

# MILESEEY®

## TR120 Handheld Infrared Thermal Imager User's Guide





## Product Overview

Thank you for purchasing the handheld infrared thermal imager of Mileseeey. Please read the user guide carefully before using it.

TR120 is a handheld dual-camera infrared thermal imager.

TR120 has 3.5 inch large screen, can show larger display range, more helpful to check the fault area.

With infrared and visible light dual camera mode, TR120 can help users to find out the fault point and problem area more accurately.

Personalized setting of emissivity makes the detection data more accurate.

TR120 can capture pictures and save them, it is also very convenient and fast to export pictures through a USB cable or SD card, which can be used as a basis for maintenance. TR120 is an ideal choice for maintenance and testing.

TR120 has a built-in 5000mA 26650 lithium battery and TYPE-C charging interface, which is very convenient to use and environmental protection.

TR120 can automatically track cold and hot spots, and automatically lock the lowest and highest temperature points, also can set high and low temperature alarm points individually. Detect and provide more accurate temperature data in real time, and assist various temperature detection work effectively.

Besides, TR120 is equipped with a 3W white LED light to help users see the detection area clearly in dark environment, which is convenient for night work and ensures personnel safety. It's IP65 protection level can protect the device from dust and humid environment, and prolong its service life.

## Safety Instructions



● To ensure accurate measurement results and safety, please use this product in accordance with the user manual, otherwise free warranty will not be provided if the product is damaged.



● Please use the damp cloth or weak soap liquid to clean the housing. Do not use abrasives, isopropyl alcohol or solvents to clean the instrument shell, lens and windows.



● Please do not use this product in flammable, explosive, steamy, humid or corrosive environments.



● Please stop using the product if it is damaged, dropped or modified to avoid inaccurate measurement results.



● Please use the correct emissivity to obtain accurate temperature readouts.

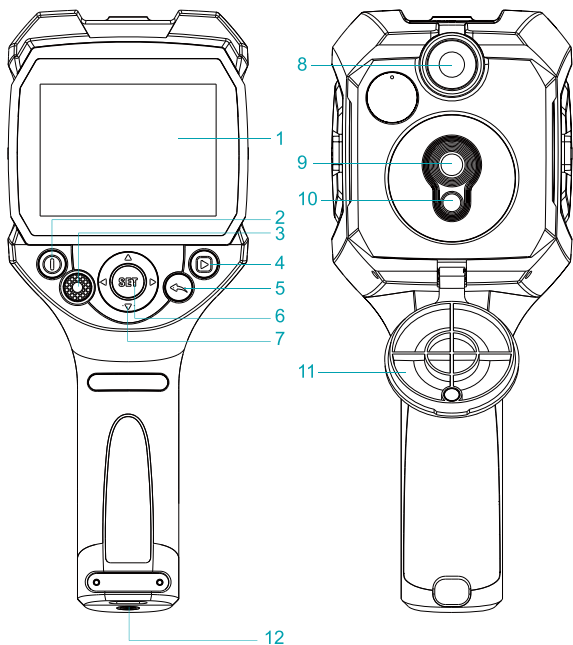


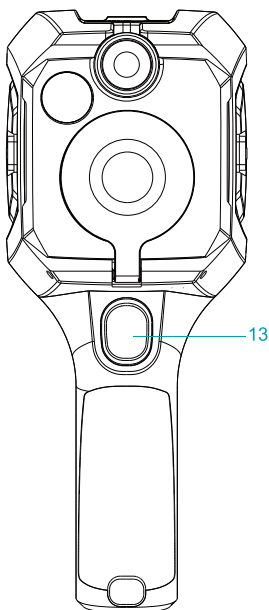
● When being charged, the internal temperature of product will rise, which will lead to inaccurate temperature measurement. It is not recommended to take measurements during or right after charging.



● Because the power consumption may cause the internal temperature of product rise. To ensure the measurement accuracy, please warm it up for 10 minutes before measuring if the product has not been used for a long time.

## Appearance





**1、3.5 inch large screen**

**2、On/off button**

Long press to power on/off

**3、LED light button**

Short press to turn on, short press again to switch 1 gear / 2 gears / off.

**4、Picture memory records**

Short press to picture memory mode, press the SET button to delete all/one picture.

**5、Return**

Short press to return.

**6、Set button**

Short press to the setting menu or data setting.

**7、Up/down/left/right button**

To switch the options and view the picture records.

**8、LED Light**

**9、Infrared camera.**

**10、Visible light camera.**

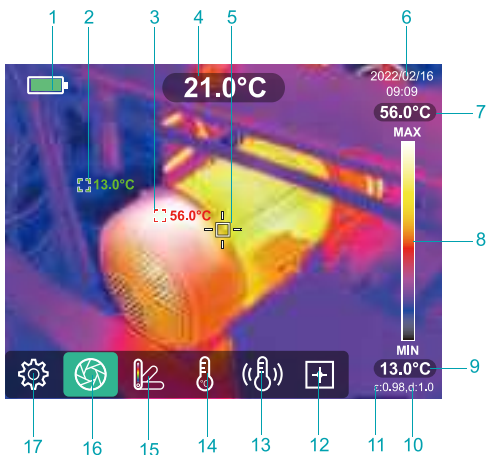
**11、Camera cover**

**12、Tripod Screw Hole**

**13、Picture taking button**

Short press to take picture and save.

## Display icon



1、Battey Status

2、Minimum temperature and position in current screen.

3、Maximum temperature and position in current screen.

4、Center point temperature

5、Center point

6、Current date & time

7、Maximum temperature of color bar

8、Color bar

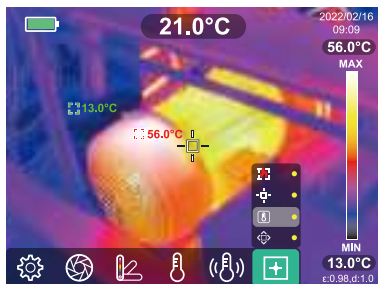
9、Minimum temperature of color bar

10、Currently set detection distance

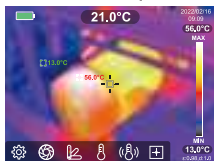
11、Currently set emissivity

## 12. Cursor options

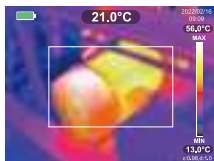
press ▲ / ▼ button to switch, and confirm with the **SET** button. Press the return button to leave the setting menu.



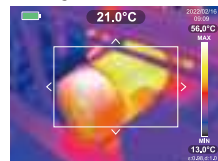
Max./min.temp.







Area



Change in size

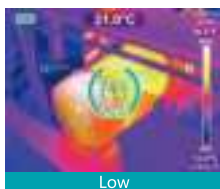
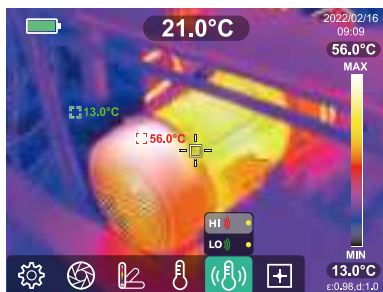


-  Position of highest/lowest temperature
-  Central point
-  Area temperature measurement
-  Change in size of area



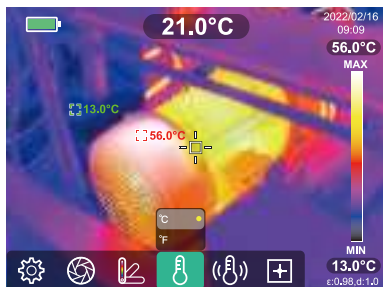
## 13. Alarm temperature setting

Press ▲/▼ button to switch, press **SET** button to turn on/off.



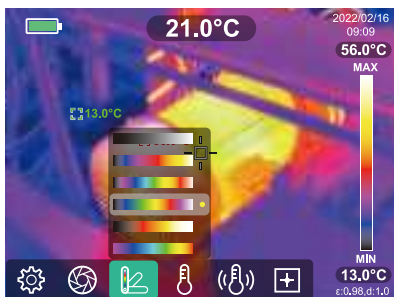
## 14. Temperature unit options

Press ▲/▼ button to switch °C and °F.



## 15. Palette options

Press ▲/▼ button to switch six colors and imaging modes.



Six colors and imaging modes

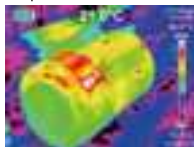
White hot mode



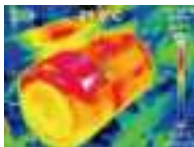
Iron mode



Tropical mode



Arctic mode



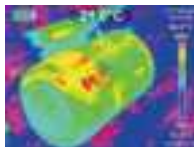
Arctic

Lava mode



Lava

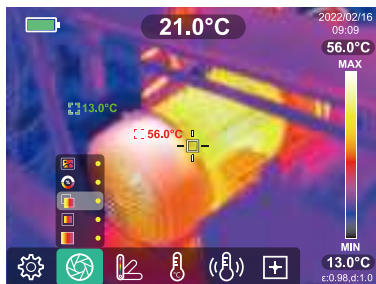
Rainbow mode



Rainbow mode

## 16、Combination of Visible and Infrared Light

Press the **SET** button, use ◀ / ▶ on the scroll ring to scroll to combination menu. Choose a display mode using ▲ / ▼ on the scroll ring and confirm with the SET button, Press the return button to leave the setting menu.



Visible light



Fusion rate



Fusion offset



PIp



Infrared light



## 17、Setting Menu

Short press **SET** button to the setting menu.

### Setting menu instruction

#### Instructions:

- ① Press **SET** button to enter the setting menu, can switch the setting area and value.
- ② Press **▲/▼** button to switch the menu options, press **SET** button to enter the setting interface, press **▲/▼** button to set the value.
- ③ Press **SET/►** button to enter the setting interface, and switch the setting area.
- ④ Press **◀** button to return to the main menu of setting.

#### Emissivity

Selecting correct emissivity is very important for accuracy of temperature measurement, as emissivity has a significant impact on the measured surface temperature.

Press **SET/►** button to set emissivity value, the value in the emissivity setting box turns blue, press the **▲/▼** button to adjust the emissivity value, after setting is completed, press the **◀** button to return to the left setting main menu.



Tip: The emissivity can be set in the range of 0.01-0.99. For the emissivity of common objects, please refer to the table in the appendix.

Emissivity of common objects

Materials	Emissivity	Materials	Emissivity
Wood	0.85	Black paper	0.86
Water	0.96	Polycarbonate	0.8
Brick	0.75	Concrete	0.97
Stainless steel	0.14	Copper oxide	0.78
Adhesive tape	0.96	Cast iron	0.81
Aluminium plate	0.09	Rust	0.8
Copper plate	0.06	Gypsum	0.75
Black aluminum	0.95	Paint	0.9
Human skin	0.98	Rubber	0.95
Asphalt	0.96	Soil	0.93
PVC plastic	0.93		

## Distance setting

Setting the distance information before detecting can ensure more accurate temperature detection.

Select the distance option, press the **SET/▶** button to enter the value setting interface. Press the **▲/▼** button to set the distance value (0.5~1.2m). After setting is completed, press the **◀** button to the left main setting menu.

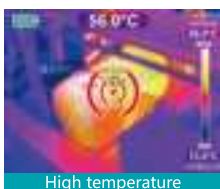


## Alarm temperature setting

Select the high/low temperature setting option, press the **SET/▶** button to enter the value setting interface. Press the **SET/▶** button again to switch the setting items, press the **▲/▼** button to set the temperature value and “on/off”. After setting is completed, press the **◀** button to the left main setting menu.

High temperature setting range: 40°C~ 400°C

Low temperature setting range: -20°C~ 40°C



High temperature



Low temperature

## Temperature Scale

Select the temperature option, press the **SET** / **▶** button to enter the setting, press the **▲** / **▼** button to switch the low gain/high gain options, press the **SET** button to confirm, then press and hold the **◀** button to the left main setting menu.

Temperature range of normal(-20°C~150°C)

Temperature range of High(100°C~400°C)

**!** Note: It takes over 10s to switch gain. Please wait the machine steadied after switching, then performing other operations or temperature measurement.

Settings		
Emissivity	0.98 >	
Distance	1.0m >	
HI/LO Alert	100°C/-5°C >	
Temperature Range	High- >	Normal(-20°C~150°C)
Brightness	Low >	High(100°C~400°C) ●
Date&Time	2022-12-16 >	

## Display brightness

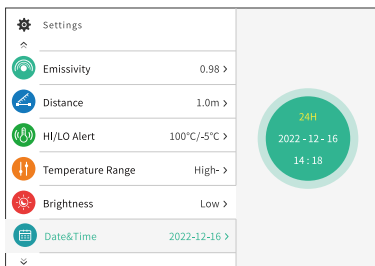
Select the display brightness option, press the **SET** / ► button to enter the setting, press the ▲ / ▼ button to switch the low/middle/high options, press the **SET** button to confirm, then press the ◀ button to the left main setting menu.

Settings		
Emissivity	0.98 >	
Distance	1.0m >	
HI/LO Alert	100°C/-5°C >	
Temperature Range	High- >	Low ●
Brightness	Low >	Mid
Date&Time	2022-12-16 >	High



## Date and time setting

Select the date & time option, press the **SET** / ► button to enter the setting, press the **SET** / ► button again to switch the setting items, press the ▲ / ▼ button to set the value. Then press the ◀ button to the left main setting menu.



## Palette setting

Select the Palette option, press the **SET** / ► button to enter the setting, press the ▲ / ▼ button to switch “on/off”, press the **SET** button to confirm. Then press the ◀ button to the left main setting menu.



## USB Mode

Select the USB mode option, press the **SET** / ► button to enter the setting, press the ▲ / ▼ button to switch “USB disk/USB camera”, press the **SET** button to confirm. Then press the ◀ button to the left main setting menu.



1. Contact us via(service@mileseeey.com) to download the PC software and complete the installation to browse images and screen projection function of real-time images Screencasting function.
2. When the USB mode is set to USB Disk, can be browsing pictures and analyzing data on PC software by connecting the USB cable to the computer.

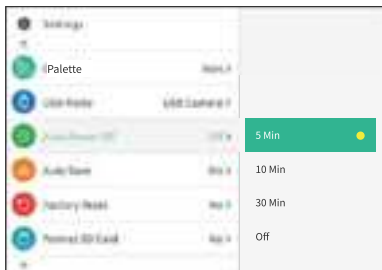
⚠ **Note:** 1) To switch to U-Disk mode, you need to restart the thermal imager, and then plug in the USB cable to apply the U-disk mode.  
2) Please do not change the Image folder name and image name, otherwise there will be a reading error.

3. When the USB mode is set to USB camera, connect the USB data cable to the computer, the projection function of real-time image can be realized on the PC software.

⚠ **Note:** 1) To switch to USB camera mode, you need to turn off the thermal imager, then plug in the USB cable, the device will automatically start to apply the USB camera mode  
2) Please do NOT unplug the USB cable during the computer screen projection process; Please close the projection software first, then unplug the USB cable, If you use complete.

## Auto power off

Select the auto power off option, press the **SET**/ ► button to enter the setting, press the ▲ / ▼ button to switch the time options, press the **SET** button to confirm, then press the ◀ button to the left main setting menu.



## Auto save

Select the auto save option, press the **SET**/ ► button to enter the setting, press the ▲ / ▼ button to switch the “on/off” options, press the **SET** button to confirm, then press the ◀ button to the left main setting menu.

Select the “on” option, means device will save every picture automatically that users take .

Select the “off” option, means users need to confirm whether to save after taking the pictures.

**! Note:** It is recommended to save no more than 2000 pictures, avoid to affect the reaction speed of the device. When the number of pictures exceeds 2000, please clean up the SD card in time.



### Factory reset

Select the factory reset option, press the **SET** / ► button to enter the setting, press the ▲ / ▼ button to switch the “Yes/No” options, press the **SET** button to confirm, then press the ◀ button to the left main setting menu.

⚠ **Note:** please use the Factory Reset function prudently, once reset confirmed, all information in the device will be lost.




## Format SD card

Select the Format SD card option, press the **SET** / ► button to enter the setting, press the ▲ / ▼ button to switch the “Yes/No ” options, press the **SET** button to confirm, then press the ◀ button to the left main setting menu.

**!** Note: Please use the Format SD card function prudently, once format confirmed, all the information in SD card will be lost.



## Browse Image

Short press the  button to enter Image browsing interface, press ◀/▶ to select different Image, press the **SET** button to enter the delete Image option, press the ▲/▼ button to select to Delete a single image or Delete all images, then press the **SET** button confirm deletion

 **Note:**Please do not move the SD card while browsing images, otherwise all the image in SD card will be lost.



## LED light

To avoid the long-time LED lighting causing the temperature of the device increase and affect the measurement accuracy, the LED light will turn off automatically after 5 minutes of continuous lighting. If you need to use it, please turn it on again.

Thermal imaging pixels	10800 (120*90)
Spectral response band	8~14um
Field of view	50°*63.4°
Pixel size	17um
Output frame rate	≤20Hz
Thermal sensitivity	<60mK
Working environment temperature	0°C~35°C
Temperature range	-20°C~400°C
Accuracy	1) -20°C~0°C: ±5°C;
	2) 0°C~100°C: ±3°C;
	3) 100°C~400°C: ±5%
Measurable distance range	0.5m~1.2m
Color palette	Six
High/low temperature alarm	√
SENSOR non-uniformity	<5%
Size	3.5 inch
Display resolution	320*240
Visible light resolution	640*480
Storage	External 8G MicroSD card
Storage memory	SDRAM:256Mbit+SPI NOR FLASH:64Mbit
Communication Interface	USB2.0(FS)
Video output	Can be chosen
Power	26650 lithium battery/ 5000mAh/3.7V
Light	High-power white LED
Protection class	IP65
Operating temperature	-10°C~50°C
Storage temperature	-40°C~70°C
Drop resistance	1.5m
Dimension	238*95*85.5mm
Weight(W/I battery)	540g

## Copyrights

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## Contact us

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Made in China



## Warranty Terms

### Warranty period:

- This product has one year guarantee in the precondition of non-artificial damage.

### **Within the warranty period, certain maintenance costs will be charged under following cases:**

- Damages caused by improper usage or maintenance of the tool;
- The tool had been disassembled or mended by non-authorized third party;
- Without the warranty card or the purchase invoice;
- The serial number on the warranty card is different with the one on product;  
The serial number has been altered or abraded;
- Damaged by any force majeure factors;
- Replacement of the worn out accessories;
- Damages caused by the abnormal factors such as the temperature/ humidity in usage;
- Damages caused by the improper operation.

**Please send the tool with warranty card & purchase invoice to local dealer if maintenance needed. The warranty card will not be reissued if lost; please keep it carefully for maintenance.**

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## Warranty Card

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Model name		Serial Number	
Invoice Code			
User Info	User Name		
	Address &Tel.		
Date of purchase		warranty period	
Dealer	Dealer's name, address, tel.		
Fault Description			



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