

**Precise non-contact  
temperature measurement  
from -50 °C to 1050 °C**



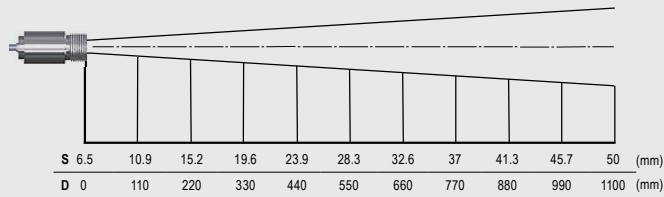
**Features:**

- One of the smallest infrared sensors worldwide with up to 22:1 optical resolution
- Rugged sensing head - usable up to 180 °C ambient temperature without cooling
- Two-piece design with easy accessible programming keys and LCD backlit display
- Built-in USB interface for simple sensor setup via mobile phone or PC
- Selectable analog outputs:  
0/4 – 20 mA, 0 – 5 V, 0 – 10 V, thermocouple type K
- Optional EtherNet/IP, Profinet, Ethernet TCP/IP / Modbus TCP, Modbus RTU, RS485, RS232 interface or relay outputs (2 x optically isolated)
- Easy and flexible exchange of sensing heads

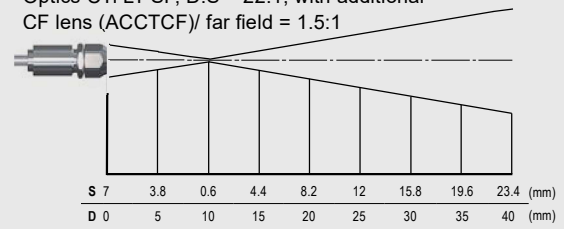
| General specifications                    |                                                                                                                                                                                                           | Measurement specifications                                                                                                                                                                                                                                                                                                         |                                                                                        |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Environmental rating                      | IP 65 (NEMA-4)                                                                                                                                                                                            | Measuring Temperature range (scalable via programming keys or software / App)                                                                                                                                                                                                                                                      | -50 °C ... 650 °C (LT02)<br>-50 °C ... 800 °C (LT15)<br>-50 °C ... 1050 °C (LT22)      |
| Operating temperature range <sup>1)</sup> | -20 °C ... 180 °C (120 °C for LT 02) (sensing head)<br>-20 °C ... 85 °C (electronics)                                                                                                                     | Spectral range                                                                                                                                                                                                                                                                                                                     | 8 – 14 µm                                                                              |
| Storage temperature                       | -40 °C ... 180 °C (120 °C for LT 02) (sensing head)<br>-40 °C ... 85 °C (electronics)                                                                                                                     | Optical resolution (90% energy)                                                                                                                                                                                                                                                                                                    | 22:1<br>15:1<br>2:1                                                                    |
| Operating air humidity range              | 10 – 95 %, non condensing                                                                                                                                                                                 | Smallest spot size                                                                                                                                                                                                                                                                                                                 | 0.6 mm @ 10 mm (LT22 + CF lens)                                                        |
| Vibration (sensor)                        | IEC 60068-2-6 (sinus shaped)<br>IEC 60068-2-64 (broadband noise)                                                                                                                                          | Measurement uncertainty <sup>2), 3), 4), 5), 7)</sup>                                                                                                                                                                                                                                                                              | ±1 % or ±1 °C                                                                          |
| Shock (sensor)                            | IEC 60068-2-27 (25G and 50G)                                                                                                                                                                              | Repeatability <sup>2), 3), 4), 5), 7)</sup>                                                                                                                                                                                                                                                                                        | ±0.2 °C or ±0.1 % (LT02)<br>±0.1 °C or ±0.1 % (LT15)<br>±0.15 °C or ±0.1 % (LT22)      |
| Weight                                    | 40 g (sensing head) / 420 g (electronics)                                                                                                                                                                 | Temperature resolution (display)                                                                                                                                                                                                                                                                                                   | 0.1 K                                                                                  |
| Electrical Specifications                 |                                                                                                                                                                                                           | NETD (typically) <sup>4), 5), 6), 7)</sup>                                                                                                                                                                                                                                                                                         | 25 mK (LT 02 & LT 15)<br>35 mK (LT 22)                                                 |
| Output / analog (2x)                      | 0 / 4 – 20 mA, 0 – 5 / 10 V, thermocouple K, alarm                                                                                                                                                        | Response time (90%)                                                                                                                                                                                                                                                                                                                | 40 ms (LT02)<br>115 ms (LT15 & LT22)                                                   |
| Output / alarm                            | 24 V / 50 mA (open collector)                                                                                                                                                                             | Emissivity / Gain (adjustable via programming keys or software / App)                                                                                                                                                                                                                                                              | 0.05 – 1.100                                                                           |
| Relay outputs (optional)                  | 2 x 60 V DC / 42 V AC <sub>RMS</sub> ; 0.4 A; optically isolated                                                                                                                                          | Transmissivity / Gain (adjustable via programming keys or software / App)                                                                                                                                                                                                                                                          | 0.05 – 1.100                                                                           |
| Digital Interfaces                        | built-in USB-interface, Optional: EtherNet/IP, Profinet, Ethernet TCP/IP / Modbus TCP, Modbus RTU, RS485, RS232 or relay outputs (2 x optically isolated)                                                 | Signal processing (parameter adjustable via programming keys or software / App)                                                                                                                                                                                                                                                    | Peak hold, valley hold, average; extended hold functions with threshold and hysteresis |
| Output impedances                         | mA max. 500 Ω (with 8 – 36 V DC)<br>mV min. 100 kΩ load impedance<br>thermocouple 20 Ω                                                                                                                    | Software / App                                                                                                                                                                                                                                                                                                                     | Optris CompactPlus Connect / IR Mobile App                                             |
| I/O Pins (3x)                             | flexible programming as in- or output; external emissivity adjustment, ambient temperature compensation, uncommitted value, trigger (reset of hold functions), alarm output (open collector 24 V / 50 mA) | <sup>1)</sup> The LCD displays capacity may be limited at ambient temperatures below 0 °C<br><sup>2)</sup> Whichever is greater<br><sup>3)</sup> T <sub>obj</sub> > 0 °C<br><sup>4)</sup> ε = 1<br><sup>5)</sup> Response time = 200ms<br><sup>6)</sup> T <sub>obj</sub> = 25 °C<br><sup>7)</sup> at ambient temperature 23 ± 5 °C |                                                                                        |
| Cable length                              | 1 m (standard), 3 m, 8 m, 15 m                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                    |                                                                                        |
| Power supply                              | 8 - 30 V DC / 1.2W                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                    |                                                                                        |

## Optical specifications

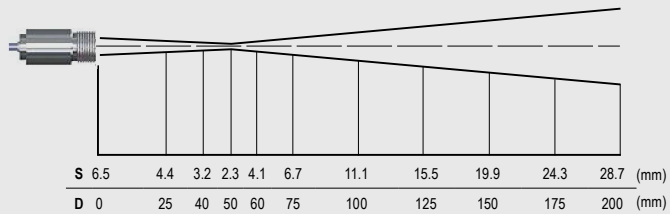
Optics CTi LT SF, D:S = 22:1



Optics CTi LT SF, D:S = 22:1, with additional  
CF lens (ACCTCF)/ far field = 1.5:1



Optics CTi LT CF, D:S = 22:1 (far field = 6:1)



More optical data: <https://optris.com/optris-calculator/>



Dimensions (in mm)

