

Technical data FLIR Exx series

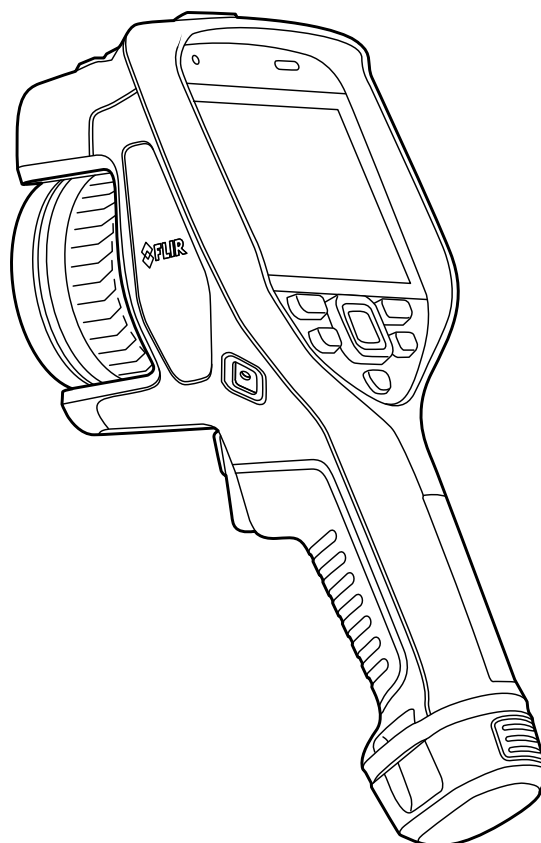


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1.1 Online field-of-view calculator

Please visit <http://support.flir.com> and click the photo of the camera series for field-of-view tables for all lens-camera combinations.

1.2 Note about technical data

FLIR Systems reserves the right to change specifications at any time without prior notice. Please check <http://support.flir.com> for latest changes.

1.3 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.

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2.46	FLIR E96 24° + 42°	297
2.47	FLIR E96 24° + 14° & 42°	304

2.1 Online field-of-view calculator

Please visit <http://support.flir.com> and click the photo of the camera series for field-of-view tables for all lens-camera combinations.

2.2 Note about technical data

FLIR Systems reserves the right to change specifications at any time without prior notice. Please check <http://support.flir.com> for latest changes.

2.3 Note about authoritative versions

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Any late changes are first implemented in English.

2.4 FLIR E53 24°

P/N: 84502-0201

Rev.: 72125

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

Technical data

Image presentation modes	
Picture in Picture	Centered infrared area on the visual image
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2%
Screening mode	
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) ¹
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
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)

1. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
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
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)	Over UVC
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

Technical data

Digital camera	
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
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

Technical data

Environmental data	
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

Shipping information	
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)
- T850105; FLIR Inspection Route - Camera Option
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.5 FLIR E54 24°

P/N: 84512-1201

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 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)	1.31 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

Technical data

Image presentation modes	
Picture in Picture	Centered infrared area on the visual image
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2%
Screening mode	
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) ²
Inspection mode	
FLIR Inspection route	Enabled in the camera
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
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)

2. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
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
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)	Over UVC
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

Technical data

Digital camera	
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
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

Technical data

Environmental data	
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 • FLIR Thermal Studio Starter • 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	4743254004733
UPC-12	845188022730
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

- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.6 FLIR E75 14°

P/N: 78501-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<50 mK @ +30°C (+86°F)
Field of view	14° × 10°
Minimum focus distance	1.0 m (3.28 ft.)
Minimum focus distance with MSX	1.0 m (3.28 ft.)
Focal length	29 mm (1.41 in.)
Spatial resolution (IFOV)	0.75 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 24° (AutoCal)
Lens identification	Automatic
f number	1.5
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
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) ³
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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

3. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254003811
UPC-12	845188016760
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.7 FLIR E75 24°

P/N: 78502-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
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)	1.31 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)⁴</p>
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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

4. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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

Technical data

Digital camera	
Resolution	5 MP with LED light
Focus	Fixed
Field of view	53° × 41°
Video lamp	Built-in LED light
Laser pointer	
Laser alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002654
UPC-12	845188013882
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.8 FLIR E75 42°

P/N: 78503-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<30 mK @ +30°C (+86°F)
Field of view	42° × 32°
Minimum focus distance	0.15 m (0.49 ft.)
Minimum focus distance with MSX	0.65 m (2.13 ft.)
Focal length	10 mm (0.39 in.)
Spatial resolution (IFOV)	2.41 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.1
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)⁵</p>
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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

5. No external blackbody needed.

Technical data

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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

Technical data

Digital camera	
Resolution	5 MP with LED light
Focus	Fixed
Field of view	53° × 41°
Video lamp	Built-in LED light
Laser pointer	
Laser alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002661
UPC-12	845188013899
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.9 FLIR E75 42° + 14°

P/N: 78507-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.41 mrad/pixel, 42° • 0.75 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
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) ⁶
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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

6. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254003323
UPC-12	845188014735
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199559; High temperature option, +300 to +1000°C
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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

- T911845ACC; USB Type-C to HDMI and PD adapter
- T911846ACC; USB 2.0 A to USB Type-C with Power supply
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.10 FLIR E75 24° + 14°

P/N: 78504-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.31 mrad/pixel, 24° • 0.75 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)⁷</p>
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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

7. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002739
UPC-12	845188013981
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.11 FLIR E75 24° + 42°

P/N: 78505-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.41 mrad/pixel, 42° • 1.31 mrad/pixel, 24°
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)⁸</p>
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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

8. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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

Technical data

Video streaming	
Radiometric infrared–video streaming (compressed)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 42° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002746
UPC-12	845188013998
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.12 FLIR E75 24° + 14° & 42°

P/N: 78506-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.41 mrad/pixel, 42° • 1.31 mrad/pixel, 24° • 0.75 mrad/pixel, 14°
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)⁹</p>
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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list

9. No external blackbody needed.

Measurement analysis	
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Extra lens, 42° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.4 kg (14.1 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002753
UPC-12	845188014001
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.13 FLIR E76 14°

P/N: 78511-1101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<50 mK @ +30°C (+86°F)
Field of view	14° × 10°
Minimum focus distance	1.0 m (3.28 ft.)
Minimum focus distance with MSX	1.0 m (3.28 ft.)
Focal length	29 mm (1.41 in.)
Spatial resolution (IFOV)	0.75 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 24° (AutoCal)
Lens identification	Automatic
f number	1.5
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
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) ¹⁰
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

¹⁰. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004597
UPC-12	845188022594
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.14 FLIR E76 24°

P/N: 78512-1101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
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)	1.31 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)¹¹</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

¹¹. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004603
UPC-12	845188022600
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.15 FLIR E76 42°

P/N: 78513-1101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<30 mK @ +30°C (+86°F)
Field of view	42° × 32°
Minimum focus distance	0.15 m (0.49 ft.)
Minimum focus distance with MSX	0.65 m (2.13 ft.)
Focal length	10 mm (0.39 in.)
Spatial resolution (IFOV)	2.41 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.1
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)¹²</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

¹². No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004610
UPC-12	845188022617
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.16 FLIR E76 42° + 14°

P/N: 78517-1101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.41 mrad/pixel, 42° • 0.75 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
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) ¹³
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

13. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004658
UPC-12	845188022655
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.17 FLIR E76 24° + 14°

P/N: 78514-1101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.31 mrad/pixel, 24° • 0.75 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
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) ¹⁴
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

14. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004627
UPC-12	845188022624
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.18 FLIR E76 24° + 42°

P/N: 78515-1101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.41 mrad/pixel, 42° • 1.31 mrad/pixel, 24°
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
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) ¹⁵
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

¹⁵. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
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

Technical data

Video streaming	
Radiometric infrared–video streaming (compressed)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 42° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004634
UPC-12	845188022631
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.19 FLIR E76 24° + 14° & 42°

P/N: 78516-1101

Rev.: 72125

Imaging and optical data	
Infrared resolution	320 × 240 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.41 mrad/pixel, 42° • 1.31 mrad/pixel, 24° • 0.75 mrad/pixel, 14°
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • Optional 300 to 1000°C (572 to 1832°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Optional Range 300 to 1000°C (572 to 1832°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)¹⁶</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes

16. No external blackbody needed.

Measurement analysis	
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
Area measurement information	No
GPS	Yes: location data automatically added to every still image and the first frame in video from built-in GPS

Technical data

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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Extra lens, 42° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.4 kg (14.1 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004641
UPC-12	845188022648
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- 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
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.20 FLIR E85 14°

P/N: 78501-0201

Rev.: 72125

Imaging and optical data	
Infrared resolution	384 × 288 pixels
UltraMax (super-resolution)	Yes
NETD	<50 mK @ +30°C (+86°F)
Field of view	14° × 10°
Minimum focus distance	1.0 m (3.28 ft.)
Minimum focus distance with MSX	1.0 m (3.28 ft.)
Focal length	29 mm (1.41 in.)
Spatial resolution (IFOV)	0.63 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 24° (AutoCal)
Lens identification	Automatic
f number	1.5
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1200°C (572 to 2192°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1200°C (572 to 2192°F): ±2%
Screening mode	
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) ¹⁷
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

17. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254003828
UPC-12	845188016777
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.21 FLIR E85 24°

P/N: 78502-0201

Rev.: 72125

Imaging and optical data	
Infrared resolution	384 × 288 pixels
UltraMax (super-resolution)	Yes
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)	1.09 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1200°C (572 to 2192°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1200°C (572 to 2192°F): ±2%
Screening mode	
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) ¹⁸
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

18. No external blackbody needed.

Technical data

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002678
UPC-12	845188013905
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.22 FLIR E85 42°

P/N: 78503-0201

Rev.: 72125

Imaging and optical data	
Infrared resolution	384 × 288 pixels
UltraMax (super-resolution)	Yes
NETD	<30 mK @ +30°C (+86°F)
Field of view	42° × 32°
Minimum focus distance	0.15 m (0.49 ft.)
Minimum focus distance with MSX	0.65 m (2.13 ft.)
Focal length	10 mm (0.39 in.)
Spatial resolution (IFOV)	2.00 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.1
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1200°C (572 to 2192°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1200°C (572 to 2192°F): ±2%
Screening mode	
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) ¹⁹
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

¹⁹. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002685
UPC-12	845188013912
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.23 FLIR E85 42° + 14°

P/N: 78507-0201

Rev.: 72125

Imaging and optical data	
Infrared resolution	384 × 288 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.00 mrad/pixel, 42° • 0.63 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1200°C (572 to 2192°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1200°C (572 to 2192°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)²⁰</p>
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

²⁰. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254003330
UPC-12	845188014742
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T911845ACC; USB Type-C to HDMI and PD adapter

- T911846ACC; USB 2.0 A to USB Type-C with Power supply
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.24 FLIR E85 24° + 14°

P/N: 78504-0201

Rev.: 72125

Imaging and optical data	
Infrared resolution	384 × 288 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.09 mrad/pixel, 24° • 0.63 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1200°C (572 to 2192°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1200°C (572 to 2192°F): ±2%
Screening mode	
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) ²¹
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

²¹. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002777
UPC-12	845188014025
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.25 FLIR E85 24° + 42°

P/N: 78505-0201

Rev.: 72125

Imaging and optical data	
Infrared resolution	384 × 288 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.00 mrad/pixel, 42° • 1.09 mrad/pixel, 24°
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1200°C (572 to 2192°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1200°C (572 to 2192°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)²²</p>
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

²². No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 42° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002784
UPC-12	845188014032
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.26 FLIR E85 24° + 14° & 42°

P/N: 78506-0201

Rev.: 72125

Imaging and optical data	
Infrared resolution	384 × 288 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 2.00 mrad/pixel, 42° • 1.09 mrad/pixel, 24° • 0.63 mrad/pixel, 14°
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1200°C (572 to 2192°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1200°C (572 to 2192°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)²³</p>
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

23. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	No
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Extra lens, 42° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.4 kg (14.1 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002791
UPC-12	845188014049
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.27 FLIR E86 14°

P/N: 78511-1301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<50 mK @ +30°C (+86°F)
Field of view	14° × 10°
Minimum focus distance	1.0 m (3.28 ft.)
Minimum focus distance with MSX	1.0 m (3.28 ft.)
Focal length	29 mm (1.41 in.)
Spatial resolution (IFOV)	0.52 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 24° (AutoCal)
Lens identification	Automatic
f number	1.5
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ²⁴
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

24. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004665
UPC-12	845188022662
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.28 FLIR E86 24°

P/N: 78512-1301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
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)	0.90 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal) • 42° (AutoCal)
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)²⁵</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

²⁵. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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

Technical data

Video streaming	
Radiometric infrared–video streaming (compressed)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004672
UPC-12	845188022679
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.29 FLIR E86 42°

P/N: 78513-1301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<30 mK @ +30°C (+86°F)
Field of view	42° × 32°
Minimum focus distance	0.15 m (0.49 ft.)
Minimum focus distance with MSX	0.65 m (2.13 ft.)
Focal length	10 mm (0.39 in.)
Spatial resolution (IFOV)	1.66 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.1
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ²⁶
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

26. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004689
UPC-12	845188022686
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.30 FLIR E86 42° + 14°

P/N: 78517-1301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.66 mrad/pixel, 42° • 0.52 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ²⁷
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

²⁷. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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

Technical data

Video streaming	
Radiometric infrared–video streaming (compressed)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004726
UPC-12	845188022723
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.31 FLIR E86 24° + 14°

P/N: 78514-1301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 0.90 mrad/pixel, 24° • 0.52 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ²⁸
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

28. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004696
UPC-12	845188022693
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.32 FLIR E86 24° + 42°

P/N: 78515-1301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.66 mrad/pixel, 42° • 0.90 mrad/pixel, 24°
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)²⁹</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

²⁹. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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

Technical data

Video streaming	
Radiometric infrared–video streaming (compressed)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 42° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004702
UPC-12	845188022709
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.33 FLIR E86 24° + 14° & 42°

P/N: 78516-1301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.66 mrad/pixel, 42° • 0.90 mrad/pixel, 24° • 0.52 mrad/pixel, 14°
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)³⁰</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes

³⁰. No external blackbody needed.

Measurement analysis	
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Extra lens, 42° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.4 kg (14.1 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004719
UPC-12	845188022716
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.34 FLIR E95 14°

P/N: 78501-0301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<50 mK @ +30°C (+86°F)
Field of view	14° × 10°
Minimum focus distance	1.0 m (3.28 ft.)
Minimum focus distance with MSX	1.0 m (3.28 ft.)
Focal length	29 mm (1.41 in.)
Spatial resolution (IFOV)	0.52 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 24° (AutoCal)
Lens identification	Automatic
f number	1.5
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)³¹</p>
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

³¹. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254003835
UPC-12	845188016784
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.35 FLIR E95 24°

P/N: 78502-0301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
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)	0.90 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal) • 42° (AutoCal)
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ³²
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

32. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002692
UPC-12	845188013929
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.36 FLIR E95 42°

P/N: 78503-0301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<30 mK @ +30°C (+86°F)
Field of view	42° × 32°
Minimum focus distance	0.15 m (0.49 ft.)
Minimum focus distance with MSX	0.65 m (2.13 ft.)
Focal length	10 mm (0.39 in.)
Spatial resolution (IFOV)	1.66 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.1
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ³³
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function

33. No external blackbody needed.

Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

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 • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002708
UPC-12	845188013936
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.37 FLIR E95 42° + 14°

P/N: 78507-0301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.66 mrad/pixel, 42° • 0.52 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ³⁴
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

34. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254003347
UPC-12	845188014759
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- T911689ACC; Pouch for FLIR E-series
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.38 FLIR E95 24° + 14°

P/N: 78504-0301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 0.90 mrad/pixel, 24° • 0.52 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)³⁵</p>
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

³⁵. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002814
UPC-12	845188014063
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.39 FLIR E95 24° + 42°

P/N: 78505-0301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.66 mrad/pixel, 42° • 0.90 mrad/pixel, 24°
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)³⁶</p>
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

³⁶. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 42° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002821
UPC-12	845188014070
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.40 FLIR E95 24° + 14° & 42°

P/N: 78506-0301

Rev.: 72125

Imaging and optical data	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.66 mrad/pixel, 42° • 0.90 mrad/pixel, 24° • 0.52 mrad/pixel, 14°
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)³⁷</p>
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

³⁷. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Extra lens, 42° • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.4 kg (14.1 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254002838
UPC-12	845188014087
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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)
- T850105; FLIR Inspection Route - Camera Option
- T850112; Option, Auto-screening
- T850111; Option, Dual streaming
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.41 FLIR E96 14°

P/N: 90201-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	640 × 480 pixels
UltraMax (super-resolution)	Yes
NETD	<50 mK @ +30°C (+86°F)
Field of view	14° × 10°
Minimum focus distance	1.0 m (3.28 ft.)
Minimum focus distance with MSX	1.0 m (3.28 ft.)
Focal length	29 mm (1.41 in.)
Spatial resolution (IFOV)	0.4 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal) • 24° (AutoCal)
Lens identification	Automatic
f number	1.5
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • Manual
Field of view match	Yes
Digital zoom	1–8× continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	12 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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)³⁸</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

38. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004528
UPC-12	845188022259
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.42 FLIR E96 24°

P/N: 90202-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	640 × 480 pixels
UltraMax (super-resolution)	Yes
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)	0.7 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal) • 42° (AutoCal)
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • Manual
Field of view match	Yes
Digital zoom	1–8× continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	12 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)³⁹</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

³⁹. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft) ±1% of measured distance
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
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

Technical data

Power system	
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 to 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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in)
EAN-13	4743254004535
UPC-12	845188022266
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.43 FLIR E96 42°

P/N: 90203-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	640 × 480 pixels
UltraMax (super-resolution)	Yes
NETD	<30 mK @ +30°C (+86°F)
Field of view	42° × 32°
Minimum focus distance	0.15 m (0.49 ft.)
Minimum focus distance with MSX	0.65 m (2.13 ft.)
Focal length	10 mm (0.39 in.)
Spatial resolution (IFOV)	1.2 mrad/pixel
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal) • 14° (AutoCal)
Lens identification	Automatic
f number	1.1
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • Manual
Field of view match	Yes
Digital zoom	1–8× continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	12 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

Technical data

Image presentation modes	
Infrared image	Yes
Visual image	Yes
Thermal fusion	No
MSX	Yes
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)⁴⁰</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

40. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	5.8 kg (12.8 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004542
UPC-12	845188022273
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.44 FLIR E96 42° + 14°

P/N: 90207-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	640 × 480 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.2 mrad/pixel, 42° • 0.4 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 24° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • Manual
Field of view match	Yes
Digital zoom	1–8× continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	12 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)⁴¹</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

⁴¹. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004580
UPC-12	845188022310
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.45 FLIR E96 24° + 14°

P/N: 90204-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	640 × 480 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 0.7 mrad/pixel, 24° • 0.4 mrad/pixel, 14°
Available extra lenses	<ul style="list-style-type: none"> • 42° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • Manual
Field of view match	Yes
Digital zoom	1–8× continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	12 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ⁴²
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

42. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004559
UPC-12	845188022280
Country of origin	Estonia

Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.46 FLIR E96 24° + 42°

P/N: 90205-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	640 × 480 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.2 mrad/pixel, 42° • 0.7 mrad/pixel, 24°
Available extra lenses	<ul style="list-style-type: none"> • 14° (AutoCal)
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • Manual
Field of view match	Yes
Digital zoom	1–8× continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	12 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

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
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) ⁴³
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes

43. No external blackbody needed.

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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 42° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.2 kg (13.7 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004566
UPC-12	845188022297
Country of origin	Estonia

Supplies & accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; IR lens, f=29 mm (14°) with case
- T199589; IR lens, f=17 mm (24°) with case
- T199590; IR lens, f=10 mm (42°) with case
- 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
- T197771ACC; Bluetooth Headset
- T300244; FLIR Route Creator Plugin for FLIR Thermal Studio Pro, 1 Year Subscription
- 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

2.47 FLIR E96 24° + 14° & 42°

P/N: 90206-0101

Rev.: 72125

Imaging and optical data	
Infrared resolution	640 × 480 pixels
UltraMax (super-resolution)	Yes
NETD	<ul style="list-style-type: none"> • <30 mK, 42° @ +30°C (+86°F) • <40 mK, 24° @ +30°C (+86°F) • <50 mK, 14° @ +30°C (+86°F)
Field of view	<ul style="list-style-type: none"> • 42° × 32° • 24° × 18° • 14° × 10°
Minimum focus distance	<ul style="list-style-type: none"> • 0.15 m (0.49 ft.), 42° • 0.15 m (0.49 ft.), 24° • 1.0 m (3.28 ft.), 14°
Minimum focus distance with MSX	<ul style="list-style-type: none"> • 0.65 m (2.13 ft.), 42° • 0.5 m (1.64 ft.), 24° • 1.0 m (3.28 ft.), 14°
Focal length	<ul style="list-style-type: none"> • 10 mm (0.39 in.), 42° • 17 mm (0.67 in.), 24° • 29 mm (1.41 in.), 14°
Spatial resolution (IFOV)	<ul style="list-style-type: none"> • 1.2 mrad/pixel, 42° • 0.7 mrad/pixel, 24° • 0.4 mrad/pixel, 14°
Lens identification	Automatic
f number	<ul style="list-style-type: none"> • 1.1, 42° • 1.3, 24° • 1.5, 14°
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> • Continuous LDM • One-shot LDM • One-shot contrast • Manual
Field of view match	Yes
Digital zoom	1–8× continuous
Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	12 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

Technical data

Image presentation	
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
Picture in Picture	Resizable and movable
Gallery	Yes
Measurement	
Camera temperature range	<ul style="list-style-type: none"> • -20 to 120°C (-4 to 248°F) • 0 to 650°C (32 to 1202°F) • 300 to 1500°C (572 to 2732°F)
Object temperature range and accuracy (for ambient temp. 15 to 35°C (59 to 95°F))	<ul style="list-style-type: none"> • Range -20 to 120°C (-4 to 248°F): <ul style="list-style-type: none"> ◦ -20 to 100°C (-4 to 212°F): ±2°C (±3.6°F) ◦ 100 to 120°C (212 to 248°F): ±2% • Range 0 to 650°C (32 to 1202°F): <ul style="list-style-type: none"> ◦ 0 to 100°C (32 to 212°F): ±2°C (±3.6°F) ◦ 100 to 650°C (212 to 1202°F): ±2% • Range 300 to 1500°C (572 to 2732°F): ±2%
Screening mode	
Sampling average mode	<p>Recommended temperature range: 30 to 45°C (86 to 113°F) in stable room temperature</p> <p>Accuracy (drift): ±0.3°C (±0.5°F)⁴⁴</p>
Inspection mode	
FLIR Inspection route	Enabled in the camera
Measurement analysis	
Spotmeter	3 in live mode
Area	3 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 • User preset 1 • User preset 2
Difference temperature	Yes
Reference temperature	Yes

44. No external blackbody needed.

Measurement analysis	
Emissivity correction	Yes: variable from 0.01 to 1.0 or selected from materials list
Measurement corrections	Yes
External optics/windows correction	Yes
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) on any selected measurement function
Set-up	
Color palettes	<ul style="list-style-type: none"> • Arctic • White hot • Black hot • Iron • Lava • Rainbow • Rainbow HC
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
Service functions	
Camera software update	Using USB cable or SD card
Storage of images	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	Using USB cable or 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	Yes
Area measurement information	Yes
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)	Over UVC
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 alignment	Position is automatically displayed on the infrared image
Laser distance meter	Activated by a dedicated button
Laser	Class 2, 0.05–40 m (1.6–131 ft.) ±1% of measured distance
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
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

Technical data

Power system	
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 • Extra lens, 14° • Extra lens, 42° • FLIR Thermal Studio Starter • Hard transport case • Infrared camera with lens • Lens cap, front • Lens cap, front and rear (only for extra lenses)
Packaging, weight	6.4 kg (14.1 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)
EAN-13	4743254004573
UPC-12	845188022303
Country of origin	Estonia

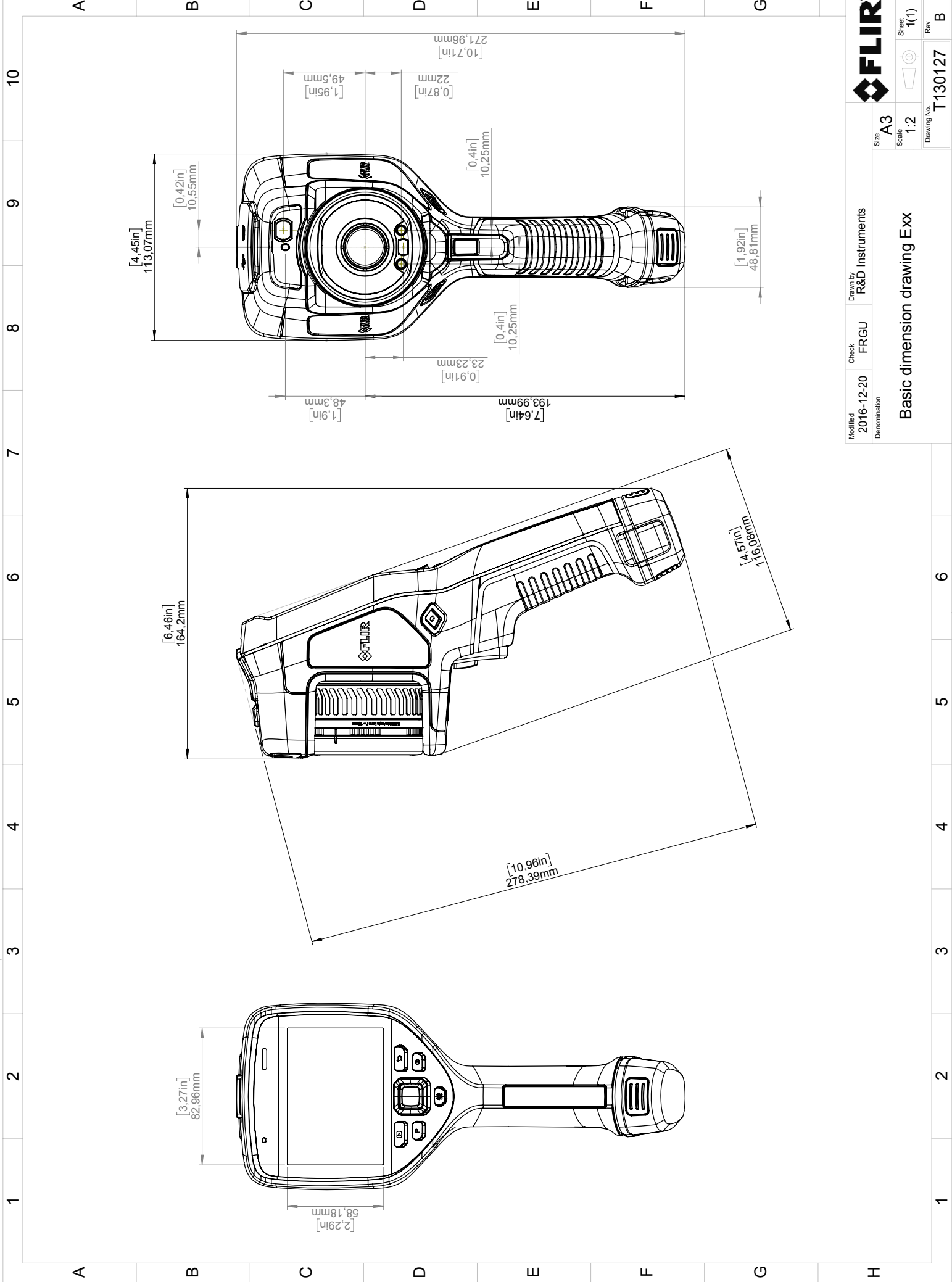
Supplies and accessories:

- T300238; Macro lens 2.0x with case
- 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
- T130337ACC; Calibration target
- T199330ACC; Battery
- T199346ACC; Hard transport case for FLIR Exx series
- T199425ACC; Battery charger
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- T300342; FLIR Screen EST, Perpetual license
- T300083; FLIR Thermal Studio Pro, Perpetual license
- T300341; FLIR Thermal Studio Standard, 1 Year Subscription
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[See next page]

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 ETSI EN 301 893 v1.8.1	Harmonized EN covering essential requirements of the R&TTE Directive Harmonized EN covering essential reqs
SAR:	EN 62209-2	Human exposure Wireless
Safety (Battery charger):		Information technology equipment
RoHS:	IEC 60950-1:2005+A1 EN 60950- 1:2006+A11:2009+A1:2010+A2:2013+AC:2011+A12:2011 EN 50581:2012	Technical documentation

FLIR Systems AB

Quality Assurance

Lea Dabiri
Quality Manager



Website

<http://www.flir.com>

Customer support

<http://support.flir.com>

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