optris CSmicro 3M
TECHNICAL DATA

Low cost micro size infrared thermometer for precise temperature measurement of metal from 50 to 600 °C

Features:

- Miniaturized infrared thermometer for temperature measurements of metal, metal oxide and cermaic material
- Special spectral range of 2.3 µm with very low starting temperature of 50 °C
- 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 (sensing head) –20 ... 80 °C (electronics) –20 ... 75 °C (electronics / mA version)[1]
Storage temperature	–40 ... 85 °C (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 60068-2-64 (broadband noise)
Weight	42 g

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 (standard), 3 m 0.5 m (standard), 3 m
Power supply	5 – 30 V DC
Current draw	9 mA (mV version)

Measurement specifications	
Temperature range[3] (scalable via software)	50 ... 350 °C (3ML) 100 ... 600 °C (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)	±(0.3 % of reading +1 °C)
Repeatability (at ambient temp. 23 ±5 °C)	±(0.1 % of reading +1 °C)
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 Diameter: 12 mm
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 at Vcc >12 V DC

[2] mV version only

[3] $T_{Object} > T_{Sensing\ head} + 25$ °C

[4] ε = 1, response time 1 s

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

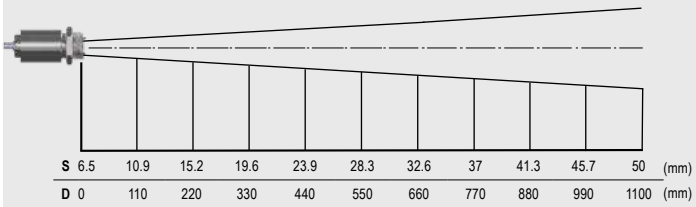
[6] With dynamic adaption at low signals

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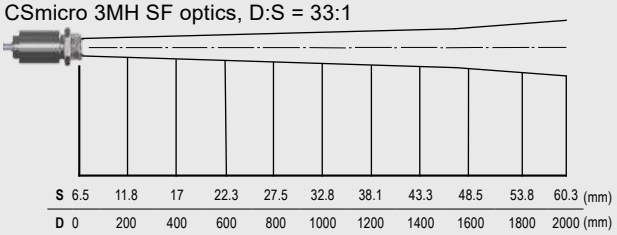
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Optical parameters

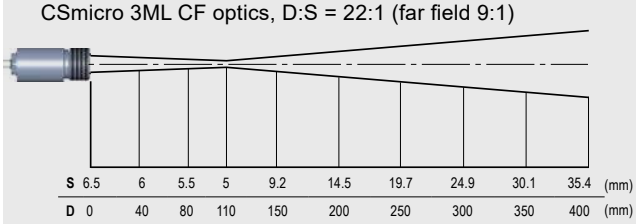
CSmicro 3ML SF optics, D:S = 22:1



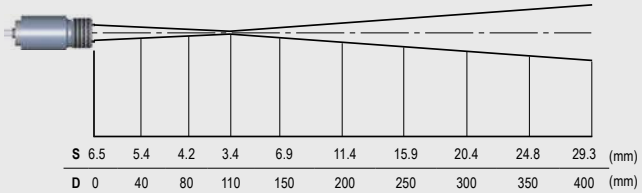
CSmicro 3MH SF optics, D:S = 33:1



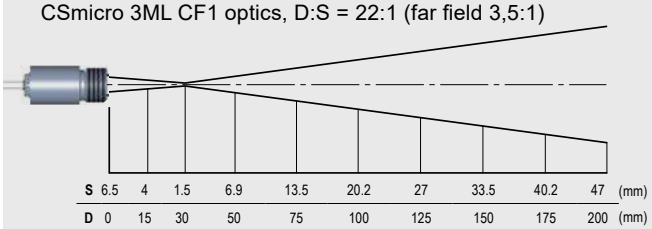
CSmicro 3ML CF optics, D:S = 22:1 (far field 9:1)



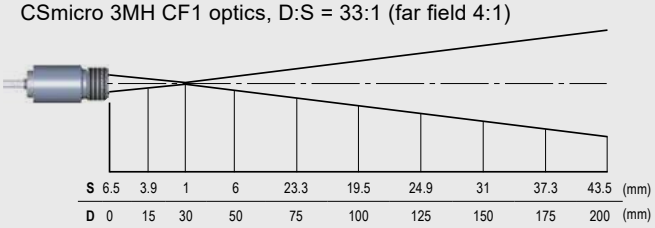
CSmicro 3MH CF optics, D:S = 33:1 (far field11:1)



CSmicro 3ML CF1 optics, D:S = 22:1 (far field 3,5:1)

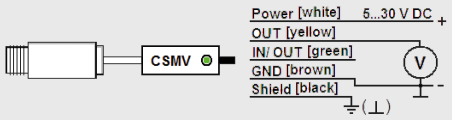


CSmicro 3MH CF1 optics, D:S = 33:1 (far field 4:1)

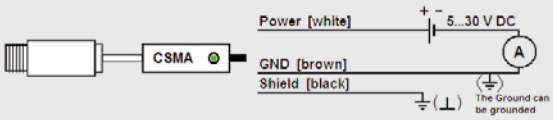


Connections

Connection mV version



Connection mA version



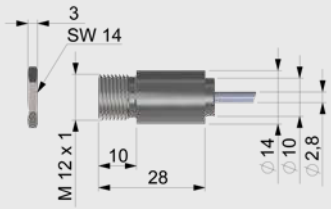


The CSmicro can be connected to a smartphone via the IR app connector

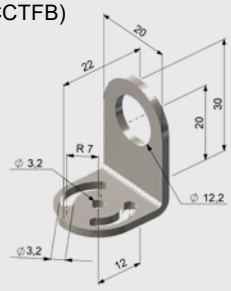
GET IT ON Google Play

Dimensions

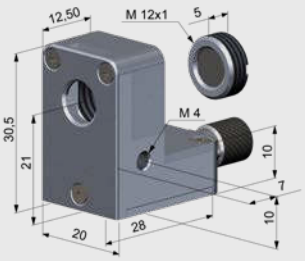
Dimensions optris® CSmicro 3M SF / 3M CF



Mounting bracket, fixed (ACCTFB)



Air purge with integrated CF optics (ACCTAPLCF)



Dimensions optris® CSmicro 3M CF1

