

**Low cost micro size
infrared thermometer
for precise temperature
measurement of metal
from 50 °C to 600 °C
(122 °F to 1112 °F)**



Features:

- Size: M12x1, 28 mm (1.1 in) long, stainless steel housing
- Miniaturized Infrared Thermometer with 2.3 µm spectral response for measurements of metals, of secondary metal processing, metal oxides and ceramic materials
- For measurements on metal surfaces with a very low start temperature of 50 °C (122 °F)
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Scalable analog output: 0–10 V or 0–5 V and additional simultaneous alarm output
- Adjustable signal processing
- Optional USB programming interface and software
- Wide power range: 5–30 V DC

Measurement Specifications

Temperature range ¹⁾ (scalable via software)	50 °C ... 350 °C (122 °F ... 662 °F) (3ML) 100 °C ... 600 °C (212 °F ... 1112 °F) (3MH)
Spectral range	2.3 µm
Optical resolution (90 % energy)	22:1 (3ML) 33:1 (3MH)
Optics	SF, CF, CF1
System accuracy ²⁾ (at ambient temp. 23 ±5 °C)	±(0.3 % of reading +2 °C [3.6 °F]) ^{3), 4)}
Repeatability (at ambient temp. 23 ±5 °C)	±(0.1 % of reading +1 °C [1.8 °F]) ^{3), 4)}
Temperature resolution (NETD)	0.1 K
Response time ³⁾ (90 %)	25 ms–999 s (adjustable)
Emissivity / Gain (adjustable via 0–5 V DC input or software)	0.100–1.100
Transmissivity (adjustable via software)	0.100–1.100
Signal processing (parameter adjustable via software)	Peak hold, valley hold, average; extended hold function with threshold and hysteresis
Dimensions of electronics	Length: 35 mm (1.4 in) Diameter: 12 mm (0.5 in)
Software	optris® Compact Connect

¹⁾ $T_{object} > T_{sensing\ head} + 25\ ^\circ C$
²⁾ $\epsilon = 1$, Response time 1 s
³⁾ With dynamic adaptation at low signal levels

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	–20 °C ... 85 °C (–4 °F ... 185 °F) (sensing head) –20 °C ... 80 °C (–4 °F ... 176 °F) (electronics)
Storage temperature	–40 °C ... 85 °C (–40 °F ... 185 °F) (sensing head and electronics)
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	42 g (1.5 oz)

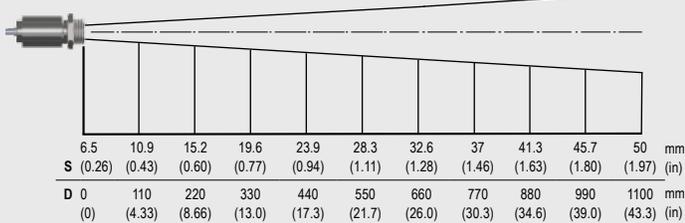
Electrical Specifications

Output / analog	0–5 V or 0–10 V 1 / 10 / 100 mV / °C
Output / alarm	0–30 V / 500 mA (open collector)
Output / digital	Uni/ bidirectional, 9.6 kBaud, 0/3 V digital level/ USB optional
LED functions	Alarm indication, automatic aiming support, self diagnostic, temperature indication (via temp. code)
Input (0–10 V)	Arogrammable functional input for external emissivity setting/ambient temperature adjustment, triggered signal output or peak-hold function
Cable length Head – electronics After electronics:	0.5 m (standard), 3 m (1.65 ft [standard], 9.8 ft) 0.5 m (standard), 3 m (1.65 ft [standard], 9.8 ft)
Power supply	5–30 V DC
Current draw	9 mA

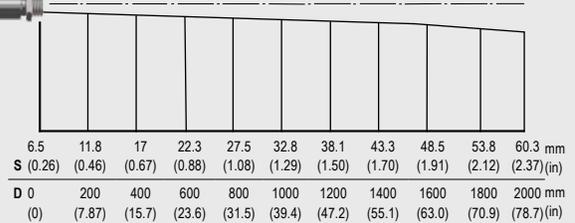
optris® CSmicro 3M

Optical Specifications

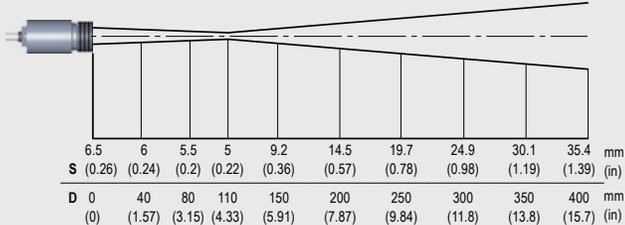
Optics CSmicro 3ML SF, D:S = 22:1



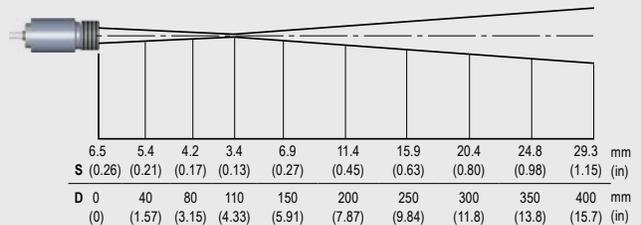
Optics CSmicro 3MH SF, D:S = 33:1



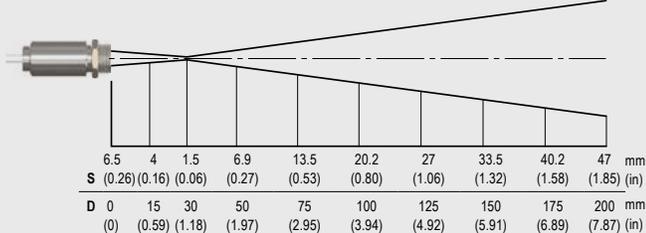
Optics CSmicro 3ML CF, D:S = 22:1 (far field 9:1)



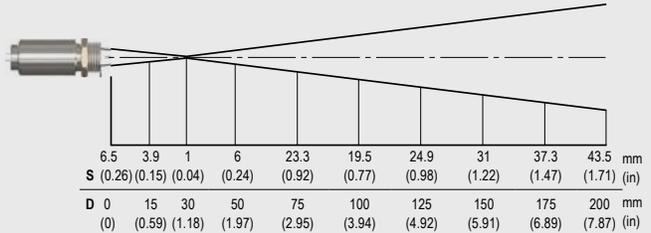
Optics CSmicro 3MH CF, D:S = 33:1 (far field 11:1)



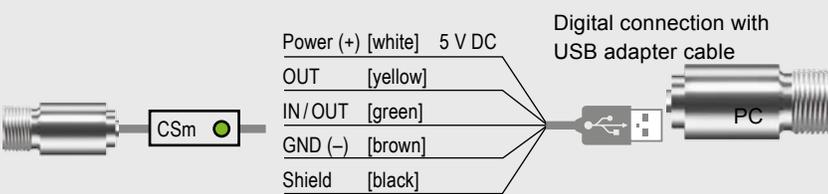
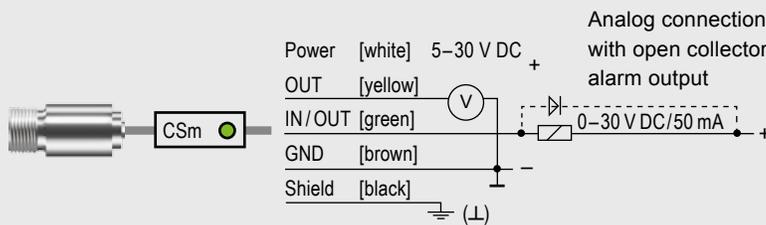
Optics CSmicro 3ML CF1, D:S = 22:1 (far field 3.5:1)



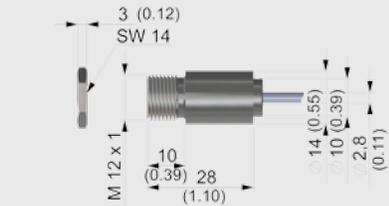
Optics CSmicro 3MH CF1, D:S = 33:1 (far field 4:1)



Dimensions / interfaces



Dimensions CSmicro 3M SF/3M CF

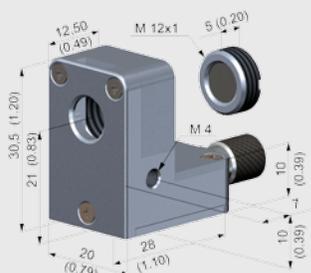


Dimensions CSmicro 3M CF1



Accessories (examples)

Air purge collar



Mounting bracket, fixed (ACCTFB)

