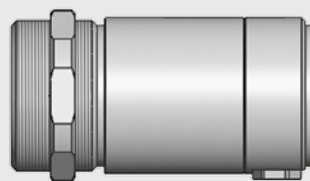
... SF	27.0 mm @ 1250 mm (1.06 in @ 49.2 in)
... CF1	1.6 mm @ 70 mm (0.06 in @ 2.76 in)
... CF2	3.4 mm @ 150 mm (0.13 in @ 5.91 in)
... CF3	4.5 mm @ 200 mm (0.18 in @ 7.87 in)
... CF4	10.0 mm @ 450 mm (0.39 in @ 17.7 in)

## Connections

Analog mode of operation

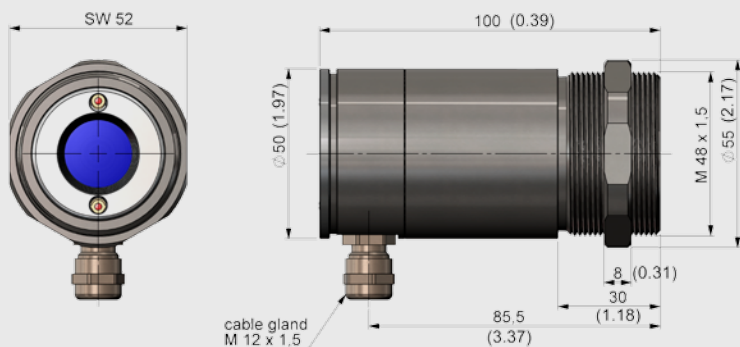


Digital mode of operation



## Dimensions

Dimensions CSLaser LT



Electrical connections / emissivity adjustment (sensor back side)

