



21.1 General


The screening alarm can be used, for example, at airports to detect passengers with elevated body temperatures, which may indicate the presence of a fever.

The screening alarm can also be used to detect temperature anomalies in a series of inspected objects in a similar/fixed setup.



Activating the screening mode will turn on a measurement box and screening data in the result table.

 The sampled average temperature.

 The alarm temperature.



 The measured temperature.

The alarm will trigger when the measurement box measures a temperature higher than the alarm temperature. The alarm temperature is, in turn, the sum of a specified allowed deviation and a sampled average value.

	WARNING
<p>Make sure that the laser is disabled when you point the camera at the face of a person. The laser beam can cause eye irritation. Disable the laser by selecting  (<i>Settings</i>) > <i>Device settings</i> > <i>Lamp & laser</i> > <i>Disable all</i>.</p>	

21.2 Procedure

Follow this procedure:

1. Push the navigation pad to display the menu system.
2. Select  (*Settings*) and push the navigation pad. This displays the *Settings* menu.
3. Use the navigation pad to select *Recording mode* > *Screening*.
4. Push the navigation pad. This displays a dialog box where you can define the settings for the alarm:
 - *Allowed deviation*: The allowed deviation from the sampled average.
 - *Alarm sound*: Applicable values are *Beep* or *No sound*.
5. Push the navigation pad. This closes the dialog box.
6. Push the back button  repeatedly to exit the *Settings* menu.
7. Aim the camera toward a point of interest. The object should be within the frame of the measurement box.
8. Push and hold the programmable button **P** to reset the sampled average.
9. Push the programmable button **P** to sample.
10. Aim the camera toward more points of interest. Sample 10 times to build up a sample base by pushing the programmable button **P**.

The alarm is now set up and ready to use. Occasionally record a few samples if the alarm is used for a long time or if the conditions change.

Note

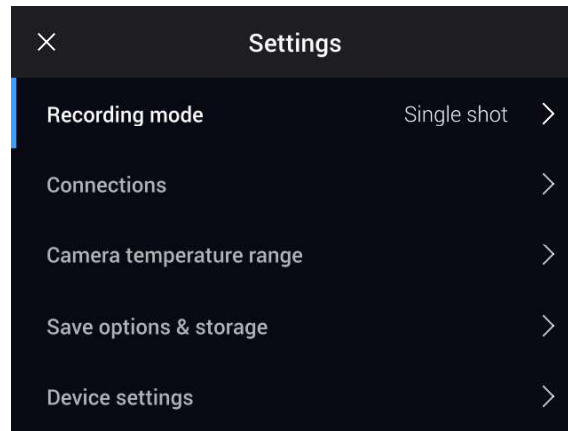
- Every time you push the programmable button **P**, a sample is saved. Make sure you aim the camera toward an object within the interesting temperature range when you push (and hold) the button.
- The algorithm has a memory of the last 10 samples. It discriminates between the highest and lowest values, and calculates an average of the remaining values.
- Do not modify the measurement setup or activate another alarm because this will deactivate the screening alarm.

25.1 General

You can change a variety of settings in the camera. You do this on the *Settings* menu.

The *Settings* menu includes the following:

- *Recording mode.*
- *Connections.*
- *Camera temperature range.*
- *Save options & storage.*
- *Device settings.*



25.1.1 Recording mode

The *Recording mode* is used to select:

- *Single shot:* This setting enables single shot mode. In this mode, you save an image by pulling the trigger.
- *Video:* This setting enables video recording mode. For more information, see section 20 *Recording video clips*, page 91.
- *Time-lapse:* This setting enables time-lapse mode. For more information, see section 19 *Programming the camera (time-lapse)*, page 90.
- *Screening:* This setting enables screening mode. For more information, see section 21 *Screening alarm*, page 93.

25.1.2 Connections

- *Wi-Fi:* This setting defines Wi-Fi networks. For more information, see section 23 *Configuring Wi-Fi*, page 96.
- *Bluetooth:* This setting defines Bluetooth connectivity. For more information, see section 22 *Pairing Bluetooth devices*, page 95.

25.1.3 Camera temperature range

For accurate temperature measurements, you must change the *Camera temperature range* setting to suit the expected temperature of the object you are inspecting.

Available temperature range options are dependent on the camera model. The unit (°C or °F) depends on the temperature unit setting, see section 25.1.5 *Device settings*, page 100.

25.1.4 Save options & storage

- *Preview image before saving:* This setting defines if a preview image will be displayed before the image is saved.

27.4 FLIR E53 24°

P/N: 84502-0201

Rev.: 48892

Imaging and optical data	
Infrared resolution	240 × 180 pixels
NETD	<40 mK @ +30°C (+86°F)
Field of view	24° × 18°
Minimum focus distance	0.15 m (0.49 ft.)
Minimum focus distance with MSX	0.5 m (1.64 ft.)
Focal length	17 mm (0.67 in.)
Spatial resolution (IFOV)	1.75 mrad/pixel
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	Manual
Field of view match	Yes
Digital zoom	1–4× continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	17 μm
Image presentation	
Resolution	640 × 480 pixels (VGA)
Surface brightness (cd/m ²)	400
Screen size	4 in.
Viewing angle	80°
Color depth (bits)	24
Aspect ratio	4:3
Auto-rotation	Yes
Touchscreen	Optically bonded PCAP
Display technology	IPS
Cover glass material	Dragontrail®
Programmable buttons	1
Viewfinder	No
Image adjustment	<ul style="list-style-type: none"> • Automatic • Automatic maximum • Automatic minimum • Manual
Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes

Image presentation modes	
Picture in Picture	Centered infrared area on the visual image
Gallery	Yes

Measurement		
Camera temperature range	Object temperature range	Accuracy — for ambient temperature +15 to +35°C (+59 to +95°F)
-20 to +120°C (-4 to +248°F)	-20 to +100°C (-4 to +212°F)	±2°C (±3.6°F)
	+100 to +120°C (+212 to +248°F)	±2%
0 to +650°C (+32 to +1202°F)	0 to +100°C (+32 to +212°F)	±2°C (±3.6°F)
	+100 to +650°C (+212 to +1202°F)	±2%

Measurement analysis	
Spotmeter	3 in live mode
Area	1 in live mode
Automatic hot/cold detection	Auto-maximum/minimum markers within area
Measurement presets	<ul style="list-style-type: none"> • No measurements • Center spot • Hot spot • Cold spot • 3 spots • Hot spot–Spot
Difference temperature	Yes: as preset (Hot spot–Spot)
Reference temperature	Yes: in preview mode
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
Screening	0,5°C (0,9°F) accuracy @ 37°C (98,6°F) with reference

Alarm	
Color alarm (isotherm)	<ul style="list-style-type: none"> • Above • Below • Interval • Condensation (moisture/humidity/dewpoint) • Insulation
Measurement function alarm	Audible/visual alarms (above/below)

Set-up	
Color palettes	<ul style="list-style-type: none"> • Iron • Gray • Rainbow • Arctic • Lava • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21

Service functions	
Camera software update	Use PC software FLIR Tools

Storage of images	
Storage media	Removable memory; SD card (8 GB)
Remote control operation	<ul style="list-style-type: none"> Using FLIR Tools (using USB cable) FLIR Tools Mobile (over Wi-Fi)
Image file format	Standard JPEG, measurement data included. Infrared-only mode
Image annotations	
Voice	60 seconds built-in microphone and speaker (and via Bluetooth) on still images and video
Text	Text from predefined list or soft keyboard on touchscreen
Visual image annotation	Yes
Image sketch	Yes: on infrared images only
Sketch	From touchscreen
METERLiNK	Wireless connection (Bluetooth) to: FLIR meters with METERLiNK
Compass	Yes
Laser distance meter information	No
Area measurement information	No
GPS	Yes: location data automatically added to every still image and the first frame in video from built-in GPS
Video recording in camera	
Radiometric infrared-video recording	RTRR (.csq)
Non-radiometric infrared-video recording	H.264 to memory card
Visual video recording	H.264 to memory card
Video streaming	
Radiometric infrared-video streaming (compressed)	Yes: over UVC or RTSP (Wi-Fi)
Non-radiometric video streaming (compressed: IR, MSX, visual, Picture in Picture)	<ul style="list-style-type: none"> H.264 (AVC) over RTSP (Wi-Fi) MPEG4 over RTSP (Wi-Fi) MJPEG over UVC and RTSP (Wi-Fi)
Visual video streaming	Yes
Digital camera	
Resolution	5 MP with LED light
Focus	Fixed
Field of view	53° × 41°
Video lamp	Built-in LED light
Laser pointer	
Laser pointer	Yes
Data communication interfaces	
Interfaces	USB 2.0, Bluetooth, Wi-Fi, DisplayPort
METERLiNK/Bluetooth	Communication with headset and external sensors
Wi-Fi	Peer to peer (<i>ad hoc</i>) or infrastructure (network)
Audio	Microphone and speaker for voice annotation of images

Data communication interfaces	
USB	USB Type-C: data transfer/video/power
USB standard	USB 2.0 High Speed
Video out	DisplayPort
Video connector type	DisplayPort over USB Type-C
Radio	
Operating frequency	Bluetooth + EDR/LE: 2402–2480 MHz WLAN 2.4 GHz: 2412–2462 MHz WLAN 5 GHz: 5150–5350 MHz (DFS: only slave mode) Note that frequency band 5150–5350 MHz is for indoor use only, see national regulations.
RF output (EIRP)	Bluetooth + EDR/LE: < 10 dBm WLAN: < 17 dBm
Antenna	Integrated PIFA antenna (gain: maximum 1.4 dBi)
Power system	
Battery type	Rechargeable Li-ion battery
Battery voltage	3.6 V
Battery operating time	> 2.5 hours at 25°C (68°F) and typical use
Charging system	In camera (AC adapter or 12 V from a vehicle) or two-bay charger
Charging time (using two-bay charger)	2.5 hours to 90% capacity with charging status indicated by LEDs
Charging temperature	0°C to +45°C (+32°F to +113°F), except for the Korean market: +10°C to +45°C (+50°F to +113°F)
External power operation	AC adapter 90–260 V AC, 50/60 Hz, or 12 V from a vehicle (cable with standard plug—optional)
Power management	Automatic shut-down and sleep mode
Environmental data	
Operating temperature range	–15 to +50°C (5–122°F)
Storage temperature range	–40 to +70°C (–40 to +158°F)
Humidity (operating and storage)	IEC 60068-2-30/24 hours/95% relative humidity 25–40°C (77–104°F)/two cycles
EMC	<ul style="list-style-type: none"> • ETSI EN 301 489-1 (radio) • ETSI EN 301 489-17 • EN 61000-6-2 (immunity) • EN 61000-6-3 (emission) • FCC 47 CFR Part 15 Class B (emission)
Radio spectrum	<ul style="list-style-type: none"> • ETSI EN 300 328 • FCC Part 15.249 • RSS-247 Issue 2
Encapsulation	IP 54 (IEC 60529)
Shock	25g (IEC 60068-2-27)
Vibration	2g (IEC 60068-2-6)
Drop	Designed for 2 m (6.6 ft.)
Safety	EN/UL/CSA/PSE 60950-1

Physical data	
Weight (including battery)	1 kg (2.2 lb.)
Size (L × W × H)	278,4 × 116,1 × 113,1 mm (11,0 × 4,6 × 4,4 in.)
Battery weight	140 g (4.9 oz.)
Battery size (L × W × H)	150 × 46 × 55 mm (5.9 × 1.8 × 2.2 in.)
Tripod mounting	UNC ¼"-20
Housing material	PCABS with TPE, magnesium
Color	Black
Warranty and service	
Warranty	http://www.flir.com/warranty/
Shipping information	
Packaging, type	Cardboard box
Packaging, contents	<ul style="list-style-type: none"> • Accessory Box I: <ul style="list-style-type: none"> ◦ Power supply for battery charger ◦ Power supply, 15 W/3 A ◦ Printed documentation ◦ SD card (8 GB) ◦ USB 2.0 A to USB Type-C cable, 1.0 m ◦ USB Type-C to HDMI adapter, standard specification UH311 ◦ USB Type-C to USB Type-C cable (USB 2.0 standard), 1.0 m • Accessory box II: <ul style="list-style-type: none"> ◦ Accessory box III: <ul style="list-style-type: none"> – Front protection fastener – Hand strap bracket, left – Hand strap bracket, right – Screws – Torx T10 wrench ◦ Carabiner hook ◦ Front protection ◦ Hand strap ◦ Lanyard strap, camera ◦ Lens cap strap ◦ Wrist strap • Battery (2 ea) • Battery charger • Hard transport case • Infrared camera with lens • Lens cap, front
Packaging, weight	5,4 kg (11.9 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254003781
UPC-12	845188016630
Country of origin	Estonia

Supplies & accessories:

- T197771ACC; Bluetooth Headset
- T199425ACC; Battery charger
- T911689ACC; Pouch
- T911706ACC; Car adapter 12 V
- T911705ACC; USB Type-C to USB Type-C cable (USB 2.0 standard), 1.0 m
- T911632ACC; USB Type-C to HDMI adapter, standard specification UH311
- T911631ACC; USB 2.0 A to USB Type-C cable, 0.9 m
- T911630ACC; Power supply for camera, 15 W/3 A

- T199346ACC; Hard transport case
- T911633ACC; Power supply for battery charger
- T199330ACC; Battery
- T199557ACC; Accessory Box II
- T199559; High temperature option, +300 to +1000°C
- T198583; FLIR Tools+ (download card incl. license key)
- T198696; FLIR ResearchIR Max 4 (hardware sec. dev.)
- T199013; FLIR ResearchIR Max 4 (printed license key)
- T199043; FLIR ResearchIR Max 4 Upgrade (printed license key)