

More Precision.



optris[®] CT 3M

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



FEATURES

- 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 _{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 |
| Current draw | max. 100 mA |
| Power supply | 8 - 36 V DC |

| Measurement specifications | |
|---|---|
| Temperature ranges (scalable via programming keys or software) ¹⁾ | 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 ²⁾ (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 (90% signal) ³⁾ | 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 |

¹⁾ T_{object} > T_{sensing head} +25°C

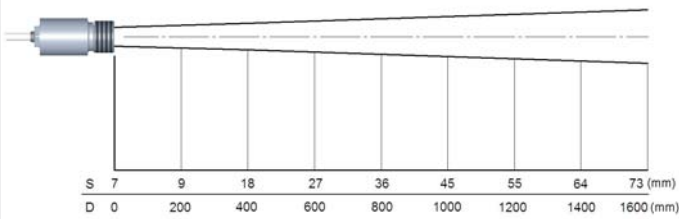
²⁾ ϵ = 1, Response time 1 s

³⁾ with dynamic adaptation at low signal levels

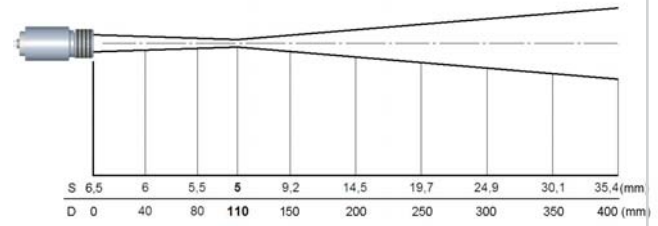
optris® CT 3M

Optical specifications

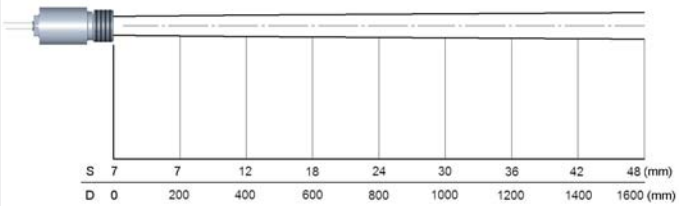
CT 3ML SF D:S = 22:1



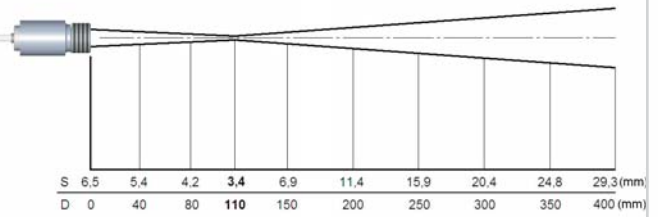
CT 3ML CF D:S = 22:1 (far field = 9:1)



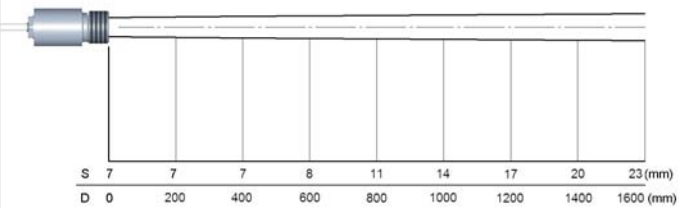
CT 3MH SF D:S = 33:1



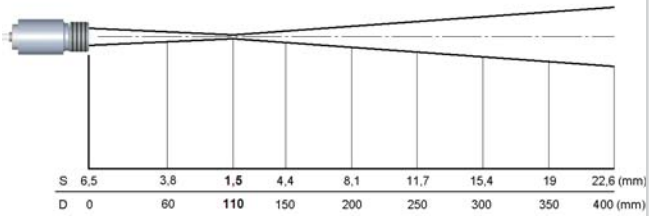
CT 3MH CF D:S = 33:1 (far field = 11:1)



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

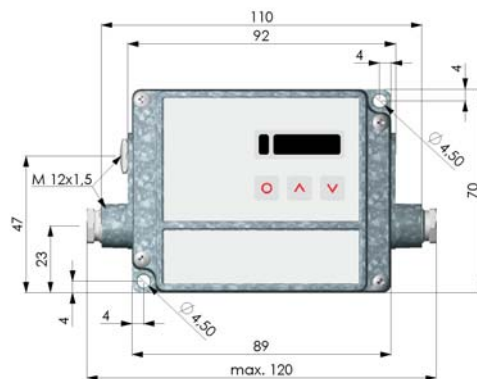
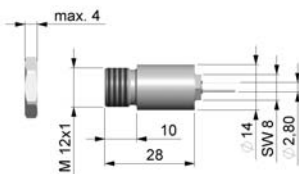


CT 3MH1-H3 CF D:S = 75:1 (far field = 40:1)



Dimensions

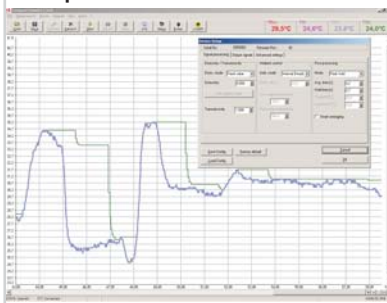
Sensing head



Electronics



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

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Development and sales of portable and stationary infrared measuring instruments.

Specifications are subject to change without notice.
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