**GM320/GM550 Infrared Thermometer User Manual**

A. Introduction

GM320/GM550 are infrared thermometers for non-contact temperature measurement, which determine the surface temperature of an object by measuring the amount of infrared energy radiated by the object surface.

B. Safety Information

To avoid possible hazards, please read all safety information before you use the product.

1. Do NOT use the product around explosive gas, vapor, or in damp or wet environments.
2. Do NOT look directly into the laser or point laser indirectly at persons’ eyes.
3. Do NOT look directly into the laser with optical tools (e.g.: binoculars, microscopes).
4. Do NOT put the product near heat or fire.

C. How the Product Works

Any object whose temperature is higher than absolute zero radiates infrared energy. The radiated infrared energy is proportionate to the temperature of the object itself. This product optics sense emitted, reflected, and transmitted energy, which is collected and focused onto a detector. The product electronics translate the signal into a temperature measurement and shows the measurement on the display.

D. General Maintenance

Do not open the product. Have the product repaired only through an approved technical site.

1. Do not operate the product around hot, wet, flammable, explosive or magnetic environments.
2. Clean the product with damp cloth and mild detergent; do not use abrasives or solvents.
3. Remove the batteries if you will not use the product for a long time to prevent possible battery leak.
4. When “battery” is shown on the display, batteries shall be replaced as below:
   1. Remove the battery cover through the depression area on the side of the product;
   2. Replace the used batteries with new batteries of the same type;
   3. Place the battery cover back.

E. Instruction

1. How to Measure
   1. Target the object you want to measure and push the trigger, the product will be turned on automatically;
   2. Use the laser light to help aiming the right point;
   3. Loosen the trigger when a temperature is shown on the display, the product will beep once, the measurement on the display will be locked and a “HOLD” will show at the lower left corner;
   4. Repeat the above steps to measure another object;

2. Instruction

<table>
<thead>
<tr>
<th>Button</th>
<th>Instruction</th>
</tr>
</thead>
</table>
| EMIT | 1. Press EMIT, then press this button to increase the emissivity.  
2. Push the trigger, then press this button to turn on/off backlight. |
| | 1. Press EMIT, then press this button to decrease the emissivity.  
2. Push the trigger, then press this button to turn on/off laser light.  
3. Press this button to make °C/°F selection. |
| SELECT | Press this button will toggle between the following functions:  
1. MAX: the maximum value. Due to the uneven temperature of an object’s surface, the measurement you get in the middle of the display will fluctuate because the laser target is pointing to different points; by entering MAX Function, the lower right corner of the display will show the maximum value you get during the whole measuring process.  
2. AVG: the average value; measure the same way as above.  
3. MIN: the minimum value; measure the same way as above.  
4. DIF: the difference between the maximum value and the minimum value; measure the same way as above.  
5. LAL: low temperature alarm; press △ or▽ after entering this function to set the alarm value; once the temperature you are measuring is lower than the alarm value, the top left corner will show “LOW” and the built-in beeper will beep continuously.  
6. HAL: high temperature alarm; set the same way as above and the top left corner will show “LOW”.  
7. Offset: calibrate temperature; when you are measuring a known temperature and find the result you get through the product is not the same as what you know, you can enter this function and press △ or▽ to calibrate the product.  

* Emissivity describes the energy-emitting characteristics of materials. Most organic materials and painted or oxidized surfaces have an emissivity of approximately 0.95, the default setting for the product. To enhance accuracy of measurements, set emissivity based on the Appendix: “Emissivity of Common Objects”.

(2) Buttons
### General Specifications

- **Display (LCD)**: √
- **Data Hold**: √
- **℃/℉ Selection**: √
- **Material**: ABS
- **Auto Power Off Time**: 6s
- **Low Battery Indication**: √
- **Auto Power Off**: √

### Mechanical Specifications

- **Dimension**: 155*95*43mm
- **Weight (Batteries Included)**: 162g
- **Battery Type**: 1.5V AAA Battery * 2
- **Warranty**: One Years

### Environmental Specifications

- **Operating Temperature**: 0~40℃
- **Humidity**: <75%
- **Storage Temperature**: -20~60℃
- **Humidity**: <80%

### Environmental Specifications

- **EN 61326-1: 2013; FCC Part 15 Subpart B: 2016**
- **Standard Accessories**: Battery * 2pcs; English User Manual; Clampshell package

### Materials and Emissivity

<table>
<thead>
<tr>
<th>Materials</th>
<th>Specs</th>
<th>Emissivity</th>
<th>Materials</th>
<th>Specs</th>
<th>Emissivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>Oxidated</td>
<td>0.20-0.40</td>
<td>Human Skin</td>
<td></td>
<td>0.98</td>
</tr>
<tr>
<td></td>
<td>Polished</td>
<td>0.02-0.04</td>
<td>Graphite</td>
<td>Oxidated</td>
<td>0.20-0.60</td>
</tr>
<tr>
<td>Copper</td>
<td>Oxidated</td>
<td>0.40-0.80</td>
<td>Lacquer</td>
<td>Polished</td>
<td>0.80-0.95</td>
</tr>
<tr>
<td></td>
<td>Polished</td>
<td>0.02-0.05</td>
<td>Unpolished</td>
<td></td>
<td>0.97</td>
</tr>
<tr>
<td>Gold</td>
<td></td>
<td>0.01-0.10</td>
<td>Rubber</td>
<td></td>
<td>0.95</td>
</tr>
<tr>
<td>Iron</td>
<td>Oxidated</td>
<td>0.60-0.90</td>
<td>Textile</td>
<td></td>
<td>0.90-0.95</td>
</tr>
<tr>
<td>Steel</td>
<td>Oxidated</td>
<td>0.70-0.90</td>
<td>Concrete</td>
<td></td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>Polished</td>
<td>0.95</td>
<td>Cement</td>
<td></td>
<td>0.96</td>
</tr>
<tr>
<td>Asbestos</td>
<td>Oxidated</td>
<td>0.80-0.90</td>
<td>Soil</td>
<td></td>
<td>0.90-0.98</td>
</tr>
<tr>
<td>Gypsum</td>
<td>Oxidated</td>
<td>0.95</td>
<td>Plaster</td>
<td></td>
<td>0.89-0.91</td>
</tr>
<tr>
<td>Bitumen</td>
<td>Oxidated</td>
<td>0.95</td>
<td>Brick</td>
<td></td>
<td>0.93-0.96</td>
</tr>
<tr>
<td>Pottery</td>
<td>Oxidated</td>
<td>0.90-0.95</td>
<td>Marble</td>
<td></td>
<td>0.94</td>
</tr>
<tr>
<td>Wood</td>
<td>Oxidated</td>
<td>0.95</td>
<td>Glass</td>
<td></td>
<td>0.85-0.92</td>
</tr>
<tr>
<td>Charcoal</td>
<td>Powder</td>
<td>0.95</td>
<td>Tableware</td>
<td></td>
<td>0.85-0.92</td>
</tr>
<tr>
<td>Carbon Paste</td>
<td>Oxidated</td>
<td>0.90</td>
<td>Paper</td>
<td>All Colors</td>
<td>0.94</td>
</tr>
<tr>
<td>Soap Bubble</td>
<td>Oxidated</td>
<td>0.75-0.80</td>
<td>Sand</td>
<td></td>
<td>0.90</td>
</tr>
<tr>
<td>Plastics</td>
<td>&gt;0.5mm</td>
<td>0.95</td>
<td>Gravel</td>
<td></td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.85-0.95</td>
<td>Water</td>
<td></td>
<td>0.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ice</td>
<td></td>
<td>0.96-0.98</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Snow</td>
<td></td>
<td>0.83-0.90</td>
</tr>
</tbody>
</table>

### Environmental Specifications

- **EN 61326-1: 2013; FCC Part 15 Subpart B: 2016**
- **Standard Accessories**: Battery * 2pcs; English User Manual; Clampshell package

---

**LIMITED WARRANTY AND LIMITATION OF LIABILITY**

Customers enjoy one-year exchange, three-year warranty from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage from accident, neglect, misuse, alternation, contamination, or abnormal conditions of operation or handling.

All rights reserved. Specifications are subject to change without notice.