

**Precise non-contact temperature measurement of liquid metals from 1000 °C to 2000 °C**

**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, measuring fields from 1 mm and exposure times from 1 ms
- Suited for ambient temperatures of 85 °C without additional cooling, laser switches of automatically at 50 °C
- 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)
Ambient temperature <sup>1)</sup>	-20 °C ... 85 °C (sensing head, 50 °C with laser ON) -20 °C ... 85 °C (electronics)
Storage temperature	-40 °C ... 85 °C (sensing head) -40 °C ... 85 °C (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	600 g (sensing head) / 420 g (electronics)

**Electrical specifications**

Outputs / analog	0/4–20 mA, 0–5/ 10 V, thermocouple J, K
Alarm output	24 V / 50 mA (open collector)
Optional	Relay: 2 x 60 V DC/ 42 V AC <sub>eff</sub> : 0.4 A; optically isolated
Outputs / digital	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	3 m (standard), 8 m, 15 m
Power Supply	8–36 V DC
Current draw	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)	1000 °C ... 2000 °C
Spectral range	525 nm
Optical resolution (90 % energy)	150:1 (3ML)
System accuracy <sup>2)</sup> (at ambient temp. 23 ±5 °C)	±1 % of reading (≤1100 °C) ±(0.3 % of reading +2 °C) (>1100 °C)
Repeatability (at ambient temp. 23 ±5 °C)	±0.5 % of reading (≤1100 °C) ±(0.1 % of reading +1 °C) (>1100 °C)
Temperature resolution	0.2 K
Exposure time <sup>3)</sup>	1 ms (90 %)
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

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

<sup>2)</sup> ε = 1, Exposure time 1 s

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

