User Manual R2.0
Santacary Technology Co. Ltd.
MHK-TI32 Thermal Imager

INTRODUCTION

Congratulations on your purchase of this Santacary MHK-TI32 Thermal Imager. MHK-TI32 combines non-contact temperature measurement and thermal imaging into one troubleshooting tool to help users quickly find the source of heat-related problems and spot potential faults. In addition to displaying unseen hot and cold spots for instant troubleshooting, the meter provides high and low temperatures, crosshairs to pinpoint specific temperatures.

FEATURES

- ✧ Sensor: Far infrared thermal sensor array
- ✧ Sensor Resolution: 32 x 24 Pixels IR Resolution
- ✧ Field of View (FOV): 55° (H) x 35° (D)
- ✧ Temperature Range: -40°F to 572°F (-40°C to 300°C)
- ✧ Temperature Accuracy: ±1.0°C
- ✧ Temperature Display: Maximum, Minimum, and Center point
- ✧ Temperature Settings: °F / C°
- ✧ Emissivity: 3 presets and 1 custom emissivity setting (0.01 to 0.99 adjustable), 0.95 default
- ✧ Cross-hair display for easy targeting of measurement spot
- ✧ Color Pallets: Rainbow 1, Rainbow 2, Rainbow 3, Iron oxide red 1, Iron oxide red 2, Pseudo color 1, Pseudo color 2, White hot, and Black hot.
- ✧ Auto Power Off (APO): User-selectable for Never, 10, 30, or 60 minutes
- ✧ Display Type: 2.2" TFT LCD

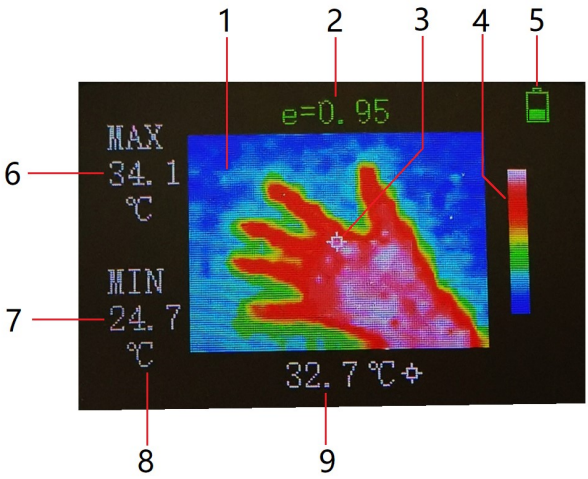
NOTE: Do not point the camera at the sun or any other strong energy source. This can affect the accuracy of the imager or cause damage to the sensor.

CAUTION: Reflective materials may have a higher actual temperature than the measured temperature. Set emissivity to match the object being measured.

DEVICE

1. TFT display
2. Power button
3. Select button
4. Enter button
5. Infrared camera lens
6. Battery compartment cover

DISPLAY DESCRIPTION



1. IR image area
2. Emissivity value
3. Center spot cross-hairs
4. Temperature Scale (Color Pallets)
5. Battery gauge
6. Live Maximum Temperature
7. Live Minimum Temperature
8. Temperature Units (°F / °C)
9. Live Center Target Temperature

OPERATING INSTRUCTIONS

1. **Power On/Off**

Press the Power button shortly to power on and press the Power button for 2s to power off.

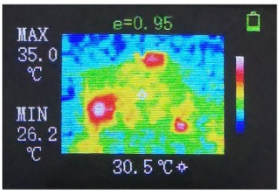
When the meter is first power on, it performs 2 second countdown for meter stable and initialization. When complete, the display will show

the thermal image with the center target temperature, maximum and minimum temperatures.
The meter has an Auto Power OFF (APO) utility that switches it OFF automatically if no buttons are pressed for the duration of the selected APO time. Use the menu operation to set the APO timer (User-selectable for never, 10, 30, or 60 minutes).

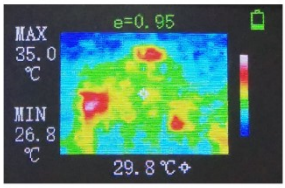
2. **Live display**
Point the meter toward the test area and scan as desired. View the IR thermal image on the display. Use the center spot cross-hairs icon for reference only when targeting measurement spots, as parallax errors affect targeting accuracy. The temperature reading on the display represents the measurement of the targeted spot. The live maximum and minimum temperatures are also displayed.

NOTE: Do NOT attempt to measure >572°F (300°C) .

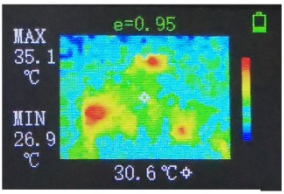
3. **Change the color palette**
Press Select Button SELECT shortly to change the live color palettes cyclically: Rainbow 1, Rainbow 2, Rainbow 3, Iron oxide red 1, Iron oxide red 2, Pseudo color 1, Pseudo color 2, White hot, and Black hot.
Note that the freeze image can be switched the color palettes.



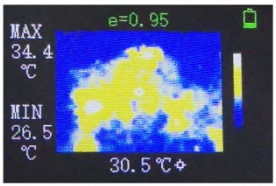
Rainbow 1



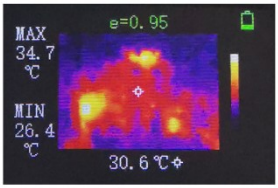
Rainbow 2



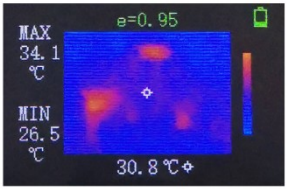
Rainbow 3



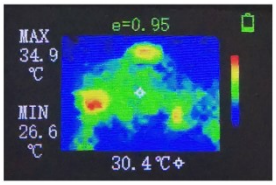
Iron oxide red 1



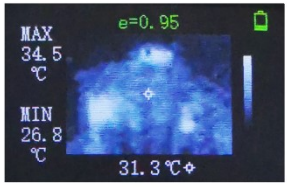
Iron oxide red 2



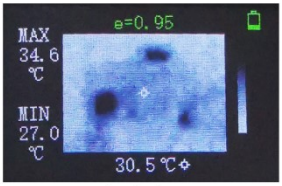
Pseudo color 1



Pseudo color 2



White hot



Black hot

4. **IR Thermal Image capture**

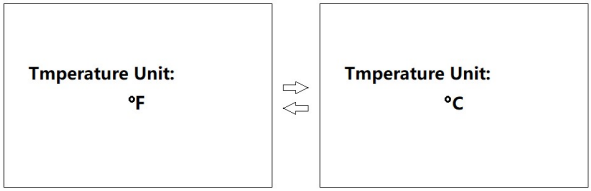
Press Power Button shortly to freeze/capture the IR image, altogether with the center target temperature, maximum and minimum temperatures. Press Power Button shortly again to return to live display. Note that the freeze image cannot be saved.

5. **Menu operations**

By pressing the Enter button ENTER shortly, the meter enters into Menu operation. There are six menu items by pressing the Enter button ENTER shortly to scroll. The menu items are described in table

1.

Table 1 Menu Operations

Menu Items	Description and Operation
Temperature Unit	1) Press Select button SELECT shortly to switch two temperature units: °F and °C.  2) Press the Power button shortly to confirm and exit the menu operations. Or pressing the Enter button ENTER shortly to proceed to the next menu item.
Emissivity	Setting the emissivity from 0.01 to 0.99 (default is 0.95). 1) Press Select button SELECT shortly to scroll through the presets and custom value: 0.95, 0.80, 0.60, and a custom emissivity value. 2) For preset values, press Power button shortly to confirm and exit the menu operations. Or pressing the Enter button ENTER shortly to proceed to the next menu item. 3) For custom value, press Power button shortly to enter a) and b) steps. Or pressing the Enter button ENTER shortly to proceed to the

	next menu item. a) Press Power button to increase value with one step of 0.01. When the emissivity reaches 1.00, its next value will loop back to 0.01. b) Press Select button SELECT to decrease value with one step of 0.01. When the emissivity reaches 0.01, its next value will loop back to 1.00.
Auto Power OFF	Setting the Auto Power OFF (APO) time: Never/10/30/60 minutes. 1) Press Select button SELECT shortly to switch APO time: Never, 10 minutes, 30 minutes, and 60 minutes (1 hour). 2) Press Power button shortly to confirm and exit the menu operations. Or press the Enter button ENTER shortly to proceed to the next menu item.
Center Cross-hairs	Enable/disable the center cross-hairs. 1) Press Select button SELECT shortly to switch center cross-hairs: On or Off. 2) Press Power button shortly to confirm and exit the menu operations. Or press the Enter button ENTER shortly to proceed to the next menu item.
Factory Reset	Restoring factory settings. Press Power button or Select button SELECT shortly to confirm and exit

	the menu operations. Or press the Enter button ENTER shortly to proceed to the next menu item.
Exit	1) Press Power button ⏻ or Select button SELECT shortly to exit the MENU operation. 2) Or press the Enter button ENTER shortly to loop back to the first menu item: Temperature Unit.

COMMON EMISSIVITY

Material	Emissivity	Material	Emissivity
Human skin	0.98	Concrete	0.97
Smooth ice	0.97	Water	0.96
Black paint	0.96	Black aluminum	0.95
Rubber	0.94-0.95	Rough concrete	0.94
Smooth glass	0.92-0.94	Soil	0.93
Asphalt	0.93	PVC	0.93
Red brick	0.93	Porcelain ceramic	0.92
Fired clay	0.91	Paint	0.9
Wood	0.80-0.90	Black paper	0.86
Cold rolled steel	0.75-0.85	Cast iron	0.81
Rust	0.8	Polycarbonate	0.8
Copper oxide	0.78	Cotton cloth	0.77
Gypsum	0.75	Gray brick	0.75
Smooth white marble	0.56	Granite	0.45
Gravel	0.28	Matt copper	0.22
Stainless steel	0.14	Aluminum plate/ Commercial sheet aluminum	0.09

Copper plate	0.06		

SPECIFICATIONS

Thermal Imaging Specifications

IR resolution	32 x 24 pixels
Field of View (FOV)	55° (H) x 35° (D)
Frame rate	2 Hz
Color depth	16 bit

Temperature Measurement Specification

Object temperature range	-40 ~ +572°F (-40 ~ +300°C)
Accuracy at ambient temperature	±1.8°F (±1.0°C)
IR Temperature resolution	0.2°F (0.1°C)
Display Options	°C/°F switchable
IR thermometer measurement	Continuous scanning

General

Environment	Indoor or outdoor
Display	2.2" TFT LCD
Operating Altitude	6562 ft. (2000 m)
Operating	14°F to 122°F (-10°C to 50°C), 0~90% RH non-condensing
Storage	14°F to 140°F (-10°C to 60°C), 0~80% RH non-condensing
Power Supply	Three AA Alkaline Batteries
Dimensions	74x148x27 mm (2.91x5.83x1.06 inch)
Weight	123 grams (4.34 oz.) without batteries

BATTERIES REPLACEMENT

1. When the batteries power is low, the low voltage symbol  appears on the display. It indicates that the batteries need to be replaced. If they are not replaced in time, the accuracy of measurement will be affected.
2. Open the battery compartment cover and take out the batteries.
3. Install 3 new AA batteries correctly according to the diagram of positive and negative poles in the battery compartment.
4. If the meter is not used for a long time, please take out the batteries to prevent the batteries from leaking and damaging the meter.

PACKAGE INCLUDED

- ✧ Santacary MHK-TI32 Thermal Imager
- ✧ Carry case
- ✧ English User Manual

CLEANING AND STORAGE

The front panel and case can be cleaned carefully with a soft wet cloth. Allow drying completely before using. Do not use aromatic hydrocarbons or chlorinated solvents for cleaning.

Do not store the instrument where temperature or humidity is excessively high.

WARRANTY

The MHK-TI32 is warranted to be free from defects in material and workmanship for a period of two year from the date of purchase. This warranty covers normal operation and does not cover misuse, abuse, alteration, neglect, improper maintenance.

CONTACT US

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