

# More Precision.



## optris® CS laser

Two-wire infrared thermometer  
for temperature measurement with precise aiming  
from -30°C to 1600°C



### FEATURES

- Temperature ranges from -30°C to 1600°C, measuring spots up from 0,5mm and response times up from 10ms
- Optical resolution up to 300:1 with selectable focus
- Double laser aiming marks real spot location and spot size at any distance
- Scalable 4 - 20 mA analog output/ additional simultaneous alarm output
- Optional USB programming interface and software
- Emissivity directly adjustable on sensor or via software
- Short circuit and polarity reversal protection
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Wide power range: 5 – 28 V DC

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20 - 85°C (50°C with laser on)
Storage temperature	-40 - 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 $\Omega$ <sup>1)</sup>
Output/ alarm	0 - 30 V/ 500mA (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)	45mA @ 5V 20mA @ 12V 12mA @ 24V
Power supply	5 - 28 V DC

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

Measurement specifications	
Temperature range (scalable via software)	-30°C - 1000°C (LT) 385°C - 1600°C (2MH)
Spectral range	8 - 14 $\mu\text{m}$ (LT) 1,6 $\mu\text{m}$ (2MH)
Optical resolution	50:1 (LT) 300:1 (2MH)
System accuracy LT (at ambient temperature 23 $\pm$ 5°C)	$\pm$ 1% or $\pm$ 1°C <sup>1)</sup>
System accuracy 2MH (at ambient temperature 23 $\pm$ 5°C)	$\pm$ (0,3% of reading + 2°C) <sup>2)</sup>
Repeatability LT (at ambient temperature 23 $\pm$ 5°C)	$\pm$ 0,5% or $\pm$ 0,5°C <sup>1)</sup>
Repeatability 2MH (at ambient temperature 23 $\pm$ 5°C)	$\pm$ (0,1% of reading + 1°C) <sup>2)</sup>
Temperature resolution (digital)	0,1 K
Response time (90% signal)	150 ms (LT) 10 ms (2MH)
Emissivity/ Gain (adjustable via switches or via 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

<sup>1)</sup> whichever is greater

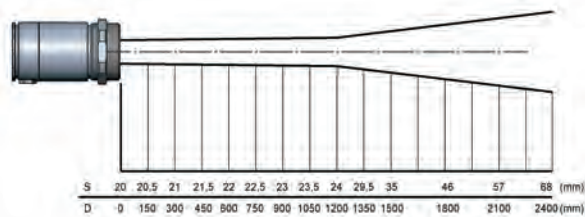
<sup>2)</sup>  $\epsilon=1$ , Response time=1s

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## Optical Parameter

### CSlaser LT optics

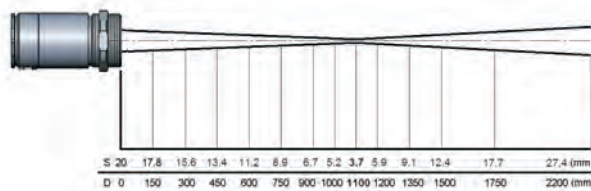
...SF	24 mm@ 1200 mm
...CF1	1,4 mm@ 70 mm
...CF2	3 mm@ 150 mm
...CF3	4 mm@ 200 mm
...CF4	9 mm@ 450 mm



LT SF optics 24mm@ 1200mm (50:1)

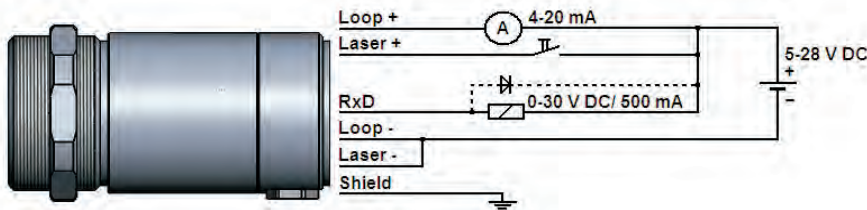
### CSlaser 2MH optics

...FF	12 mm@ 3600 mm
...SF	3,7 mm@ 1100 mm
...CF2	0,5 mm@ 150 mm
...CF3	0,7 mm@ 200 mm
...CF4	1,5 mm@ 450 mm

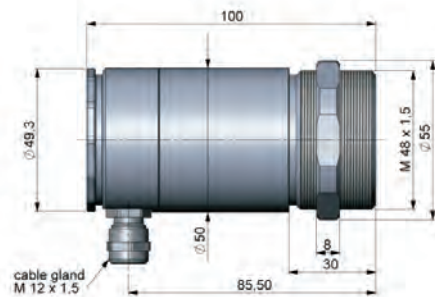
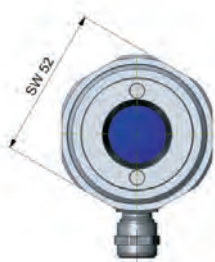
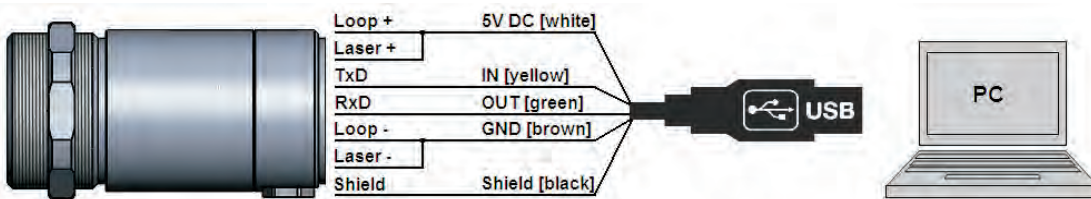


2MH SF optics 3,7mm@ 1100mm (300:1)

### Analog mode



### Programming mode

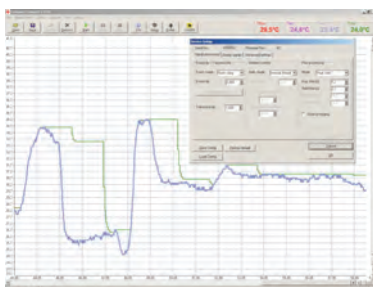


Dimensions



Electrical connections/ Emissivity setup (sensor back side)

### CompactConnect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of the sensor outputs
- The software CompactConnect allows to customize the sensor to application needs of the user

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Specifications are subject to change without notice.  
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