



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

Features:

- Miniaturized infrared thermometer for temperature measurements of metal, metal oxide and ceramic material
- Special spectral range of 2.3 µm with very low starting temperature of 50 °C (112 °F)
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Scalable analog output: 0 – 5/10 V or 4 – 20 mA (two-wire); additional simultaneous alarm output
- Easy programming via smartphone app (IR mobile) or Windows software (Compact Connect)
- Stainless steel housing with compact dimensions



General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	–20 ... 85 °C (–4 ... 185 °F) (sensing head) –20 ... 80 °C (–4 ... 176 °F) (electronics) –20 ... 75 °C (–4 ... 167 °F) (electronics / mA version) ¹⁾
Storage temperature	–40 ... 85 °C (–40 ... 185 °F) (sensing head and electronics)
Relative humidity	10–95 %, non condensing
Vibration	IEC 60068-2-6 (sinus shaped) IEC 60068-2-64 (broadband noise)
Shock	IEC 60068-2-27 (25 G and 50 G)
Weight	42 g (1.5 oz)

Electrical specifications

Output / analog	0 – 5 or 10 V or 4 – 20 mA
Output / alarm	0 – 30 V / 50 mA (open collector) (mA version: 500 mA)
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)	Programmable functional input for external emissivity setting ²⁾ / ambient temperature adjustment ²⁾ , triggered signal output or peak-hold function
Cable length head – electronics: after electronics:	0.5 m (1.6 ft) (standard), 3 m (9.8 ft) 0.5 m (1.6 ft) (standard), 3 m (9.8 ft), 6 m (19.7 ft)
Power supply	5 – 30 V DC
Current draw	9 mA (mV version)

Measurement specifications

Temperature range ³⁾ (scalable via software)	50 ... 350 °C (122 ... 662 °F) (3ML) 100 ... 600 °C (212 ... 1112 °F) (3MH)
Spectral range	2.3 µm
Optical resolution (90 % energy)	22:1 (3ML) 33:1 (3MH)
Optics	SF, CF, CF1
System accuracy ⁴⁾ (at ambient temp. 23 ± 5 °C [73 ± 9 °F])	±(0.3 % of reading + 1 °C [1.8 °F])
Repeatability (at ambient temp. 23 ± 5 °C [73 ± 9 °F])	±(0.1 % of reading + 1 °C [1.8 °F])
NETD ⁵⁾	30 mK (3ML) 50 mK (3MH)
Response time ⁶⁾ (90 %)	8 ms (mA version: 20 ms)
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 (Windows) IR mobile (Android)

¹⁾ mA version: For Vcc (supply voltage) 5 – 12 V DC/ the electronic's max. ambient temperature is 65 °C (149 °F) at Vcc > 12 V DC

²⁾ mV version only

³⁾ $T_{Object} > T_{Sensing\ head} + 25\text{ °C (77 °F)}$

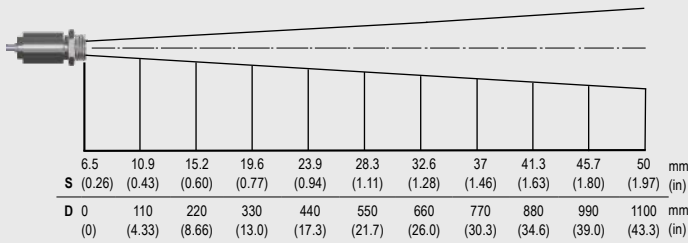
⁴⁾ $\varepsilon = 1$, response time 1 s

⁵⁾ At time constant of 200 ms and T_{Obj} 150 °C (302 °F) (3ML) / 300 °C (572 °F) (3MH)

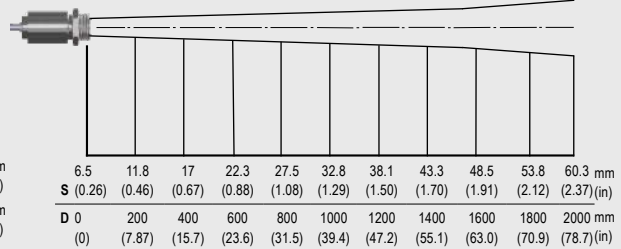
⁶⁾ With dynamic adaption at low signals

Optical parameters

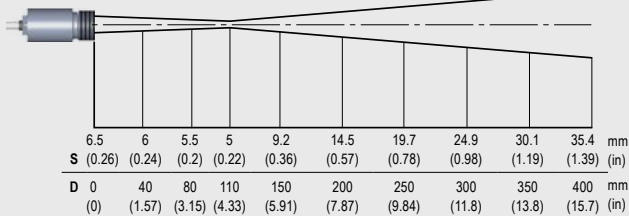
CSmicro 3ML SF optics, D:S = 22:1



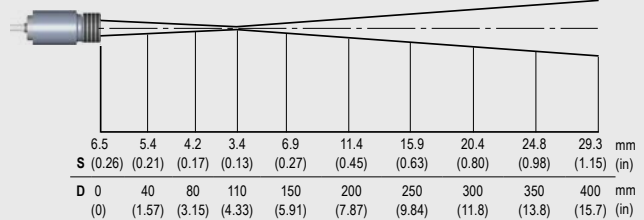
CSmicro 3MH SF optics, D:S = 33:1



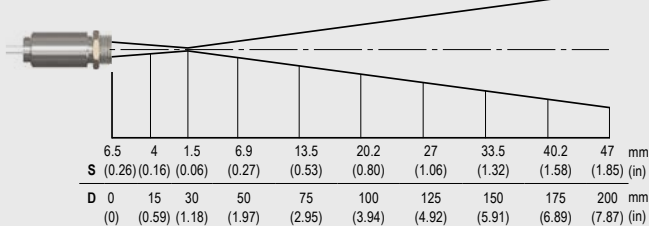
CSmicro 3ML CF optics, D:S = 22:1 (far field 9:1)



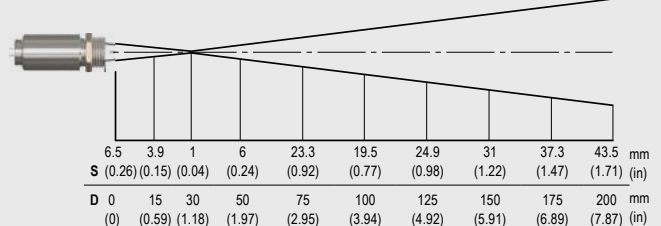
CSmicro 3MH CF optics, D:S = 33:1 (far field 11:1)



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

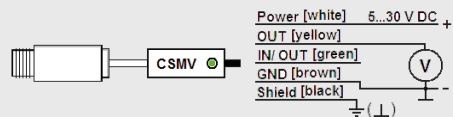


CSmicro 3MH CF1 optics, D:S = 33:1 (far field 4:1)

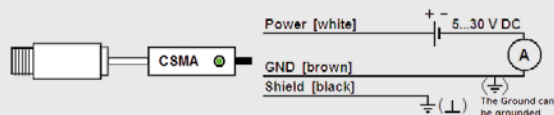


Connections

Connection mV version



Connection mA version

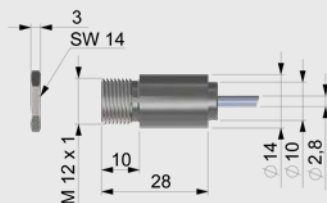


The CSmicro can be connected to a smartphone via the IR app connector

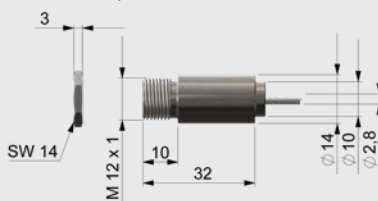


Dimensions

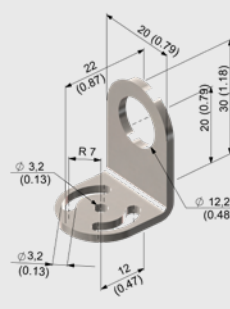
Dimensions optris® CSmicro 3M SF / 3M CF



Dimensions optris® CSmicro 3M CF1



Mounting bracket, fixed (ACCTFB)



Air purge with integrated CF optics (ACCTAPLCF)

