optris® **CTfast LT**
TECHNICAL DATA

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

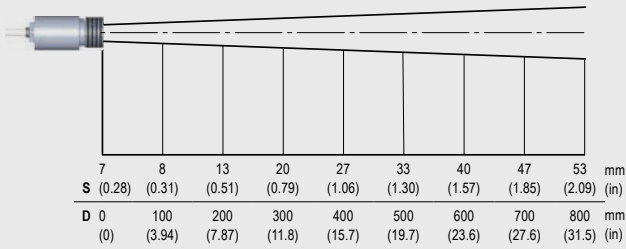|	
Temperature range (scalable via programming keys or software)	–50 °C ... 975 °C (–58 °F ... 1787 °F)
Spectral range	8 – 14 µm
Optical resolution (90 % energy)	LT15F 15:1 LT25F 25:1
System accuracy (at ambient temp. 23 ±5 °C) (23 ±41 °F)	±1 % or ±2 °C[1), 2)] (±1 % of reading +3.6 °F)
Repeatability (at ambient temp. 23 ±5 °C) (23 ±0.5 °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
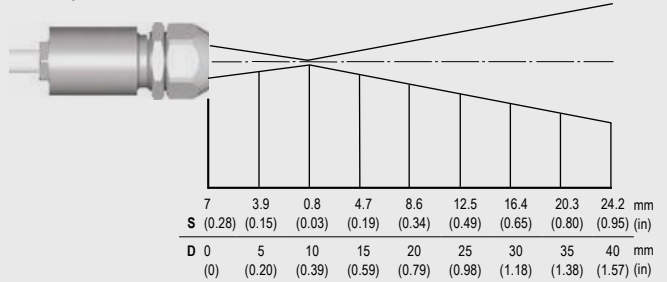[2)] At object temperatures ≥20 °C (≥68 °C)
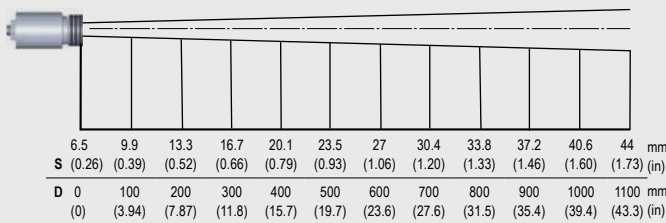[3)] At time constant 100 ms with smart averaging and T_{Obj} 25 °C (T_{Obj} 77 °F)

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Optical specifications

15:1 optics

S	7 (0.28)	8 (0.31)	13 (0.51)	20 (0.79)	27 (1.06)	33 (1.30)	40 (1.57)	47 (1.85)	53 (2.09)	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)

15:1 optics with CF-lens

S	7 (0.28)	3.9 (0.15)	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)

25:1 optics

S	6.5 (0.26)	9.9 (0.39)	13.3 (0.52)	16.7 (0.66)	20.1 (0.79)	23.5 (0.93)	27 (1.06)	30.4 (1.20)	33.8 (1.33)	37.2 (1.46)	40.6 (1.60)	44 (1.73) 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)	1100 (43.3) mm (in)

25:1 optics with CF-lens

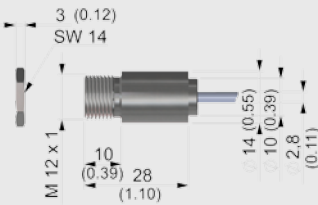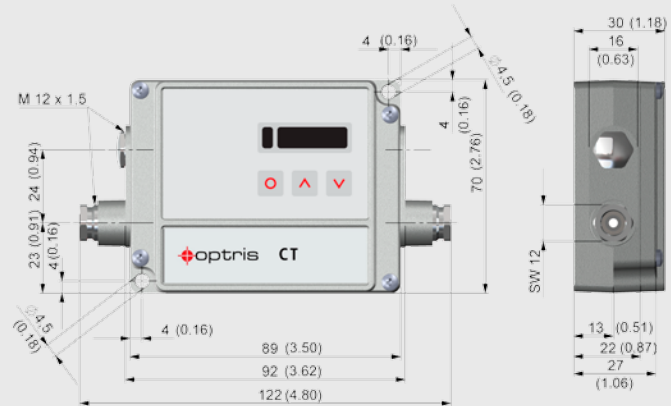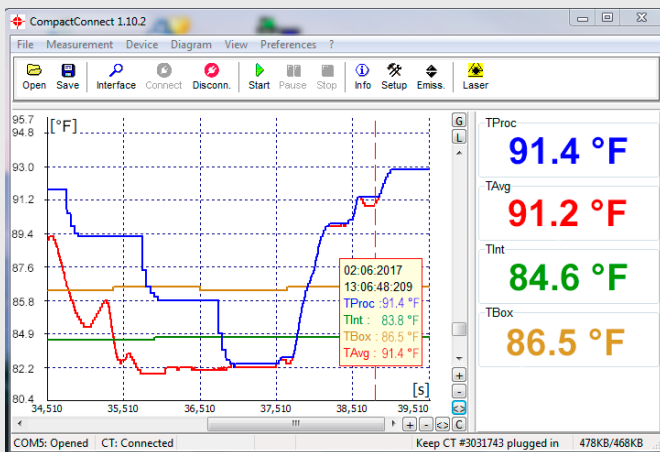|										
S	6.5 (0.26)	3.5 (0.14)	0.5 (0.02)	4 (0.16)	7.5 (0.30)	11 (0.43)	15.4 (0.61)	19.8 (0.78)	24.1 (0.95)	28.5 (1.12) mm (mm)
D	0 (0)	4 (0.16)	8 (0.31)	12 (0.47)	16 (0.63)	20 (0.79)	25 (0.98)	30 (1.18)	35 (1.38)	40 (1.57) mm (in)

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