optris® CSmicro LT

TECHNICAL DATA

optris infrared sensing

Low cost micro size infrared thermometer for –40 °C to 1030 °C (–40 °F to 1886 °F)

Features:

- Size: M12x1, 28 mm (1.1 in) long, stainless steel housing
- Temperature range: –40 °C to 1030 °C (–40 °F to 1886 °F)
- Rugged coated silicon optics
- Usable up to 120 °C (248 °F) ambient temperature without cooling (sensing head)
- Green LED alarm indicati., aiming support, self diagnostic or temp. code indication
- Cable built in electronics
- Scalable analog output: 0–10 V or 0–5 V and additional simultaneous alarm output
- Short circuit and polarity reversal protection
- 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 °C to 120 °C (sensing head) (–4 °F to 248 °F) –20 °C to 80 °C (electronics) (–4 °F to 176 °F)
Storage temperature	–40 °C to 85 °C (sensing head and electronics) –40 °F to 185 °F)
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 oder 0 – 10 V 1 / 10 / 100 mV / °C
Output / alarm	24 V / 50 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)	Programmable 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, 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
Current draw	9 mA

Measurement Specifications

Temperature range (scalable via software)	–40 °C to 1030 °C (–40 °F to 1886 °F)
Spectral range	8 – 14 µm
Optical resolution (90 % energy)	15:1 (precision glass optics) (LT 15) 2:1 (with flat front window) (LT02)
CF-lens (optional)	0.8 mm @ 10 mm (15:1) (0.03 in @ 0.4 in) 2.5 mm @ 23 mm (2:1) (0.1 in @ 0.9 in)
System accuracy	±1.0 % or ±1.0 °C[1), 2)] (±1.0 % or ±1.8 °F)
Repeatability	±0.5 % or ±0.5 °C[1), 2)] (±0.5 % % or ±0.9 °F)
Temperature coefficient	±0.05 K/K or ±0.05 %/K[3)]
Temperature resolution	0.1 K
Response time (90 %)	25 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

[1)] Object temperature >23 °C (>73.4 °F); whichever is greater
[2)] At ambient temperature 23 ±5 °C (±41 °F)
[3)] For ambient temperatures <18 °C (>64.4 °F) and >28 °C (>82.4 °F); whichever is greater

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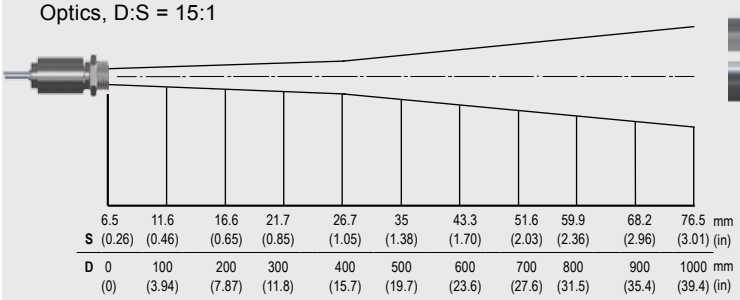
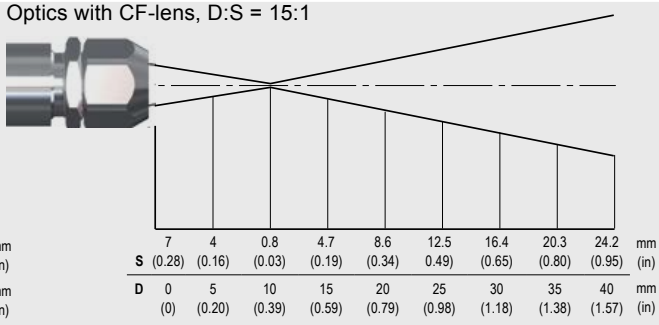
Optical Specifications

Optics, D:S = 15:1



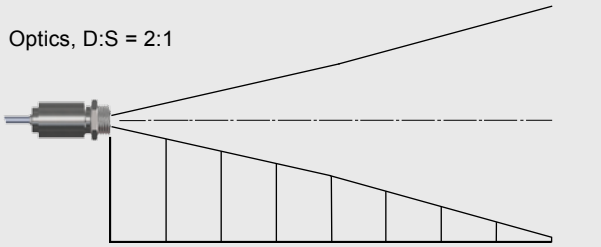
S	6.5 (0.26)	11.6 (0.46)	16.6 (0.65)	21.7 (0.85)	26.7 (1.05)	35 (1.38)	43.3 (1.70)	51.6 (2.03)	59.9 (2.36)	68.2 (2.96)	76.5 (3.01)	mm (in)
D	0 (0)	100 (3.94)	200 (7.87)	300 (11.8)	400 (15.7)	500 (19.7)	600 (23.6)	700 (27.6)	800 (31.5)	900 (35.4)	1000 (39.4)	mm (in)

Optics with CF-lens, D:S = 15:1



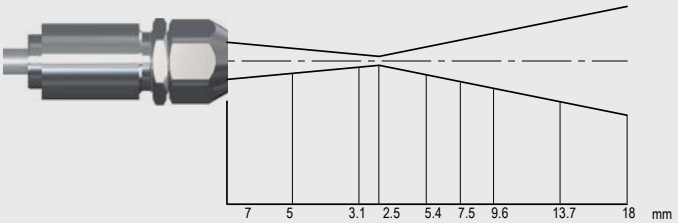
S	7 (0.28)	4 (0.16)	0.8 (0.03)	4.7 (0.19)	8.6 (0.34)	12.5 0.49)	16.4 (0.65)	20.3 (0.80)	24.2 (0.95)			mm (in)
D	0 (0)	5 (0.20)	10 (0.39)	15 (0.59)	20 (0.79)	25 (0.98)	30 (1.18)	35 (1.38)	40 (1.57)			mm (in)

Optics, D:S = 2:1



S	5 (0.20)	53.8 (2.12)	102.5 (4.04)	151.3 (5.96)	200 (7.87)	251.3 (9.89)	302.5 (11.91)	353.8 (13.9)	405 (15.9)	mm (in)
D	0 (0)	100 (3.94)	200 (7.87)	300 (11.8)	400 (15.7)	500 (19.7)	600 (23.6)	700 (27.6)	800 (31.5)	mm (in)

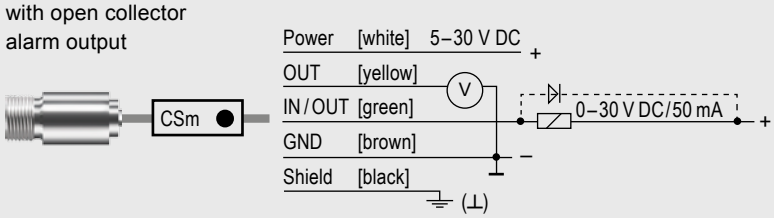
Optics with CF-lens, D:S = 2:1



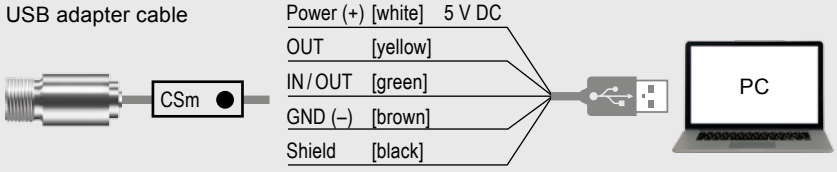
S	7 (0.28)	5 (0.20)	3.1 (0.12)	2.5 (0.10)	5.4 (0.21)	7.5 (0.30)	9.6 (0.38)	13.7 (0.54)	18 (0.71)	mm (in)
D	0 (0)	10 (0.39)	20 (0.79)	23 (0.91)	30 (1.18)	35 (1.38)	40 (1.57)	50 (1.97)	60 (2,36)	mm (in)

Interfaces / Dimensions

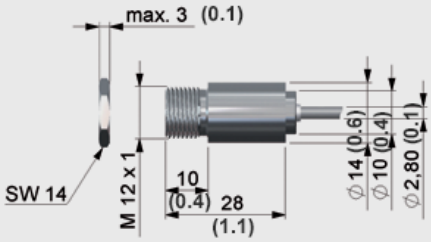
Connection analog with open collector alarm output



Connection digital with USB adapter cable

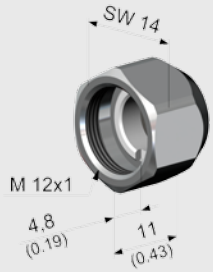


Dimensions CSmicro LT

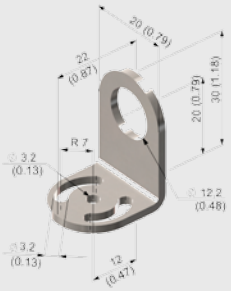


Accessories (examples)

CF-lens (ACCTCF)



Mounting bracket, fixed (ACCTFB)



Air purge collar with integrated CF-lens (ACCTAPLCF)