Laser Probe Combo Thermometer

Unit Diagram

- Infared Lens
- Laser
- Emissivity Key
- Down Key
- Mode Key
- Probe
- Battery Cover

LCD Display

Surface Temperature Guide
- Simmer: 200°F/95°C
- Saute: 275°F/135°C
- Grill: 400°F/205°C
- Griddle: 325°F/165°C
- Wok: 425°F/220°C
- Pan fry: 350°F/180°C
- Sear: 450°F/230°C
- Deep fry: 375°F/190°C

Internal Temperature Guide
- Beef, veal, lamb (med rare): 145°F/63°C
- Beef, veal, lamb (medium): 160°F/71°C
- Beef, veal, lamb (well): 170°F/77°C
- Chicken, turkey (done): 180°F/82°C
- Pork (done): 160°F/71°C

Usage Instructions
How to measure temperature

- To measure a surface temperature, point the unit at an object and pull the trigger. Be sure to consider the distance-to-spot ratio (Distance:Spot is 11:1) and field of view. The laser is used for aiming the target for reference. The LCD will display the temperature. After 60 seconds, the unit will power down to save battery.
- To measure internal temperature, simply insert thermocouple probe (10) into food and the temperature will display automatically. After 12 minutes, the unit will power down to save battery.

⚠️ EMC/RFI
Readings may be affected if the unit is operated within radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.

⚠️ Caution
Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
Caution: Please make sure the target to be measured will not exceed the temperature range of the probe to avoid permanent damage of the thermocouple probe.

Read the following safety information carefully and use caution when operating this instrument.
1. When device is in use, do not look directly into the laser beam—permanent eye damage may result.
2. Never point the device towards anyone's eyes or indirectly from reflective surfaces.
4. Do not use for safety related applications

Distance-to-Spot Ratio
To get a correct reading, the detection area you want to measure must be larger than the required spot size. The temperature you get is an average temperature of the detected region. The smaller the target, the shorter the distance is required for measuring.

\[ D:S = 11:1 \]

Emissivity
Emissivity is a term used to describe the energy-emitting characteristics of materials. The higher the value, the more capability of radiation emittance. Most organic materials and painted or oxidized surfaces have an emissivity of 0.98. Metal surfaces or shiny materials have a lower emissivity and may give inaccurate temperature readings. **For best results when measuring the temperature of shiny surfaces such as stainless steel, coat pan with butter or oil before reading surface temperature.**

The default emissivity is 0.95. To change emissivity, Press Emissivity key (1), then press Up key (4) or Down key (2). Press Mode key (5) to confirm. The emissivity can be changed from 0.10 (10E) to 1 (100E).
Function Modes

E
Emissivity display. (The default emissivity is 0.95.)

MAX
Press Mode key (5) for:
Maximum Temperature (MAX), Minimum Temperature (MIN), Difference between MAX and MIN Temperatures (DIF) and Average Temperature (AVG) modes. Mode reading will be displayed beside the mode icon.

MIN

DIF

AVG

HAL
Press Up key (4) or Down key (2) key to change the High Alarm Temperature (HAL) or Low Alarm Temperature (LAL), then press Meas. key (9) to confirm.

LAL

PR3
When the thermocouple probe (10) is in/on the target, the thermometer will display the temperature automatically. To see the min or max data during the probe measurement, hold the Up key (4) or Down key (2). After measuring high temperatures, the probe may remain HOT.

Backlight on/off:
Press Mode key (5) and Up key (4) for backlight function ON/OFF.

Laser Function On/Off:
Press Mode key (5) and Down key (2) for laser function ON/OFF.

In MAX, MIN, DIF, AVG mode:
Press Up key (4) for LOCK mode ON/OFF. The lock mode is particularly useful for continuous monitoring of temperatures for up to 60 minutes.

Press Down key (2) for °C or °F

Storage and Cleaning

Unit body: Do not submerge in water. To clean, periodically wipe casing with a clean, dry cloth. Do not use abrasives or solvents on this product. The thermometer should be stored at room temperature between -4 to 149°F (-20 to +65°C).

Lens: The sensor lens is the most delicate part of the thermometer. Blow off loose particles using canned air and gently brush away remaining debris using a lens brush. The lens should be kept clean at all times, care should be taken when cleaning the lens using only a soft cloth or cotton swab with water or medical alcohol. Allow the lens to fully dry before using the thermometer. Do not use solvents to clean the glass lens!

Troubleshooting - Error Messages

('Hi' or 'Lo' is displayed when the temperature being measured is outside of the settings of HAL and LAL.

Er2' is displayed when the thermometer is exposed to rapid changes in the ambient temperature. ‘Er3’ is displayed when the ambient temperature exceeds 32°F (0°C) or +122°F (50°C).

The thermometer should be allowed time (minimum 30 minutes) to stabilize to room temperature.

For all other error messages it is necessary to reset the thermometer. To reset it, turn the instrument off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn on.
Battery Display

- **Battery OK**
  - Measurements are possible

- **Battery Low**
  - Replace Battery
  - Measurements are possible

- **Battery Exhausted**
  - Replace Battery
  - Measurements not possible

⚠️ When the ‘Low Battery’ icon indicates the battery is low, the battery should be replaced immediately with AAA, 1.5V batteries. Please note: It is important to turn the instrument off before replacing the battery otherwise the thermometer may malfunction. Dispose of used battery promptly and keep away from children.

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## Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Infrared Scan Measurement Range</td>
<td>-76 to +932°F (-60 to +500 °C)</td>
</tr>
<tr>
<td>Probe Scan Measurement Range</td>
<td>-67 to +626°F (-55 to +330 °C)</td>
</tr>
<tr>
<td>Operating Range</td>
<td>32°-122°F (0°-50°C)</td>
</tr>
<tr>
<td>Infrared Scan Accuracy, (Tobj=15-35°C,Tamb=25°C)</td>
<td>+/-1.8°F (1.0°C)</td>
</tr>
<tr>
<td>Infrared Scan Accuracy (Tobj=33-400°C,Tamb=23 +/- 3°C)</td>
<td>+/-2% of reading or 4°F (2°C) whichever is greater</td>
</tr>
<tr>
<td>Probe Scan Accuracy (Tested in Tamb=23 +/- 6°C)</td>
<td>+/-1% of reading or 0.8°C (1.4°F) whichever is greater</td>
</tr>
<tr>
<td>Emissivity</td>
<td>0.95 fixed</td>
</tr>
<tr>
<td>Resolution (-9.9~199.9°C)</td>
<td>0.1°F/0.1°C</td>
</tr>
<tr>
<td>Response Time (90%)</td>
<td>1 sec</td>
</tr>
<tr>
<td>Distance:Spot</td>
<td>11:1</td>
</tr>
<tr>
<td>Battery Life</td>
<td>Typ.180 min, 140 hours continuous use</td>
</tr>
<tr>
<td>Dimensions</td>
<td>175.2 x 39.0 x 71.9mm(6.9°–1.54°–2.83 inch)</td>
</tr>
<tr>
<td>Weight</td>
<td>179 grams including batteries (AAA*2pcs)</td>
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