

More Precision.



optris® CT laser 1M/ 2M

Non-contact temperature measurement with precise aiming from 250°C to 1800°C



FEATURES

- Accurate temperature measurements of metals, secondary metal processing and ceramic materials
- Double laser aiming marks real spot location at any distance
- Optical resolution up to 300:1 with selectable focus
- Temperature ranges from 250°C to 1800°C, measuring spots up from 0,45 mm and response times up from 1ms
- Usable up to 85°C ambient temperature without cooling and automatic laser switch off at 50°C
- Short measuring wave length of 1 μm or 1,6 μm

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 85°C (50°C with laser ON) electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 85°C electronics: -40 - 85°C
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11 - 200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 600 g electronics 420 g
Electrical specifications	
Outputs/analog	0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K
Alarm output	Open - collector (24V / 50mA)
Optional:	relay: 2 x 60 V DC/42 V AC _{eff.} ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 5 - 36 V DC) mV min. 100 k Ω load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 160 mA
Power supply	8 - 36 V DC
Laser 635 nm	1mW, ON/OFF via electronic box or software

Measurement specifications	
Temperature range (scalable via programming keys or software)	485 - 1050°C (1ML) 650 - 1800°C (1MH) 250 - 800°C (2ML) 385 - 1600°C (2MH)
Spectral range	1 μm (1M) 1.6 μm (2M)
Optical resolution (90% Energy)	150:1 (1ML, 2ML) 300:1 (1MH, 2MH)
System accuracy ¹⁾ (at ambient temperature 23 \pm 5°C)	\pm (0.3% of reading +2°C)
Repeatability (at ambient temperature 23 \pm 5°C)	\pm (0.1% of reading +1°C)
Temperature resolution	0.1 K (1ML, 2ML) 0.2 K (1MH, 2MH)
Exposure time (90% signal) ²⁾	1 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.000
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

¹⁾ $\epsilon = 1$, response time 1 s

²⁾ with dynamic adaptation at low signal levels

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Optical specifications

1MH/ 2MH CF2 S 20 13,5 7 0,5 7,4 14,2 21 34,7 48,4 62 75,7 89,4 (mm)
300:1
0,5 mm@ 150 mm



1ML/ 2ML CF2 S 20 13,7 7,3 1 8 15 22 36 50 64 78 92 (mm)
150:1
D 0 50 100 150 200 250 300 400 500 600 700 800 (mm)



1MH/ 2MH CF4 S 20 18 16 13,9 11,8 9,8 7,7 5,6 3,6 1,5 3,9 8,7 13,5 18,3 (mm)
300:1
1,5 mm@ 450 mm



1ML/ 2ML CF4 S 20 18,1 16,3 14,4 12,5 10,6 8,7 6,8 4,9 3 5,6 10,7 12,8 21 (mm)
150:1
D 0 50 100 150 200 250 300 350 400 450 500 600 700 800 (mm)

D = Distance
S = Spotsize

1MH/2MH CF3 S 20 15,2 10,3 5,6 0,7 5,9 11,1 21,4 31,8 42,1 52,5 62,8 (mm)
300:1
0,7 mm@ 200 mm



1ML/ 2ML CF3 S 20 15,4 10,7 6 1,3 6,7 12 22,6 33,3 44 55 65 (mm)
150:1
D 0 50 100 150 200 250 300 400 500 600 700 800 (mm)



1MH/ 2MH SF S 20 17,8 15,6 13,4 11,2 8,9 6,7 5,2 3,7 5,9 9,1 12,4 17,7 27,4 (mm)
300:1
3,7 mm@ 1100 mm



1ML/ 2ML SF S 20 16,3 16,5 14,8 13 11,4 9,6 8,5 7,3 9,8 13,5 17,3 23,5 34,6 (mm)
150:1
D 0 150 300 450 600 750 900 1000 1100 1200 1350 1500 1750 2200 (mm)

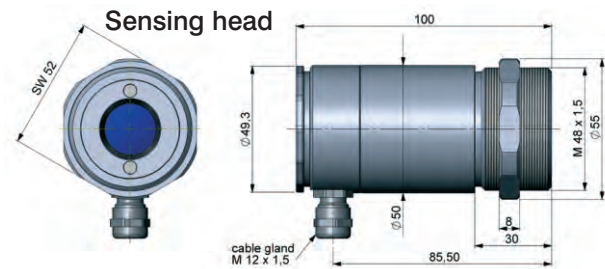
1MH/ 2MH FF S 20 19 18 17 16 15 14 13,4 12 16,5 24,4 33,4 40 (mm)
300:1
12 mm@ 3600 mm



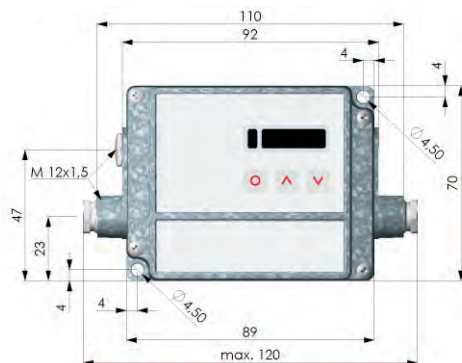
1ML/ 2ML FF S 20 20,5 21 21,5 22 22,5 23 23,4 24 29 41 53,4 62,5 (mm)
150:1
D 0 450 900 1350 1800 2250 2700 3000 3600 4000 5000 6000 6750 (mm)



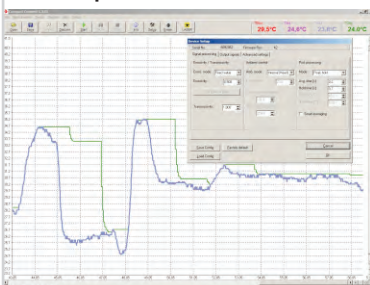
Dimensions



Electronics



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 outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software CompactConnect allows to customize the sensor to application needs of the user