

VT06/VT08/VT08-II

Visual IR Thermometer

Users Manual



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Introduction

The Fluke VT06/VT08/VT08-II Visual IR Thermometers (the Product or Meter) are hand-held, infrared imaging cameras for use in many applications. These applications include equipment troubleshooting, preventive and predictive maintenance, building diagnostics, and research and development.

The Meter displays thermal images on a high-visibility, industrial-quality LCD screen. The Meter can save images to internal memory. You can transfer images and data stored in internal memory to a PC through a direct USB connection to the PC.

A rugged, rechargeable lithium-ion smart battery provides power to the Meter. Direct ac power is accessible with the included ac power adapter.

Contact Fluke Corporation

Fluke Corporation operates worldwide. For local contact information, go to our website: www.fluke.com.

To register your product, or to view, print, or download the latest manual or manual supplement, go to our website.

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Safety Information

General Safety Information is in the printed Safety Information document that ships with the Product and on the www.fluke.com website. More specific safety information is listed where applicable.

Product Familiarization

The manual explains features for multiple models. Because models have different features, some of the information in the manual might not apply to your Meter.

Note

Unless otherwise specified, the figures in this document show the VT08 Visual IR Thermometer.

Features

Table 1 shows the features of the Product.

Table 1. Features

Feature	VT06	VT08/VT08-II
Focus/Image Enhancement		
Fixed focus	●	●
Visible Light Camera		●
Picture-in-Picture (PIP)		●
Light/Laser		
LED Light		●
Laser	●	●

Specifications

Complete specifications are at www.fluke.com. See the *VT06/VT08/VT08-II Product Specifications*.

The Product

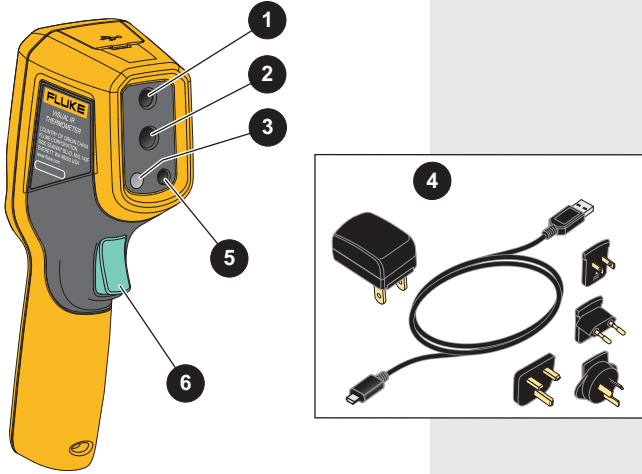
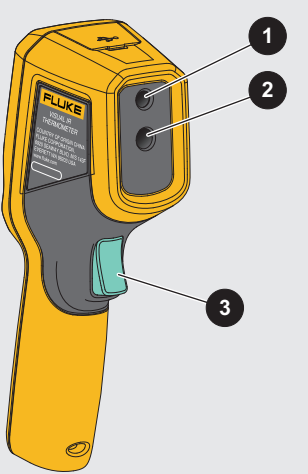
Table 2 shows the front of Product VT08/VT08-II.

Table 2. Front of the Product

	
Item	Description
1	Display screen
2	See Control Panel .
3	USB Cable (Power input)

Table 3 shows the back of the Products.

Table 3. Back of the Products

VT08/VT08-II		VT06	
<div><p>VT08/VT08-II</p></div>		<div><p>VT06</p></div>	
VT08/VT08-II		VT06	
Item	Description	Item	Description
1	Visual Light Camera Lens	4	AC Power Supply with Mains Adapters ^[1]
2	Infrared Camera Lens	5	LED
3	Laser Pointer (the Japanese model has no laser pointer)	6	Trigger
VT06		VT06	
Item	Description	Item	Description
1	Laser Pointer (the Japanese model has no laser pointer)	3	Trigger
2	Infrared Camera Lens	4	AC Power Supply with Mains Adapters ^[1]
[1] Not available in all countries.			

Trigger

The Trigger is located in the standard trigger position for a pistol-grip device.

Use the Trigger to capture and save an image. The Trigger is also the laser pointer switch. From any menu, use the Trigger to return to Camera mode.

Control Panel

Use the control panel to change parameters or select functions and options. You can also use  to power on or power off the Product. For the VT08/VT08-II device only, you can also use the  button to turn on or turn off the LED Light. [Table 4](#) shows the functions of the buttons on the Control Panel.

Table 4. Control Panel

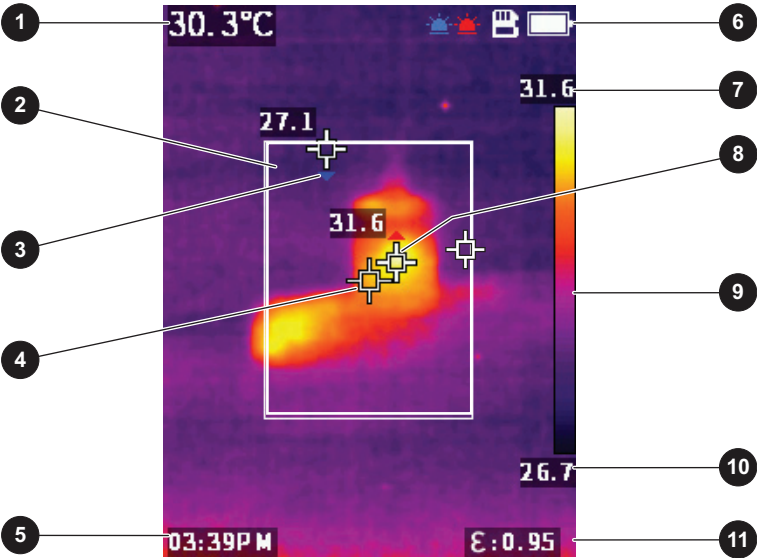
Button	Description
	<ul style="list-style-type: none"> • Push to open the Main Menu. • Push and hold for 2 seconds to power on or power off the LED Light (VT08/VT08-II only). • Within a menu or submenu: <ul style="list-style-type: none"> • Push to save the change and go back to the previous menu. • Push to perform the function.
	<ul style="list-style-type: none"> • Push and hold for 2 seconds to power on or power off the Product. • Push to cancel the change and go back to the previous menu.
	<ul style="list-style-type: none"> • Push to switch the Camera mode (VT08/VT08-II only). • Push to move up the cursor and highlight an option. • Within a submenu, push to increase a parameter value during parameter editing.
	<ul style="list-style-type: none"> • Push to switch the Camera mode (VT08/VT08-II only). • Push to move down the cursor and highlight an option. • Within a submenu, push to decrease a parameter value during parameter editing.

Display Screen

The display screen is the primary user interface of the Product. The display screen has a backlight for work in dimly lit spaces.

[Table 5](#) shows the default information on the screen of the Product.

Table 5. Display

			
Item	Description	Item	Description
1	Center point temperature	7	Temperature range higher value
2	Region of Interest Measure (ROI Measure) area This area outlines the high and low temperature markers in its spot box.	8	ROI Measure high temperature marker
3	ROI Measure low temperature marker	9	Range bar The range of colors in the palette mapped to a certain range of temperatures
4	Center point marker	10	Temperature range lower value
5	Time	11	Emissivity value
6	Status information for Battery status, SD card status, Laser status, High temperature alarm status, Low temperature alarm status, and USB connect status		

Menu Controls

The following choices describe how to use the menus to change and view settings:

1. Push **OK** in Camera mode to open the Main Menu.
2. On the Main Menu, push **↶** to return to live Camera mode.
3. On the Main Menu, push **▲** or **▼** to move the cursor and highlight an option.
4. On the Main Menu, push **OK** to open a submenu. [Table 6](#) describes the Main Menu options.

5. On the submenu, push  to return to the previous menu.
6. To change and view settings on the submenu, refer to the [Gallery](#) and [Camera Info](#) sections.
7. Push the Trigger to close a menu or submenu and return to live Camera mode.

Basic Operation

Power On and Power Off the Product

Before you use the Product for the first time, charge the battery. See [Charge Batteries](#).

- To power on the Product, push and hold  for 2 seconds.
- To power off the Product, push and hold  for 2 seconds.

Note

All thermal Meters need sufficient warm-up time for accurate temperature measurements and best image quality. Warm-up time can vary by model and environmental conditions. Although most Meters are fully warmed up in 3 minutes to 5 minutes, wait a minimum of 10 minutes if the most accurate temperature measurement is important to your application. When you move a Meter between environments with large differences in ambient temperature, allow for additional adjustment time.

Note

If the Product crashes, push and hold  for 3 seconds to power off the Product.

Focus

The VT06/VT08/VT08-II thermometer is a focus-free product, which means that users do not need to do anything after receiving it. The Product can ensure that the image is clearly set within 0.5 m and 1.2 m.

Laser Pointer

The Meter has a laser pointer. The laser pointer is a sighting aid and is offset from the infrared camera. As a result, the laser dot does not always represent the exact center of the image.

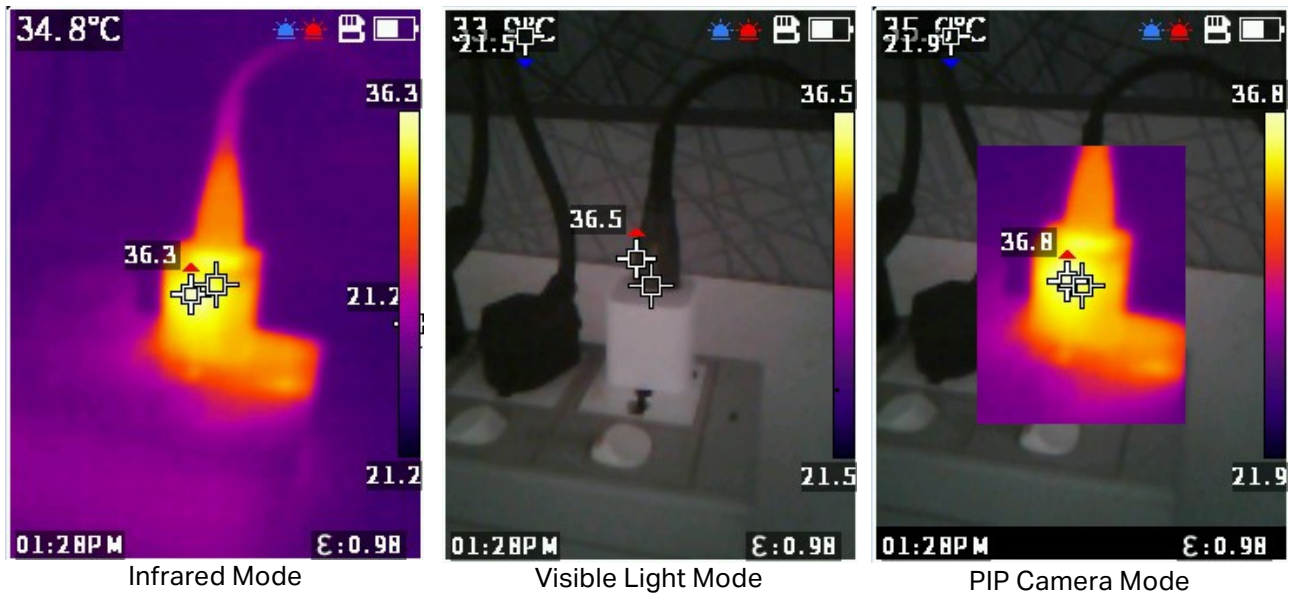
The laser dot does not appear on infrared-only or PIP images. The laser dot does appear on visible-only images. You will not be able to see the laser dot in the visible channel of the PIP image if the dot is obscured by the center point marker graphic.

Pull the Trigger to turn on the laser pointer and release the Trigger to turn off the laser pointer.

Camera mode

The VT08/VT08-II Meter has the infrared, visible light, and PIP Camera modes, as shown in [Figure 1](#). The VT06 Meter has only infrared mode.

Figure 1. VT08/VT08-II Camera Modes



To switch the Camera mode:

1. Push to open a list of Camera modes.
2. Push or to switch to a different Camera mode.

Capture and Save an Image

You can capture and save images in Camera mode.

To capture and save an image:

1. In Camera mode, focus on a target.
2. Pull and release the Trigger to capture and freeze the image.
3. Within 2 seconds, pull and release the Trigger again or push to save the image.

If you decide to discard the image, wait longer than 2 seconds to push or push .

Save Images to a PC

To save images to a PC with the USB cord:

1. Power on the Product.
2. Connect one end of the USB cord to the USB port on the Product and the other end of the USB cord to a USB port on a PC.

The PC recognizes the Product as an external memory storage device.

3. On the PC:
 - a. Browse to the directory on the Product.
 - b. Copy and paste or drag the images to a directory on the PC.

4. Remove the USB cord from the PC and the Product.

Main Menu

The Main Menu shows the available options for the Meter.

To view and select menu options:

1. On the Product, push **OK** to open the Main Menu.
2. Push **▲** or **▼** to find the item you want.
3. Push **OK** to accept your selection.
4. Pull the Trigger to return to Camera mode.

Table 6. Main Menu Options

	Menu Option	Function
	Gallery	View or delete an image: <ul style="list-style-type: none"> • Use Review to look at an image in the internal memory storage. You can delete this image if you do not need it. • Use Delete all images to remove all of the images in the internal memory storage. See Gallery .
	TempRange	Set the temperature range to use. See TempRange .
	Emissivity	Set the emissivity. See Emissivity .
	Palette	Set the palette to use on the image: <ul style="list-style-type: none"> • WhiteHot • IronRed • HotIron • RainBow1 • RainBow2 • Arctic

Table 6. Main Menu Options (cont.)

Menu Option		Function
	CenterPoint	<p>Use the center point marker to help you with temperature measurement. The Meter screen shows the center point temperature. When you use the center point marker to aim at the target, you can get the target temperature. Options are:</p> <ul style="list-style-type: none"> • On • Off <p>After you power on the setting and return to Camera mode, you see a marker in the center of screen.</p>
	TempUnit	<p>Set the temperature unit to use:</p> <ul style="list-style-type: none"> • Celsius • Fahrenheit <p>The option to set a TempUnit is not available in all countries.</p>
	ROIMeasure	Set the measure area to help with temperature measurement. See ROIMeasure .
	Alarm	Set the alarm parameters. See Alarm .
	Reflmeasure	Set the reflected temperature.
	Distance	The farther the distance, the weaker the infrared energy. You can set the distance between the Meter and the target to make the temperature measurement more accurate.
	AutoShut	You can set an automatic shutdown to save battery power. The Meter automatically shuts down after the set time has passed without operation.
	ScreenBright	You adjust screen brightness to adapt to the ambient light.
	Laser	Turn on or turn off the laser setting switch. For information about using the laser, see Laser Pointer .

Table 6. Main Menu Options (cont.)

	Menu Option	Function
	DateTime	Set the date and time. See DateTime .
	Language	Select the language displayed on the screen: <ul style="list-style-type: none"> • English • Korean • Japanese • Simplified Chinese • Traditional Chinese
	Reset	Reset the Meter settings. See Reset .
	Format SD	Format the internal memory storage. After you begin the formatting, be sure to wait until you see the <code>Formatted</code> message before making another selection.
	PIPTransparent (VT08/VT08-II only)	Set the transparency of an infrared picture in PIP mode. See PIPTransparent (VT08/VT08-II Only) .
	Camera Info	View the Meter information including version, firmware version, serial number, SD card status, and ID.

Gallery

The following sections describe the options available in the Gallery submenu.

Review

You can review an image in the internal memory storage and delete the image if you do not need it.

To review and delete an image:

1. In the Gallery submenu, push  or  to highlight **Review**.
2. Push  to review the first image.
3. Push  to review the previous image or push  to review the next image.
4. Push  and push  or  to highlight , then push  again to delete this image.

Delete all images

To delete all images at the same time:

1. In the Gallery submenu, push  or  to highlight **Delete all images**.
2. Push  and push  or  to highlight , then push  again to delete all images.

TempRange

When measuring temperature, you need to use the appropriate temperature range, which depends on the target temperature. The Meter has these temperature ranges:

- -20 °C to 150 °C (-4 °F to 302 °F)
- 100 °C to 400 °C (212 °F to 752 °F)

The Meter can automatically use the appropriate range based on the target temperature if you set the TempRange to **Auto** in the Main Menu.

Emissivity

All objects radiate infrared energy. The actual surface temperature and emissivity of the target affect the quantity of energy radiated. The Meter senses the infrared energy from the surface of the target and uses the data to calculate an estimated temperature value. Many common materials such as wood, water, skin, cloth, and painted surfaces, including metal, radiate energy well and have a high emissivity factor of $\geq 90\%$ (or 0.90). The Meter measures temperatures accurately on targets with a high emissivity.

Shiny surfaces or unpainted metals do not radiate energy well and have a low emissivity factor of < 0.60 . For the Meter to calculate a more accurate estimate of the actual temperature of targets with a low emissivity, adjust the emissivity setting.

Warning

To prevent personal injury, see emissivity information for actual temperatures. Reflective objects result in lower than actual temperature measurements. These objects pose a burn hazard.

Set emissivity as a direct value or from a list of emissivity values for some common materials.

Note

Surfaces with an emissivity of < 0.60 make it difficult to determine reliable and consistent actual temperatures. The lower the emissivity, the greater the potential of error when the Meter calculates the temperature measurement because more of the energy reaching the camera is specified as background temperature. This is also true when adjustments to the emissivity and reflected background adjustments are performed properly.

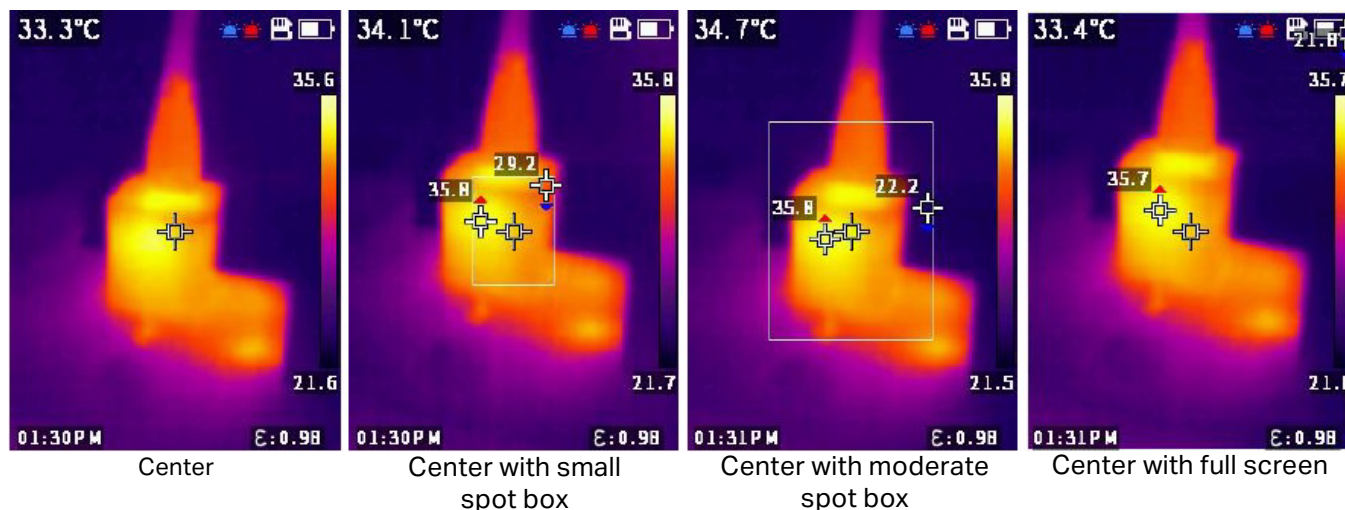
To adjust emissivity:

1. In the Emissivity submenu, push  or  to select which emissivity to use, or select **SelfDefine**.
2. If you select **SelfDefine**, push  and  or  to manually set the emissivity.
3. Push  again to save.
4. Push  to return to the previous menu.

ROIMeasure

Use this setting to determine the measure area to help with temperature measurement. In the measure area, high and low temperature markers automatically track the highest temperature and lowest temperature. The images in [Figure 2](#) show the types of measure area that you can select.

Figure 2. Types of ROIMeasure Areas



Alarm

Use this setting to adjust the alarm parameters. [Table 7](#) shows the options in the Alarm submenu.

Table 7. Alarm Menu

Option	Suboption	Description
OFF		Turn off the alarm.
ON	High	Turn on or turn off the high-temperature alarm; set the high-temperature alarm value.
	High temperature value	
	Low	Turn on or turn off the low-temperature alarm; set the low-temperature alarm value.
	Low temperature value	

To set the alarm:

1. In the Alarm submenu, push **OK** to turn on or turn off the alarm.
2. When the alarm is on:
 - a. Push **▼** to highlight **High**.
 - b. Push **OK** to turn on the high-temperature alarm.
 - c. Push **▼** to highlight **High temperature value**.
 - d. Push **OK** to begin editing and push **▲** or **▼** to adjust the high temperature value.
 - e. Push **OK** to stop editing and save the changes.

3. Adjust the **Low** and **Low temperature value** settings as needed:
 - a. Push  to highlight **Low**.
 - b. Push  to turn on the low-temperature alarm.
 - c. Push  to highlight **Low temperature value**.
 - d. Push  to begin editing and push  or  to adjust the low temperature value.
 - e. Push  to stop editing and save the changes.

DateTime

The date is displayed as **YY/MM/DD** and the time shows as **24 hour** or **12 hour**. Use the steps in this section to set the date and time on the Meter.

To set the date:

1. In the **DateTime** submenu push  or  to highlight **Year**.
2. Push  and then push  or  to find the year you want.
3. Push  to save the setting.
4. To set the month and day, follow the first step 1 through step 3 in this section, using step 1 to highlight **Month** and **Day**, as appropriate.

To set the time:

1. Push  or  to highlight **24H**.
2. Push  and then push  or  to select **24 hour** or **12 hour**.
3. Push  to save the setting.
4. If you selected **12 hour**, highlight **PM** or **AM** and push , then push  or  to select **PM** or **AM**.
5. Push  to save the setting.
6. To set the hour and minute, follow step 1 through step 5, using step 1 and step 2 to highlight **Hour** and **Minute**, as appropriate.

Reset

You can reset the following settings to their default values.

Menu	Default
TempRange	-20 °C to 150 °C (-4 °F to 302 °F)
Emissivity	0.95
Palette	IronRed
CenterPoint	ON
TempUnit	°C
ROIMeasure	Big

Menu	Default
Alarm	Off
RelMeasure	23 °C (73 °F)
AutoShut	Disable
ScreenBright	Medium
Laser	Off
DateTime	24H

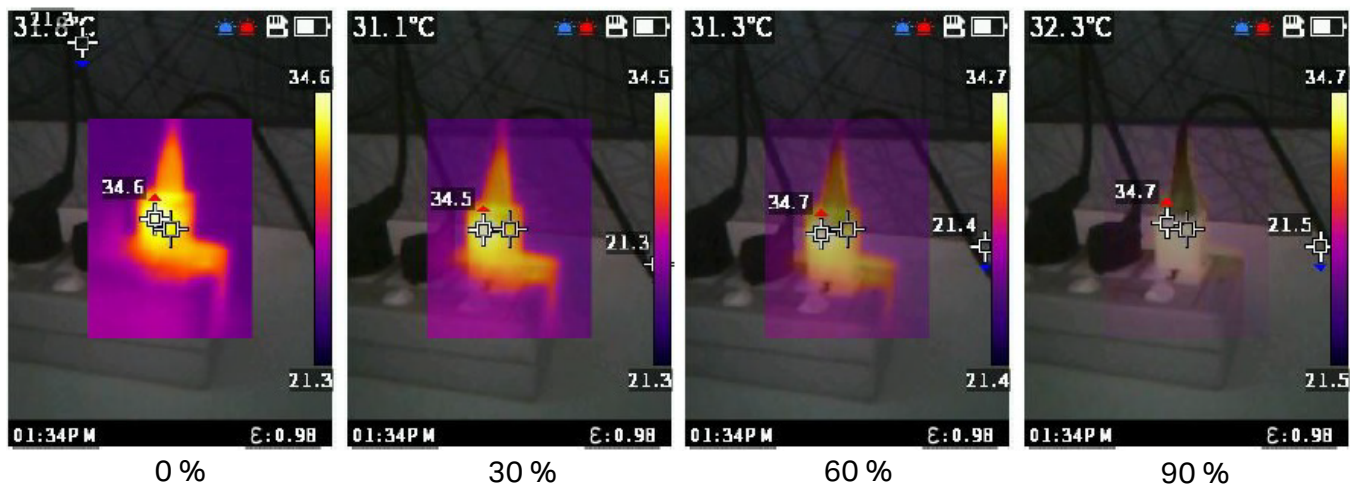
To reset:

1. In the Reset submenu, push  or  to highlight √.
2. Push **OK** to reset, then go to the Language submenu.
3. Set the language.

PIPTransparent (VT08/VT08-II Only)

Use these steps to set the transparency of an infrared picture in PIP (Picture in Picture) mode. The 0, 30 %, 60 %, and 90 % levels are available. As the level increases, the transparency becomes greater. The images in [Figure 3](#) show the transparency levels.

Figure 3. Transparency Levels



Fluke VT Report Desktop Software

Fluke VT Report desktop software for a PC is available to use with the Product and contains features to analyze images, organize data and information, and make professional reports.

You can download the Fluke VT Report software and use it to edit image files.

To download the Fluke VT Report desktop software:

1. Go to <https://www.fluke.com/en-us/support/software-downloads/software-for-fluke-infrared-cameras>.
2. On the website, follow the instructions to download the software to the PC.

Note

You must have Administrator privileges for your computer to install the software.

3. On the PC, follow the instructions to install the Fluke VT Report software.
4. Restart the PC when installation is complete.

Accessories

See www.fluke.com for a list of accessories available for the Product.

Maintenance

The Product requires minimum maintenance.

Clean the Case

Clean the case with a damp cloth and a mild detergent solution. Do not use abrasives, isopropyl alcohol, or solvents to clean the case.

Lens Care

 Caution

To prevent damage to the infrared lens:

- **Carefully clean the infrared lens. The lens has a delicate anti-reflective coating.**
- **Do not clean the lens too vigorously because this can damage the anti-reflective coating.**

To clean the lens:

1. Use a pressurized can of air or a dry nitrogen-ion gun, if available, to blow off the particulates from the lens surface.
2. Soak a lint-free cloth in a commercial lens cleaning liquid that contains alcohol, ethyl alcohol, or isopropyl alcohol.
3. Squeeze the cloth to remove excess liquid.
4. Wipe the lens surface in one circular motion and discard the cloth.
5. If needed, repeat with a new lint-free cloth.

Battery Care

To get the best performance from the lithium-ion battery:

- Do not charge the Product for more than 24 hours because reduced battery life might result.
- Charge the Product for at least 2.5 hours every six months for maximum battery life. Without use, the battery will self-discharge in approximately six months.

Charge Batteries

Caution

To prevent damage to the Meter:

- **Do not store the batteries in extremely cold environments.**
- **Do not attempt to charge the batteries in extremely cold environments.**

Caution

Do not incinerate the Product and/or battery.

Before you use the Meter for the first time, charge the battery for at least 2.5 hours. The battery status is displayed in the upper-right corner of the screen.

Note

New batteries are not fully charged. Two to ten charge/discharge cycles are necessary before the battery charges to its maximum capacity.

Note

Make sure that the Meter is near room temperature before you connect it to the charger. See the charging temperature specification. Do not charge in hot or cold areas. When you charge in extreme temperatures, battery capacity might be decreased. When you charge in extreme temperatures, the battery might not charge.

To charge the battery with the Type C port on the Meter:

1. Connect the ac power adapter to an ac wall outlet and connect the other end to the ac power socket on the Meter.

The battery status icon on the screen shows that the battery is charging.

2. Charge until the battery status icon on the screen shows that the battery is full.

If you remove the Meter from the charger before a full charge shows, it can have a reduced run-time.

3. Disconnect the Type C port when the smart battery is fully charged.

Caution

To prevent damage to the Meter, do not use a USB charger that supplies >5 V (±5%).

Product Disposal

Dispose of the Product in a professional and environmentally sound manner:

1. Delete personal data on the Product before disposal.
2. Remove batteries that are not integrated into the electrical system before disposal and dispose of batteries separately.
3. If this Product has an integral battery, put the entire Product in the electrical waste.

