



**Precise non-contact  
temperature measurement  
of liquid metals from  
1000 °C to 2000 °C  
(1832 °F to 3632 °F)**



**Features:**

- Precise temperature measurement of molten metal
- Decrease of measurement errors at emissivity changes or wrong settings thanks to short wavelength of 525 nm
- Temperature range from 1000 °C to 2000 °C (1832 °F to 3632 °F), measuring fields from 1 mm (0.04 in) and exposure times from 1 ms
- Suited for ambient temperatures of 85 °C (185 °F) without additional cooling, laser switches of automatically at 50 °C (122 °F)
- Optical resolution 150:1, focus settings scalable
- Double laser visor with 2 laser beams for exact measuring field marking and focussing

**General specifications**

|                                   |                                                                                                                                           |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental rating              | IP 65 (NEMA-4) front mountable at vacuum processes (up to 10 <sup>-3</sup> mbar)                                                          |
| Ambient temperature <sup>1)</sup> | -20 °C ... 85 °C (-4 °F ... 185 °F) (sensing head)<br>(50 °C [122 °F] with laser ON)<br>-20 °C ... 85 °C (-4 °F ... 185 °F) (electronics) |
| Storage temperature               | -40 °C ... 125 °C (-4 °F ... 257 °F) (sensing head)<br>-40 °C ... 85 °C (-40 °F ... 185 °F) (electronics)                                 |
| Relative humidity                 | 10–95 %, non condensing                                                                                                                   |
| Vibration                         | IEC 60068-2-6 (sinus shaped)<br>IEC 60068-2-64 (broadband noise)                                                                          |
| Shock                             | IEC 60068-2-27 (25G and 50G)                                                                                                              |
| Weight                            | 600 g (21.2 oz) (sensing head)<br>420 g (14.8 oz) (electronics)                                                                           |

**Electrical specifications**

|                      |                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Output / analog      | 0/4–20 mA, 0–5/ 10 V, thermocouple J, K                                                                                                |
| Output / alarm       | 24 V / 50 mA (open collector)                                                                                                          |
| Optional             | Relay: 2 x 60 V DC/ 42 V AC <sub>eff</sub> ; 0.4 A;<br>optically isolated                                                              |
| Output / digital     | USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)                                                                               |
| Output impedances    | mA max. 500 Ω (with 8–36 V DC)<br>mV min. 100 kΩ load impedance<br>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<br>(9.8 ft [standard], 26.2 ft, 49.2 ft)                                                                     |
| Current draw (laser) | Max. 160 mA                                                                                                                            |
| Power supply         | 8–36 V DC                                                                                                                              |
| Laser 635 nm         | 1 mW, ON/OFF via electronic box or software                                                                                            |

**Measurement specifications**

|                                                                                           |                                                                                                                                                  |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature range (scalable via programming keys or software)                             | 1000 °C ... 2000 °C<br>(1832 °F ... 3632 °F)                                                                                                     |
| Spectral range                                                                            | 525 nm                                                                                                                                           |
| Optical resolution (90 % energy)                                                          | 150:1                                                                                                                                            |
| System accuracy <sup>2)</sup> (at ambient temp. 23 ± 5 °C)<br>(at ambient tem. 73 ± 9 °F) | ±1 % of reading (≤1100 °C)<br>±(0.3 % of reading + 2 °F) (>1100 °C)<br>±1 % of reading (≤2012 °F)<br>±(0.3 % of reading + 3.6 °F) (>2012 °F)     |
| Repeatability (at ambient temp. 23 ± 5 °C)<br>(at ambient tem. 73 ± 9 °F)                 | ±0.5 % of reading (≤1100 °C)<br>±(0.1 % of reading + 1 °C) (>1100 °C)<br>±0.5 % of reading (≤2012 °F)<br>±(0.1 % of reading + 1.9 °F) (>2012 °F) |
| Temperature resolution (digital)                                                          | 0.2 K                                                                                                                                            |
| Exposure time <sup>3)</sup> (90 % signal)                                                 | 1 ms                                                                                                                                             |
| Emissivity/ Gain (adjustable via sensor or software)                                      | 0.100–1.100                                                                                                                                      |
| IR window correction (adjustable via software)                                            | 0.100–1.000                                                                                                                                      |
| Signal processing (parameter adjustable via software)                                     | Peak hold, valley hold, average; extended hold function with threshold and hysteresis                                                            |
| Software                                                                                  | optris® Compact Connect                                                                                                                          |

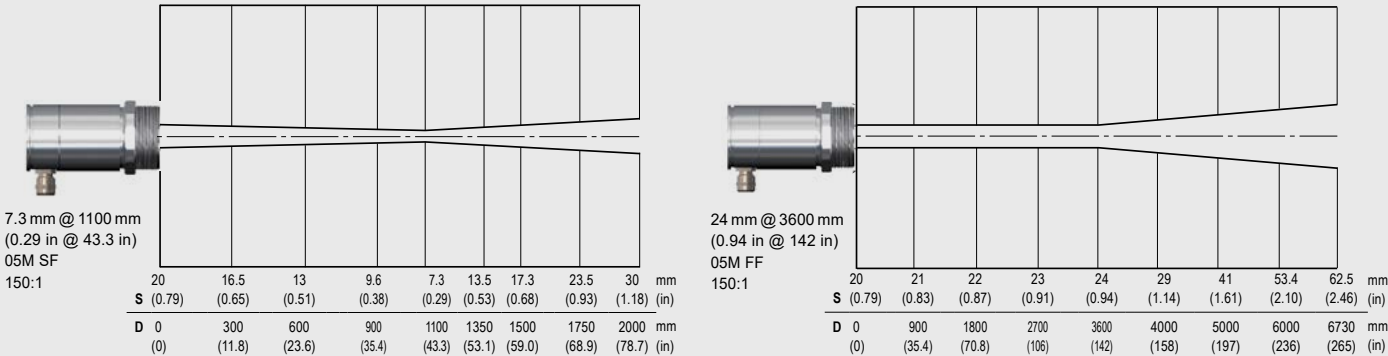
<sup>1)</sup> The functioning of the LCD display may be limited in ambient temperatures below 0 °C

<sup>2)</sup>  $\varepsilon = 1$ , Exposure time 1 s

<sup>3)</sup> With dynamic adaptation at low signal levels

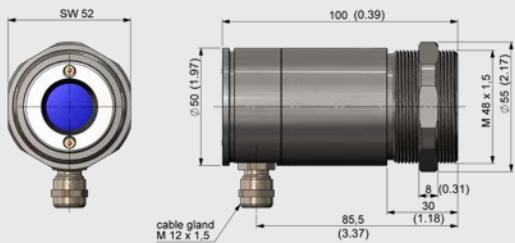


Optical parameter

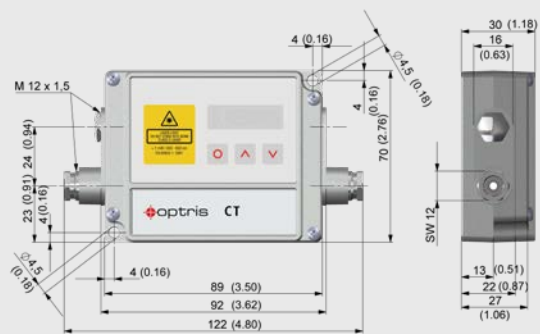


Dimensions

Sensing head



Electronics



Accessories

Mounting angle, adjustable  
in two axes (ACCTLAB)



Cooling housing  
(ACCJCTL)



Mounting angle for cooling housing,  
adjustable in two axes (ACCJAB)



Water cooling and air purge for  
sensing head (ACCTLW + ACCTLAP)



Mounting device for cooling housing  
(ACCTLRM)

