



## CT 3M

### Precise non -contact temperature measurement from 50°C to 1800°C

- **New: Miniaturized Infrared Thermometer with 2,3 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 85°C ambient temperature without cooling**
- **For measurements on metal surfaces with a very low start temperature of 50°C**
- **Short wave length range of 2.3 μm to reduce error of reading with measurements on materials with unknown emissivity**



#### ■ General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -40 - 85°C electronics: 0 - 85°C
Storage temperature	sensing head: -40 -125°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 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 <sub>eff</sub> ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500Ω (with 8 - 36 V DC) mV min. 100 kΩ load impedance thermocouple 20Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m
Current draw	max. 100 mA
Power supply	8 - 36 V DC

#### ■ Measurement specifications

Temperature ranges (scalable via programming keys or software) <sup>1)</sup>	50- 400°C (3ML) 100- 600°C (3MH) 150- 900°C (3MH1) 200- 1200°C (3MH2) 350 - 1800°C (3MH3)
Spectral ranges	2.3 μm
Optical resolution CT 3ML (90% Energy)	22:1
Optical resolution CT 3MH (90% Energy)	33:1
Optical resolution CT 3MH1 - H3 (90% Energy)	75:1
System accuracy <sup>2)</sup> (at ambient temperature 23 ±5°C)	±(0.3% of reading +2°C)
Repeatability (at ambient temperature 23 ±5°C)	±(0.1% of reading +1°C)
Temperature resolution (digital)	0.1 K
Exposure time (90% signal) <sup>3)</sup>	1 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

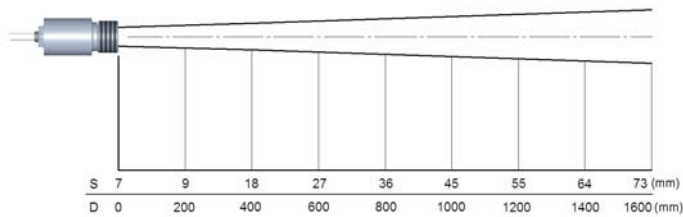
<sup>1)</sup> T<sub>object</sub> > T<sub>sensing head</sub> +25°C

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

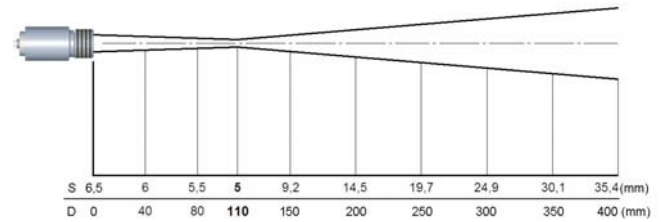
<sup>3)</sup> with dynamic adaptation at low signal levels

## Optical specifications

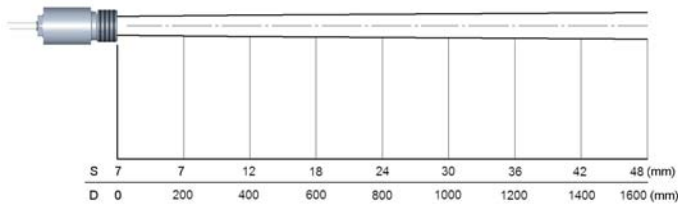
CT 3ML SF D:S = 22:1



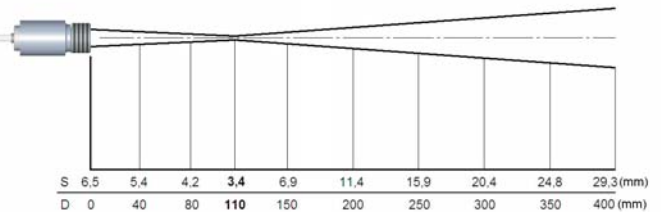
CT 3ML CF D:S = 22:1 (far field = 9:1)



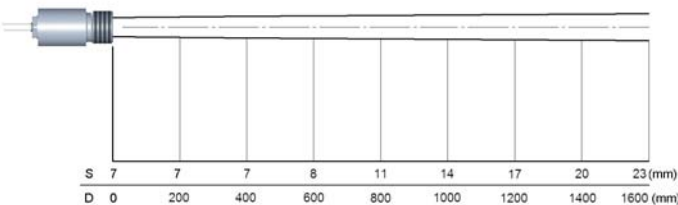
CT 3MH SF D:S = 33:1



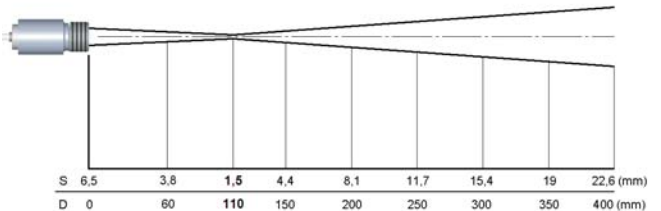
CT 3MH CF D:S = 33:1 (far field = 11:1)



CT 3MH1-H3 SF D:S = 75:1

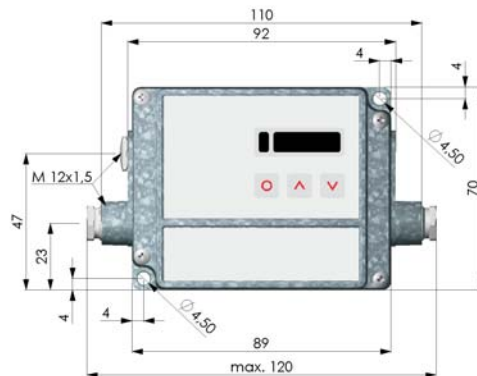
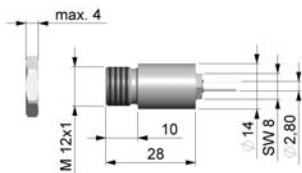


CT 3MH1-H3 CF D:S = 75:1 (far field = 40:1)



## Dimensions

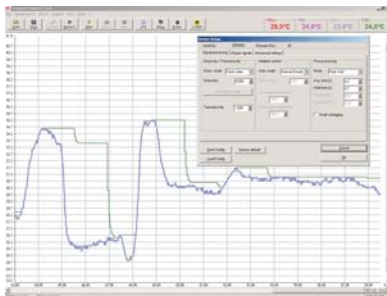
Sensing head



Electronics



## Compact Connect 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

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