

# User's manual FLIR ONE series

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## 1.1 Legal disclaimer

For warranty terms, refer to <https://www.flir.com/warranty>.

## 1.2 U.S. Government Regulations

This product may be subject to U.S. Export Regulations. Send any inquiries to [exportquestions@flir.com](mailto:exportquestions@flir.com).

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The Quality Management System under which these products are developed and manufactured has been certified in accordance with the ISO 9001 standard.

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## 1.5 Usage statistics

FLIR Systems reserves the right to gather anonymous usage statistics to help maintain and improve the quality of our software and services.

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## 1.8 EULA Terms

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## 2.1 Safety information

	<b>CAUTION</b>
<p>Failure to observe the safety instructions can result in fire, electric shock and other injuries or damage to the device or other property. The housing is made of plastic with sensitive electronic components and batteries inside.</p> <ul style="list-style-type: none"> <li>• Do not pierce, break, crush or cut the device or the battery.</li> <li>• Do not expose the device or the battery to an open flame or extremely high temperatures.</li> <li>• Do not expose the device or the battery to liquids or extremely low air pressure.</li> <li>• Do not drop the device or the battery.</li> <li>• Do not try to change the battery in the device.</li> <li>• The device or the battery must be recycled or disposed of separately from household waste.</li> </ul>	
	<b>CAUTION</b>
<p>The FLIR ONE camera is not waterproof.</p>	
	<b>CAUTION</b>
<p>Be careful if you use the camera to observe very hot objects such as fire and molten metal.</p>	

## 2.2 Disposal of electronic waste

Electrical and electronic equipment (EEE) contains materials, components and substances that may be hazardous and present a risk to human health and the environment when waste electrical and electronic equipment (WEEE) is not handled correctly.

Equipment marked with the below crossed-out wheeled bin is electrical and electronic equipment. The crossed-out wheeled bin symbol indicates that waste electrical and electronic equipment should not be discarded together with unseparated household waste, but must be collected separately.

For this purpose all local authorities have established collection schemes under which residents can dispose waste electrical and electronic equipment at a recycling centre or other collection points, or WEEE will be collected directly from households. More detailed information is available from the technical administration of the relevant local authority.



## 2.3 Documentation updates

Our manuals are updated several times per year, and we also issue product-critical notifications of changes on a regular basis.

To access the latest manuals, translations of manuals, and notifications, go to the Download tab at:

<http://support.flir.com>

In the download area you will also find the latest releases of manuals for our other products, as well as manuals for our historical and obsolete products.

## **2.4 Important note about this manual**

FLIR Systems issues generic manuals that cover several cameras within a model line.

This means that this manual may contain descriptions and explanations that do not apply to your particular camera model.

## **2.5 Note about authoritative versions**

The authoritative version of this publication is English. In the event of divergences due to translation errors, the English text has precedence. Any late changes are first implemented in English.

## 3.1 General

Do not hesitate to contact our Customer Support Center if you experience problems or have any questions.

For customer help, go to <http://support.flir.com>.

## 3.2 Submitting a question

To submit a question to the customer help team, you must be a registered user. It only takes a few minutes to register online. If you only want to search the knowledgebase for existing questions and answers, you do not need to be a registered user.

When you want to submit a question, make sure that you have the following information to hand:

- The camera model.
- The camera serial number.
- The communication protocol, or method, between the camera and your device (e.g., SD card reader, HDMI, Ethernet, USB, or FireWire).
- Device type (PC/Mac/iPhone/iPad/Android device, etc.).
- Version of any programs from FLIR Systems.
- Full name, publication number, and revision number of the manual.

## 3.3 Downloads

On the customer help site you can also download the following, when applicable for the product:

- Firmware updates for your infrared camera.
- Program updates for your PC/Mac software.
- Freeware and evaluation versions of PC/Mac software.
- User documentation for current, obsolete, and historical products.
- Mechanical drawings (in \*.dxf and \*.pdf format).
- CAD data models (in \*.stp format).
- Application examples.
- Technical datasheets.

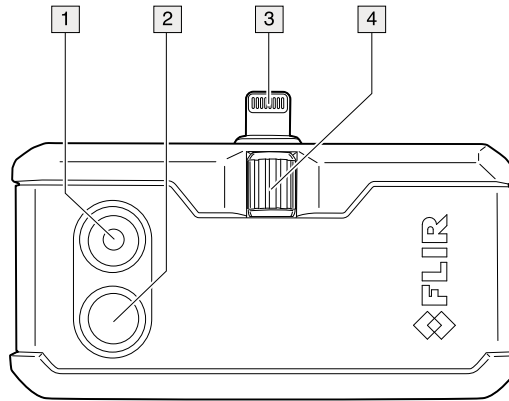
## 4.1 Procedure

Follow this procedure:

1. Charge the FLIR ONE camera for approximately 40 minutes.
2. Download the FLIR ONE app from your preferred app store, and then install it on your phone.
3. Push the On/off button on the bottom of the FLIR ONE camera to turn it on. It takes about 20 seconds for the camera to start. The indicator will flash green when the FLIR ONE camera is ready.
4. Connect the FLIR ONE camera to your phone. If needed, adjust the blue dial of the OneFit connector and extend the connector to fit your phone's protective case.
5. Start the FLIR ONE app on your phone.
6. The onboarding of the FLIR ONE app will guide you and help you setup the permissions for the app. After that, the app is opened in Photo mode and is ready to use.
7. To turn off the FLIR ONE camera, push and hold the On/off button for more than 2 seconds.

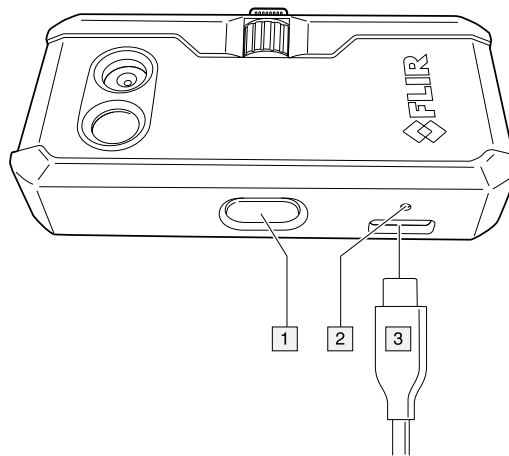
## 5.1 FLIR ONE PRO and FLIR ONE PRO LT

### 5.1.1 View from the front



1. Visual camera.
2. Thermal camera.
3. Phone connect.
4. Height control for the OneFit connector.

### 5.1.2 View from the bottom



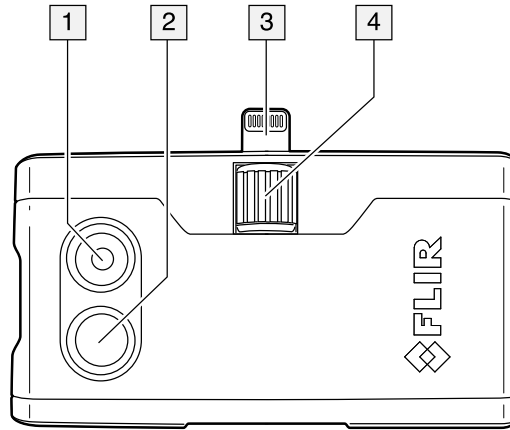
1. On/off switch and Power indicator.
2. Charge indicator LED.
3. USB-C power connector.



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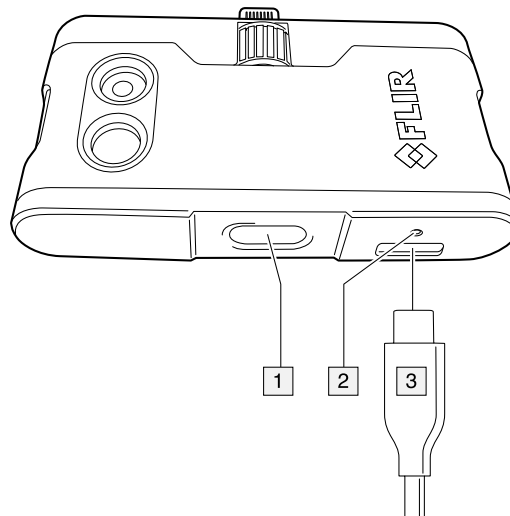
## 5.2 FLIR ONE

### 5.2.1 View from the front



1. Visual camera.
2. Thermal camera.
3. Phone connect.
4. Height control for the OneFit connector.

### 5.2.2 View from the bottom



1. On/off switch and Power indicator.
2. Charge indicator LED.
3. USB-C power connector.

## 6.1 Charging the battery



### WARNING

Make sure that you install the socket-outlet near the equipment and that it is easy to get access to.

Follow this procedure:

- Connect a power supply to a wall outlet.
- Connect the power supply to the USB-C connector power on the FLIR ONE camera.
- Let the battery charge for approximately 40 minutes.
- The charge indicator will flash green during charging, and then change into a steady green light when fully charged.

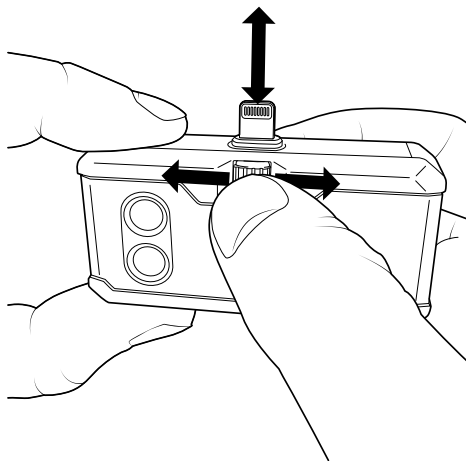
## 6.2 Turning the FLIR ONE camera on and off

- Push the On/off button on the bottom of the FLIR ONE camera to turn it on. It takes about 20 seconds for the camera to start. The indicator will flash green when the FLIR ONE camera is ready.
- The camera automatically turns off after 2 minutes of inactivity.
- Push and hold the On/off button for more than 2 seconds to turn off the FLIR ONE camera.

## 6.3 Connecting the FLIR ONE camera to your phone

Download and install the FLIR ONE app on your phone, and then start it.

Turn on the FLIR ONE camera and connect it to your phone. If needed, adjust the blue dial of the OneFit connector and extend the connector to the appropriate length to fit your phone's protective case.



If the FLIR ONE camera is turned off when you connect it to your phone, the app will prompt you to attach your FLIR ONE camera before you can view the camera features.

## 6.4 Using the FLIR ONE app

### 6.4.1 Installation

The latest version of the FLIR ONE app is available on the Apple App Store for iOS devices and the Google Play Store for Android devices. Download and install the app on your device.

### 6.4.2 Onboarding

The onboarding of the FLIR ONE app will introduce you to the app and guide you to set the permissions needed. After the onboarding is completed, the live view from the camera is presented.

### 6.4.3 Camera view

When the FLIR ONE camera is connected and turned on, you can see the live view from the camera and take an image or a video.

The camera view contains functionality to modify the live view. Depending on the camera model, different functionality is available:

**Table 6.1** Comparison of available live view modification functionality in FLIR ONE camera models.

	FLIR ONE PRO	FLIR ONE PRO LT	FLIR ONE
<b>IR Scale</b> Hide/show scale, adjust scale limits	Yes	Yes	No
<b>Color</b> Choose from nine color palettes	Yes	Yes	Yes
<b>Measurements</b> Measurement spot	Yes (three spots)	Yes (three spots)	Yes (one spot)
Automatic tracking of hottest and coldest spot	Yes	Yes	No
<b>Image mode</b> Thermal / DC (visual) / MSX	Yes, all modes	Yes, all modes	MSX mode, only
<b>MSX Distance</b> Align visual and thermal images in MSX mode, depending on distance to object	Yes	Yes	Yes

### 6.4.4 Calibration

The camera automatically calibrates and refreshes the image periodically to provide an optimal image. The thermal camera has a mechanical shutter inside that activates during calibration, which releases a clicking sound. When the shutter activates, the image will freeze for a brief period. When the camera first turns on, and periodically thereafter, the camera will automatically calibrate. It is also possible to manually initiate a calibration in the FLIR ONE app.

### 6.4.5 Gallery

Captured images and videos can be viewed in the gallery of the FLIR ONE app. Images and videos can also be saved in the gallery of the phone, if permission is given. Permissions are set during onboarding, or later in the phone settings for the app.

Relevant information related to the image is presented in Image details, where it's also possible to add a note to the image.

In the gallery of the FLIR ONE app, images can be edited with the same functionality as in the camera view.

Images and videos can be shared to other apps, for example an e-mail app or a social media app on your mobile device.

#### 6.4.6 Drawer menu

In the drawer menu you find:

- Relevant information related to the camera.
- Settings for the FLIR ONE app; temperature unit, time format, date format, temperature range for the FLIR ONE PRO, emissivity (see 6.5.2 *Emissivity*), and location.
- Help on how to use the app in more detail.
- Contact to support.
- Other available apps that are compatible with the FLIR ONE camera.

## 6.5 Using a thermal camera

### 6.5.1 Measurements

Measurements in thermal cameras show the temperature on the surface of an object. The measurement accuracy depends on many factors, including the distance from the object, the ambient temperature, and the emissivity of the material being observed. Users are encouraged to learn more about the science of thermography from [www.infraredtraining.com](http://www.infraredtraining.com).

### 6.5.2 Emissivity

When the spot meter is enabled, the temperature displayed is affected by many factors, including a property of the target material known as emissivity. This property is a relative rating of how well the target material emits or radiates thermal energy. Some materials are more emissive than others; glossy or reflective materials such as metals tend to be poor emitters. For most materials, the default “matte” setting is a fair approximation.

# Cleaning the camera

## 7.1 Camera housing, cables, and other items

Use one of these liquids:

- Warm water
- A weak detergent solution

Equipment:

- A soft cloth

Follow this procedure:

1. Soak the cloth in the liquid.
2. Twist the cloth to remove excess liquid.
3. Clean the part with the cloth.



### CAUTION

Do not apply solvents or similar liquids to the camera, the cables, or other items. This can cause damage.

## 7.2 Infrared lens

Use one of these liquids:

- A commercial lens cleaning liquid with more than 30% isopropyl alcohol.
- 96% ethyl alcohol (C<sub>2</sub>H<sub>5</sub>OH).

Equipment:

- Cotton wool



### CAUTION

If you use a lens cleaning cloth it must be dry. Do not use a lens cleaning cloth with the liquids that are listed above. These liquids can cause material on the lens cleaning cloth to become loose. This material can have an unwanted effect on the surface of the lens.

Follow this procedure:

1. Soak the cotton wool in the liquid.
2. Twist the cotton wool to remove excess liquid.
3. Clean the lens one time only and discard the cotton wool.



### WARNING

Make sure that you read all applicable MSDS (Material Safety Data Sheets) and warning labels on containers before you use a liquid: the liquids can be dangerous.



### CAUTION

- Be careful when you clean the infrared lens. The lens has a delicate anti-reflective coating.
- Do not clean the infrared lens too vigorously. This can damage the anti-reflective coating.

[See next page]



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March 22, 2018 Täby, Sweden

AQ320287

### CE Declaration of Conformity – EU Declaration of Conformity

Product: FLIR One -series

Name and address of the manufacturer:

FLIR Systems AB

PO Box 7376

SE-187 15 Täby, Sweden

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration: FLIR One -series (FLIR part numbers 435-00xx-xx)

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

#### Directives:

Directive: 2011/65/EU

RoHS

Directive 2014/30/EU

Electromagnetic Compability

#### Standards:

Emission:

EN 61000-3-2:2014

EMC Limits for harmonic current emissions

EN 61000-3-3:2013

EMC Limitation of voltage changes

EN 55032:2012

EMC of multimedia equipment - Emission requirements

Immunity:

EN 55024:2010

Information Tech Equipment Immunity characteristics

**FLIR Systems AB**

Quality Assurance

Lea Dabiri

Quality Manager



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**Website**

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