

# INFRARED THERMOMETER



## CONTACTLESS TEMPERATURE MEASUREMENT

- 12:1 (-50...650 °C) or 30:1 optics (-50...1000 °C)
- Two-beam laser sight
- Automatic data hold
- Units can be switched between °C and °F
- Emissivity level adjustable between 0.1 and 1.0
- MAX temperature display
- Illuminated display
- Automatic range selection and display resolution of 0.1 °C or 0.1 °F
- Activatable trigger lock
- Freely selectable lower and upper alarm limits

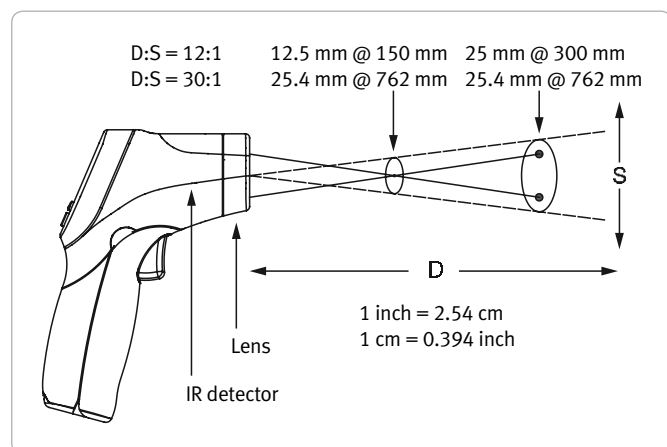


# TECHNICAL INFORMATION

With the TP31-IR, surface temperatures can be determined quickly and contactless. Thanks to an adjustable emissivity level and a double laser, which serves as a target device, the surfaces of a wide range of materials can be precisely measured.

## Optics

The focal point of the device lens is 150 mm (TP31-IR121) or 762 mm (TP31-IR301) from the beam exit opening. There the measuring spot has a diameter of 12.5 mm respectively 25.4 mm, resulting in a ratio of D:S of 12:1 or 30:1. The size of the measuring spot corresponds to 90 % of the measured energy. The TP31-IR301 therefore also allows accurate measurements of small surfaces from further distances.

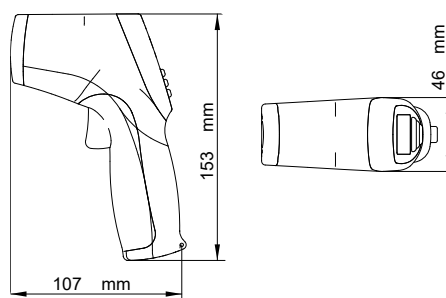


## Emissivity values

| Substance | Thermal Emissivity | Substance           | Thermal Emissivity |
|-----------|--------------------|---------------------|--------------------|
| Asphalt   | 0.90 to 0.98       | Fabric (black)      | 0.98               |
| Concrete  | 0.94               | Human skin          | 0.98               |
| Cement    | 0.96               | Foam                | 0.75 to 0.80       |
| Sand      | 0.90               | Charcoal (powder)   | 0.96               |
| Earth     | 0.92 to 0.96       | Lacquer             | 0.80 to 0.95       |
| Water     | 0.92 to 0.96       | Lacquer (matt)      | 0.80 to 0.95       |
| Ice       | 0.96 to 0.98       | Rubber (black)      | 0.94               |
| Snow      | 0.83               | Plastic             | 0.85 to 0.95       |
| Glass     | 0.90 to 0.95       | Construction timber | 0.90               |
| Ceramics  | 0.90 to 0.94       | Paper               | 0.70 to 0.94       |
| Marble    | 0.94               | Chromium oxide      | 0.81               |
| Plaster   | 0.80 to 0.90       | Copper oxide        | 0.78               |
| Mortar    | 0.89 to 0.91       | Iron oxide          | 0.78 to 0.82       |
| Brick     | 0.93 to 0.96       | Textiles            | 0.90               |

| Specification                           | TP31-IR121  | TP31-IR301   |
|---|---|--|
| Measurement range                       | -50...650 °C<br>(-58...1202 °F)   | -50...1000 °C<br>(-58...1832 °F)                             |
| Ratio D:S                               | 12:1  | 30:1   |
| Display resolution                      | 0.1 °C/°F @ T < 1000 °C/°F<br>1 °F @ T > 1000 °F  |  |
| Measurement accuracy<br>@ 23 °C (73 °F) | -50...20 °C<br>-58...68 °F  | ±2.5 °C<br>±4.5 °F   |
|   | 20...300 °C<br>68...572 °F  | ±1.0 % of reading ±1.0 °C<br>±1.0 % of reading ±1.8 °F       |
|   | >300 °C<br>>572 °F  | ±1.5 % of reading  |
|   |   |  |
| Repeatability                           | -50...20 °C<br>-58...68 °F  | ±1.3 °C<br>±2.3 °F   |
|   | >20 °C<br>>68 °F  | ±0.5 % of reading or ±0.5 °C<br>±0.5 % of reading or ±0.9 °F |
|   |   |  |
| Response time                           | 150 ms  |  |
| Sensor sensitivity                      | 8...14 µm   |  |
| Emissivity                              | 0.10...1.00 (0.01 steps)  |  |
| Diode laser                             | Output power <1 mW<br>Wavelength 630 to 670 nm, Laser Product Class II  |  |
| Operating conditions                    | 0...50 °C (32...122 °F)<br>10...90 %RH  |  |
| Storage conditions                      | -10...60 °C (14...140 °F)<br><80 %RH  |  |
| Power supply                            | 9 V battery<br>(NEDA 1604A or IEC 6LR61)  |  |
| Included                                | <ul style="list-style-type: none"> <li>Battery</li> <li>Short instruction manual</li> <li>Function and calibration certificate</li> </ul> |  |

## Dimensions



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