optris® CSmicro LT/LTH

TECHNICAL DATA

Very small infrared thermometer for –50 °C to 1030 °C

Features:

- Size: M12x1, 28 mm long, stainless steel housing
- Temperature range: –50 °C to 1030 °C
- Rugged coated silicon optics
- Usable up to 180 °C ambient temperature without cooling (LTH sensing head)
- Green LED alarm indication, aiming support, self diagnostic or temp. 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)

General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	–20 ... 120 °C (LT sensing head) –20 ... 180 °C (LTH 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 / -64
Shock	IEC 60068-2-27 (25 G and 50 G)
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, 6 m 0.5 m (standard), 3 m, 6 m
Power supply	5 – 30 V DC
Current draw	9 mA (mV version)

Measurement specifications

Temperature range (scalable via software)	–50 ... 1030 °C
Spectral range	8 – 14 µm
Optical resolution (90 % energy)	22:1 (LT22H) 15:1 (LT15 / LT15H) 2:1 (LT02)
CF lens (optional)	2.3 mm @ 50 mm (22:1) 3.4 mm @ 50 mm (15:1) 2.5 mm @ 23 mm (2:1 with CF optics)
System accuracy	±1.0 % or ±1.0 °C[3), 4)]
Repeatability	±0.5 % or ±0.5 °C[3), 4)]
Temperature coefficient	±0.05 K/K or ±0.05 %/K[5)]
NETD	50 mK[6)]
Response time (90 %)	14 ms (LT) / 150 ms (LTH)
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)] Object temperature >23 °C; whichever is greater

[4)] At ambient temperature 23 ±5 °C

[5)] At ambient temperatures <18 °C and >28 °C; whichever is greater

[6)] At time constant of 200 ms and T_{Obj} 200 °C

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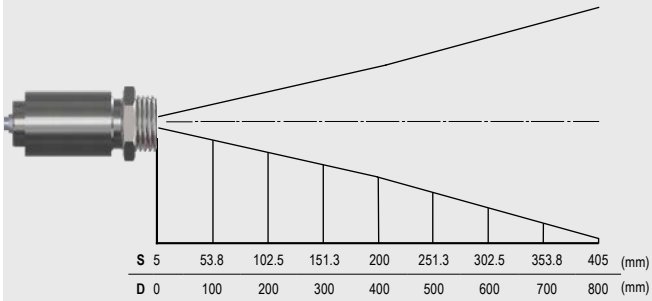
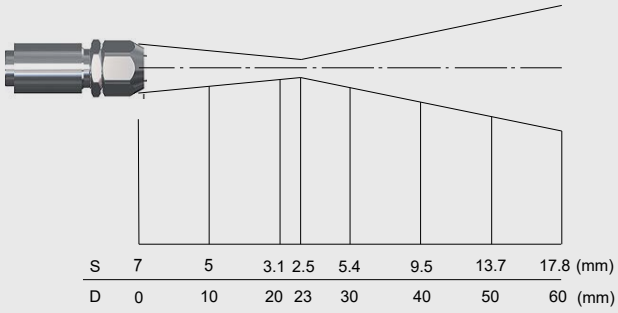
Optical parameters

SF optics, D:S = 2:1

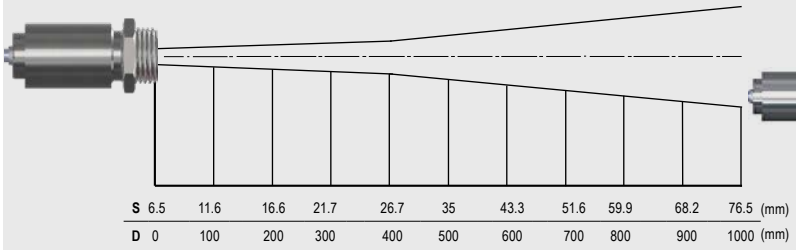


CF optics D:S = 2:1 (far field = 2,5:1)

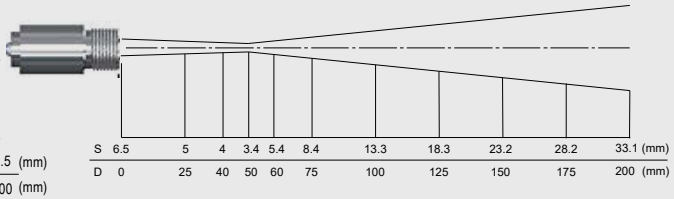


Options with integrated CF lens

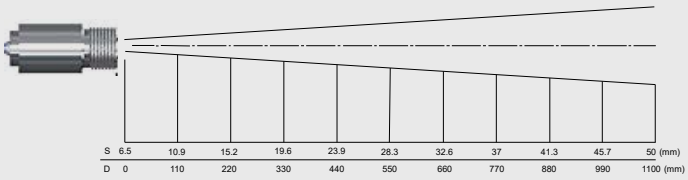
SF optics, D:S = 15:1



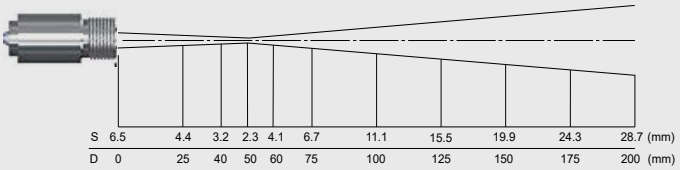
CF optics D:S = 15:1 (far field = 5:1)



SF optics D:S = 22:1

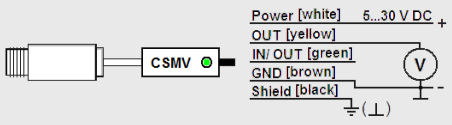


CF optics, D:S = 22:1 (far field = 6:1)

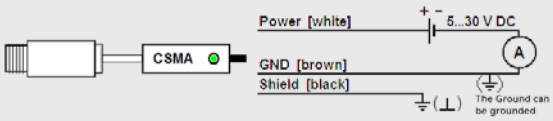


Connections

Connection mV version



Connection mA version



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

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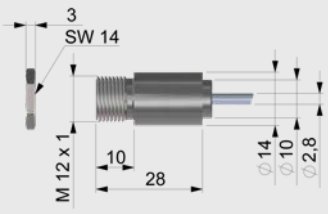
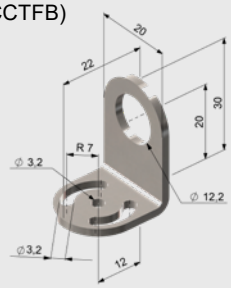
Dimensions

Dimensions CSmicro



Mounting bracket, fixed (ACCTFB)



Air purge with integrated CF optics (ACCTAPLCF)