

More Precision.



optris® CT 1M/2M

Precise non-contact temperature measurement from 250°C to 1800°C



FEATURES

- New: Miniaturized Infrared Thermometer with 1.0 μm respectively 1.6 μm wave length range for measurements of metals, of secondary metal processing, metal oxides and ceramic materials
- Very small sensing head of 14 mm diameter and 28 mm length fits everywhere
- Usable up to 125°C ambient temperature without cooling
- Temperature ranges from 250°C to 1800°C, measuring spots up from 1.8 mm and exposure times up from 1ms
- Short measuring wave length of 1.0 μm respectively 1.6 μm reduces error of temperature readings on surfaces with low or unknown emissivity

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 100°C (1M) / 125°C (2M) electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 100°C (1M) / 125°C (2M) 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 40 g electronics 420 g
Electrical specifications	
Outputs/analog	0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K, alarm
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 8 - 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. 100 mA
Power supply	8 - 36 V DC

Measurement specifications	
Temperature ranges (scalable via programming keys or software)	485 - 1050°C (1ML)
	650 - 1800°C (1MH)
	250 - 800°C (2ML)
	385 - 1600°C (2MH)
Spectral ranges	1.0 μm (1M) / 1.6 μm (2M)
Optical resolution CT 1ML/2ML (90% energy)	40:1 (2,7mm @ 110mm)
Optical resolution CT 1MH/2MH (90% energy)	75:1 (1,5mm @ 110mm)
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 (digital)	0.1 K
Exposure time ²⁾	1 ms (90%)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

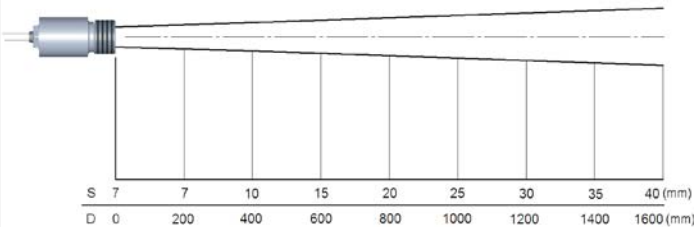
¹⁾ $\epsilon = 1$, response time 1s

²⁾ with dynamic adaptation at low signal levels

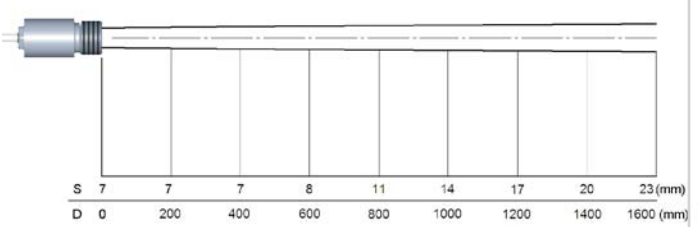
optris® CT 1M/2M

Optical specifications

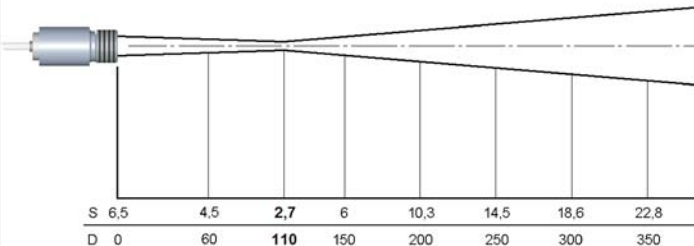
CT 1ML/2ML SF D:S = 40:1



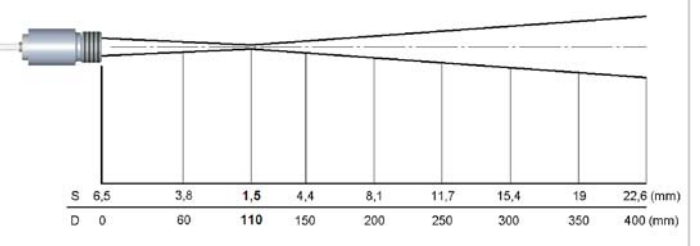
CT 1MH/2MH SF D:S = 75:1



CT 1ML/2ML CF D:S = 40:1 (far field 12:1)

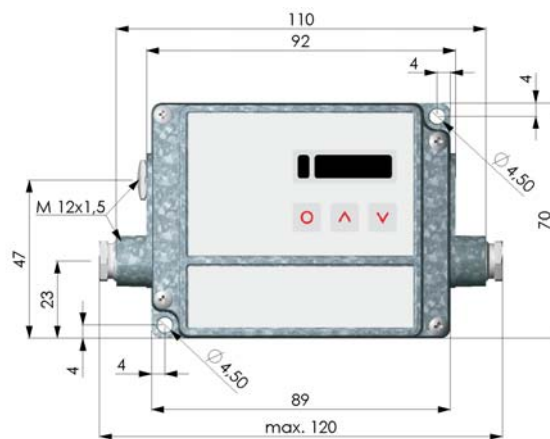
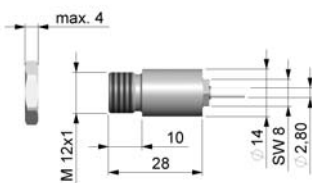


CT 1MH/2MH CF D:S = 75:1 (far field 14:1)

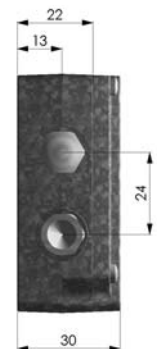


Dimensions

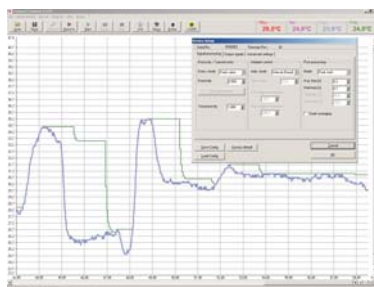
Sensing head



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