Empowering you to work smarter

NMT1200

Thermal Imaging Camera
User Manual

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Failure to follow warnings could result in personal injury.
SAVE THIS MANUAL FOR FUTURE REFERENCE.

CONTENTS

1 Introduction

1.1 Product Introduction

The thermal imaging camera is a camera that captures thermal images. The built-in high-sensitivity IR detector and high-performance sensor detect the temperature change and measure the real-time temperature.
The handheld thermal camera is based on thermal technology, specially designed for the needs of temperature measuring applications. People can quickly troubleshoot faults on-site.

1.2 Main Function

Temperature measurement

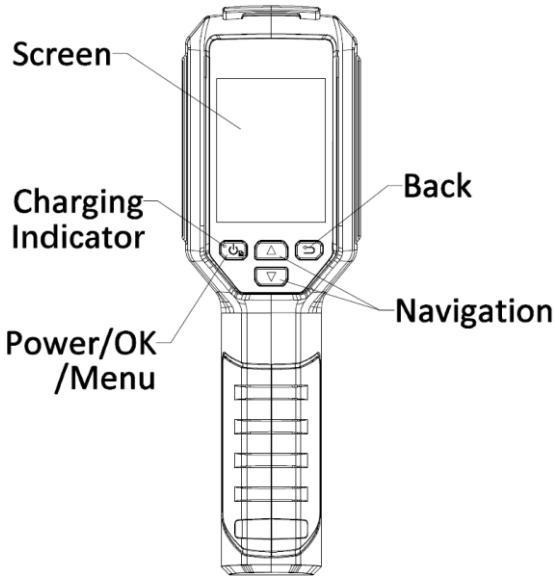
The device detects real-time temperatures simultaneously and displays them on the screen.

Ultra IR

The device adopts Ultra IR technology in live streaming, making live image clearer and with more details. Go to **Settings** > **Ultra IR** to enable the function.

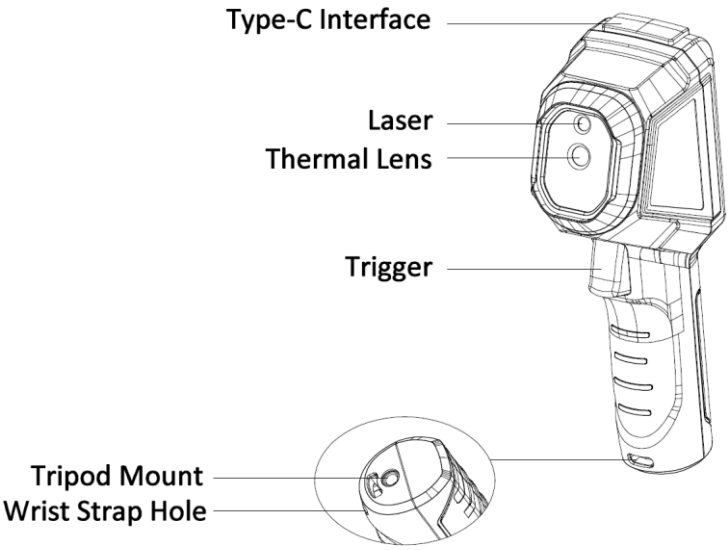
2 Appearance

2.1 Components



Button	Function
	Hold: Power On/Off Press: Display menu or confirm operation
	Exit the menu or return to previous menu.
	In menu mode: Press  and  to select parameters. In live view mode: Press  to switch palettes.

Appearance 1



Component	Function
Screen	Views live view.
Charging Indicator	Solid Red: Charging. Solid Green: Fully charged.
Type-C Interface	Charge the battery or export snapshots.
Laser	Locates the target with laser light.
Thermal Lens	Generates thermal images.
Trigger	In live view: ● Press: Capture snapshots. ● Hold: Locate the target with laser light, and release to capture snapshots. In menu mode, press the trigger to go back to live view.
Wrist Strap Hole	Mounts the wrist strap.

Tripod Mount	Connect to UNC 1/4”-20 tripod.

Note

- The warning sign is beside the laser and on the left side of the device.

Warning:

The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Prevent eyes from direct laser. Before enabling the Light Supplement function, make sure no human or inflammable substances are in front of the laser lens. The wave length is 650 nm, and the power is less than 1 mW. The divergence angle is 0.05° ± 0.01°. The laser meets the IEC 60825-1:2014 standard. Protective eyewear can protect people against laser sources. The operating wavelength of the eyewear should be longer than the laser peak wavelength, and the optical density should be higher than 0D5+.

3 Preparation

3.1 Charge Device

Steps:

1. Lift the type-C interface cover.
2. Connect the device to power supply using the type-C cable to charge the device.
3. Check the power indicator for the charging status:
   - Solid red: charging normally
   - Flashing red: charging exception
   - Solid green: fully charged

Type-C Interface

Note

- The device is equipped with a built-in battery. For the first charge, charge the device for more than 3 hours when the device is turned on.
- If the camera is not in use for an extended period and is over-discharged, it is recommended to charge for at least 30 min before powering it on.
- It is recommended to use the USB cable included in the package for both charging and data transfer.
- **Do not use the USB-C to USB-C cable from other manufacturers**

3.2 Power On/Off

Power On

Hold for over six seconds to turn on the device. You can observe the target when the interface of the device is stable.

Note

It may take at least 30 s until the device is ready for use after you power on it.

Power Off

When the device is on, hold for six seconds to power off the device.

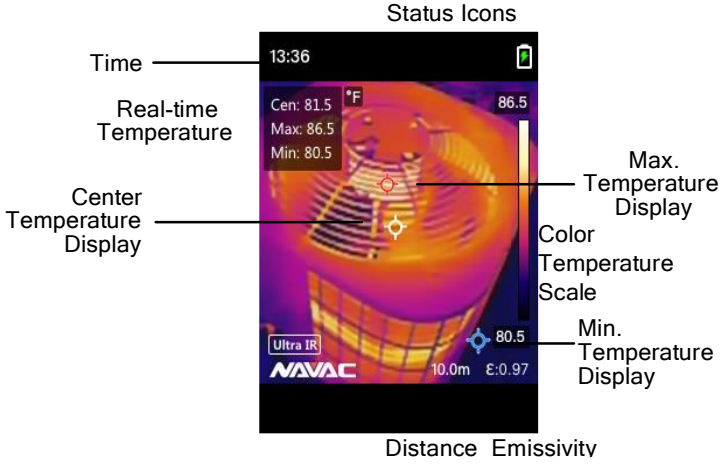
Set Auto Power-off Duration

In the live view interface, press and go to **More Settings** → **Auto Power-off** to set the automatic shutdown time for device as required.

3.3 Set Auto Sleep

In live view interface, press , and go to **More Settings** → **Auto Sleep** to set the waiting time before auto sleep. When there is no button pressing on the device for more than the set waiting time, the device enters sleep mode automatically. Press a button to wake the device up.

3.4 Live View



Note

- Your camera will periodically perform a self-calibration to optimize image quality and measurement accuracy. In this process, the image will pause briefly and you'll hear a "click" as a shutter moves in front of the detector. The prompt "Image Calibrating …" appears in the upper center of the screen as

the device is calibrating itself. The self-calibration will be more frequent during start up or in very cold or hot environments.

4 Display Settings

4.1 Set Color Distribution

Color distribution allows you to adjust image effects. You can select histogram or linear pattern. Histogram is suitable for scenarios with large temperature differences, and linear pattern is suitable for scenarios with small temperature differences. You can go to **Settings** → **Color Distribution** to select histogram or linear pattern.

- Linear: Linear mode is used to detect small high temperature targets in low temperature background. Linear color distribution enhances and displays more details of high temperature targets, which is good for checking small high temperature defective areas such as cable connectors.
- Histogram: Histogram mode is used to detect temperature distribution in large areas. Histogram color distribution enhances high temperature targets and remains some details of low temperature objects in the area, which is good for discovering small low temperature targets such as cracks.

Note

- This function is only supported in auto level & span.

4.2 Set Palettes

Palettes allow you to select different color schemes. You can switch palettes by the following ways:

- Go to **Settings** → **Palettes** to select a preferred palette, and press to save and exit.
- Press in live view to switch palettes.

4.3 Set Level & Span

Set a display temperature range and palette only works for targets within the temperature range. You can get better image contrast by adjusting the level & span parameters.

Steps:

1 In the live view interface, press to show the menu.
2 Press /, and select **Level & Span**.
3 Select **Setting Mode**, and press to switch auto and manual adjustment.
   - In **Auto** mode, the device adjusts display temperature range automatically.
   - In **Manual** mode, select **Parameters** to enter the setting interface. Press to lock or unlock the max. temperature and min. temperature, and press / to adjust unlocked value. Or, unlock the max. temperature and min. temperature, and press / to increase or decrease the individual values while remaining the same temperature range.
4 Press to save and exit.

4.4 Display OSD Info

Go to **Settings** → **Display Settings** to enable the on-screen display information.

Parameters

Temperature measurement parameters, e.g. emissivity.

Unit

Set the temperature unit displayed on the live view interface.

Time and Date

Set the time and date displayed on the live view interface.

5 Temperature Measurement

The temperature measurement function provides the real-time temperature of the scene. The temperature information is displayed on the top left of your screen. The function is enabled by default.

5.1 Set Measurement Parameters

You can set temperature measurement parameters to improve the accuracy of temperature measurement.

Steps:

1 In the live view interface, press to show the menu.

2 Press / to select desired parameters.

3 Press to go to the setting interface.

- **Emissivity**: Enable **Custom**, and select **Emissivity** to set the emissivity of the target as the effectiveness in emitting energy as thermal radiation by pressing /. Or you can select a preset emissivity.
- **Distance**: Set the distance between the target and the device.
- **Temperature Range**: Select a temperature range or select **Auto Switch**. The device can detect the temperature and switch temperature range automatically in **Auto Switch** mode.

4 Press to save and exit.

5.2 Set Image Measurement

Device measures the temperature of the whole scene and can be managed to display the center, hot, and cold spot in the scene.

Steps:

1 In the live view interface, press to show the menu.

2 Press /.to select **Display Settings**.

3 Select the desired sports to show their temperatures, and press to enable them.

- **Hot**: Display the hot spot in the scene and show the max. temperature.
- **Cold**: Display the cold spot in the scene and show the min. temperature.

- **Center**: Display the center spot in the scene and show the center temperature.

4 Press to save and exit.

Result:

The device shows the real-time temperature on the upper left side of live view interface.

5.3 Enhance High-Temperature Target

In target enhancement function, when the target's temperature is higher than the set value, the target will become red.

Steps:

1 You can enable target enhancement function by the following ways:
   - Go to **Settings** → **Palettes**, and select **Above Alarm**.
   - Press in live view to switch the palette to **Above Alarm**.
2 Go to **Settings** → **Palettes** → **Temperature**, and press to select the option. Then press /.to configure the enhancement temperature threshold. When the temperature of target is higher than the set value, the target will be red in live view.
3 Press to save and exit.

5.4 Set Temperature Alarm

Set the alarm rules and the device will alarm when the temperature triggers the rule.

Steps:

1 In the live view interface, press to show the menu.
2 Press /, and select **Alarm**.
3 Press to enable the function.
4 Select **Measurement** to set the alarm rule. Select **Alarm Threshold** to set the threshold temperature. When the target's temperature is higher or lower than the threshold value, the device will trigger the alarm.
5 Press to save and exit.

6 Snapshots

6.1 Capture Image

Capture One Image

You can capture snapshots in live view. The snapshot will be automatically saved in the albums.

Steps:

1. In the live view interface, you can capture snapshots in the following ways.
   - Press the trigger in live view to capture snapshots.
   - Hold the trigger in live view to locate the target with laser light, and release the trigger to capture snapshots.

Scheduled Capture

The device capture images after a set time interval.

Steps:

1. In the live view interface, press to show the menu.
2. Press , and select **Capture Mode.**
3. Select **Scheduled Capture** as the capture mode.
4. Set the time interval and the number of images that you want to capture.
5. Press the trigger in live view to start scheduled capture.

Note

- Go to **More Settings** → **Laser** to turn on/off laser light.
- You cannot capture snapshots when the device is connected with PC.

6. **Optional**: If the thermal images are exported and viewed on a high resolution screen, enable **Ultra IR** in the menu before capturing. Resolution of captured images with **Ultra IR** is 4 times higher than the original one.

What to do next:

You can view and manage the snapshots in the album, and export them to PC.

6.2 View Snapshots

Steps:

1. In the live view interface, press to show the menu.
2. Press to select **Albums**, and press to enter the album.
3. Press to select the picture, and press to view it.
4. **Optional:** Press to delete picture in picture view interface. Press to switch the picture.
5. Press to exit.

6.3 Export Snapshots

Purpose:

Connect the device to your PC with supplied cable, and then you can export the captured snapshots.

Steps:

1. Lift the Type-C interface cover.
2. Connect the camera to your PC with supplied cable, and select **USB Drive** mode in the prompt on camera.
3. Open the detected disk.
4. Copy and paste the snapshots to PC and view the files.
5. Disconnect the device from your PC.

Note

- For the first connection, the driver will be installed automatically.
- DO NOT disconnect the supplied cable from PC during drive installation, or it may cause damage to the device.

7 Maintenance

7.1 View Device Information

In the live view interface, press and go to **More Settings** → **About** to view the device information.

7.2 Set Language

In the live view interface, press and go to **More Settings** → **Language** to set the menu language.

7.3 Save Operation Logs

The device can collect its operation logs and save in the storage only for troubleshooting. You can turn on/off this function in **More Settings** → **Save Logs**.

You can connect the camera to PC using the supplied USB-C to USB-A cable, and select **USB Drive** as the USB mode on camera to export the operation logs in the root directory of the camera, if necessary.

7.4 Format Storage

Steps:

1. In the live view interface, press and go to **More Settings** → **Format Storage.**
2. Press and select **OK** to start formatting storage.

Note

Format storage before first use.

7.5 Upgrade

Before You Start:

Download the upgrade file from the official website first.

Steps:

1. Connect the device to your PC with supplied cable, and open the detected disk.
2. Copy the upgrade file and replace it to the root directory of the device.
3. Disconnect the device from your PC.
4. Reboot the device and then it will upgrade automatically. The upgrading process will be displayed in the main interface.

Note

After the upgrade, the device automatically reboots. You can view the current version in **More Settings** → **About**.

7.6 Restore Device

In the live view interface, press and go to **More Settings** → **Restore Device** to initialize the device and restore default settings.

8 Frequently Asked Questions (FAQ)

Q: The charge indicator flashes red.
A: Examine the items below.
1. Examine whether the device is charged with the standard power adapter.
2. Make sure the environment temperature is above 0°C (32°F).

Q: Capturing fails.
A: Examine the items below:
1. Whether the device is connected to your PC and the capture function is unavailable.
2. Whether the storage space is full.
3. Whether the device has low-battery.

Q: The PC cannot identify the camera.
A: Examine whether the device is connected to your PC with standard cable.

Q: The camera cannot be operated or not responding.
A: Hold to reboot the camera

Legal Information

Read all information and instructions in this document carefully before using the device and keep it for further reference.

For more device information and instructions, please visit the manufacturer website. You can also refer to other documents (if any) accompanying the device or scan the QR code (if any) on the packaging to get more information.

About this Manual

The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the company website

Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

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IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATER PREVAILS.

REGULATORY INFORMATION

These clauses apply only to the products bearing the corresponding mark or information

FCC Compliance Statement

Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Please pay attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Safety Instruction

The symbols that may be found in this document are defined as follows.

Symbol	Description
Danger	Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Note	Provides additional information to emphasize or supplement important points of the main text.

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

Laws and Regulations

Use of the product must be in strict compliance with the local electrical safety regulations.

Transportation

- Keep the device in original or similar packaging while transporting it.
- Keep all wrappers after unpacking them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and the company shall not take any responsibilities.
- Do not drop the product or subject it to physical shock. Keep the device away from magnetic interference.

Power Supply

- Input voltage should meet the Limited Power Source. Please refer to technical specifications or device label for detailed information.
- Make sure the plug is properly connected to the power socket.
- DO NOT connect multiple devices to one power adapter, to avoid over-heating or fire hazards caused by overload.
- Use the power adapter provided by a qualified manufacturer. Refer to the product specification for detailed power requirements.

Battery

- The built-in battery cannot be dismantled. Please contact the manufacturer for repair if necessary.
- CAUTION: Risk of explosion if the battery is replaced by an incorrect type.
- Improper replacement of the battery with an incorrect type may defeat a safeguard (for example, in the case of some lithium battery types).
- Do not dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.
- Do not leave the battery in an extremely high temperature surrounding environment, which may result in an explosion or the leakage of flammable liquid or gas.
- Do not subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.
- Dispose of used batteries according to the instructions.
- For long-term storage of the battery, make sure it is fully charged every half year to ensure the battery quality. Otherwise, damage may occur.
- Make sure the plug is properly connected to the power socket.
- When the device is powered off and the battery is full, the time settings can be kept for 60 days.
- The standard adapter power supply is 5 V.

- The battery is certified by UL2054.

Maintenance

- If the product does not work properly, please contact your dealer or the nearest service center. We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.
- Wipe the device gently with a clean cloth and a small quantity of ethanol, if necessary.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.
- Your camera will periodically perform a self-calibration to optimize image quality and measurement accuracy. In this process the image will pause briefly and you will hear a “click” as a shutter moves in front of the detector. The self-calibration will be more frequent during the startup or in very cold or hot environments. This is a normal part of operation to ensure optimum performance for your camera.

Calibration Service

Please contact the local dealer or visit our website for the information on maintenance points.

Using Environment

- Make sure the running environment meets the requirements of the device. The operating temperature shall be -10 °C to 50 °C (14 °F to 122 °F), humidity shall be 95% or less.
- Place the device in a dry and well-ventilated environment.
- DO NOT expose the device to high electromagnetic radiation or dusty environments.
- DO NOT aim the lens at the sun or any other bright light.
- When any laser equipment is in use, make sure that the device lens is not exposed to the laser beam, or it may burn out.
- The device is suitable for indoor and outdoor uses, but do not expose it in wet conditions.
- The level of protection is IP 54.
- The pollution degree is 2.

Emergency

If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.

Laser Light Supplement Warning

Warning: The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Prevent eyes from direct laser. Before enabling the Light Supplement function, make sure no human or inflammable substances are in front of the laser lens. The wave length is 650 nm, and the power is less than 1 mW. The divergence angle is 0.05° ± 0.01°. The laser meets the IEC 60825-1:2014 standard. Protective eyewear can protect people against laser sources. The operating wavelength of the eyewear should be longer than the laser peak wavelength, and the optical density should be higher than 0D5+.

Laser maintenance: It is not necessary to maintain the laser regularly. If the laser does not work, the laser assembly needs to be replaced in the factory under warranty. Keep the device power off when replacing laser assembly. Caution-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

COMPLIANCE NOTICE: The thermal series products might be subject to export controls in various countries or regions, including without limitation, the United States, European Union, United Kingdom and/or other member countries of the Wassenaar Arrangement. Please consult your professional legal or compliance expert or local government authorities

for any necessary export license requirements if you intend to transfer, export, re-export the thermal series products between different countries.