



The Tempviewer 6400 is a handheld infrared thermal camera used for predictive maintenance, equipment troubleshooting and verification. Thermal images are displayed on the screen and can be saved.

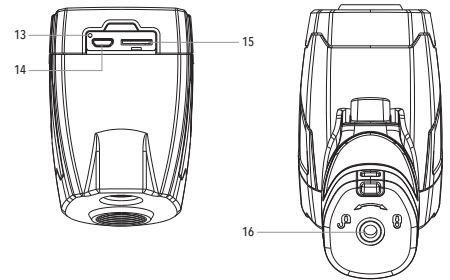
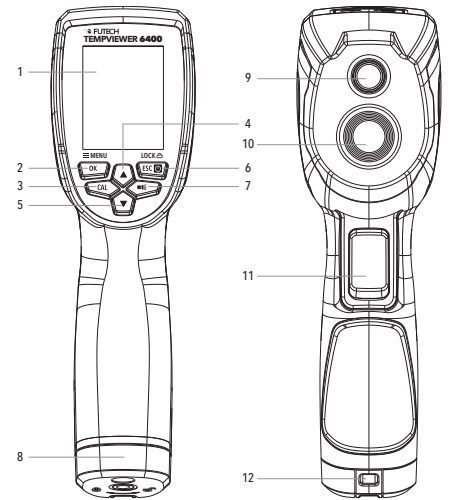
■ SAFETY AND WARNINGS

Improper use can damage the Tempviewer 6400. Please read and understand all the information provided in this manual before use.

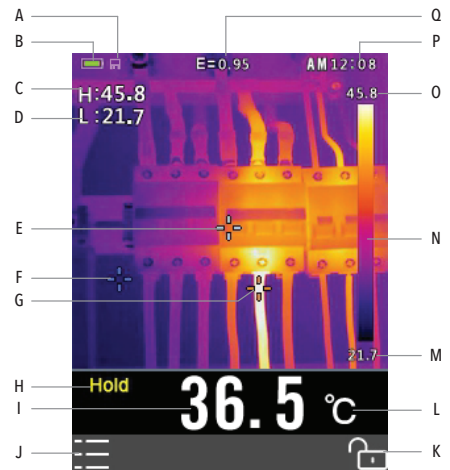
Please read the complete safety instructions in the booklet delivered with this device.

DESCRIPTION

1. TFT Color display
2. Menu / OK button
3. Left Key / Calibrate (CAL) button
4. Up arrow button
5. Down arrow button
6. Power / Back (escape) / Lock button
7. Right Key / Flashlight button
8. Battery cover
9. LED Flashlight
10. Infrared (IR) Imaging lens
11. Trigger
12. Lanyard access
13. Battery Charging LED indicator
14. USB Battery Charging interface
15. Micro SD Card slot
16. 5/8" Tripod connection



- A. Micro-SD card symbol
- B. Battery indicator
- C. Hot temperature Point reading
- D. Cold temperature Point reading
- E. Center temperature point
- F. Lowest temperature point
- G. Highest temperature point
- H. Image Hold symbol
- I. Center Temperature point reading
- J. Menu sign
- K. Lock sign
- L. Current temperature unit
- M. Scene low temperature
- N. Palette scale
- O. Scene high temperature
- P. Clock
- Q. Current Emissivity Setting



CONTROL BUTTONS AND TRIGGER

Power / Back (escape) / Lock button [6]

- Press and hold for >2 sec. to set the Tempviewer 6400 on or off.
- Press shortly to exit a menu screen
- When the Lock sign [K] is visible on the screen, press short to lock the current scene temperature range.

OK / Menu button [2]

- Press shortly to access the settings menu.
- Press shortly to confirm, to edit or save (when the Save symbol is visible in the left lower part of the screen).

Up [4] and Down [5] navigation arrow

- Allows you to scroll in the settings menu

Right Key / Flashlight button [9]

- Press about 2sec. to activate the flashlight of the Tempviewer 6400.
- When the menu is activated, press shortly to confirm.

Left Key / CAL-button [3]

- Press shortly to allow the shutter to reset the image.
- When the menu is activated, press shortly to go one step back.

OPERATION

SWITCH ON THE TEMPVIEWER 6400

- Press and hold the Power button [6] for approx. 2 sec. to switch on the device.
- If the battery is sufficiently charged, the tempviewer 6400 will display the start-up screen. The startup screen will be shown until the shutter resets the image.
- After the startup period, the unit will show a real time infrared thermal image along with an infrared temperature reading.

LOCK/UNLOCK SCENE TEMPERATURE LEVEL-SPAN

The unit is real 80x80 pixels thermal omager. For better get the object temperature problem, you can lock the current scene temperature.

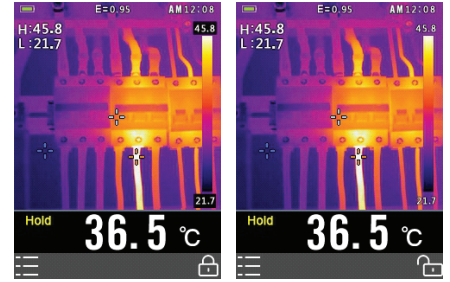
If the temperature is higher than the lock temperature, the corresponding color is white. If the temperature is lower than the lock temperature, the corresponding color will be black.

- Point the unit an an object or area of intrest
- Short press the Lock button [6] to lock the temperature. The backcolor of the temperature reading pallet scale [N] will turn grey.
- Short press the Lock button [6] again to unlock the scene temperature range.

CAPTURE / SAVE IMAGES

Place the included micro SD card in the Micro CD Card slot [15] if you want to save images. The Micro SD card symbol [A] is visible when a card is placed.

- Point the unit at an object or area of intrest.
- Short press the trigger [11] to capturethe image. The shown image will freeze. The HOLD symbol [H] is visible on the screen.
- If you want to save the image, choose save with the OK button [2]. The image will be saved on the micro SD card.
OR if you don't want to save the current image, short press the trigger again. In both cases the image will unfreeze.



SETTINGS MENU

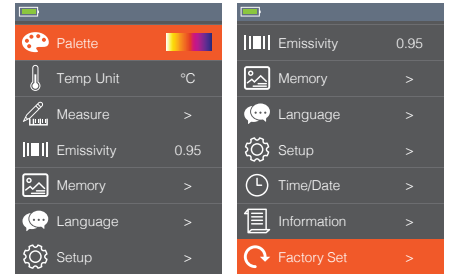
How to use the setting menu

Press the Menu / OK button [2] to open the settings menu.

Press the Up arrow [4] or Down arrow [5] button to select the menu item you like to change

Press the OK button [2] to enter the sub menu or set focus on the current selected item. Use the Left Key (CAL) [3] to return to the previous menu.

If you want to exit the menu, press the Power / Back (escape) / Lock button [6]



PALETTE MODE

You can choose between 5 color palettes to show the thermal image.

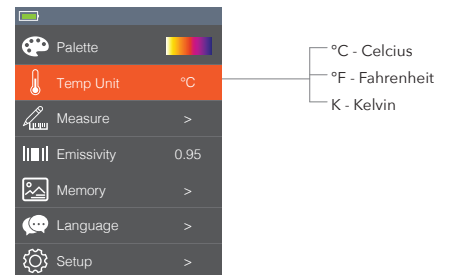
- Navigate to the option Palette in the settings menu.
- By pressing the OK button [2] you can choose between the 5 suggested palettes.



TEMPERATURE UNIT

The Tempviewer 6400 can show temperatures in °C, °F and K.

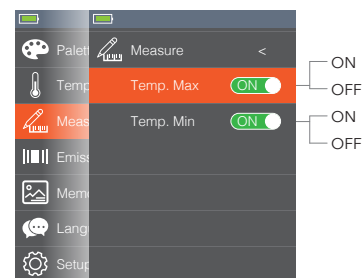
- Navigate to the option "Temp Unit" in the settings menu and press the OK button [2] to select.
- Use the Up [4] or Down [5] arrow to choose between the available units
- Confirm your chosen unit by pressing the OK button [2].



MEASURE

The Tempviewer 6400 shows by default the highest [G] and lowest [F] temperature spot. If preferred, you can deactivate one or both of these spots.

- Navigate to the option "Measure" in the settings menu and press the OK button [2] to select.
- Navigate in the submenu to the point you like to (de-)activate and confirm with the OK button [2]. The switch will change from ON to OFF or vice versa.



EMISSION

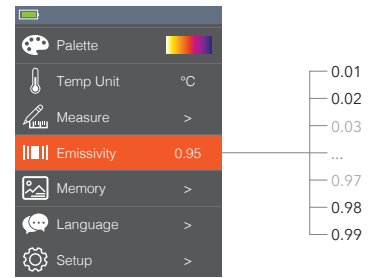
The amount of infrared energy radiated by an object is proportional to the temperature of the object and the ability of the material to radiate energy. This ability refers to "radiation coefficient" or "emissivity". Emissivity is the ratio of the average emission power to a black radiator at the same temperature. Emission is for materials between 0.10 and 1.00. Materials with low emissivity (<0.60) emit little energy, typically for materials with a shiny, light surface (e.g. metals). Materials with high emissivity (>0.90) emit much energy, typically for matte, dark areas. The lower the emissivity, the more difficult it is to measure accurately. (Check the emissivity table).

Most (90% of typical applications) organic materials and painted or oxidized surfaces have an emissivity of 0,95 (pre-set in the unit). Inaccurate readings will result from measuring shiny or polished metal surfaces.

To compensate, cover the surface to be measured with masking tape of flat black paint. Allow time for the tape to reach the same temperature as the material underneath it. Measure the temperature of the tape or painted surface.

ASPHALT	0,90 - 0,98
CONCRETE	0,94
CEMENT	0,96
SAND	0,90
SOIL/EARTH	0,92 - 0,96
WATER	0,92 - 0,96
ICE	0,96 - 0,98
SNOW	0,83
GLASS	0,90 - 0,95
CERAMIC	0,90 - 0,94
MARBLE	0,94
PLASTER	0,80 - 0,90
MORTAR	0,89 - 0,91
BRICK	0,93 - 0,96
CLOTH (BLACK)	0,98
SKIN (HUMAN)	0,98
LEATHER	0,75 - 0,80
CHARCOAL (POWDER)	0,96
LACQUER	0,80 - 0,95
LACQUER (MATT)	0,97
RUBBER (BLACK)	0,94
PLASTIC	0,85 - 0,95
TIMBER	0,90
PAPER	0,70 - 0,94
CHROMIUM OXIDES	0,81
COPPER OXIDES	0,78
IRON OXIDES	0,78 - 0,82
TEXTILES	0,90

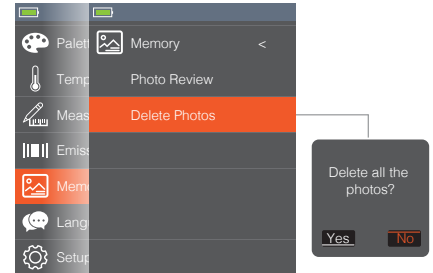
- Navigate to the option "Emissivity" in the settings menu and press the OK button [2] to select.
- Use the Up [4] or Down [5] arrow to select the correct emissivity and confirm with the OK button [2]



■ MEMORY

In this part of the menu you can review saved pictures or delete them.

- Navigate to the option "Memory" in the settings menu and press the OK button [2] to select.
 - Navigate to "Delete Photos" if you like to delete all saved photos on the memorycard and press the OK button [2].
If you like to delete one single image, please see "Photo review" in the memory submenu.



Highlight "YES" in red using the Left [3] and Right [7] key and push the OK button [2] to delete all saved pictures.
(Pushing the OK button [2] with "NO" highlighted in red takes you back to the Memory submenu.)

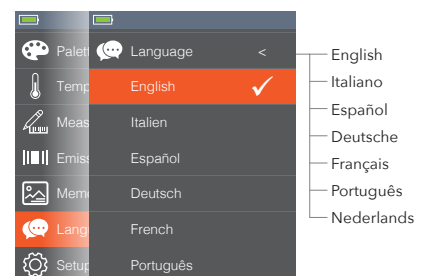
- Navigate to "Photo review" if you like to see saved image and confirm with OK. The last saved picture will be shown on the screen.
Use the Left [3] and Right [7] key to navigate between all saved pictures.

If you like to delete one single image, navigate to this image and push the OK button [2]. Delete will be visible at the bottom right of the screen.
Push the OK button [2] to delete and confirm by highlight "YES" in red using the Left [3] and Right [7] key and push the OK button [2].
(Pushing the OK button [2] with "NO" highlighted in red takes you back to the selected photo.)

■ LANGUAGE

The default language of the Tempviewer 6400 is English. Multiple languages are available.

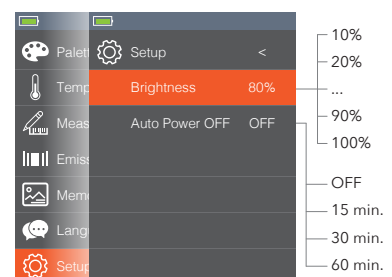
- Navigate to the option "Language" in the settings menu and press the OK button [2] to select.
- Use the Up [4] or Down [5] arrow to select the language you prefer and confirm with the OK button [2].



■ SETUP

In this part of the menu you can choose the brightness of the screen and (de-) activate the Auto Power OFF.

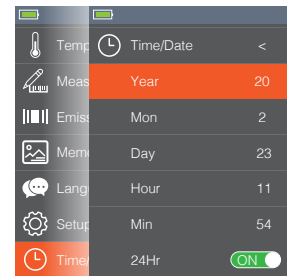
- Navigate to the option "Language" in the settings menu and press the OK button [2] to select.
 - Navigate to "Brightness" if you like to change the brightness of the screen and press the OK button [2].
Use the Up [4] or Down [5] arrow to select the brightness you prefer and confirm with the OK button [2].
- Navigate to "Auto Power OFF" if you want the device to turn off automatically after a specified time (to save battery) and press the OK button [2].
Use the Up [4] or Down [5] arrow to select the Auto Power OFF time you prefer and confirm with the OK button [2].



■ TIME/DATE

- Navigate to the option "Time/Date" in the settings menu and press the OK button [2] to select.
- Use the Up [4] or Down [5] arrow to go to the part of the Time/Date you want to adapt and confirm with the OK button [2].
- Use the Up [4] or Down [5] arrow to choose the correct value and confirm with the OK button [2].
- Repeat the previous two steps to set Time/Date complete.

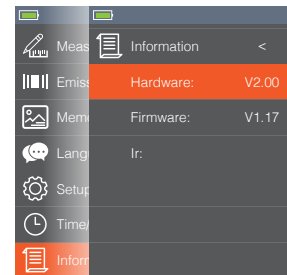
Set the 24Hr switch to ON to use 24Hr hour notation. Set this switch to OFF will show time in 12Hr notation, mentions AM or PM.



■ INFORMATION

In this part of the menu you can see the software and hardware version of this Tempviewer 6400.

- Navigate to the option "Information" in the settings menu and press the OK button [2] to select.



■ FACTORY SET

It is possible to set all settings back to the default factory settings.

- Navigate to the option "Factory Set" in the settings menu and press the OK button [2] to select.
- Highlight "YES" in red using the Left [3] and Right [7] key and push the OK button [2] to set all settings back to the default factory settings. (Pushing the OK button [2] with "NO" highlighted in red takes you back to the menu.)



SPECIFICATIONS

Field of View	21° x 21°
/ Minimum focus Distance	/ 0.5m
Spatial Resolution (IFOV)	4.53 mrad
Thermal Sensitivity / NETD	<0.1°C at 30°C (86°F) / 100mK
Image Frequency	50Hz
Focus Mode	Focus Free
Focal Length	7.5mm
Focal Plane Array (FPA)	Uncooled microbolometer
/ Spectral Range	/ 8-14µm
Object Temperature Range	-20 to 380°C (-4 to 716°F)
Accuracy	±2°C (3.6°F) or ±2% of reading (Environment temperature 10 to 35°C, object temperature >0°C)
Display	2" Color TFT LCD screen
Display resolution	240 x 320 Pixels resolution
Battery	Rechargeable 3.7V/2600mAh lithium-ion battery (not user-serviceable)
Battery Lift	>6 hours , typical
Battery charger	5V/1A USB charger
Drop proof	Designed for up to 2 meters
Connect	Not applicable
Save image format	Bitmap (.bmp) with 6400 points temperature analyse and emissivity
Operating temperature	-10 to 45°C (14 to 113°F)
Storage temperature	-30 to 55°C (-22 to 131°F)
Allowable Relative Humidity	<80%RH

Futech is a registered brand of Laseto NV, Belgium.

Futech declares that the Tempviewer 6400 is in conformity with the following standards:

- EN 62479:2010
- Draft EN 301 489-1 V2.2.0 (2017-03)
- Draft EN 301 489-17 V3.2.0 (2017-03)
- EN 61000-6-3:2007+A1:2011+AC:2012
- EN 61000-6-1:2007
- EN 61326-1:2013
- EN 61326-2-2:2013
- EN 300 328 V2.1.1 (2016-11)

following the provisions of Directive:

- Radio Equipment Directive (RED) 2014/53/EU

Tested by Bureau Veritas Shenzhen Co., Ltd., Dongguan Branch, Guangdong 523942, China

Certificate number SE180212N010 (Mar. 19, 2018), RM180212N010 (Mar. 19, 2018), CE180212N010 (Mar. 19, 2018), RE180212N010 (Mar. 19, 2018).

