UNI-T®

UTi260E
Professional
Thermal Imager

UK CA CE FC

UTi260E
Professional Thermal Imager
User Manual

PREFACE

Thank you for purchasing the new UTi260E Professional Thermal Imager. In order to use this product safely and correctly, please read this manual thoroughly, especially the Safety Instructions part.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

LIMITED WARRANTY AND LIABILITY

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination and improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact your seller directly.

This warranty is the only compensation you can obtain. Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by any reason or speculation. As some areas or countries do not allow limitations on implied warranties and incidental or subsequent damage, the above limitation of liability and stipulation may not apply to you.

TABLE OF CONTENTS

1. Technical Specifications

Sensor	Uncooled vanadium oxide
Temperature Scale	Low temperature (-20°C~150°C) High temperature(0°C~550°C) (Manual switch)
Display	3.5" IPS
Display resolution	640*480
Emissivity	0.95 (default) 0.01~1.00
Thermal imaging pixels	256*192 (49152)
Visible light pixels	2 million
Pixel size	12μm
Palettes	iron,Rainbow,whitehot,redhot,blackhot,lava,Rain.HC.
Infrared spectrum bandwidth	8~14μm
Field of view	56°*42.2°
IFOV	3.8mrad
Lens focal length	3.2mm
Focus mode	Focus free
Sensitivity	<50mK @25°C
Frame rate	<25Hz
Digital zoom	2x,4x
Temperature analysis	Point, areas (large, medium and small), line (up to 6 analysis objects can be added at the same time)
Isotherm	Manual/auto
Temperature display	Center point temperature, high/low temperature tracking
Unit	°C (default)/°F
High and low temperature alarm	√ (LED alarm, LCD alarm)
Image modes	Thermal, visible, fusion, PIP
Image capture mode	Photograph/self-timer
Image save format	JPG
Image viewing	Temperature analysis, change palettes, remarks

|	
QR code scanning	√
USB communication	Type-C USB (real-time image and U disk storage)
WIFI	√
PC screen projection	√
PC analysis software	√ (real-time image, photo download and analysis)
Mobile APP	√ (photo download and analysis)
Flashlight	√
Language	Chinese/English
Certificates	CE FCC
Operating temperature	0℃~ 50℃ (32℉~ 122℉)
Storage temperature	-10℃~ 60℃ (14℉~ 140℉)
Operating humidity	10%~95%RH (non-condensing)
Accuracy	-10℃~550℃, normal temperature 25℃, ±2℃/±2% (whichever is greater)
Measurement range	- 20℃ ~ 550℃ (-4℉~1022℉)
Battery	5200mAh (removable battery pack)
Auto power off	0~90min
Operating time	>3h
Charging time	<4h
Charging voltage/current	5V/1.5A 9V/1A 12V/1A (only for USB charging heads below QC2.0 standard)
Image storage	Micro SD card, maximum 32G
IP rating	IP54, 2m drop proof

2. Product Structure
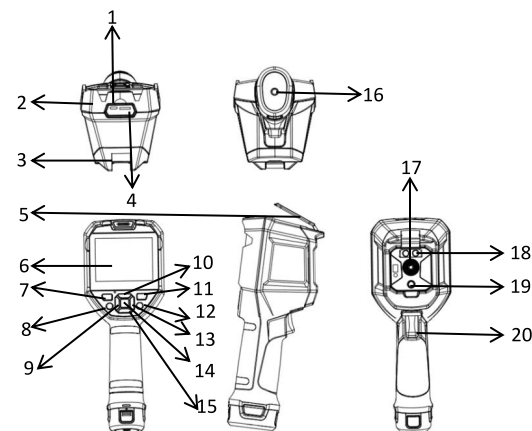
Item	Description	Item	Description
1	USB Type-C interface	11	View images
2	Upper housing	12	Return
3	Lower housing	13	Right
4	SD card slot	14	SET
5	Interface protection cover	15	Down
6	LCD	16	Bracket screw hole
7	Power	17	Infrared camera lens
8	Flashlight button	18	Flashlight
9	Left	19	Visual light camera lens
10	Up	20	Trigger

3. LCD Indicators/Icons

Display size: 640×480
Display resolution: 256 (vertical) × 192 (horizontal)
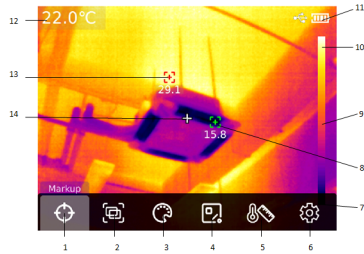
| Item	Description	Item	Description
1	Markup	8	Lowest temperature spot
2	Image	9	Range bar
3	Palette	10	Upper range of palette
4	Measure	11	Battery status
5	Vitta	12	Center point temperature
6	System	13	Highest temperature spot
7	Lower range of palette	14	Center point marker

4. Power on/off

Long press the power button for 5s to turn on/off the thermal imager (it needs 30 minutes warm-up time when the device is just turned on or not used for a long time, or the measurement environment changes). When the battery is low, a low battery indicator will show on the LCD, which means the thermal imager should be turned off and the battery should be charged. When the thermal imager is in low battery status for a long time, the device will automatically shut down.


5. Menus

Main Menu Configuration Options
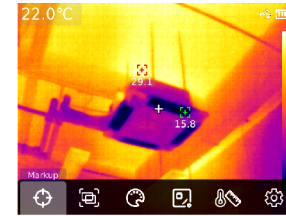
In the main interface:
1. Press the SET button to open the main menu.
2. Press the left/right button to step through submenus.
3. Press the SET button to open the selected submenu.
4. Press the left/right button to step through setting items in the submenu.
5. Press the SET button to confirm the selected setting item.
6. Press the return button to return to the previous interface and save the setting.
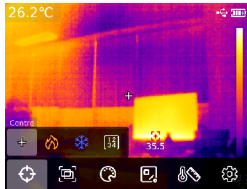7. Press the return button again to return to the main interface.
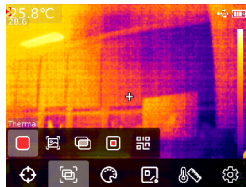
Main Menu

Submenu
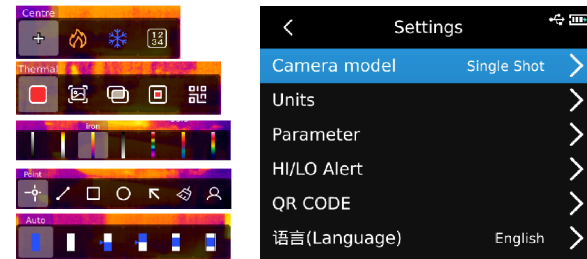
6. Markup

In the main interface, press the SET button to open the main menu. Press the left/right button to select "Markup". Press the SET button again to open the submenu of "Markup". In the submenu, press the left/right button to select a submenu option. (For example: press the SET button to perform the selected function "Center", and a center point marker will show on the middle of the screen. Press the button again to exit.)
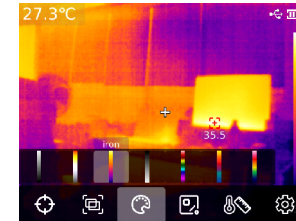

7. Image

In the main interface, press the SET button to open the main menu. Press the left/right button to select "Image". Press the SET button again to open the submenu of "Image". In the submenu, press the left/right button to select a submenu option. (For example: press the SET button to perform the selected function "Fusion" and the image will switch to the fusion mode.) In the fusion mode, press the left/right button to adjust the mix proportion, and up/down button to adjust the mix distance. In the PIP mode, press the left/right button to move the position or stretch the size of PIP. As for the QR function, users can manually input the QR code or scan the QR code. Select "cancel" to return to the main interface.


8. Palette

In the main interface, press the SET button to open the main menu. Press the left/right button to select "Palette". Press the SET button again to open the submenu of "Palette". Press the left/right button to step through seven optional palettes: iron, Rainbow, whitehot, redhot, blackhot, lava, Rain.HC.


9. Measure

In the main interface, press the SET button to open the main menu. Press the left/right button to select "Measure". Press the SET button again to open the submenu of "Measure".

In the submenu, press the left/right button to select an analysis object (Point, Line, Rect., Circle). Press the SET button to add the selected object. The submenu also includes three other functions: choose (this function can only be used if an analysis object is added), clear, preset.
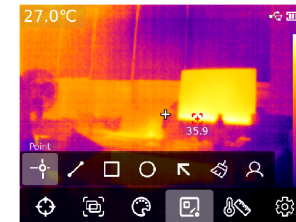

After adding an analysis object, a submenu will appear. The optional functions in the submenu are choose, move, stretch (this function cannot be applied to point objects), diff (point objects can only be compared with point objects; the comparison information will be displayed on the right side), delete (delete the selected object). The temperature information of the added object will be displayed on the left. When a line object is selected, its temperature change graph will be displayed in the lower left corner.
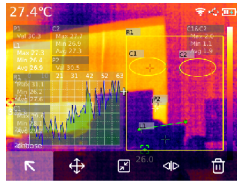
Press the "SET" button to perform the "clear" function, and all the analysis objects in the current interface will be cleared. When there is an analysis object, press the "SET button" to perform the "preset" function, and a box "Save tool" will pop up. Select "OK" to save the analysis object. The preset tool can be used directly next time.

If there is no temperature measurement and analysis object on the main page, press the "SET" button to select a preset tool, and a prompt box of "Read tool" will pop up. Select Confirm, and the preset tool saved last time will be added to the main page.

When there is no analysis object in the main interface, press the "SET" button to perform the "preset" function, and a box "Read tool" will pop up. Select "OK" and the preset tool will be added to the interface.
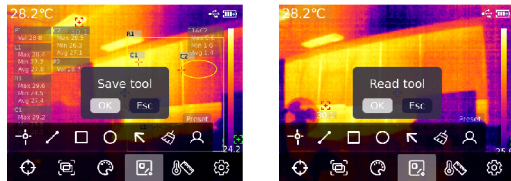

Note: The maximum number of point objects that can be added is 5 (line: 1; Rect.: 3; circle: 3). The total number of analysis objects added cannot exceed 6. When it exceeds 6, a box "Outnumber" will pop up.
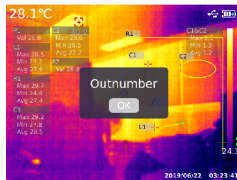
10. Isotherm

In the main interface, press the SET button to open the main menu. Press the left/right button to select "Isotherm". Press the SET button again to open the submenu of "Isotherm". The options in the submenu are: Auto, Ratio, Below, Above, Section, Manual.
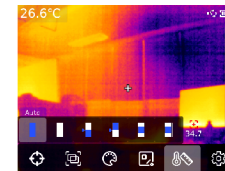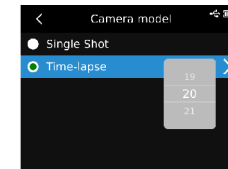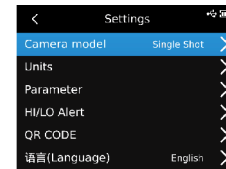

11. System

Press the SET button to enter the submenu. Press the up/down button to select a setting item, and press the SET button to enter the interface of this item.
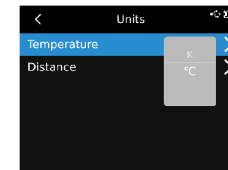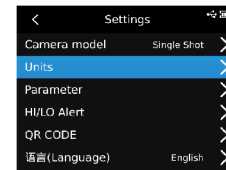
11.1 Camera Model

In the setting interface, select "camera model" and press the SET button to enter the submenu. Press the up/down button to select Single Shot/Time-lapse. In the Time-lapse mode, press the up/down button to adjust the Time-lapse interval (10s-1000s).

11.2 Units

In the setting interface, select "units" and press the SET button to enter the submenu. Press the up/down button to select temperature/distance. When selecting temperature, press the up/down button to change the units ($℉$/K/$℃$). The distance unit cannot be changed.
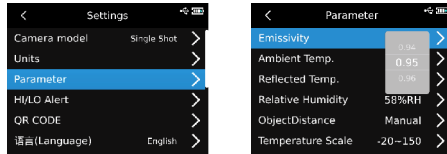
11.3 Parameter

In the setting interface, select "parameter" and press the SET button to enter the submenu. Press the up/down button to select Emissivity/Ambient Temp./Reflected Temp./Relative Humidity/ObjectDistance/Temperature Scale.Press the SET button to select the parameter to be modified, and press the up/down button to adjust the parameter value. When setting the object distance, press the SET button to enter its submenu, and then press the SET button and the up/down button to modify the parameter.

Low temperature:-20°C~150°C
High temperature:0°C~550°C
Note:It takes about 20S to switch mode.
Please wait until it is stable and take the next action.

1. Please refer to emissivity table on page 40;
2. If you are not sure which value to use, use the following default values
   Emissivity 0.95
   Ambient Temp. 25°C
   Reflected Temp. 25°C
   Relative Humidity 55%RH
   ObjectDistance 0.25m

Note: Emissivity and reflection temperature are the two most important parameters to set correctly. If in doubt, use the default values.

11.4 HI/LO Alert

In the setting interface, select "HI/LO Alert " and press the SET button to enter the submenu. Press the up/down button to select HI/LO/LED Alert. When setting HI/LO, press the up/down button to select HI value/LO value, press the SET button to modify, and press the up/down button to adjust the value (-20°C–550°C).
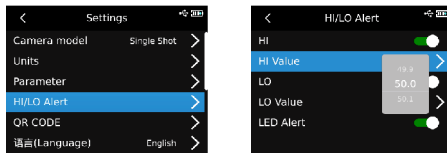

When the measured temperature exceeds the HI value, a red triangle will pop up. When the measured temperature is lower than the LO value, a green inverted triangle will pop up.
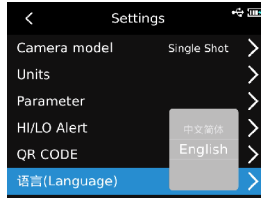

11.5 QR CODE

In the setting interface, select "QR code" and press the SET button to enter the submenu. Press the up/down button to select a QR code. Press the SET button to change the code name or reset the code.
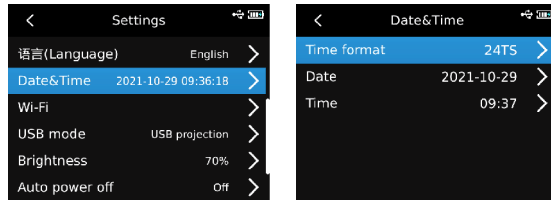

13   14
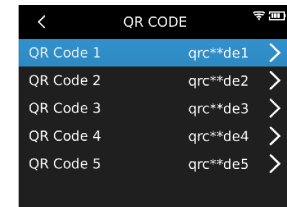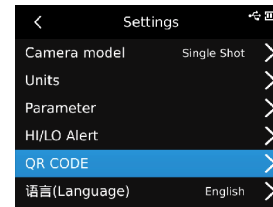
11.6 Language

In the setting interface, select "Language" and press the up/down button to select Simplified Chinese/English.
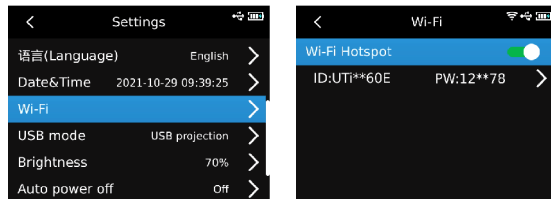

11.7 Date & Time

In the setting interface, select "Date & Time" and press the SET button to enter the submenu. Press the SET button to modify Time format/Date/Time, and press the up/down button to adjust the value.
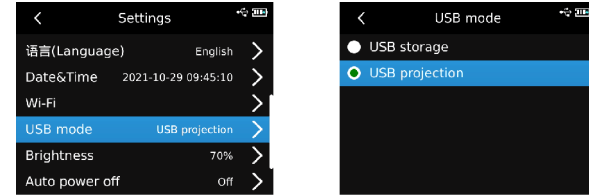

11.8 Wi-Fi

In the setting interface, select "Wi-Fi" and press the SET button to enter the submenu. Press the SET button to turn on the LionScripts, press the down button to select the ID and password, and press the SET button to confirm.

11.9 USB mode

In the setting interface, select "USB mode" and press the SET button to enter the submenu. Press the up/down button to select USB storage/USB projection, and press the SET button to confirm.

11.10 Brightness

In the setting interface, select "Brightness" and press the up/down button to adjust the brightness (1-100).
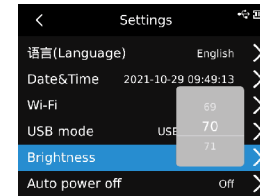
11.11 Auto power off

In the setting interface, select "Auto power off " and press the up/down button to select Off/5min/10min/20min/30min/45min/60min/90min.

11.12 Factory Reset

In the setting interface, select "Factory reset" and press the SET button. A box "Factory reset?" will pop up. Select "Yes", the device will automatically shut down. After turning on again, the device will restore the factory settings.

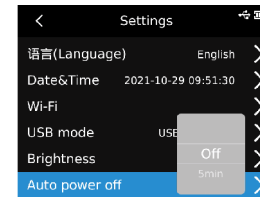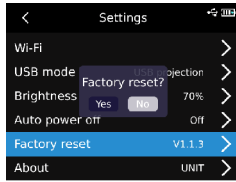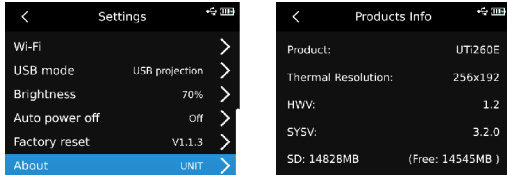

11.13 About

In the setting interface, select "About" and press the SET button to enter the submenu. The product information including product, Thermal Resolution, HWV, SYSV and SD can be viewed.

12. Image Viewing

In the main interface, press the image viewing button to enter the multimedia browsing interface. Press the up/down button to select all photos or other folders, and press the SET button to open the selected folder. Press the up/down/left/right button to select the image to be viewed, and press the SET button to view this image. Press the left/right button to switch between images.

When viewing an image, press the SET button to open the submenu of this image. The functions in this submenu are:

Message: create date, ModifiedDate, Emissivity, HVGA, Ambient Temp., Relative Humidity, ReflectiveDistance, QR code, remarks.

Notes: The added notes will show in the photo message.

Redact: markup, image, palette, measure, Isotherm.

QR code: Users can add an existing QR code for image classification, or can delete the QR code of the current image or add a new QR code.

Delete.

Note: In the redact interface, after editing a photo, press the SET button and then the up button to select "restore". Press the SET button again to restore the photo to its original state. Press the return button after editing, and a box "save/exit/esc" will pop up. Select Exit to exit the editing interface. Select Save and a box "Cover?" will pop up. Select Cover, the original image will be changed and saved. Select New, the original image will not be changed and a new image will be saved.
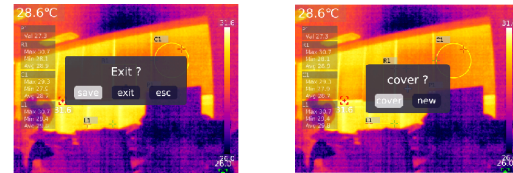
After adding the QR code, press the return button, and a prompt "Save and exit" will pop up. Choose Confirm to save the added QR code. Choose Cancel to exit the QR code editing page without saving. The QR code added here will not be saved to the existing QR code category. If users want to modify the existing QR code, they need to change it in the settings.

13. Buttons

In the main interface, press the up button to zoom in. The magnification is displayed in the upper right corner of the screen, and it will step through 1X, 2X, 4X, and 1X.

In the main interface, press the left/right button to adjust the degree of fusion. The optional degrees are 0%, 25%, 50%, 75%, and 100%.

14. SD Card

This device supports Micro SD card to store images. To avoid affecting the operating speed of the device, please copy the backup data regularly and clean up the SD card in time. To avoid causing abnormal data on the SD card, do not insert or remove the SD card repeatedly. If the SD card is removed in the image viewing interface, a box "SD lost" will pop up.
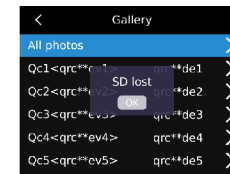
15. Maintenance

Use a wet cloth or weak soap solution to clean the outer shell of the device. Do not use abrasives, isopropyl alcohol or solvents to clean the outer shell, lens or window.

16. Safety Instructions

In order to ensure the accuracy, please read the instructions carefully. Please use this product in accordance with the manual; otherwise the free warranty will not be carried out if the product is damaged. Please do not use this device in flammable, explosive, steamy, humid or corrosive environments. Please do not continue to use the device when it is damaged, broken or corrected, so as to avoid incorrect test results. Please refer to the emissivity information to confirm the actual temperature; otherwise the measured temperature will be inaccurate.

Do not aim the lens at a strong or hot light source, such as the sun and other high-temperature objects, so as to avoid damage to the lens or thermal imaging detector.

Do not use the product in extremely hot, cold, dusty or high humidity environments. For detailed temperature and humidity requirements, please refer to the parameter table.

The product can be charged with a USB cable. However, in order to improve the charging efficiency, it is recommended to pull out the battery pack and charge the battery pack separately.

17. FCC Compliance statement

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.

18. Common Emissivity

Material	Emissivity	Material	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
Tape	0.96	Cast iron	0.81
Aluminum 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	0.93		

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