Precise non-contact temperature measurement of metal from 50 °C to 1800 °C (122 °F to 3272 °F)

Features:
- Miniaturized Infrared Thermometer with 2.3 μm wave length range for measurements of metals, of secondary metal processing, metal oxides and ceramic materials
- Very small sensing head of 14 mm (0.6 in) diameter and 28 mm (1.1 in) length fits everywhere and is usable up to 85 °C (185 °F) ambient temperature without cooling
- Temperature measuring ranges from 50 °C to 1800 °C (122 °F to 3272 °F) and exposure times starting from 1 ms
- Short wave length range of 2.3 μm to reduce error of reading with measurements on materials with unknown emissivity

Measurement specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
</table>
| Temperature range (scalable via programming keys or software) | 50 °C ... 400 °C (3ML) (122 °F ... 752 °F)  
100 °C ... 600 °C (3MH) (212 °F ... 1112 °F)  
150 °C ... 1000 °C (3MH1) (302 °F ... 1832 °F)  
200 °C ... 1500 °C (3MH2) (392 °F ... 2732 °F)  
250 °C ... 1800 °C (3MH3) (482 °F ... 3272 °F) |
| Spectral range                                     | 2.3 μm                                             |
| Optical resolution (90 % energy)                   | 22:1 (3ML)  
33:1 (3MH)  
75:1 (3MH1 – 3MH3) |
| System accuracy2) (at ambient temp. 23 ±5 °C (73 ±9 °F)) | ±0.1 % of reading +1 °C  
(±0.1 % of reading +1.8 °F) |
| Repeatability (at ambient temp. 23 ±5 °C (73 ±9 °F)) | ±0.1 % of reading +1 °C  
(±0.1 % of reading +1.8 °F) |
| Temperature resolution (display)                   | 0.1 K                                              |
| Exposure time3)                                     | 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                            |

General specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental rating</td>
<td>IP 65 (NEMA-4)</td>
</tr>
</tbody>
</table>
| Ambient temperature                        | –20 °C to 85 °C (–4 °F to 185 °F) (sensing head)  
0 °C to 85 °C (32 °F to 185 °F) (electronics) |
| Storage temperature                        | –40 °C to 125 °C (–40 °F to 257 °F) (sensing head)  
–40 °C to 85 °C (–40 °F to 185 °F) (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                                     | 40 g (1.4 oz) (sensing head)  
420 g (14.8 oz) (electronics) |

Electrical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs / analog</td>
<td>0/4 – 20 mA, 0 – 5/10 V, thermocouple J, K, alarm</td>
</tr>
<tr>
<td>Output / alarm</td>
<td>24 V / 50 mA (open collector)</td>
</tr>
<tr>
<td>Optional</td>
<td>Relay: 2 x 60 V DC / 42 V ACnom. 0.4 A; optically isolated</td>
</tr>
<tr>
<td>Outputs / digital</td>
<td>USB, RS232, RS485, CAN, Proflibus DP, Ethernet (optional)</td>
</tr>
</tbody>
</table>
| 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 (9.8 ft)                              |
| Power Supply                                      | 8 – 36 V DC                               |
| Current draw                                      | Max. 100 mA                               |

Optris® CT 3M
TECHNICAL DATA

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Phone: 603-766-6060 · E-Mail: sales@optris-ir.com · www.optris.com
Optical specifications

Optics CT 3ML SF, D:S = 22:1

Optics CT 3ML CF, D:S = 22:1 (far field = 9:1)

Optics CT 3MH SF, D:S = 33:1

Optics CT 3MH CF, D:S = 33:1 (far field 11:1)

Optics CT 3MH1-H4 SF, D:S = 75:1

Optics CT 3MH1-H4 CF, D:S = 75:1 (far field 40:1)

Dimensions

Sensing head (standard)

Sensing head (built-in CF lenses)

Electronics

Accessories (examples)

CF-lens (ACCTCFHT)

Mounting bracket, fixed (ACCTFB)

Air purge collar with integrated CF-lens (ACCTAPLCFHT)