

## P/N: 78502-0301

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### Document identity

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### Website

<http://www.flir.com>

### Customer support

<http://support.flir.com>

### Disclaimer

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



<b>Imaging and optical data</b>	
Infrared resolution	464 × 348 pixels
UltraMax (super-resolution)	In FLIR Tools
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"> <li>• 14° (AutoCal)</li> <li>• 42° (AutoCal)</li> </ul>
Lens identification	Automatic
f number	1.3
Image frequency	30 Hz
Focus	<ul style="list-style-type: none"> <li>• Continuous LDM</li> <li>• One-shot LDM</li> <li>• One-shot contrast</li> <li>• Manual</li> </ul>
Field of view match	Yes
Digital zoom	1–4× continuous
<b>Detector data</b>	
Focal plane array/spectral range	Uncooled microbolometer/7.5–14 μm
Detector pitch	17 μm

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Image presentation	
Resolution	640 × 480 pixels (VGA)
Surface brightness (cd/m <sup>2</sup> )	400
Screen size	4 in.
Viewing angle	80°
Color depth (bits)	24
Aspect ratio	4:3
Auto-rotation	Yes
Touchscreen	Optically bonded PCAP
Display technology	IPS
Cover glass material	Dragontrail®
Programmable buttons	1
Viewfinder	No
Image adjustment	<ul style="list-style-type: none"> <li>• Automatic</li> <li>• Automatic maximum</li> <li>• Automatic minimum</li> <li>• Manual</li> </ul>

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	Object temperature range	Accuracy — for ambient temperature +15 to +35°C (+59 to +95°F)
-20 to +120°C (-4 to +248°F)	-20 to +100°C (-4 to +212°F)	±2°C (±3.6°F)
	+100 to +120°C (+212 to +248°F)	±2%
0 to +650°C (+32 to +1202°F)	0 to +100°C (+32 to +212°F)	±2°C (±3.6°F)
	+100 to +650°C (+212 to +1202°F)	±2%
+300 to +1500°C (+572 to +2732°F)	+300 to +1500°C (+572 to +2732°F)	±2%

Measurement analysis	
Spotmeter	3 in live mode
Area	3 in live mode
Automatic hot/cold detection	Auto-maximum/minimum markers within area

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<b>Measurement analysis</b>	
Measurement presets	<ul style="list-style-type: none"> <li>No measurements</li> <li>Center spot</li> <li>Hot spot</li> <li>Cold spot</li> <li>User preset 1</li> <li>User preset 2</li> </ul>
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
Screening	0.5°C (0.9°F) accuracy @ 37°C (98.6°F) with reference
<b>Alarm</b>	
Color alarm (isotherm)	<ul style="list-style-type: none"> <li>Above</li> <li>Below</li> <li>Interval</li> <li>Condensation (moisture/humidity/dewpoint)</li> <li>Insulation</li> </ul>
Measurement function alarm	Audible/visual alarms (above/below) on any selected measurement function
<b>Set-up</b>	
Color palettes	<ul style="list-style-type: none"> <li>Iron</li> <li>Gray</li> <li>Rainbow</li> <li>Arctic</li> <li>Lava</li> <li>Rainbow HC</li> </ul>
Setup commands	Local adaptation of units, language, date and time formats
Languages	21
<b>Service functions</b>	
Camera software update	Use PC software FLIR Tools
<b>Storage of images</b>	
Storage media	Removable memory; SD card (8 GB)
Time lapse (periodic image storage)	10 seconds to 24 hours (infrared)
Remote control operation	<ul style="list-style-type: none"> <li>Using FLIR Tools (using USB cable)</li> <li>FLIR Tools Mobile (over Wi-Fi)</li> </ul>
Image file format	Standard JPEG, measurement data included. Infrared-only mode
<b>Image annotations</b>	
Voice	60 seconds built-in microphone and speaker (and via Bluetooth) on still images and video
Text	Text from predefined list or soft keyboard on touchscreen

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<b>Image annotations</b>	
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
<b>Video recording in camera</b>	
Radiometric infrared-video recording	RTRR (.csq)
Non-radiometric infrared-video recording	H.264 to memory card
Visual video recording	H.264 to memory card
<b>Video streaming</b>	
Radiometric infrared-video streaming (compressed)	Over UVC
Non-radiometric video streaming (compressed: IR, MSX, visual, Picture in Picture)	<ul style="list-style-type: none"> <li>• H.264 (AVC) over RTSP (Wi-Fi)</li> <li>• MPEG4 over RTSP (Wi-Fi)</li> <li>• MJPEG over UVC and RTSP (Wi-Fi)</li> </ul>
Visual video streaming	Yes
<b>Digital camera</b>	
Resolution	5 MP with LED light
Focus	Fixed
Field of view	53° × 41°
Video lamp	Built-in LED light
<b>Laser pointer</b>	
Laser 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
<b>Data communication interfaces</b>	
Interfaces	USB 2.0, Bluetooth, Wi-Fi, DisplayPort
METERLiNK/Bluetooth	Communication with headset and external sensors
Wi-Fi	Peer to peer ( <i>ad hoc</i> ) or infrastructure (network)
Audio	Microphone and speaker for voice annotation of images
USB	USB Type-C: data transfer/video/power
USB standard	USB 2.0 High Speed

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

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

- T130337ACC; Calibration target

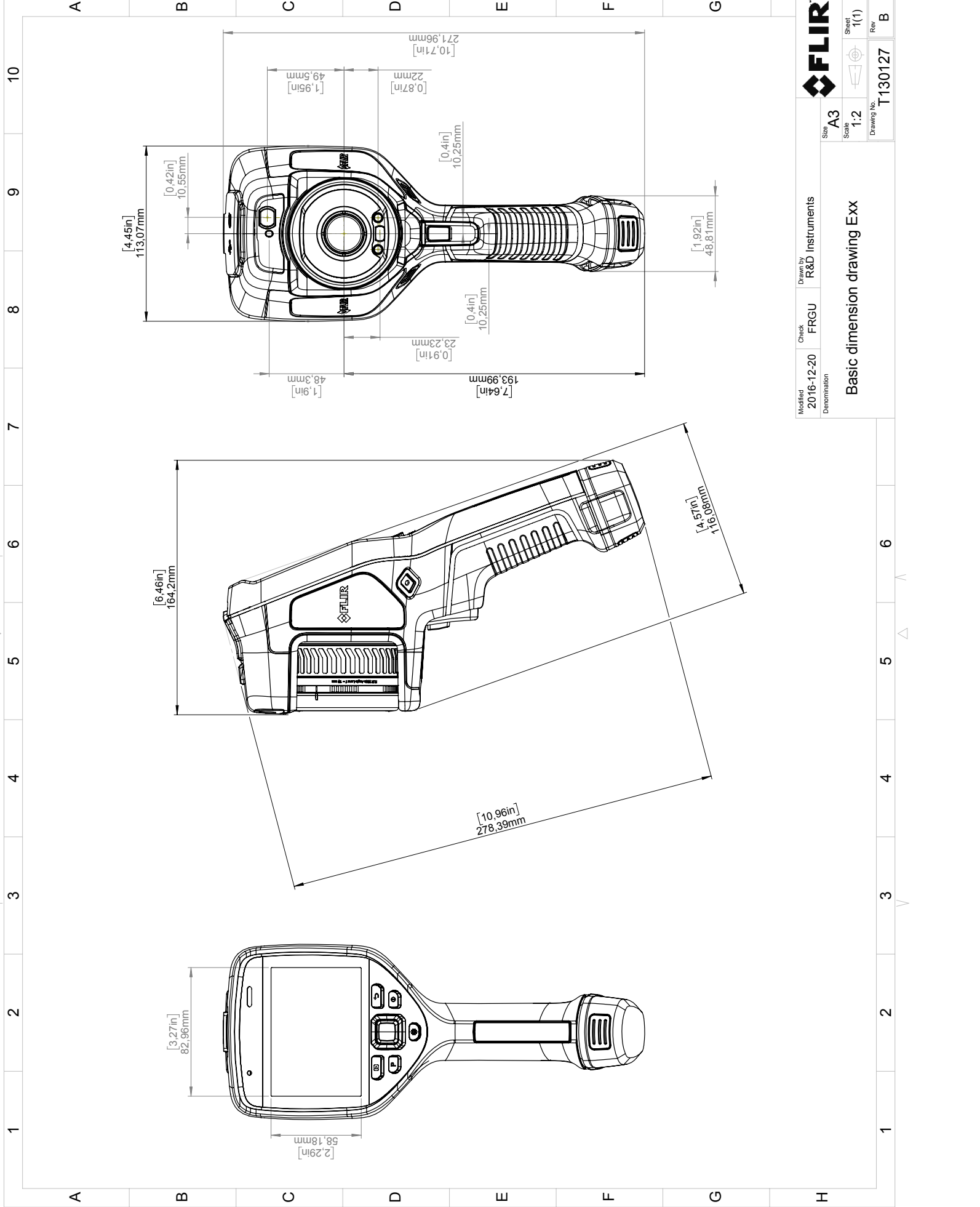
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- T199330ACC; Battery
- T199346ACC; Hard transport case
- T199425ACC; Battery charger
- T199557ACC; Accessory Box II
- T199588; Lens 14° + case
- T199589; Lens 24° + case
- T199590; Lens 42° + case
- T911630ACC; Power supply for camera, 15 W/3 A
- 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
- T300030; Option, No radio
- T197771ACC; Bluetooth Headset
- T198583; FLIR Tools+ (download card incl. license key)
- T300083; FLIR Thermal Studio (incl. license key/QR code)
- 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



		Size <b>A3</b>	Sheet <b>1(1)</b>	Rev <b>B</b>
Modified <b>2016-12-20</b>	Check <b>FRGU</b>	Drawn by <b>R&amp;D Instruments</b>	Drawing No. <b>T130127</b>	
Denomination <b>Basic dimension drawing Exx</b>		Scale <b>1:2</b>		

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The World's Sixth Sense™

February 20, 2018 Täby, Sweden

AQ320222

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

Product: FLIR E53 / E75 / E85 / E95 -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 / E75 / E85 / E95 -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 Compatibility 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 Compatibility Generic standards – Immunity
Laser:	EN 60825-1	Safety of laser products
Radio:	ETSI EN 300 328	Harmonized EN covering essential requirements of the R&TTE Directive
SAR:	EN 62209-2	Human exposure Wireless
Safety (Battery charger):	IEC 60950-1:2005+A1 EN 60950- 1:2006+A11:2009+A1:2010+A2:2013+AC:2011+A12:2011	Information technology equipment
RoHS:	EN 50581:2012	Technical documentation

**FLIR Systems AB**  
Quality Assurance

Lea Dabiri  
Quality Manager