optris® CTfast LT
TECHNICAL DATA

optris infrared sensing

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

Features:

- One of the smallest infrared sensors worldwide with extrem short response time down to 6 ms (90 % signal)
- Fast analog output (0/4–20 mA, 0–5/10 V) with smart real time data processing
- Instant digital 0/10 V output with a response time of 4 ms (50 % signal)
- Continuous process monitoring with an unchoppered sensor system
  Note: Conventional fast pyroelectrical infrared sensors with mechanical chopper see processes only part of the time
- Easy to assemble in multiple arrays for line scanning of small and fast objects (hot spot detection) using a RS485 bus communication
- Rugged up to 120 °C (248 °F) ambient temperature without cooling

General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	–20 °C ... 120 °C (–4 °F ... 248 °F) (sensing head) 0 °C ... 85 °C (32 °F ... 185 °F) (electronics)
Storage temperature	–40 °C ... 120 °C (–40 °F ... 248 °F) (sensing head) –40 °C ... 85 °C (–40 °F ... 185 °F) (electronics)
Relative humidity	10 – 95 %, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11 – 200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	40 g (1.4 oz) (sensing head) / 420 g (14.8 oz) (electronics)

Electrical Specifications

Outputs / analog	0/4 – 20 mA, 0 – 5/10 V, thermocouple J, K, alarm
Output / alarm	24 V / 50 mA (open collector)
Outputs / digital	0/10 V (10 mA) optional: relay: 2 x 60 V DC/ 42 V AC; 0.4 A; optically isolated
Digital interface	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
Output impedances	mA max. 500 Ω (with 8 – 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	1 m (standard), 3 m, 8 m, 15 m (3.3 ft [standard], 9.8 ft, 26.2 ft, 49.2 ft)
Power Supply	8 – 36 V DC
Current draw	Max. 100 mA

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)	LT15F 15:1 LT25F 25:1
System accuracy (at ambient temp. 23 ±5 °C) (73 ±9 °F)	±1 % or ±2 °C[1), 2)] (±1 % of reading +3.6 °F)
Repeatability (at ambient temp. 23 ±5 °C) (73 ±9 °F)	±0.75 % or ±0.75 °C[1), 2)] (±0.75 % of reading +1.4 °F)
Temperature resolution	LT15F 0.2 K[2), 3)] LT25F 0.4 K[2), 3)]
Response time	Analog output (90 %) LT15F 9 ms LT25F 6 ms
	Digital output (50 %) LT15F 4 ms LT25F 3 ms
Emissivity/ Gain (adjustable via programming keys or software)	0.100 – 1.100
Transmissivity/ Gain (adjustable via programming keys or software)	0.100 – 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	Peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	optris® Compact Connect

1) Whichever is greater with dynamic noise compression

2) At object temperatures ≥20 °C (≥68 °C)

3) At time constant 100 ms with smart averaging and T_{Obj} 25 °C (T_{Obj} 77 °F)

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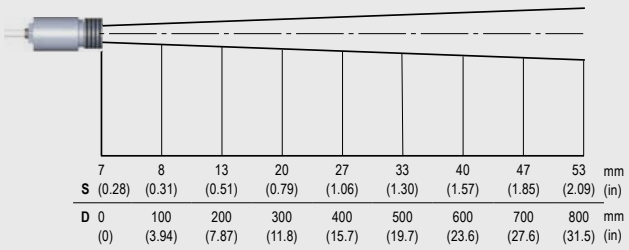
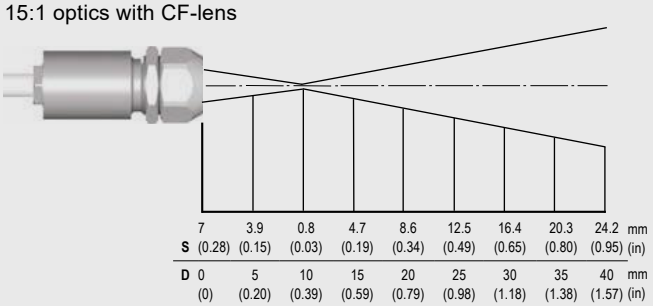
Optical specifications

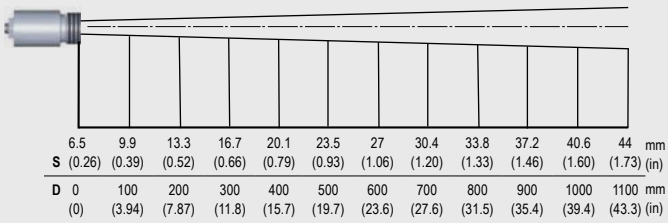
15:1 optics



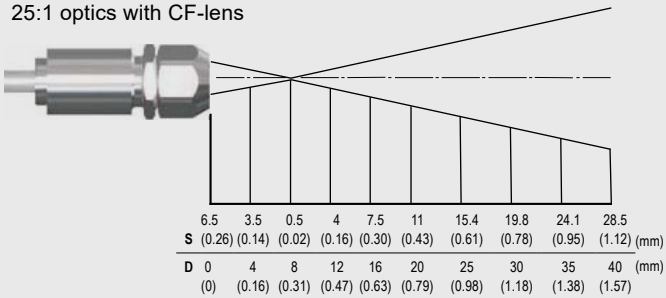
15:1 optics with CF-lens



25:1 optics

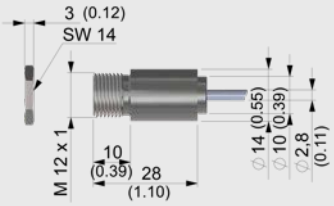


25:1 optics with CF-lens

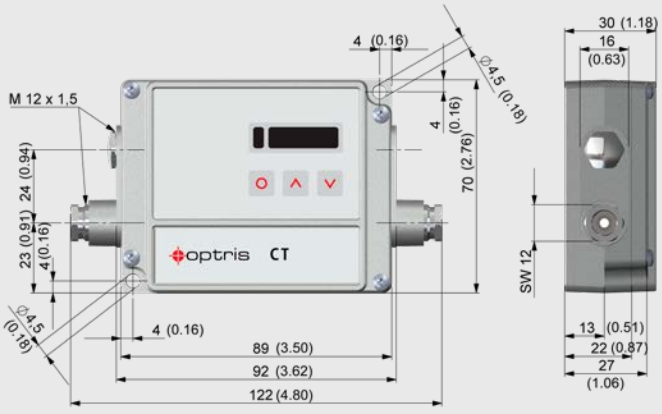


Dimensions

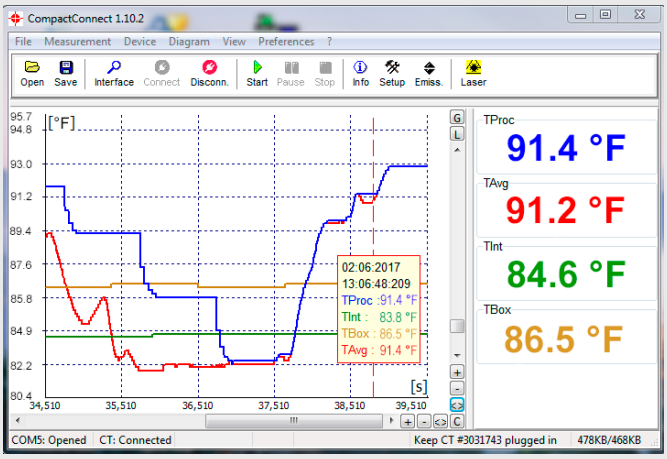
Sensing head
(standard)



Electronics



Compact Connect software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software CompactConnect allows to customize the sensor to application needs of the user