Rapid-Measuring Infrared Thermometer (-10°C - 350°C)

Operating Instructions

I. Product Introduction

It is a professional hand-held non-contact infrared thermometer, which is characteristic of easy operation, precise design, high accuracy and wide measurement range. It possesses various kinds of functions such as laser collimation, LCD display with backlight，over-temperature alarm, adjustable emissivity and automatic shutdown. When the device is in use, the objects temperature could be detected rapidly and accurately by simply aiming the detection window at the objects.

II. Basic Operation Principle

Any object with the temperature over 0°C will emit a certain proportion of infrared radiation energy on the basis of its own temperature. The radiation energy and its wavelength distribution have very close relation to its surface temperature.   On the basis of this principle, the objects temperature could be accurately detected by measuring infrared radiation energy of the objects.

III. Product Features

● Exclusive use of HEIMANN infrared temperature probe with high accuracy and stable performance.

● Sound alarm function when temperature is slightly high (Threshold value is adjustable)

● 32 times measuring data storage
● Backlight LCD digital display

● Two temperature modes to select: Fahrenheit and Celsius
● Emissivity 0.30-1.00 adjustable

● Inbuilt laser aiming device
● Automatic shutdown (power conservation)

● Small volume, proper structure and easy to operate.

IV. Main Technical Specifications

A. Normal working condition   1. Environment temperature: 10°C-45°C

2. Relative humidity: 10%-85%   3. Power: DC3V (2 AAA batteries)

B. Basic Size :87mm×3mm×48mm (Length×idth×eight)   **C. Weight (Net weight): 113g (excluding the batteries)**

D. LCD Display Resolution (Accuracy): 0.1°C/°F   **E. Measurement Range: -10°C-350°C (14.0°F-662.0°F)**

F. Power Consumption: ≤50mw   **G. Measurement Discrepancy: ±2°C or ±2% (Max value)**

G. Measurement Discrepancy: 2.0°C or 2% (Max value)   **H. Measurement Time: ≤0.5 second**

I. Measurement Distance: D: S= 8:1 (measurement distance : object target)

J. Emissivity: 0.30 - 1.00 adjustable   **K. Automatic Shutdown Time: 6 seconds**

L. Safety Design Standard: In accordance with European CE safety criteria

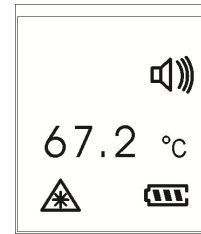## V. Basic Composition & Profile Configuration
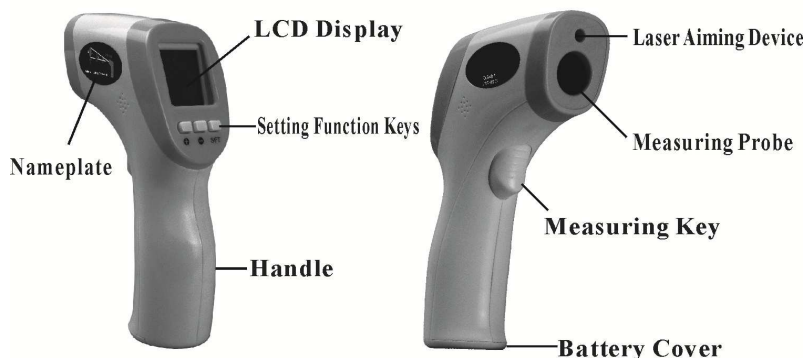
VI. Operation Method

● **Safety Notes**

1. Please use with care when laser beam is turned on.

2. Don't aim laser beam at the eyes of people and animals.

3. Don't aim laser beam at the surface of objects which reflects to the eyes of people.

4. Don't aim laser beam at any explosive gas.

● **Measuring steps and method**

1. To measure a more accurate temperature value, this thermometer should be used after 10 minutes when the batteries are installed. When the device is used in a new environment, it should also be used after 10 minutes.

2. Aim the measuring probe at the measured object and press the measuring key on the handle. The device automatically turns on with a beep sound. Meanwhile, it will display the measuring result. See the picture below,

Note:

Please select the emissivity of the measured object and adjust the measuring distance according to the size of the measured objects.

3. The way to save measuring results

If any measuring data needs to be saved for future reference, please press the "●" in the function key after the measuring result has been obtained. The measuring result has thus been saved. (It could be saved for 32 times)

4. **The way to check previous measuring result**

After the thermometer is turned on, press "SET" in the setting function key to check the 32 measured data. Meanwhile, the LCD shows "Memory". Press "●" or "●" to check the previous measuring result forwards or backwards. See the picture below:
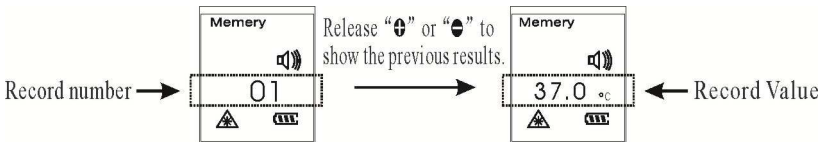
VII. Symbol Description of Keystroke and LCD Display

Symbol	Description of Symbol Function
●	**Function Key:** It is + when setting and turn page forwards when checking saved data
●	**Function Key:** It is - when setting and turn page backwards when checking saved data
SET	**Function Key:** It has setting function and check saved data
⚠	Laser Indication
▭	Battery Power Indication
℃	Temperature Unit: Celsius
℉	Temperature Unit: Fahrenheit
◁》	Sound Alarm
Memory	Memory Information

VIII. Battery Replacing

Display: When the battery symbol" ▭ "flashes on the LCD, it means the battery has been run out of.

Operation: Remove the battery cover and change two new AAA alkaline batteries.

IX. Setting

A. Function Setting F-1: Temperature Unit Selection

1. Press the setting key for 3 seconds, the LCD will show F-1. Meanwhile, the "°C" symbol flashes.

2. Press "+" key to select Celsius (°C).

3. Press "-"key to select Fahrenheit (°F).

4. When the selection is done, press SET key to save the setting parameter and enter function setting F-2.

B. Function Setting F-2: Alarm Threshold Value

1. Press the setting key for 3 seconds, the LCD will show F-1.

2. Further press the setting key once, it shows F-2 and the symbol "100.0" flashes.

3. Press "+" key once, the alarm threshold value adds 0.1℃.

4. Press "-" key once, the alarm threshold value reduces 0.1℃.

5. After the selection is done, press SET key to save the setting parameter and enter function setting F-3.

Note:

    The alarm threshold value is the lower limit value of temperature measurement. Once the temperature over the alarm threshold value, the thermometer will emit beep sound. The factory default setting is 100.0℃.

C. Function Setting F-3: Emissivity Selection

1. Press the setting key for 3 seconds, the LCD will show F-1.

2. Further press the setting key twice, it shows F-3 and the symbol "95" flashes at the same time.

3. Press "+" key once, the value adds 1.

4. Press "-" key once, the value reduces 1.

5. After the selection is done, press SET key to save the setting parameter and enter function setting F-4.

Note:

    The emissivity varies from different objects. Please refer to the contrast table of objects emissivity for corresponding setting.

The value adjustment range: "30-100", default value is 95.

The value indication: 95 indicates 0.95, 30 indicates 0.30, 100 indicates 1.00.

D. Function Setting F-4: The Overall Value of the Offset

1. Press the setting key for 3 seconds, the LCD will show F-1.

2. Further press the setting key for three times, it shows F-4 and the symbol "0.0" flashes at the same time.

3. Press "+" key once, the value of the offset adds 0.1℃.

4. Press "-" key once, the value of the offset reduces 0.1℃.

5. After the selection is done, press SET key to save the setting parameter and enter function setting F-5.

Note:

    The actual value of measured temperature could be adjusted from -6.0℃ to + 6.0℃ according to the actual measuring distance and environment. For example, if the measuring result of the measured object in specific environment is 85.9℃, while the temperature of the measured object is 84.6℃, then we could get the correct value 85.9℃ by adjusting 1.3 through function setting F-4. (When setting value is negative, it means the measured value needs to deduct this negative value. If the value is not negative, it means the measured value needs to add this value. If the value is 0.0, no need to add or deduct.)

E. Function Setting F-5: Sound Switch Mode

1. Press the setting key for 3 seconds, the LCD will show F-1.

2. Further press the setting key for four times, it shows F-5 and the symbol "1" flashes at the same time.

3. Press "+" key, it shows "1", which means the sound function is turned on.

4. Press "-" key, it shows "0" and the symbol" 🔊 "disappears on the LCD, which means the sound function is turned off.

5. After the selection is done, press SET key to save the setting parameter and enter function setting F-6.

F. Function Setting F-6: Laser Beam Switch Mode

1. Press the setting key for 3 seconds, the LCD will show F-1.

2. Further press the setting key for five times, it shows F-6 and the symbol "1" flashes at the same time.

3. Press "+" key, it shows "1", which means the laser beam function is turned on.

4. Press "-" key, it shows "0" and the symbol "⚠" disappears on the LCD, which means the laser beam function is turned off.

5. After the selection is done, press SET key to save the setting parameter and exit from setting function.

G. Exit Setting Mode

1. When setting function parameter, continuously press the setting key until it exits from the setting function.

2. If no key is pressed (no any operation), it will automatically exits from the setting function after 12 seconds.

X. Points for Attention

1. The sensor lens is the most delicate part of the thermometer, so special care should be given to it.

2. They way to clean the sensor lens: gently wipe the lens by using a soft cloth or cotton swab with water or medical alcohol.

3. Don't put batteries in fire. Please place the used batteries at appointed recycling places. The use of unqualified batteries is likely to cause fire or explosion.

4. When the device is not used for a long time, please take out the batteries.

5. Don't put the device in water or expose it to excessive heat.

6. Don't crush or throw the device in case it gets damaged.

7. The measuring discrepancy happens if the device is not within effective distance or not aimed at the center position of the measured object. It is recommended to measure once again or more.

XI. Quality Commitment & After Sale Service

The warranty period is a year from the date of the original purchase.

Note:

1. The warranty is not extended to products that are physically damaged or that are not under normal operating conditions as a result of misuse on the user's part.

2. Please keep your warranty card and purchase receipt for warranty use.

XII. Accessories List

Instruction Manual: 1 copy

AAA batteries: 1 pair

XIII. Attached Drawing: Modification on Laser Positioning & Location of the Measured Area
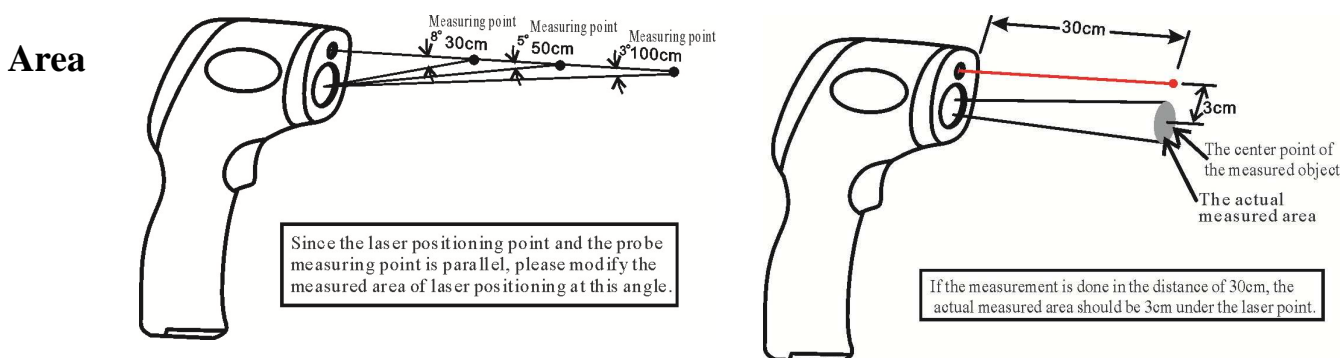
XIV. Attached Table: Contrast Table of Common Objects Emissivity

Material	Specification	Emissivity	Material	Specification	Emissivity
Aluminum	Oxidation	0.20-0.40	Human Skin		0.98
	Polishing	0.02-0.04	Graphite	Oxidation	0.20-0.60
Copper	Oxidation	0.40-0.80	Plastic	Diaphaneity $>$ 0.5mm	0.95
	Polishing	0.02-0.05			
Gold		0.01-0.10	Rubber		0.95
Iron	Oxidation	0.60-0.90	Plastic		0.85-0.95
Steel	Oxidation	0.70-0.90	Concrete		0.95
Asbestos		0.95	Cement		0.96
Gypsum		0.80-0.90	Soil		0.90-0.98
Asphaltum		0.95	Plaster		0.89-0.91
Ceramics		0.95	Brick		0.93-0.96
Timber		0.90-0.95	Marble		0.94
Charcoal	Powder	0.96	Textile		0.90
Lacquer		0.80-0.95	Paper	various colors	0.94
Lacquer	Lackluster	0.97			
Carbon rubber		0.90	Sand		0.9
Lather		0.75-0.80	Clay		0.92-0.96
Water		0.93	Gravel		0.95
Snow		0.83-0.90	Glass	Dishware	0.85-0.92
Ice		0.96-0.98	Textile		0.95

601E-0303-000A