Precise non-contact temperature measurement with precise aiming from 250 °C to 2200 °C (482 °F to 3992 °F)

Features:
- Accurate temperature measurements of metals, secondary metal processing and ceramic materials
- Double laser aiming marks real spot location at any distance
- Optical resolution up to 300:1 with selectable focus
- Temperature ranges from 250 °C to 2200 °C (482 °F to 3992 °F), measuring spots up from 0.45 mm (0.02 in) and response times up from 1 ms
- Usable up to 85 °C (185 °F) ambient temperature without cooling and automatic laser switch off at 50 °C (122 °F)
- Short measuring wavelength of 1.0 μm or 1.6 μm

Measurement specifications

Temperature range (scalable via programming keys or software)
- 485 °C ... 1050 °C (905 °F ... 1841 °F) (1ML)
- 650 °C ... 1800 °C (1202 °F ... 3272 °F) (1MH)
- 800 °C ... 2200 °C (1472 °F ... 3992 °F) (1MH1)
- 250 °C ... 800 °C (482 °F ... 1472 °F) (2ML)
- 385 °C ... 1600 °C (725 °F ... 2912 °F) (2MH)
- 490 °C ... 2000 °C (914 °F ... 3632 °F) (2MH1)

Spectral range
- 1.0 μm (1M) / 1.6 μm (2M)

Optical resolution (90 % energy)
- 150:1 (1ML, 2ML)
- 300:1 (1MH, 1MH1, 2MH, 2MH1)

System accuracy 2)
- ±(0.3 % of reading +2 °C) at ambient temp. 23 ±5 °C
- ±[0.3 % of reading +3.6 °F] at ambient temp. 73 ±9 °F

Repeatability
- ±(0.1 % of reading +1 °C) at ambient temp. 23 ±5 °C
- ±[0.1 % of reading +1.8 °F] at ambient temp. 73 ±9 °F

Temperature resolution
- 0.1 K (1ML, 2ML)
- 0.1 K (1MH, 1MH1, 2MH, 2MH1)

Exposure time 3)
- 1 ms (90 %)

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

General specifications

Environmental rating
- IP 65 (NEMA-4) front mountable at vacuum processes (up to 10⁻³ mbar)

Ambient temperature 1)
- –20 °C ... 85 °C (–4 °F ... 185 °F) (sensing head) (50 °C [122 °F] with laser ON)
- –20 °C ... 85 °C (–4 °F ... 185 °F) (electronics)

Storage temperature
- –40 °C ... 125 °C (–40 °F ... 257 °F) (sensing head)
- –40 °C ... 85 °C (–40 °F ... 185 °F) (electronics)

Relative humidity
- 10 – 95 %, non condensing

Vibration
- IEC 68-2-6: 3 G, 11 – 200 Hz, any axis

Shock
- IEC 68-2-27: 50 G, 11 ms, any axis

Weight
- 600 g (21.2 oz) (sensing head)
- 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, 0.4 A; optically isolated

Output / digital
- USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)

Output impedances
- mA max. 500 Ω (with 8 –36 V DC)
- mV min. 100 Ω 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 (9.8 ft [standard], 26.2 ft, 49.2 ft)

Current draw (laser)
- Max. 100 mA

Power supply
- 8 – 36 V DC

Laser
- 635 nm 1 mW, ON/OFF via electronic box or software

1) The functioning of the LCD Display may be limited in ambient temperatures below 0 °C
2) ε = 1, Exposure time 1 s
3) With dynamic adaptation at low signal levels
### Optical parameter

#### 1MH/2MH SF
- 300:1
- 3.7 mm @ 1100 mm
  - (0.15 in @ 43.3 in)
- 7.3 mm @ 1100 mm
  - (0.29 in @ 43.3 in)
- **Specifications are subject to change without notice**

#### 1MH/2MH SF 150:1
- 0.5 mm @ 150 mm
  - (0.02 in @ 5.91 in)
- 1 mm @ 550 mm
  - (0.04 in @ 21.7 in)
- **Specifications are subject to change without notice**

#### 1MH/2MH CF2
- 300:1
- 12 mm @ 3600 mm
  - (24 mm @ 3600 mm)
- **Specifications are subject to change without notice**

#### 1MH/2MH CF2 150:1
- 0.7 mm @ 200 mm
- 1.3 mm @ 200 mm
- **Specifications are subject to change without notice**

#### 1MH/2MH CF4
- 300:1
- 1.5 mm @ 450 mm
  - (3 mm @ 450 mm)
- **Specifications are subject to change without notice**

#### 1MH/2MH CF4 150:1
- 0.5 mm @ 150 mm
  - (1 mm @ 550 mm)
- **Specifications are subject to change without notice**

#### 1MH/2MH FF
- 300:1
- 12 mm @ 3600 mm
  - (24 mm @ 3600 mm)
- **Specifications are subject to change without notice**

#### 1MH/2MH FF 150:1
- 0.5 mm @ 150 mm
  - (1 mm @ 550 mm)
- **Specifications are subject to change without notice**

#### 1MH/2MH CF3
- 300:1
- 0.7 mm @ 200 mm
  - (1.3 mm @ 200 mm)
- **Specifications are subject to change without notice**

#### Dimensions

### Sensing head

### Electronics

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*Specifications are subject to change without notice - CT Laser 1M/2M US2018-08-A*