

Precise focussing and non-contact temperature measurement from –50 °C to 975 °C (–58 °F to 1787 °F)



Features:

- Low and high temperature measurements of smallest spots up from 0.9 mm (0.04 in)
- Double laser aiming marks real spot location and spot size at any distance
- Optics 75:1 and 50:1 with selectable focus
- CT laser F (fast) for scanning of fast moving low temperature objects up from 9 ms response time
- Usable up to 85 °C (185 °F) ambient temperature without cooling and automatic laser switch off at 50 °C (122 °F)
- Selectable analog outputs 0/4–20 mA, 0–5/ 10 V, thermocouple type K or J
- Optional plug in digital interfaces USB, RS232, RS485, CAN or Profibus DP

General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature ¹⁾	–20 °C ... 85 °C (–4 °F ... 185 °F) (sensing head) (50 °C [122 °F] with laser ON) –20 °C ... 85 °C (–4 °F ... 185 °F) (electronics)
Storage temperature	–40 °C ... 125 °C (–4 °F ... 257 °F) (sensing head) –40 °C ... 85 °C (–40 °F ... 185 °F) (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	600 g (21.2 oz) (sensing head) 420 g (14.8 oz) (electronics)

Electrical specifications

Output / analog	Channel 1: 0/4–20 mA, 0–5/ 10 V, thermocouple J, K Channel 2: sensing head temperature (–40 °C ... 85 °C [–40 °F ... 185 °F] as 0–5 V or 0–10 V), alarm output
Output / alarm	24 V / 50 mA (open collector)
Optional	Relay: 2 x 60 V DC/ 42 V AC _{eff} ; 0.4 A; optically isolated
Output / digital	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
Output impedances	mA max. 500 Ω (with 5–36 V DC) mV min. 100 kΩ load impedance, thermocouple 20 Ω
Inputs	Programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m (9.8 ft [standard], 26.2 ft, 49.2 ft)
Power supply	8–36 V DC
Current draw (laser)	Max. 160 mA
Laser 635 nm	1 mW, ON/OFF via electronic box or software

Measurement specifications

Temperature range (scalable via programming keys or software)	–50 °C ... 975 °C (–58 °F ... 1787 °F)
Spectral range	8–14 μm
Optical resolution (90 % energy)	75:1 CTlaser 50:1 CTlaser F
Selectable focus (CTlaser) ¹⁾	CF1: 0.9 mm @ 70 mm (0.04 in @ 2.76 in) CF2: 1.9 mm @ 150 mm (0.07 in @ 5.91 in) CF3: 2.75 mm @ 200 mm (0.11 in @ 7.87 in) CF4: 5.9 mm @ 450 mm (0.23 in @ 17.7 in) SF: 16 mm @ 1200 mm (0.63 in @ 47.2 in)
System accuracy ²⁾ (at ambient temp. 23 ±5 °C) (at ambient tem. 73 ±9 °F)	±1 % or ±1 °C ^{3),4)} (CTlaser) ±1.5 % or ±1.5 °C ^{3),4)} (CTlaser F) (±1 % or ±1.8 °F ^{3),4)} [CTlaser]) (±1.5 % or ±2.7 °F ^{3),4)} [CTlaser F])
Repeatability (at ambient temp. 23 ±5 °C) (at ambient tem. 73 ±9 °F)	±0.5 % or ±0.5 °C ^{2),3)} (CTlaser) ±1 % or ±1 °C ^{2),3)} (CTlaser F) (±0.5 % or ±0.9 °F ^{2),3)} (CTlaser) (±1 % or ±1.8 °F ^{2),3)} (CTlaser F)
Temperature resolution (NETD)	0.1 K / 0.5 K with CTlaser F
Response time ⁵⁾ (90 % signal)	9 ms CTlaser F / 120 ms CTlaser
Emissivity/ Gain (adjustable via sensor or software)	0.100–1.100
IR window correction (adjustable via software)	0.100–1.000
Signal processing (parameter adjust- table via software)	Peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	optris® Compact Connect

¹⁾ The functioning of the LCD display may be limited in ambient temperatures below 0 °C

²⁾ Different spotsizes for CTlaser F (D:S = 50:1)

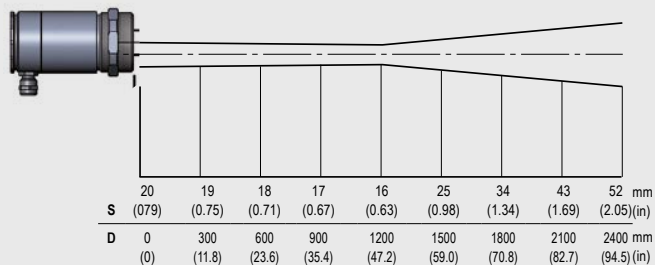
³⁾ Whichever is greater

⁴⁾ At object temperatures >0 °C, ε = 1

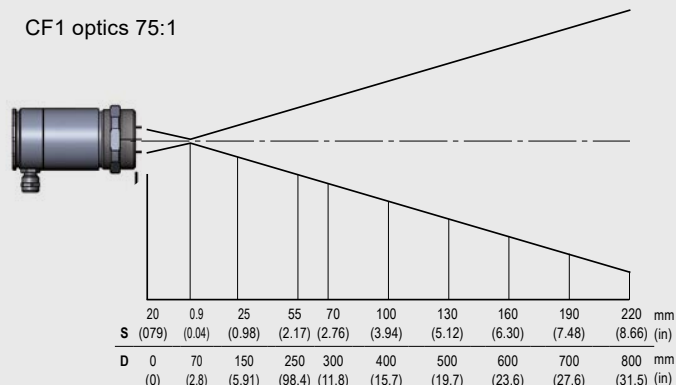
⁵⁾ With dynamic adaption at low signal levels

Optical parameter

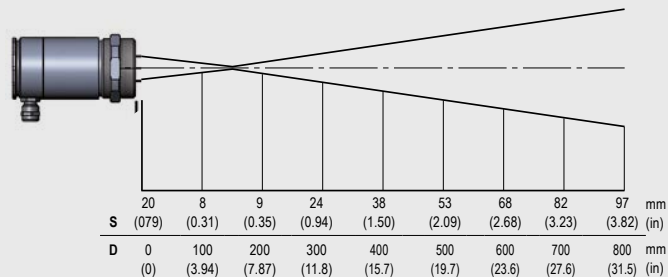
SF optics 75:1



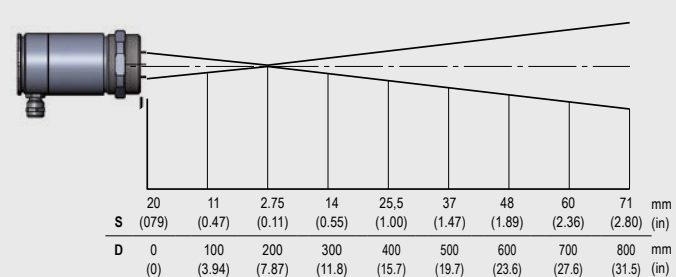
CF1 optics 75:1



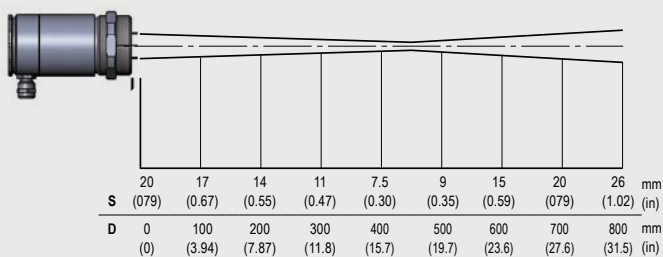
CF2 optics 75:1



CF3 optics 75:1



CF4 optics 75:1



Dimensions

Sensing head



Electronics

