MC230 Compact Thermal Camera User Guide

Contents

Guide

MC230 Compact Thermal Camera

IMPORTANT
This manual is a general manual covering multiple thermographic cameras in a product line, which means that some functions and instructions are not applicable to certain model of thermographic camera.

NOTES
Please strictly observe the following rules at all times:

1. Keep the device as stable as possible during use and avoid violent shaking.
2. Do not use or store the device in an environment with the temperature beyond the permitted range.
3. Do not expose the device directly to high-intensity heat radiation source, such as sun, laser, and spot welding machine.
4. Do not expose the device to dust or moisture. When used in an environment with water, avoid splashing water on the device. The lens shall be covered when the device is not in use.
5. When the device is not used, please place the device and all accessories in the special packing box.
6. Do not block the holes on the device.
7. Do not knock, throw or vibrate the device and accessories to avoid damage.
8. Do not disassemble the device, which may cause damage to the device and lose the warranty right.
9. Avoid using TF card for other purposes.
10. Do not use the device in an environment exceeding the operating temperature of the device, which may damage the device.
11. Do not use soluble or similar liquids on device and cables, which may cause damage to the device.
12. Please observe the following rules when wiping the device:
    Non-optical surface: if necessary, wipe the non-optical surface of the thermographic camera with a clean and soft cloth.
    Optical surface: when using the thermographic camera, please avoid soiling the optical surface of the lens, especially avoid touching the lens with your hands, because the optical coating on the glass surface may be corroded due to sweat on the hands. When the optical lens surface is contaminated, use special lens cloth to carefully clean it.

LITHIUM BATTERY STORAGE AND OPERATING INSTRUCTIONS

Instructions on lithium battery storage

1. Lithium-ion batteries shall be stored in a cool, dry and ventilated environment, away from water source, fire source and high temperatures. The storage temperature of the battery must be within the range of – 10℃ ~ 45℃, and the humidity must be 65 ± 20% RH.
2. Storage voltage and power: the voltage is 3.7V ~ 3.9v (4.2V lithium battery standard voltage system, multi-series combination * corresponding multiple); Power: 30% – 70%.
3. For long-term storage (more than 3 months), the battery must be placed in an environment with a temperature of 23 ± 5 ℃ and humidity of 65 ± 20% RH.
4. The battery shall be stored according to the storage requirements and shall be fully charged and discharged once every three months and charged to 70% of the capacity.
5. Do not transport the battery when the ambient temperature is higher than 65℃.

Instructions for use of lithium battery

1. Use dedicated charger or charge in the whole device. Do not use modified or damaged charger. The use of high current or high voltage charging may cause problems in the charge and discharge performance, mechanical performance and safety performance of the cell, and may cause heating, leakage or bulging.
2. The battery must be charged within the ambient temperature range of 0 ℃ ~ 45 ℃. Exceeding this temperature range will reduce the performance and service life of the battery, and there will be problems such as leakage or bulging.
3. The battery must be discharged within the ambient temperature range of – 20 ℃ ~ 60 ℃.
4. If the battery is not used for long term (more than 3 months), it may be in over discharge state due to self-discharge characteristics. In order to prevent over-discharge, the battery shall be charged regularly and its voltage shall be maintained between 3.7V and 3.9v. Over-discharge will lead to the loss of cell performance and battery function. If the voltage is lower than the protection plate for a long time, the cell will be deeply discharged to the cell damage. For batteries or battery packs not loaded into the device, it is recommended to charge the battery every 1 month and complete full charging and discharging process of the battery every 3 months; For the battery or battery pack loaded into the device, considering the possible static discharge of the device, the battery shall be charged regularly according to the requirements of the operation manual to prevent battery damage due to power loss.

Warning

1. Do not charge the battery near fire sources or under extremely hot conditions! Do not use or store batteries near heat sources such as fires or heaters! If the battery leaks or emits an odor, it shall be removed from the place close to the open fire immediately;
2. When the battery has problems such as bulging and liquid leakage, stop using the battery immediately!
3. Do not put the battery in water or get it wet!
4. Do not put the battery into the fire or heat the battery!
5. Do not connect the battery directly to the wall socket or vehicle cigarette lighter socket!
6. Do not short-circuit the positive and negative terminals of the cell with wires or other metal objects, and do not

transport or store the battery with necklaces, hairpins or other metal objects!

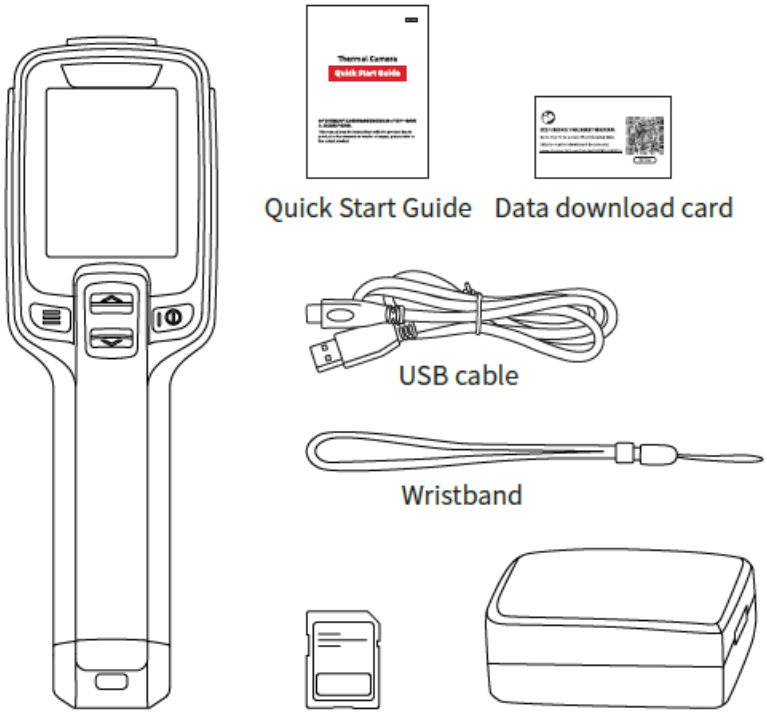
7. Do not pierce the battery case with nails or other sharp objects, and do not hit or step on the battery!
8. Do not knock, throw or vibrate the battery mechanically!
9. Do not disassemble the battery in any way!
10. Do not place the battery in the microwave oven or pressure vessel!
11. Do not mix the cell with primary batteries (such as dry batteries) or batteries of different capacities, models and varieties!
12. Do not use smelly, hot, deformed, discolored battery and battery with any other abnormal phenomenon.
13. If the battery is in use or charging, it shall be taken out of the electrical appliance or charger immediately and stop using!
14. Charge the battery according to the methods described in this manual, and follow the charging steps and warnings. Incorrect charging can lead to battery heating, damage and even personal injury.

PRODUCT INTRODUCTION

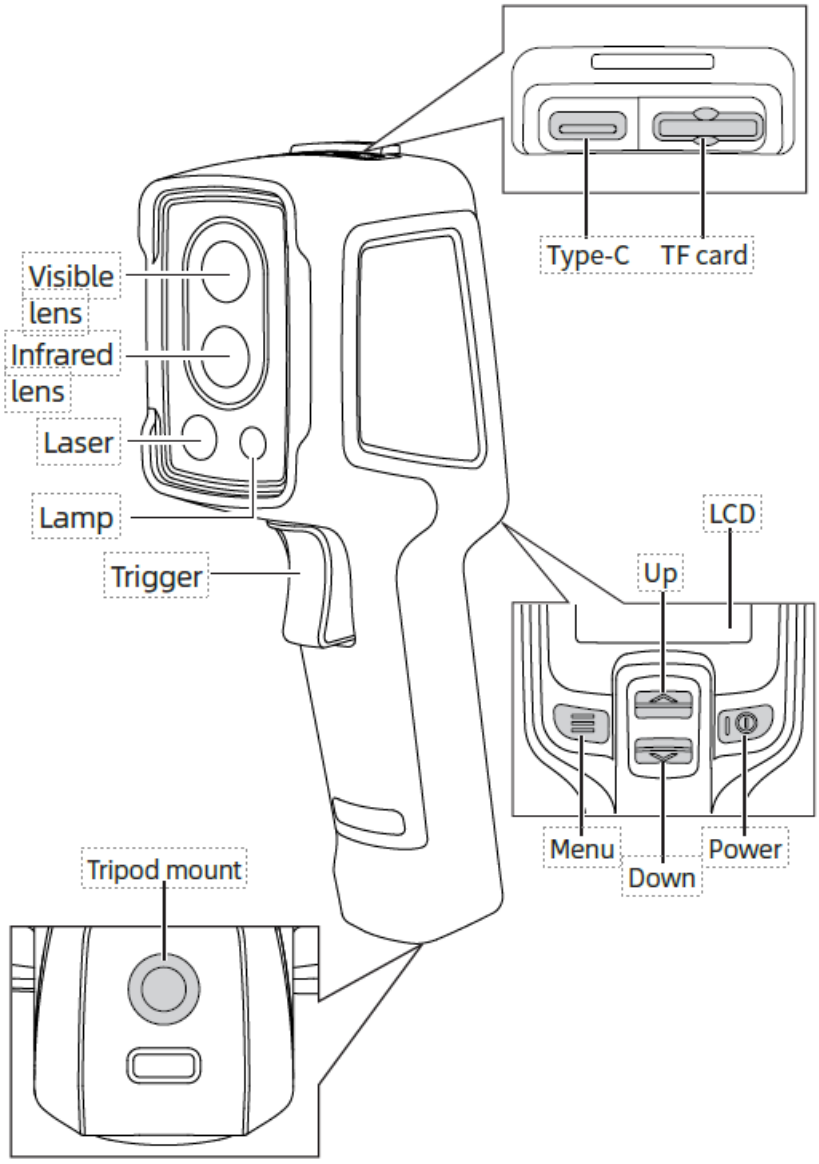
This product is a hand-held temperature measurement infrared thermographic camera. It has 49,152 effective infrared pixels, and is equipped with laser, lighting and visible light. It can be connected to external PC and TF card to meet the needs of different occasions.

LIST OF ITEMS

- Thermal camera (including battery) 1
- Quick Start Guide 1
- Data download card 1
- USB cable 1
- Wristband 1
- Adaptateur Adapter 1
- TF card 1



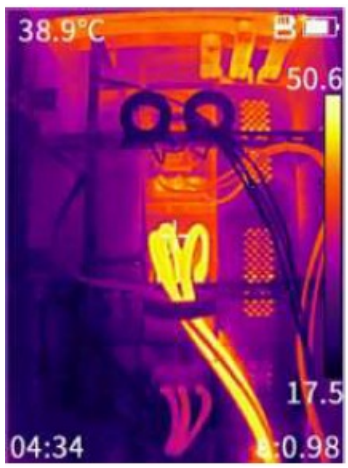
PRODUCT COMPONENTS



OPERATION INSTRUCTIONS

Take photos and view

In the real-time observation interface, short press the “trigger button” to obtain the picture, press  to save the image or press  to abandon the image according to the prompt of the current interface.



View and delete images

1. Short press  to enter the menu interface.
2. Select the image bar by pressing  .
3. Short press  to enter the image file interface.
4. Short press  to view the image. Press up and down buttons to switch the image.
5. In the image preview interface, short press  to delete images.

File export

1. Open the USB cover on the top of the device.
2. Connect to the computer with a USB-Type C cable.
3. Enter the disk folder of the computer, select the image to be exported, copy it to the computer, and view the image files through the analysis software.
4. After copy is completed, disconnect the USB cable from the computer.

Image mode

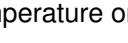
In the observation mode, select the image mode through  of the remote control. The device supports four image modes, namely infrared mode, visible light mode, MIF mode and PIP mode.

Temperature measurement parameters

Temperature measurement parameters will affect the accuracy of temperature measurement results. They need to be set in advance before temperature measurement.

1. Temperature measurement range: select the appropriate temperature measurement range according to the temperature of the measured target
2. Emissivity: Adjust according to the emissivity of the measured target. There are commonly used physical emissivities in this device, which can also be customized.
3. Reflection temperature: the effect of the current ambient temperature on the target temperature.
4. Target distance: adjust the distance parameters of the device according to the distance of the measured target to make the temperature measurement more accurate.

High and low-temperature alarm

1. Short press  to enter the menu interface.
2. Select Alarm.
3. Press  to select high temperature or low temperature, and then adjust the alarm threshold to realize the alarm function.

Reset and format the SD card

1. Enter the Setting menu – Reset, and press  to confirm the reset.
2. This function will restore the device to the factory settings. Please be careful.
3. Enter the Setting menu – Format SD card, and press  to confirm the formatting.
4. This function will clear the SD card. Please be careful.

Emissivity of common objects

Materials	Emissivity
Wood	0.85
Water	0.96
Brick	0.75
Stainless steel	0.14
Adhesive tape	0.96
Aluminum plate	0.09
Copper plate	0.06
Black aluminum	0.95
Human skin	0.98
Asphalt	0.96
PVC plastic	0.93

Materials	Emissivity
Black paper	0.86
Polycarbonate	0.8
Concrete	0.97
Copper oxide	0.78
Cast iron	0.81
Rust	0.8
Gypsum	0.75
Paint	0.9
Rubber	0.95
Soil	0.93

FAQS

Fault	Cause	Measures
Start failure	Low battery	Start the device after charging for 10 minutes
	The plug of the external power supply is not plugged in place	Unplug, reconnect and push it into place
	Battery life has expired	Replace the battery with a new one
Infrared image is not clear	The lens is covered with water vapor or contaminated	Clean the lens with dedicated device
Visible light image is not clear	The environment is too dark	Take proper lighting measures
	Water vapor or contamination in the front end of visible light	Clean the visible light front end with dedicated device
Inaccurate temperature measurement	The parameters related to temperature measurement are not set correctly	Change the parameter settings or restore the default parameter values directly
	Measure temperature immediately after startup	To ensure the accuracy of temperature measurement, we recommend to start temperature measurement after 5 ~ 10 minutes when the device is turned on
	No calibration for a long time	For accurate temperature measurement results, we recommend to calibrate the thermographic camera once a year

Documents / Resources

	Guide MC230 Compact Thermal Camera [pdf] User Guide PC230, MC230, MC230 Compact Thermal Camera, MC230, Compact Thermal Camera, Thermal Camera, Camera

References

- User Manual