User Manual

A. Introduction

This product is an infrared thermometer for non-contact temperature measurement, which determines 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. Then the product translates the signal into a temperature measurement and shows the measurement on the display.

D. Genearl 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.
(5) When "⌷" 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. Loose 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;

* 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

Button	Instruction
☀️💡△	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 ℃/℉ 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 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 from the product is not the same as what you know, you can enter this function and press △ or ▽ to calibrate the product. 8. E: current emissivity.
EMIT	Press this button to set the emissivity.

F. Specifications

Electronical Specifications	
Range	-50~550℃(-58~1022℉)
Resolution	0.1℃/0.1℉
Accuracy	＜0℃ or ＞25℃: ±1.5℃ or ±1.5%, whichever is greater 0℃~25℃: ±3.0℃ ＜32℉ or >77℉: ±2.7℉ or ±1.5%, whichever is greater 32℉~77℉: ±4.4℉
Spectral Response	6-14μm
Repeatability	±1% or ±1℃ (1.8℉), whichever is greater
Distance: Spot	12:1
Emissivity	0.10~1.00 (adjustable)
Response Time	500 ms
Laser Target	√
General Specifications	
Display (LCD)	√
Data Hold	√
℃/℉ Selection	√
Material	ABS
Auto Power Off Time	6s
Low Battery Alert	√
Auto Power Off	√
Mechanical Specifications	
Dimension	155*95*43mm
Weight	148g
Battery Type	1.5V AAA Battery * 2
Warranty	One Year
Environmental Specifications	
Operating	Temperature
	Humidity
Storage	Temperature
	Humidity

LIMITED WARRANTY
AND LIMITATION OF LIABILITY

*Appendix: Emissivity of Common Objects

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