

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 ¹⁾	-20 ... 85 °C (sensing head, 50 °C with laser ON) -20 ... 85 °C (electronics)
Storage temperature	-40 ... 85 °C (sensing head) -40 ... 85 °C (electronics)
Relative humidity	10–95 %, non-condensing
Vibration (sensor)	IEC 60068-2-6 (sinus shaped) IEC 60068-2-64 (broadband noise)
Shock (sensor)	Shock: IEC 60068-2-27 (25G and 50G)
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 _{eff} ; 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 ... 2000 °C
Spectral range	525 nm
Optical resolution (90 % energy)	150:1
System accuracy ²⁾ (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 ³⁾	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

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

²⁾ $\varepsilon = 1$, Exposure time 1 s

³⁾ With dynamic adaptation at low signal levels

7.3 mm @ 1100 mm
05M SF
150:1

S	20	18.3	16.5	14.8	13	11.4	9.6	8.5	7.3	9.8	13.5	17.3	23.5	30	(mm)
D	0	150	300	450	600	750	900	1000	1100	1200	1350	1500	1750	2000	(mm)

24 mm @ 3600 mm
05M FF
150:1

S	20	20.5	21	21.5	22	22.5	23	23.4	24	29	41	53.4	62.5	(mm)
D	0	450	900	1360	1800	2250	2700	3000	3600	4000	5000	6000	6730	(mm)

Dimensions

[illegible]

Accessories (examples)