

## P/N: 64502-1001

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### Document identity

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### Website

<http://www.flir.com>

### Customer support

<http://support.flir.com>

### Disclaimer

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### General description

The FLIR Exx series cameras are compact and rugged infrared cameras that can be used in harsh environments while still providing you with the latest technology such as a modern touch screen. A FLIR Exx series camera is the perfect choice when you are looking for a robust but feature-rich camera at an affordable price.

#### Benefits:

- Robust and sophisticated: The FLIR Exx series cameras have a robust and light-weight design and can withstand a 2 m drop. Large buttons combined with a modern touch screen and extensive measuring capabilities, they are the right choice for demanding inspections in the field.
- Best value for money: The FLIR Exx series cameras combine good performance (up to 320 × 240 pixels), a user-friendly interface, and a rugged point-and-shoot design with an affordable price.

### Imaging and optical data

IR resolution	160 × 120 pixels
Thermal sensitivity/NETD	< 0.07°C @ +30°C (+86°F) / 70 mK
Field of view (FOV)	25° × 19°
Minimum focus distance	0.4 m (1.31 ft.)
Focal length	18 mm (0.7 in.)
Spatial resolution (IFOV)	2.72 mrad
F-number	1.3
Image frequency	60 Hz
Focus	Manual
Digital zoom	2×
Panning	Panning over zoomed-in images

### Detector data

Detector type	Focal plane array (FPA), uncooled microbolometer
Spectral range	7.5–13 μm

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<b>Image presentation</b>	
Display	Touch screen, 3.5 in. LCD, 320 × 240 pixels
Image adjustment	Auto or manual
<b>Image presentation modes</b>	
Image modes	IR image, visual image, MSX, picture in picture, thumbnail gallery
Picture in Picture	IR area on visual image
<b>Measurement</b>	
Object temperature range	<ul style="list-style-type: none"> <li>• -20°C to +120°C (-4°F to +248°F)</li> <li>• 0°C to +650°C (+32°F to +1202°F)</li> </ul>
Accuracy	±2°C (±3.6°F) or ±2% of reading, for ambient temperature 10°C to 35°C (+50°F to 95°F)
<b>Measurement analysis</b>	
Spotmeter	3
Area	3 boxes with max./min./average
Automatic hot/cold detection	Auto hot or cold spotmeter markers within area
Difference temperature	Delta temperature between measurement functions or reference temperature
Reference temperature	Manually set or captured from any measurement function
Emissivity correction	Variable from 0.01 to 1.0 or selected from materials list
External optics/windows correction	Automatic, based on inputs of optics/window transmission and temperature
Measurement corrections	Reflected temperature, optics transmission and atmospheric transmission
<b>Set-up</b>	
Color palettes	Arctic, Gray, Iron, Lava, Rainbow and Rainbow HC
Set-up commands	Local adaptation of units, language, date and time formats
<b>Storage of images</b>	
Image storage	Standard JPEG, including measurement data, on memory card
Image storage mode	Simultaneous storage of images in IR, visual and MSX
<b>Image annotations</b>	
Text	Text from predefined list or soft keyboard on touch screen
Report generation	<ul style="list-style-type: none"> <li>• FLIR Tools software specifically designed to provide an easy way to create inspection reports. It is available on the major platforms – Android, Windows, MacOS, and iOS.</li> </ul>

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<b>Video recording in camera</b>	
Non-radiometric IR video recording	MPEG-4 to memory card
<b>Video streaming</b>	
Radiometric IR video streaming	Full dynamic to PC using USB
Non-radiometric IR video streaming	Uncompressed colorized video using USB
<b>Digital camera</b>	
Built-in digital camera	3.1 Mpixels (2048 × 1536 pixels), and one LED light
Digital camera, focus	Fixed focus
Built-in digital lens data	FOV 53° × 41°
Digital camera, aspect ratio	4:3
<b>Laser pointer</b>	
Laser	Activated by dedicated button
Laser alignment	Position is automatic displayed on the IR image
Laser classification	Class 2
Laser type	Semiconductor AlGaInP diode laser
Laser power	1 mW
Laser wavelength	635 nm (red)
<b>Data communication interfaces</b>	
SD Card	One card slot for removable SD memory cards
<b>USB</b>	
USB	<ul style="list-style-type: none"> <li>USB-A: Connect external USB device</li> <li>USB Mini-B: Data transfer to and from PC / uncompressed colorized video</li> </ul>
USB, standard	USB Mini-B: 2.0
USB, connector type	<ul style="list-style-type: none"> <li>USB-A connector</li> <li>USB Mini-B connector</li> </ul>
<b>Composite video</b>	
Video out	Composite
Video, standard	CVBS (ITU-R-BT.470 PAL/SMPTE 170M NTSC)
Video, connector type	4-pole 3.5 mm jack
<b>Power system</b>	
Battery type	Rechargeable Li ion battery
Battery voltage	3.7 V
Battery capacity	4.4 Ah, at +20°C to +25°C (+68°F to +77°F)
Battery operating time	Approx. 4 hours at +25°C (+77°F) ambient temperature and typical use
Charging system	In camera (AC adapter or 12 V from a vehicle) or 2-bay charger

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Power system	
Charging time	4 h to 90% capacity, charging status indicated by LED's
Charging temperature	0°C to +45°C (+32°F to +113°F)
Power management	Automatic shutdown and sleep mode (user selectable)
AC operation	AC adapter, 90–260 VAC input, 12 V output to camera
Start-up time from sleep mode	Instant on
Environmental data	
Operating temperature range	–15°C to +50°C (+5°F to +122°F)
Storage temperature range	–40°C to +70°C (–40°F to +158°F)
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25° C to +40°C (+77°F to +104°F) / 2 cycles
EMC	<ul style="list-style-type: none"> <li>• EN 61000-6-2 (Immunity)</li> <li>• EN 61000-6-3 (Emission)</li> <li>• FCC 47 CFR Part 15 B (Emission)</li> </ul>
Magnetic fields	EN 61 000-4-8, Test level 5 for continuous field (severe industrial environment)
Encapsulation	IP 54 (IEC 60529)
Shock	25 g (IEC 60068-2-27)
Vibration	2 g (IEC 60068-2-6)
Drop	2 m (6.6 ft.)
Safety	EN/UL/CSA/PSE 60950-1
Physical data	
Camera weight, incl. battery	0.869 kg (1.91 lb.)
Camera size (L × W × H)	246 × 97 × 184 mm (9.7 × 3.8 × 7.2 in.)
Tripod mounting	UNC ¼"-20 (adapter needed)
Material	<ul style="list-style-type: none"> <li>• Polycarbonate + acrylonitrile butadiene styrene (PC-ABS)</li> <li>• Thixomold magnesium</li> <li>• Thermoplastic elastomer (TPE)</li> </ul>
Color	Graphite gray and black
Shipping information	
Packaging, type	Cardboard box
List of contents	<ul style="list-style-type: none"> <li>• Hard transport case</li> <li>• Infrared camera with lens</li> <li>• Battery</li> <li>• Handstrap</li> <li>• Memory card</li> <li>• Power supply, incl. multi-plugs</li> <li>• Printed documentation</li> <li>• USB cable</li> <li>• Video cable</li> </ul>
Packaging, weight	5.2 kg (11.5 lb.)
Packaging, size	500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.)

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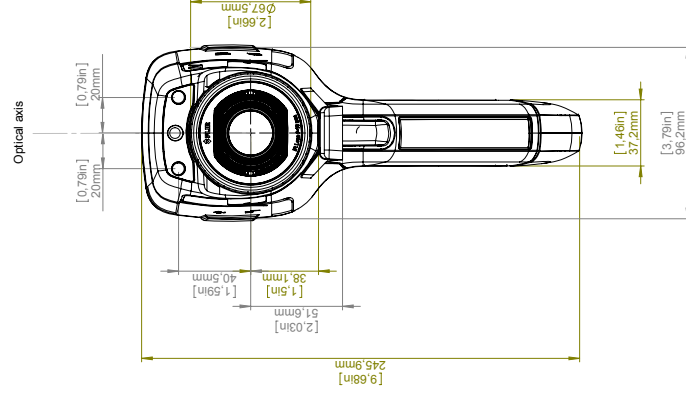
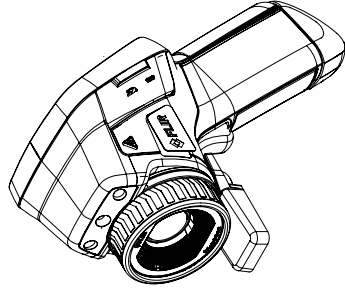
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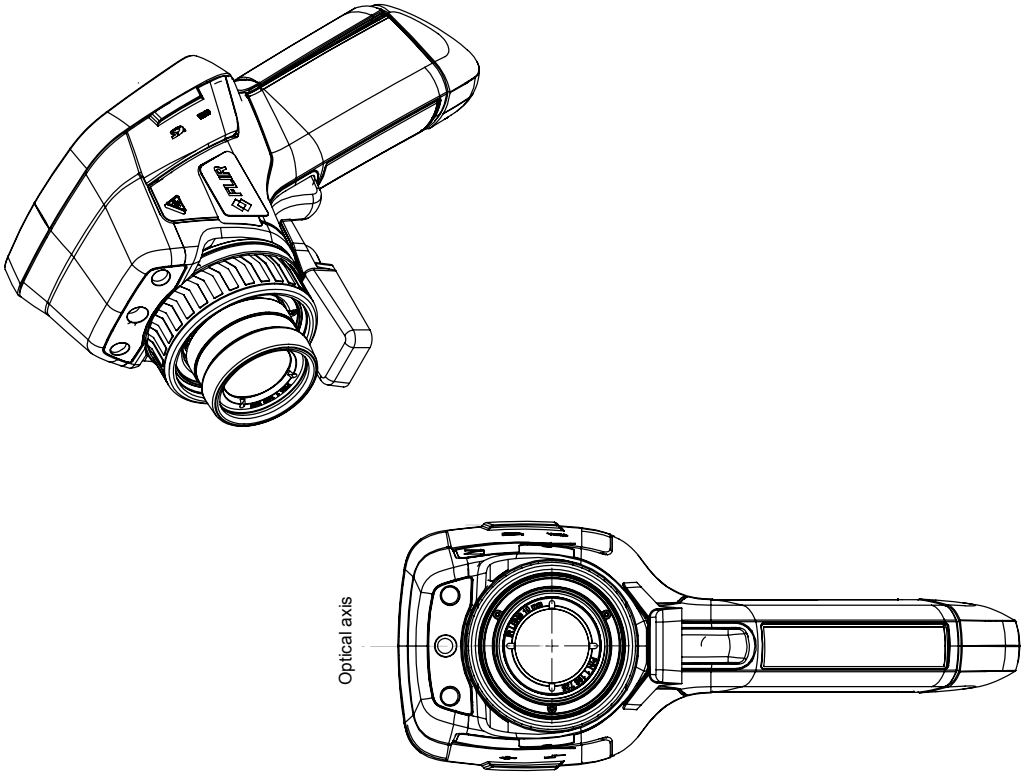
Shipping information	
EAN-13	4743254001220
UPC-12	845188005252
Country of origin	Estonia

## Supplies & accessories:

- 1196961; IR lens, f = 30 mm, 15° incl. case
- 1196960; IR lens, f = 10 mm, 45° incl. case
- T910814; Power supply, incl. multi plugs
- T911650ACC; Memory card SD Card 8 GB
- 1910423; USB cable Std A <-> Mini-B
- T198509; Cigarette lighter adapter kit, 12 VDC, 1.2 m/3.9 ft.
- 1910582ACC; Video cable
- T911093; Tool belt
- T198125; Battery charger, incl. power supply with multi plugs (Exx, Kxx)
- T199235; High-temperature lens
- T198113; IR lens, 76 mm (6°) with case and mounting support for Exx
- T198487; Li-Ion Battery pack 3.7V 17Wh
- T198484; Pouch for FLIR Exx series
- T198485; Sun shield
- T198341ACC; Transport case Exx
- T198486; Tripod Adapter
- T199363ACC; Battery Li-ion 3.6 V, 5.2 Ah, 19 Wh
- 19250-100; IR Window 2 in.
- 19251-100; IR Window 3 in.
- 19252-100; IR Window 4 in.
- 19250-200; SS IR Window 2 in.
- 19251-200; SS IR Window 3 in.
- 19252-200; SS IR Window 4 in.
- T198586; FLIR Reporter Professional (license only)
- T198584; FLIR Tools
- T198583; FLIR Tools+ (download card incl. license key)
- DSW-10000; FLIR IR Camera Player
- T198697; FLIR ResearchIR Max + HSDR 4 (hardware sec. dev.)
- T199014; FLIR ResearchIR Max + HSDR 4 (printed license key)
- T199044; FLIR ResearchIR Max + HSDR 4 Upgrade (printed 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)
- T198731; FLIR ResearchIR Standard 4 (hardware sec. dev.)
- T199012; FLIR ResearchIR Standard 4 (printed license key)
- T199042; FLIR ResearchIR Standard 4 Upgrade (printed license key)
- T199233; FLIR Atlas SDK for .NET
- T199234; FLIR Atlas SDK for MATLAB

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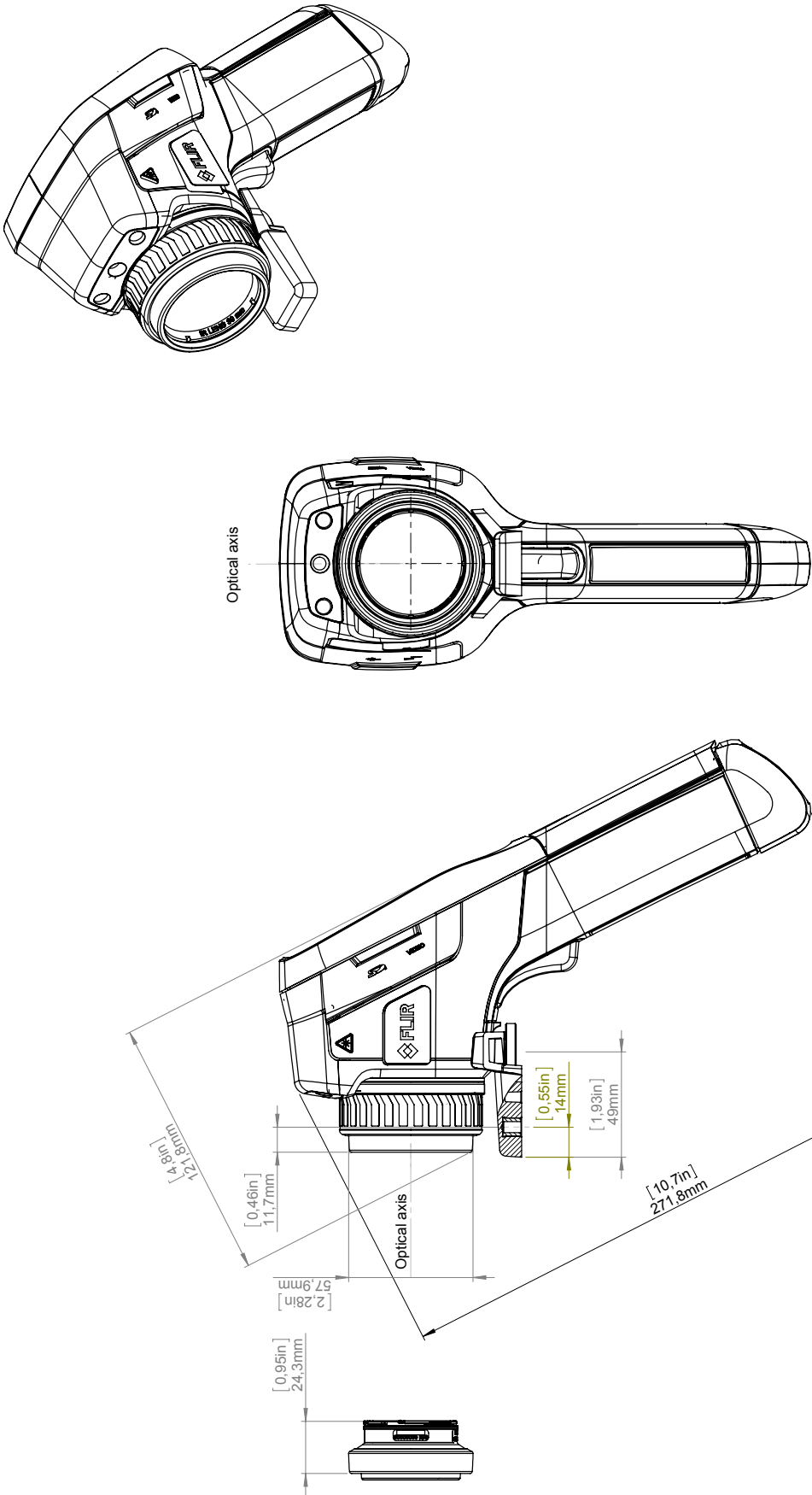
Camera with Lens IR f=10 mm (45°)



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For additional dimensions see page 1			FLIR		
Modified	Check	Drawn by	Size	Scale	Sheet
2015-10-28	JOHG	R&D Thermography	A3	1:2	2(5)
Denomination			Basic dimensions Flir Exx series		
			Drawing No.	Size	
			T127869	B	

Camera with Lens IR f=30 mm (15°)



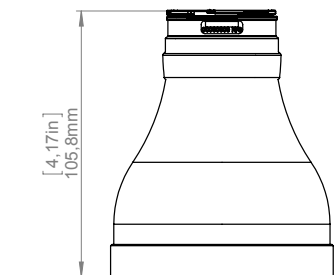
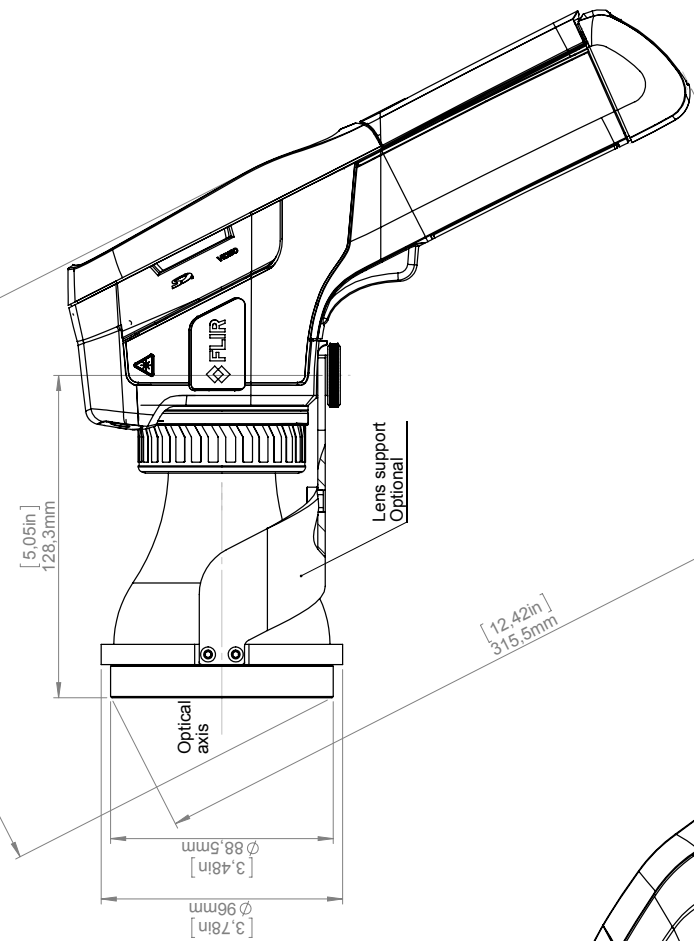
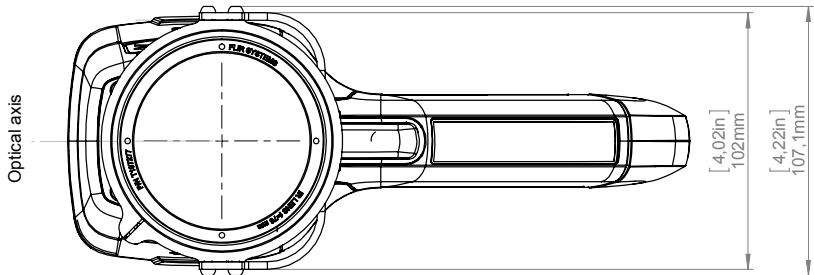
For additional dimensions see page 1			
Modified 2015-10-28	Check JOHG	Drawn by R&D Thermography	Size A3
Denomination		Basic dimensions Flir Exx series	
		Scale 1:2	Sheet 3(5)
		Drawing No. T127869	Size B





Camera with Lens IR f=76 mm (6°) incl support

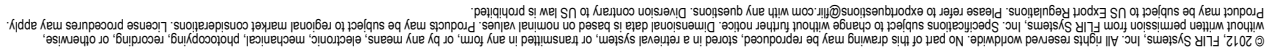
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FLIR	Size	Sheet	Size
A3	1:2	4(5)	B
Scale	Drawing No.		
	T127869		

Modified	Check	Drawn by	For additional dimensions see page 1
2015-10-28	JOHG	R&D Thermography	
Denomination			
Basic dimensions Flir Exx series			

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Modified 12/15/10-28	Check JOHG	Drawn by R&D Thermography	
Denomination			
Size <b>A3</b>			
Scale <b>1:2</b>			Sheet <b>5(5)</b>
Drawing No. <b>T127869</b>			Size <b>B</b>

## CE Declaration of Conformity

This is to certify that the System listed below have been designed and manufactured to meet the requirements, as applicable, of the following EU-Directives and corresponding harmonising standards. The systems consequently meet the requirements for the CE-mark.

Directives:

<b>Directive 2004/108/EC</b>	<b>Electromagnetic Compatibility</b>
<b>Directive 2006/95/EC</b>	<b>"Low voltage Directive" (Power Supply)</b>
<b>Directive 1999/5/EC</b>	<b>"R&amp;TTE on radio equipment and telecommunications terminal equipment"</b>
<b>Directive 2002/96/EC</b>	<b>Waste electrical and electronic equipment; WEEE</b> (As applicable)

Standards:

<b>Emission:</b>	<b>EN 61000-6-3; Electro magnetic Compatibility</b> <b>Generic standards - Emission</b>
<b>Immunity:</b>	<b>EN 61000-6-2; Electro magnetic Compatibility</b> <b>Generic standards - Immunity</b>
<b>Safety (Power Supply):</b>	<b>EN 60950; (or other)</b> <b>Safety of information technology equipment</b>
<b>Radio</b>	<b>EN 300328</b> <b>EN 301489</b>

System: **FLIR EXX series**

FLIR Systems AB  
Quality Assurance



Björn Svensson  
Director