

**Very small two-wire
infrared thermometer
from $-40\text{ }^{\circ}\text{C}$ to $1030\text{ }^{\circ}\text{C}$
($-40\text{ }^{\circ}\text{F}$ to $1886\text{ }^{\circ}\text{F}$)**

Features:

- Temperature range: $-40\text{ }^{\circ}\text{C}$ to $1030\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$ to $1886\text{ }^{\circ}\text{F}$)
- Size: M12x1, 28 mm (1.1 in) long, stainless steel housing
- Scalable 4–20 mA analog output/additional simultaneous alarm output
- Rugged coated silicon optics
- Usable up to $180\text{ }^{\circ}\text{C}$ ($356\text{ }^{\circ}\text{F}$) ambient temperature without cooling (LTH sensing head)
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Electronics build in cable
- Adjustable signal processing
- Optional USB programming interface and software
- Wide power range: 5–30 V DC



General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	$-20\text{ }^{\circ}\text{C}$... $120\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$... $248\text{ }^{\circ}\text{F}$) (LT sensing head) $-20\text{ }^{\circ}\text{C}$... $180\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$... $248\text{ }^{\circ}\text{F}$) (LTH sensing head) $-20\text{ }^{\circ}\text{C}$... $75\text{ }^{\circ}\text{C}^{1)}$ ($-4\text{ }^{\circ}\text{F}$ to $167\text{ }^{\circ}\text{F}^{1)}$ (electronics)
Storage temperature	$-40\text{ }^{\circ}\text{C}$... $85\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$... $185\text{ }^{\circ}\text{F}$) (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	4–20 mA
Loop resistance	Max. 1000 $\Omega^2)$
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	Programmable functional input for triggered signal output or peakhold function
Cable length head – electronics: after electronics:	0.5 m (standard), 3 m, 6 m (1.7 ft (stand.), 9.8 ft, 19.7 ft) 0.5 m (standard), 3 m (1.7 ft (stand.), 9.8 ft)
Power supply	5–30 V DC

Measurement Specifications

Temperature range (scalable via software)	$-40\text{ }^{\circ}\text{C}$ to $1030\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$ to $1886\text{ }^{\circ}\text{F}$)
Spectral range	8–14 μm
Optical resolution (90 % energy)	2:1 (LT) 15:1 (LT, LTH) 22:1 (LTH)
CF-lens (optional)	0.8 mm @ 10 mm (15:1) (0.03 in @ 0.4 in) 0.6 mm @ 10 mm (2:1) (0.02 in @ 0.4 in)
System accuracy	$\pm 1.0\%$ or $\pm 1.0\text{ }^{\circ}\text{C}^{3), 4)}$ ($\pm 1.0\%$ or $\pm 1.8\text{ }^{\circ}\text{F}^{3), 4)}$
Repeatability	$\pm 0.5\%$ or $\pm 0.5\text{ }^{\circ}\text{C}^{3), 4)}$ ($\pm 0.5\%$ or $\pm 0.9\text{ }^{\circ}\text{F}^{3), 4)}$
Temperature coefficient	$\pm 0.05\text{ K/K}$ or $\pm 0.05\%/K^{5)}$
Temperature resolution	0.1 K
Response time (90 %)	25 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 (1.4 in) Diameter: 12 mm (0.5 in)
Software	optris® Compact Connect

¹⁾ For V_{cc} (supply voltage) 5–12 V DC/ at $V_{cc} > 12\text{ V DC}$ the max. ambient temperature of the electronics is $65\text{ }^{\circ}\text{C}$ ($149\text{ }^{\circ}\text{F}$)

²⁾ In dependence on supply voltage

³⁾ Object temperature $> 23\text{ }^{\circ}\text{C}$ ($73.4\text{ }^{\circ}\text{F}$); whichever is greater

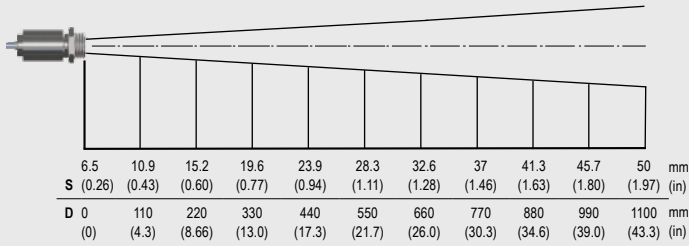
⁴⁾ At ambient temperature $23 \pm 5\text{ }^{\circ}\text{C}$ ($41\text{ }^{\circ}\text{F}$), $\epsilon = 1$, response time 1 s

⁵⁾ For ambient temperatures $< 18\text{ }^{\circ}\text{C}$ ($64.4\text{ }^{\circ}\text{F}$) and $> 28\text{ }^{\circ}\text{C}$ ($82.4\text{ }^{\circ}\text{F}$); whichever is greater

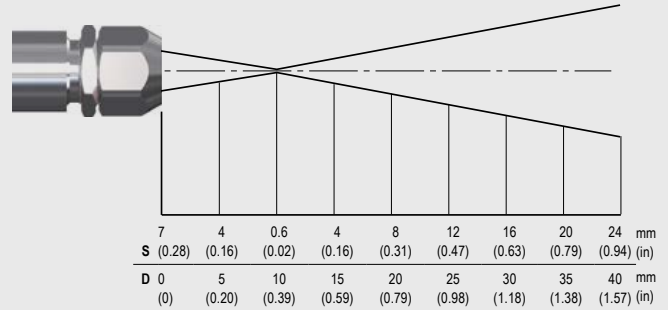
optris[®] CSmicro 2W LT

Optical Specifications

Optics, D:S = 22:1

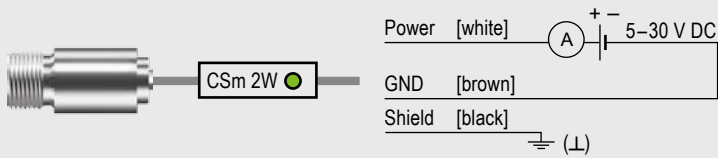


Optics with CF-lens, D:S = 22:1

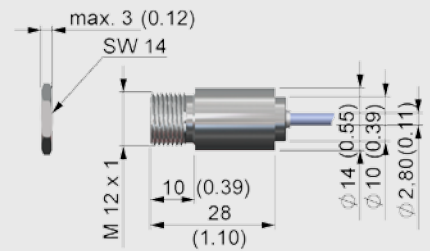


Dimensions / Interfaces

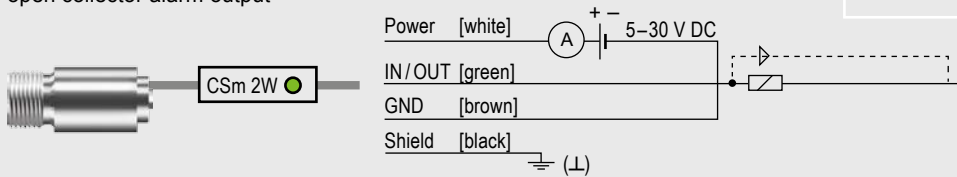
Analog Mode (Two wire connection)



Dimensions CSmicro LT



Connection analog with open collector alarm output



Combined Mode (analog and digital)

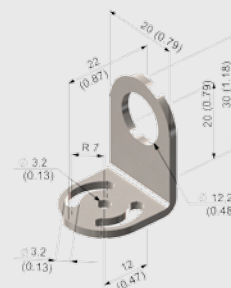


Accessories (examples)

CF-lens (ACCTCF)



Mounting bracket, fixed (ACCTFB)



Air purge collar with integrated CF-lens (ACCTAPLCF)

