

## P/N: 84502-0201

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### Document identity

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### Website

<http://www.flir.com>

### Customer support

<http://support.flir.com>

### Disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply. Products described herein may be subject to US Export Regulations. Please refer to [exportquestions@flir.com](mailto:exportquestions@flir.com) with any questions.



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 <sup>2</sup> )	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®

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<b>Image presentation</b>	
Programmable buttons	1
Viewfinder	No
Image adjustment	<ul style="list-style-type: none"> <li>• Automatic</li> <li>• Automatic maximum</li> <li>• Automatic minimum</li> <li>• Manual</li> </ul>
<b>Image presentation modes</b>	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Centered infrared area on the visual image
Gallery	Yes
<b>Measurement</b>	
Camera temperature range	<ul style="list-style-type: none"> <li>• -20 to 120°C (-4 to 248°F)</li> <li>• 0 to 650°C (32 to 1202°F)</li> </ul>
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> <li>• Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> <li>◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F)</li> <li>◦ 100 to 120°C (212 to 248°F): ±2%</li> </ul> </li> <li>• Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> <li>◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F)</li> <li>◦ 100 to 650°C (212 to 1202°F): ±2%</li> </ul> </li> </ul>
<b>Screening mode</b>	
Sampling average mode	Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature Accuracy (drift): ±0.3°C (±0.5°F) <sup>1</sup>
<b>Measurement analysis</b>	
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"> <li>• No measurements</li> <li>• Center spot</li> <li>• Hot spot</li> <li>• Cold spot</li> <li>• 3 spots</li> <li>• Hot spot-Spot</li> </ul>
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

1. No external blackbody needed.

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<b>Alarm</b>	
Color alarm (isotherm)	<ul style="list-style-type: none"> <li>• Above</li> <li>• Below</li> <li>• Interval</li> <li>• Condensation (moisture/humidity/dewpoint)</li> <li>• Insulation</li> </ul>
Measurement function alarm	Audible/visual alarms (above/below)
<b>Set-up</b>	
Color palettes	<ul style="list-style-type: none"> <li>• Arctic</li> <li>• White hot</li> <li>• Black hot</li> <li>• Iron</li> <li>• Lava</li> <li>• Rainbow</li> <li>• Rainbow HC</li> </ul>
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
<b>Service functions</b>	
Camera software update	Using USB cable or SD card
<b>Storage of images</b>	
Storage media	Removable memory; SD card (8 GB)
Remote control operation	Using USB cable or Wi-Fi
Image file format	Standard JPEG, measurement data included. Infrared-only mode
<b>Image annotations</b>	
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
<b>Video recording in camera</b>	
Radiometric infrared-video recording	RTRR (.csq)
Non-radiometric infrared-video recording	H.264 to memory card
Visual video recording	H.264 to memory card

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<b>Video streaming</b>	
Radiometric infrared–video streaming (compressed)	Over UVC
Non-radiometric video streaming (compressed: IR, MSX, visual, Picture in Picture)	<ul style="list-style-type: none"> <li>• H.264 (AVC) over RTSP (Wi-Fi)</li> <li>• MPEG4 over RTSP (Wi-Fi)</li> <li>• MJPEG over UVC and RTSP (Wi-Fi)</li> </ul>
Visual video streaming	Yes
<b>Digital camera</b>	
Resolution	5 MP with LED light
Focus	Fixed
Field of view	53° × 41°
Video lamp	Built-in LED light
<b>Laser pointer</b>	
Laser pointer	Yes
<b>Data communication interfaces</b>	
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
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
<b>Radio</b>	
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)
<b>Power system</b>	
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)



## FLIR E53 24°

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Power system	
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"><li>• ETSI EN 301 489-1 (radio)</li><li>• ETSI EN 301 489-17</li><li>• EN 61000-6-2 (immunity)</li><li>• EN 61000-6-3 (emission)</li><li>• FCC 47 CFR Part 15 Class B (emission)</li></ul>
Radio spectrum	<ul style="list-style-type: none"><li>• ETSI EN 300 328</li><li>• FCC Part 15.249</li><li>• RSS-247 Issue 2</li></ul>
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	<a href="http://www.flir.com/warranty/">http://www.flir.com/warranty/</a>

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Shipping information	
Packaging, type	Cardboard box
Packaging, contents	<ul style="list-style-type: none"> <li>• Accessory Box I: <ul style="list-style-type: none"> <li>◦ Power supply for battery charger</li> <li>◦ Power supply, 15 W/3 A</li> <li>◦ Printed documentation</li> <li>◦ SD card (8 GB)</li> <li>◦ USB 2.0 A to USB Type-C cable, 1.0 m</li> <li>◦ USB Type-C to HDMI adapter, standard specification UH311</li> <li>◦ USB Type-C to USB Type-C cable (USB 2.0 standard), 1.0 m</li> </ul> </li> <li>• Accessory box II: <ul style="list-style-type: none"> <li>◦ Accessory box III: <ul style="list-style-type: none"> <li>– Front protection fastener</li> <li>– Hand strap bracket, left</li> <li>– Hand strap bracket, right</li> <li>– Screws</li> <li>– Torx T10 wrench</li> </ul> </li> <li>◦ Carabiner hook</li> <li>◦ Front protection</li> <li>◦ Hand strap</li> <li>◦ Lanyard strap, camera</li> <li>◦ Lens cap strap</li> <li>◦ Wrist strap</li> </ul> </li> <li>• Battery (2 ea)</li> <li>• Battery charger</li> <li>• Hard transport case</li> <li>• Infrared camera with lens</li> <li>• Lens cap, front</li> </ul>
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:

- T131171ACC; Remote operation button
- T300030; Option, No radio
- T911997; Tripod
- T911998; HDMI 2-port video splitter
- T300369; Mounting kit (FLIR T5xx, T8xx, Exx)
- T300344; EST Camera kit (FLIR Exx/T5xx/T8xx)
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199559; High temperature option, +300 to +1000°C
- T911630ACC; Power supply for camera, 15 W/3 A
- T911631ACC; USB 2.0 A to USB Type-C cable, 0.9 m
- T911633ACC; Power supply for battery charger
- T911689ACC; Pouch for FLIR E-series
- T911705ACC; USB Type-C to USB Type-C cable (USB 2.0 standard), 1.0 m
- T911706ACC; Car adapter 12 V
- T911845ACC; USB Type-C to HDMI and PD adapter
- T911846ACC; USB 2.0 A to USB Type-C with Power supply



## FLIR E53 24°

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- T197771ACC; Bluetooth Headset
- T300342; FLIR Screen EST, Perpetual license
- T300083; FLIR Thermal Studio Pro, Perpetual license
- T300341; FLIR Thermal Studio Standard, 1 Year Subscription
- T300258; FLIR Thermal Studio Standard, Perpetual license
- 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)
- 4220499; FLIR Research Studio - 1 Year Subscription (online activation)
- 4220500; FLIR Research Studio - Perpetual License (online activation)
- 4220646; FLIR Research Studio - Perpetual License (USB dongle)
- INST-EW-0140; Extended Warranty 1 Year for E53, E75, E85, E95
- INST-EWGM-0135; Premium Service Package for A35, A65, E53, E75, E85, E95
- INST-GM-0125; General Maintenance Package for A35, A65, Exx, Kxx





August 26, 2020 Täby, Sweden

AQ320222

## CE Declaration of Conformity – EU Declaration of Conformity

Product: FLIR E53 /E54 /E75 /E76 /E85 /E86 /E95 /E96 -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 E53 /E54 /E75 /E76 /E85 /E86 / E95 /E96-series (Product Model Name FLIR-E7850).

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

### Directives:

Directive	2012/19/EU	Waste electrical and electric equipment
Directive	2014/53/EU	Radio Equipment Directive (RED)
Directive	1999/519/EC	Limitation of exposure to electromagnetic fields (SAR)
Directive	2011/65/EU	RoHS and 2015/830/EU

### Standards:

Emission:	EN 61000-6-3/A1:2011	Electromagnetic Compability Generic standards – Emission
Immunity:	EN 61000-6-2:2005 Draft EN 301489-1:2016 v2.1.0 EN 301489-17:2012 v2.2.1	Electromagnetic Compability Generic standards – Immunity
Laser:	EN 60825-1	Safety of laser products
Radio:	ETSI EN 300 328 v1.9.1,v2.1.1	Harmonized EN covering essential requirements of the R&TTE Directive
SAR:	ETSI EN 301 893 v1.8.1	Harmonized EN covering essential reqs
Safety (Battery charger):	EN 62209-2	Human exposure Wireless Information technology equipment
	IEC 60950-1:2005+A1 EN 60950- 1:2006+A11:2009+A1:2010+A2:2013+AC:2011+A12:2011	
RoHS:	EN 50581:2012	Technical documentation

### FLIR Systems AB

Quality Assurance



Lea Dabiri

Quality Manager