

P/N: 55904-7522

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Document identity

Publ. No.: 55904-7522

Release: -

Commit: 15419

Language: en-US

Modified: 2014-06-19

Formatted: 2014-06-22

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General description

The FLIR T640bx is designed for the expert requiring the highest performance and the latest technology available. The camera combines excellent ergonomics and a walk-up-and-use interface with superior image quality of 640 × 480 pixel IR resolution. The T640bx is flexible and can meet your every need, and has extensive communication options.

Benefits:

- Highest performance with the latest technology: The T640bx camera is equipped with the innovative 'Multi Spectral Dynamic Imaging (MSX)' feature, which produces an image richer in detail than ever before. Continuous auto-focus makes the T640bx the first fully automatic IR camera on the market.
- Ground-breaking efficiency: You can highlight objects of interest, on both the IR and the visual images, by sketching or adding pre-defined stamps directly on the camera's capacitive touch screen. The user interface is intuitive and logical for effective operation. Auto-orientation allows you to tilt between landscape and portrait views.
- Extensive communication options: The Wi-Fi connectivity of the T640bx allows you to connect to smart phones or tablet PCs for the wireless transfer of images or the remote control of the camera. The Bluetooth-based Meterlink function transfers readings from external measurement instruments to the IR image.

Imaging and optical data

IR resolution	640 × 480 pixels
Thermal sensitivity/NETD	<35 mK @ +30°C (+86°F)
Field of view (FOV)	25° × 19°
Minimum focus distance	0.25 m (0.82 ft.)
Focal length	25 mm (0.97 in.)
Spatial resolution (IFOV)	0.68 mrad
Lens identification	Automatic
F-number	1.0
Image frequency	30 Hz
Focus	Continuous, one shot or manual
Digital zoom	1–8× continuous
Digital image enhancement	Adaptive digital noise reduction

Detector data

Detector type	Focal Plane Array (FPA), uncooled microbolometer
Spectral range	7.5–14 μm
Detector pitch	17 μm

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Image presentation	
Display	Built-in touch screen, 4.3 in. wide screen LCD, 800 × 480 pixels
Viewfinder	Built-in 800 × 480 pixels
Automatic image adjustment	Continuous, histogram based
Automatic image adjustment, type	Standard or histogram based from image content
Manual image adjustment	Linear based; Possible to adjust level/span/max/min
Image presentation modes	
Infrared image	Full color IR image
Visual image	Full color visual image
Multi Spectral Dynamic Imaging (MSX)	Thermal image with enhanced detail presentation
Picture in Picture	Resizable and movable IR area on visual image
Measurement	
Object temperature range	-40°C to +150°C (-40°F to +302°F) +100°C to +650°C (+212°F to +1202°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading
Measurement analysis	
Spotmeter	10
Area	5 areas (boxes or circles) with max./min./average
Profile	1 line profile with max/min temp
Automatic hot/cold detection	Auto hot or cold spotmeter markers within area and profile
Measurement presets	No measurements, Center spot, Hot spot, Cold spot, User preset 1, User preset 2
Difference temperature	Delta temperature between measurement functions or reference temperature
Reference temperature	Manually set using difference temperature
Atmospheric transmission correction	Automatic, based on inputs for distance, atmospheric temperature and relative humidity
Optics transmission correction	Automatic, based on signals from internal sensors
Emissivity correction	Variable from 0.01 to 1.0 or selected from materials list
Emissivity table	Emissivity table of predefined materials
Reflected apparent temperature correction	Automatic, based on input of reflected temperature
External optics/windows correction	Automatic, based on inputs of window transmission and temperature
Alarm	
Measurement function alarm	Audible/visual alarms (above/below) on any selected measurement function
Humidity alarm	1 humidity alarm, including dew point alarm
Insulation alarm	1 insulation alarm

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Set-up	
Set-up commands	Define user presets, Save options, Programmable button, Reset options, Set up camera, Wi-Fi, GPS & compass, Bluetooth, Language, Time & units, Camera information
Service functions	
Camera software update	Use PC software FLIR Tools
Storage of images	
Storage media	Removable memory SD card
Image storage mode	Simultaneous storage of thermal and digital photo in same JPEG. Optional to store digital photo as separate JPEG.
File formats	Standard JPEG, measurement data included
File formats, visual	Standard JPEG, automatically associated with corresponding thermal image
Image annotations	
Voice	60 seconds (via Bluetooth) stored with the image
Text	Add table. Select between predefined templates or create your own in FLIR Tools
Image description	Add short note (stored in JPEG exif tag)
Sketch	Draw on thermal/digital photo or add predefined stamps
Meterlink	Wireless connection (Bluetooth®) to: FLIR meters with MeterLink
Report generation	<ul style="list-style-type: none"> Instant Report (*.pdf file) in camera Separate PC software with extensive report generation
Geographic Information System	
GPS	Location data automatically added to every image from built-in GPS
Compass	Camera direction automatically added to every image
Video recording in camera	
Non-radiometric IR-video recording	MPEG-4 to memory card
Visual video recording	MPEG-4 to memory card
Video streaming	
Radiometric IR-video streaming	Full dynamic to PC using USB or to mobile devices using Wi-Fi.
Non-radiometric IR-video streaming	MPEG-4 using Wi-Fi Uncompressed colorized video using USB
Visual video streaming	MPEG-4 using Wi-Fi Uncompressed colorized video using USB

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Digital camera	
Built-in digital camera	5 Mpixel with LED light
Digital camera, FOV	Adapts to the IR lens
Video lamp	Built-in LED light
Laser pointer	
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, 1 mW, 635 nm (red)
Data communication interfaces	
Bluetooth	Communication with headset and external sensors
Wi-Fi	Peer to peer (ad-hoc) or infrastructure (network)
SD Card	One card slot for removable SD memory cards
Audio	Microphone headset via Bluetooth for voice annotation of images
USB	
USB	<ul style="list-style-type: none"> • USB-A: Connect external USB device • USB Mini-B: Data transfer to and from PC / Uncompressed colorized video
USB, standard	USB 2.0 High Speed
USB, connector type	<ul style="list-style-type: none"> • USB-A connector • USB Mini-B connector
Composite video	
Video out	Digital Video Output (DVI)
Video, connector type	HDMI compatible
Radio	
Wi-Fi	Standard: 802.11 b/g Frequency range: 2412–2462 MHz Max output power: 15 dBm
Bluetooth	Frequency range: 2402–2480 MHz
Antenna	Internal
Power system	
Battery type	Rechargeable Li Ion battery
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 2-bay charger
Charging time	2.5 h to 90 % capacity, charging status indicated by LED's
Charging temperature	0°C to +45°C (+32°F to +113°F)

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Power system	
External power operation	AC adapter 90–260 VAC, 50/60 Hz or 12 V from a vehicle (cable with standard plug, optional)
Power management	Automatic shutdown and sleep mode (user selectable)
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"> • 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) • ICES-003
Radio spectrum	<ul style="list-style-type: none"> • ETSI EN 300 328 • FCC Part 15.247 • RSS-210
Encapsulation	IP 54 (IEC 60529)
Bump	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)
Safety	EN/UL/CSA/PSE 60950-1
Physical data	
Weight	1.3 kg (2.87 lb.)
Size (L × W × H)	143 × 195 × 95 mm (5.6 × 7.7 × 3.7 in.)
Camera size, excl. lens (L × W × H)	143 × 195 × 95 mm (5.6 × 7.7 × 3.7 in.)
Tripod mounting	UNC ¼"-20
Housing material	Magnesium

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Shipping information	
<ul style="list-style-type: none"> • Infrared camera with lens • Battery (2 ea.) • Battery charger • Bluetooth headset • Calibration certificate • FLIR Tools download card • User documentation CD-ROM • Printed documentation • HDMI-DVI cable • HDMI-HDMI cable • Hard transport case • Large eyecap • Lens cap • Memory card • Neck strap • Power supply, incl. multi-plugs • Tripod adapter • USB cable, Std A to Mini-B 	
EAN-13	7332558007068
UPC-12	845188007409

Supplies & accessories:

- T197914; IR lens, f=41.3 mm (15°) with case
- T197922; IR lens, f=24.6 mm (25°) with case
- T197915; IR lens, f=13.1 mm (45°) with case
- T198059; Close-up IR lens, 2.9× (50 µm) with case
- T198060; Close-up IR lens, 5.8× (100 µm) with case
- T198166; IR lens, f=88.9 mm (7°) with case and support for T6xx
- T198065; IR lens, f=6.5 mm (80°) with case
- T198066; Close-up IR lens, 1.5× (25 µm) with case
- T197896; High temp option +300°C to 2000°C (+572°F to 3632°F) for FLIR A6xxsc and T6xx
- T910814; Power supply, incl. multi plugs
- T198126; Battery charger, incl. power supply with multi plugs T6xx
- T198506; Li-Ion Battery pack 3.7V 29Wh
- T911230ACC; Memory card SDHC 4 GB
- 1910423; USB cable Std A <-> Mini-B
- T198509; Cigarette lighter adapter kit, 12 VDC, 1.2 m/3.9 ft.
- T910930ACC; HDMI type C to DVI cable 1.5 m
- T910891ACC; HDMI type C to HDMI type A cable 1.5 m
- T198625ACC; Hard transport case for T6xx series
- T198495; Pouch for FLIR T6xx and T4xx series
- T198497; Large eyecup
- T198498; Tripod Adapter
- T198496; Stylus pen
- T198499; Neck strap
- T197771ACC; Bluetooth Headset
- T910972; EX845: Clamp meter + IR therm TRMS 1000A AC/DC
- T910973; MO297: Moisture meter, pinless with memory
- T911093; Tool belt
- T198586; FLIR Reporter Professional (license only)
- T198584; FLIR Tools
- T198583; FLIR Tools+ (license only)
- DSW-10000; FLIR IR Camera Player
- APP-10002; FLIR Tools Mobile (Android Application)



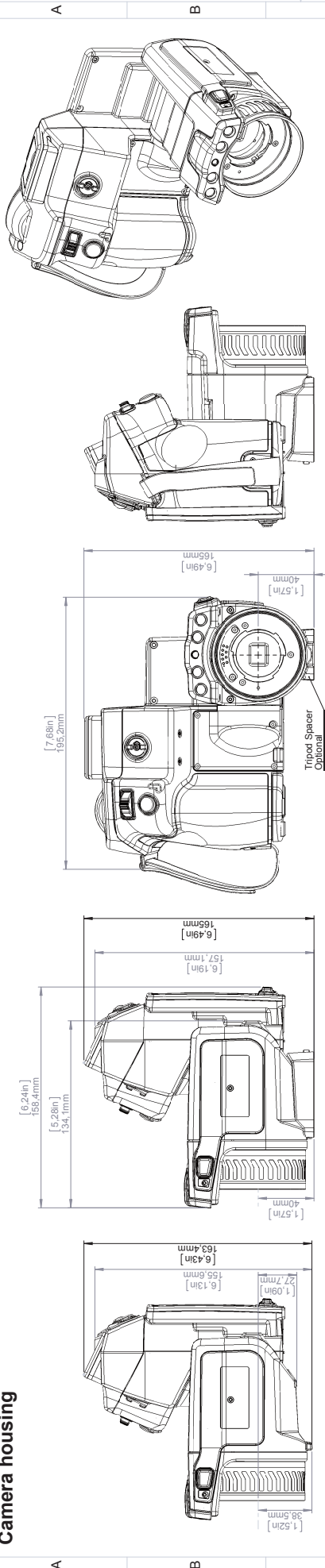
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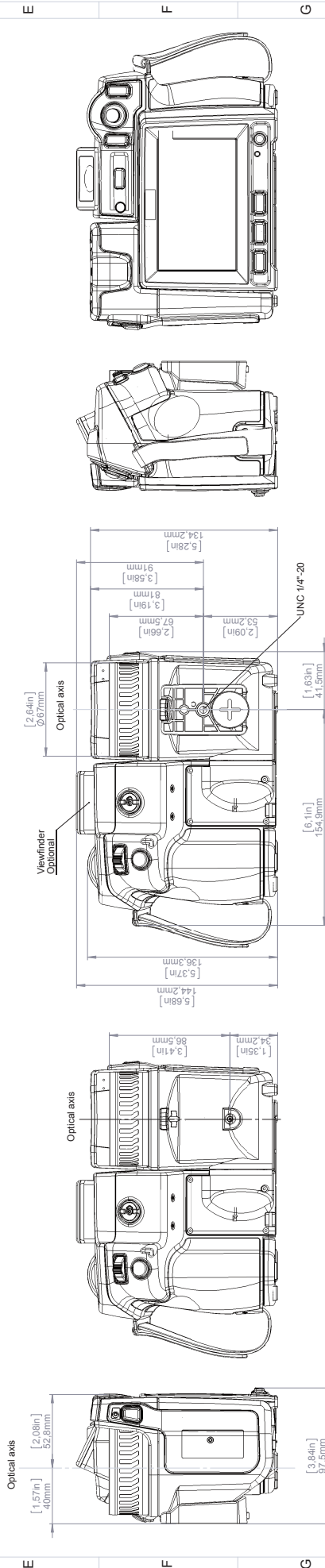
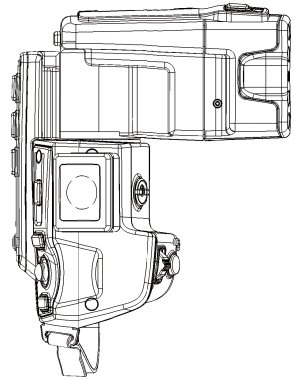
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- APP-10004; FLIR Tools (MacOS Application)
- T127597L5; FLIR ResearchIR 3 (license only), 5 user licenses
- T127597L10; FLIR ResearchIR 3 (license only), 10 user licenses
- T127598L5; FLIR ResearchIR 3 Max (license only), 5 user licenses
- T127598L10; FLIR ResearchIR 3 Max (license only), 10 user licenses
- T198696; FLIR ResearchIR Max 4
- T198697; FLIR ResearchIR Max + HSDR 4
- T198579; FLIR ResearchIR 3 (CD)
- T198578; FLIR ResearchIR 3 (license only)
- T198575; FLIR ResearchIR 3 Max (CD)
- T198574; FLIR ResearchIR 3 Max (license only)
- T198292; Upgrade previous version to FLIR ResearchIR 3
- T198291; Upgrade previous version to FLIR ResearchIR 3 Max
- T198290; Upgrade FLIR ResearchIR 3 to FLIR ResearchIR 3 Max

Camera housing



Tripod Spacer
Optional




Viewfinder
Optional

Optical axis

Optical axis

UNC 1/4"-20



 Drawn by: R&D Thermography

 Checked: JOTA

 Model: 2014-02-18

 Description:

 Sheet: 1(9)

 Scale: 1:2

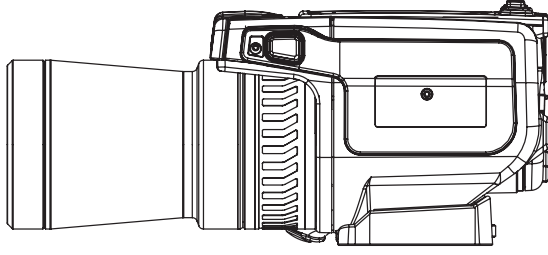
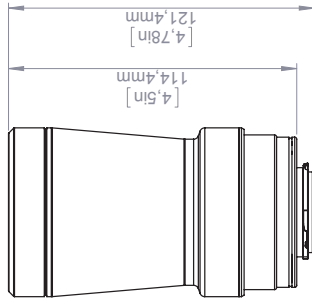
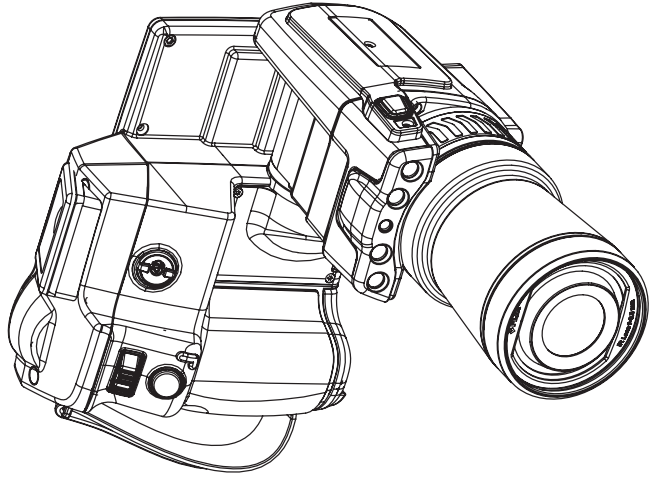
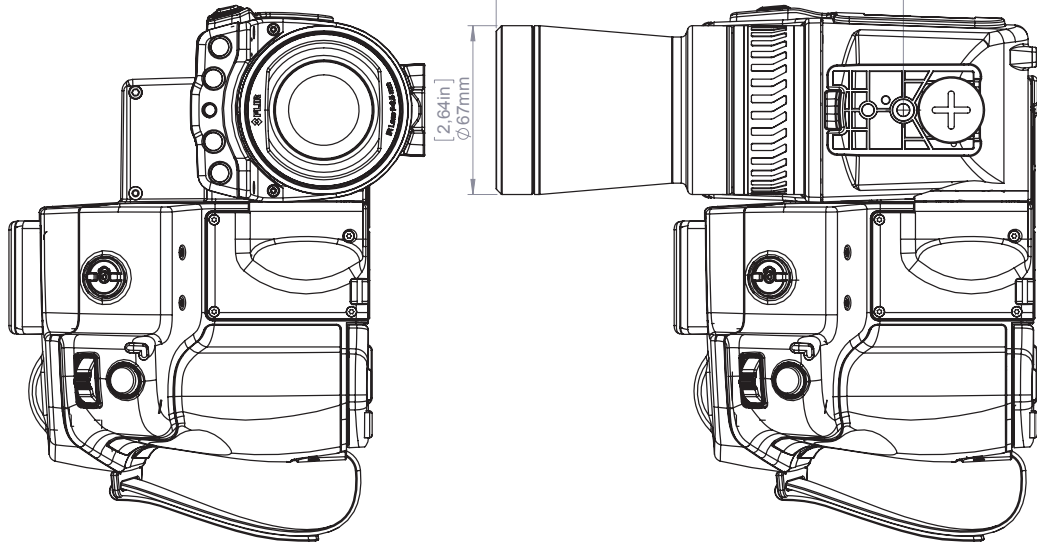
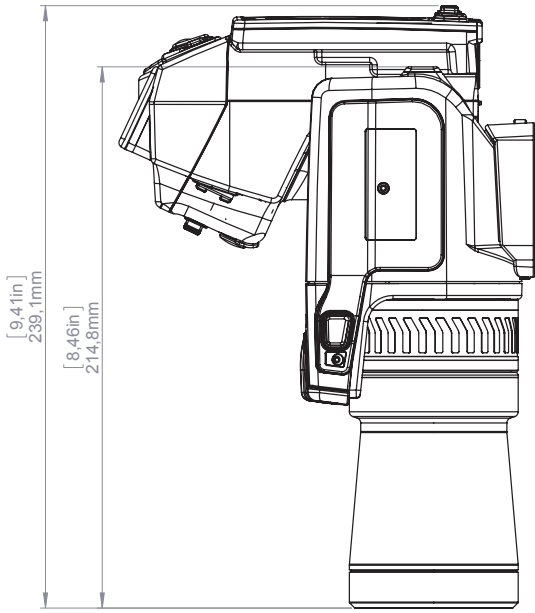
 Drawing No.: T128123

 Size: A

Basic dimensions FLIR T6xx mtk II

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Camera with Lens IR f=6,5 mm (80°)

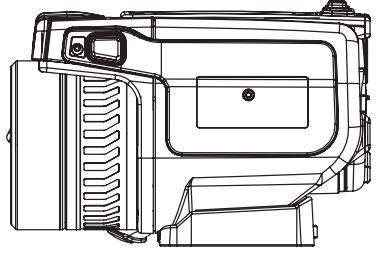
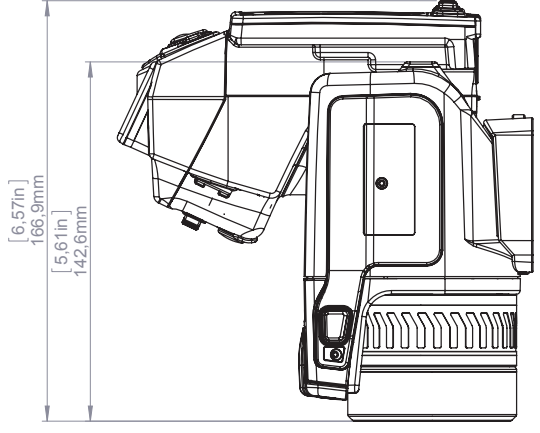
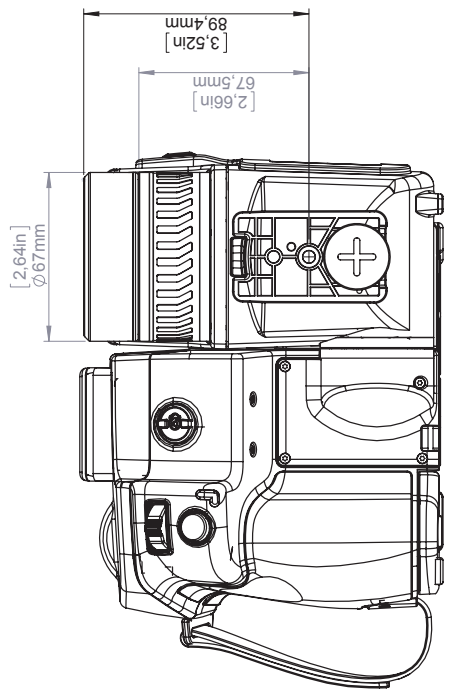
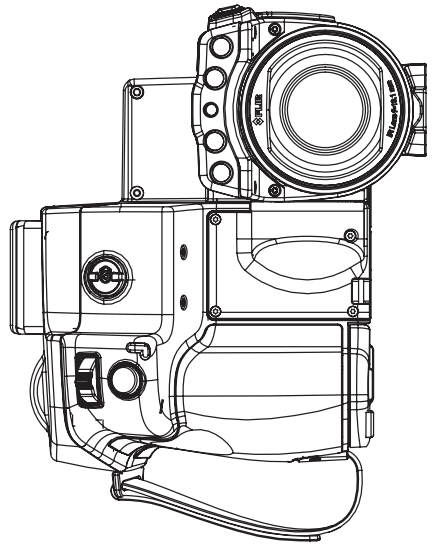
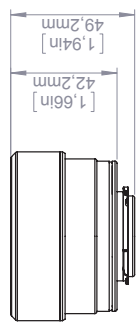
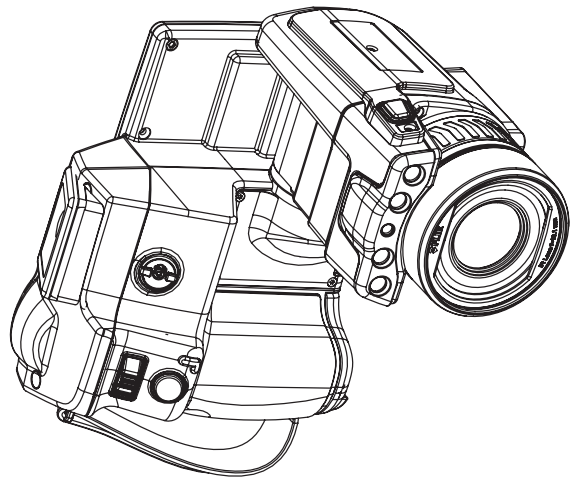


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Modified 2014-02-18		Check JOTA	Drawn by R&D Thermography	Size A3	Sheet 2(9)		Drawing No. T128123
Denomination		Basic dimensions FLIR T6xx mk II		Scale 1:2	Size A		

For additional dimensions see page 1

Camera with Lens IR f=13,1 mm (45°)



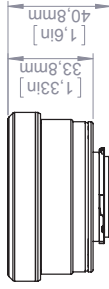
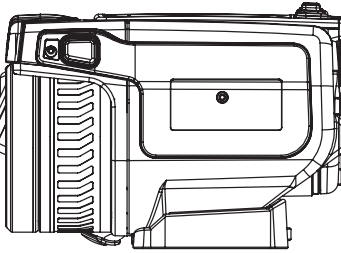
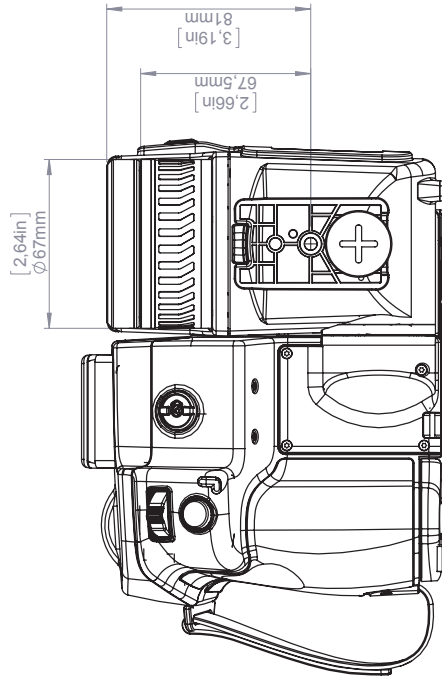
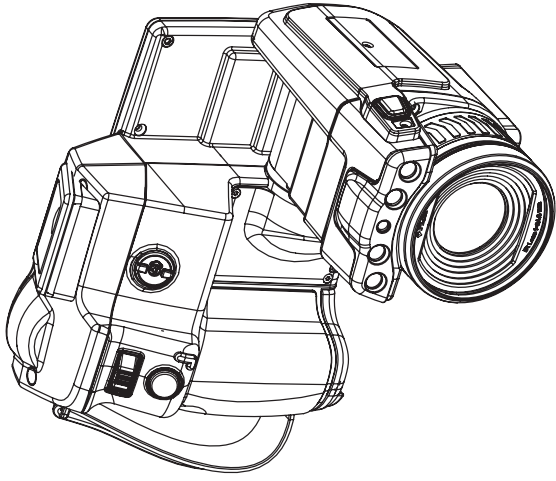
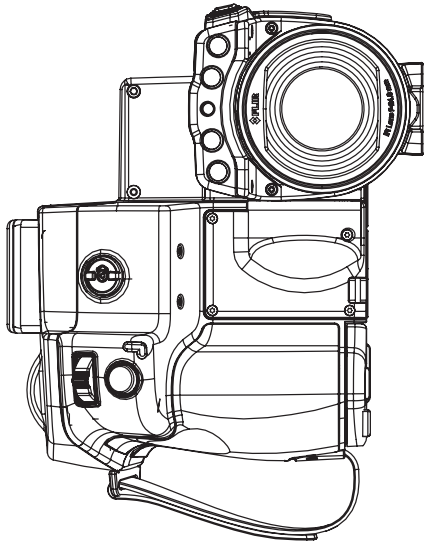
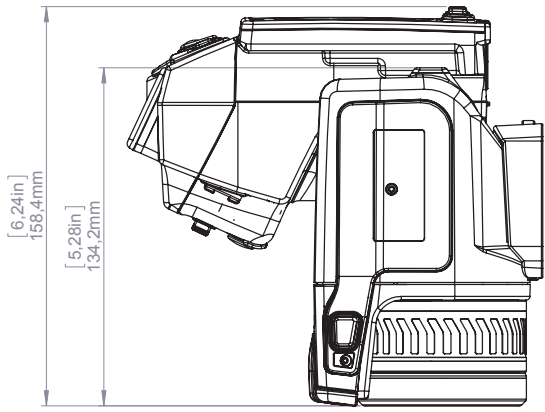
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Denomination Basic dimensions FLIR T6xx mk II			Scale 1:2	Drawing No. T128123
				Size A



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Camera with Lens IR f=24,6 mm (25°)

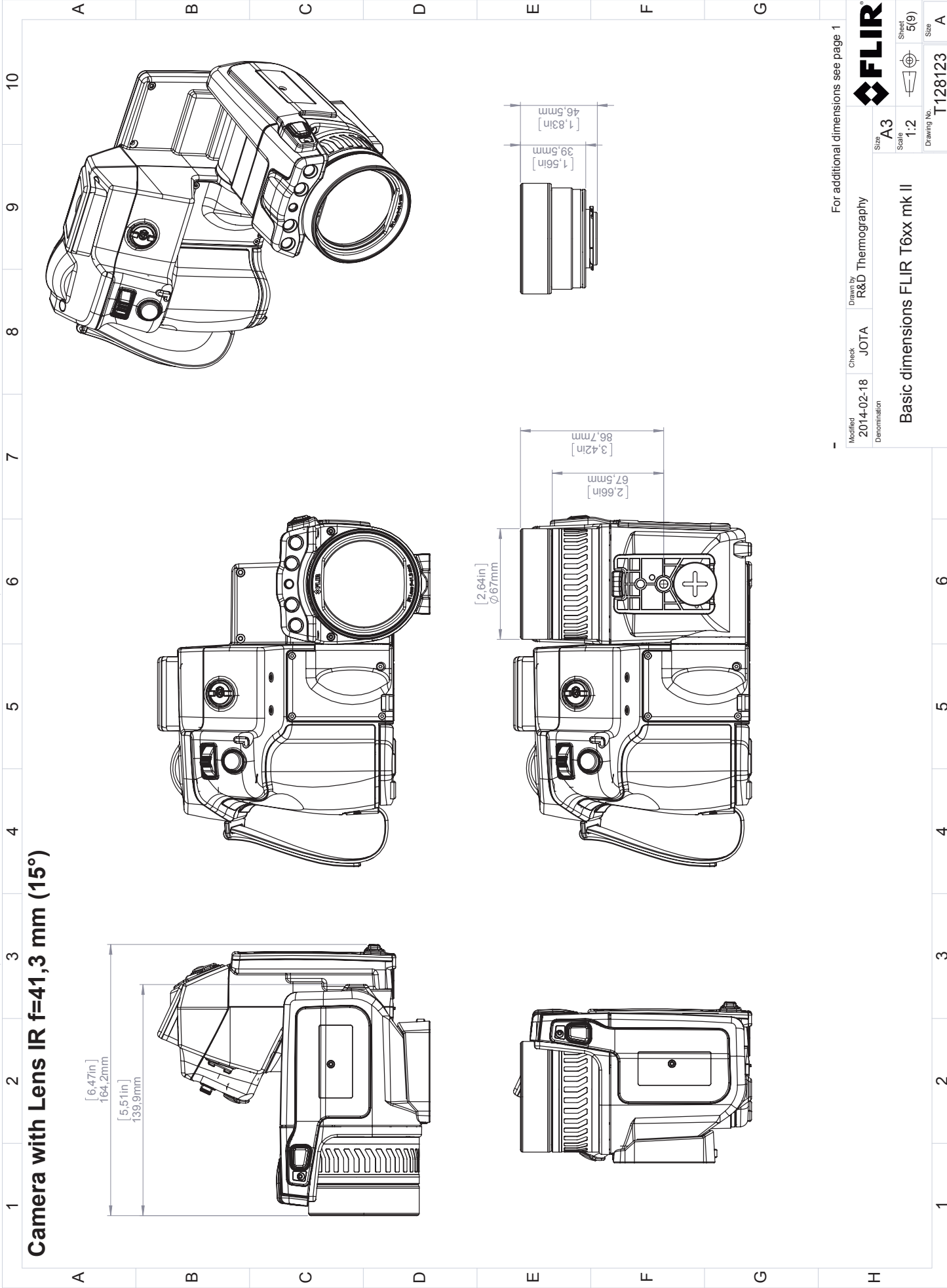


For additional dimensions see page 1

Modified 2014-02-18	Check JOTA	Drawn by R&D Thermography	Size A3	Sheet 4(9)
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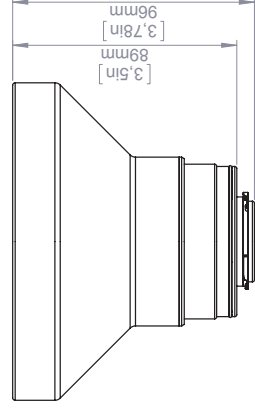
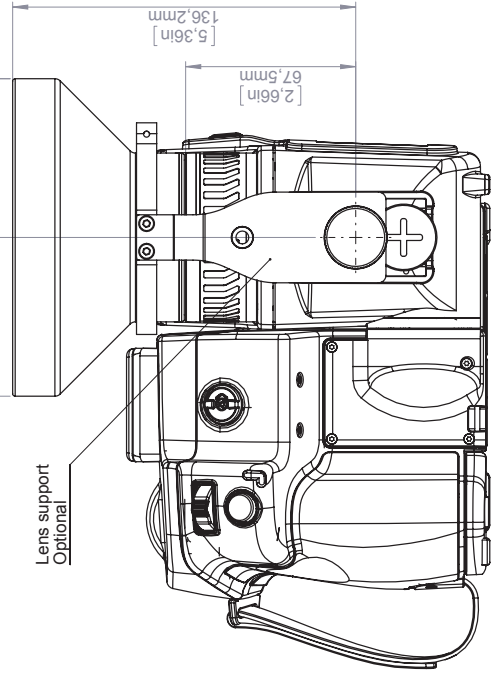
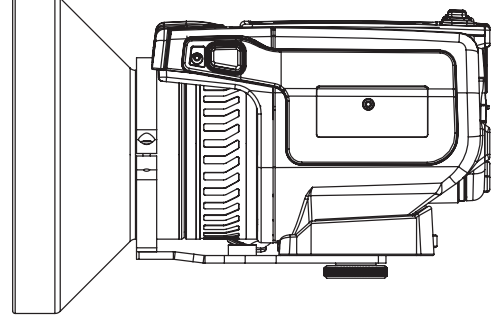
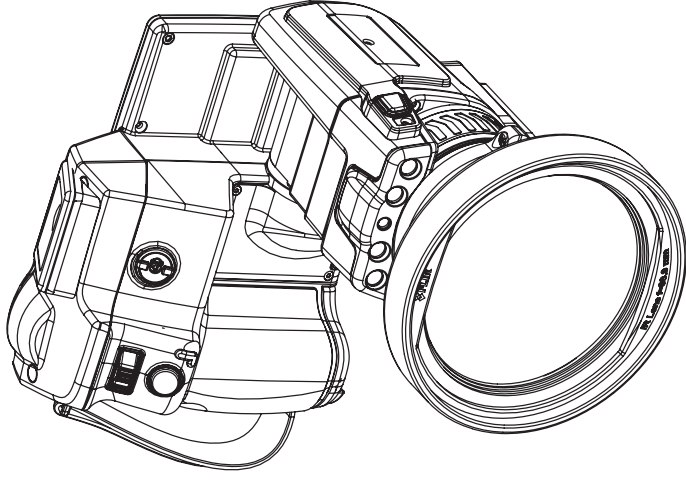
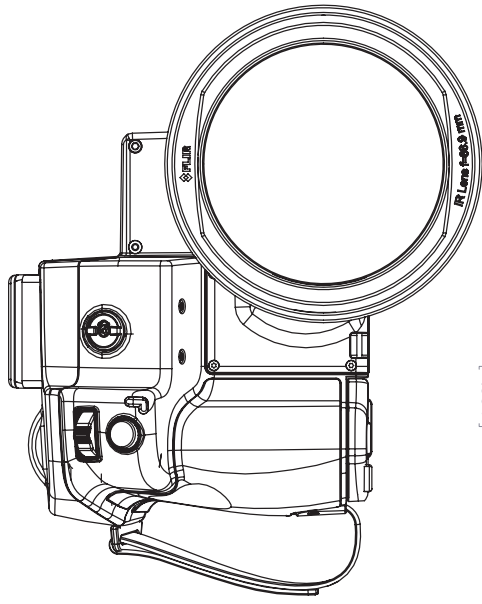
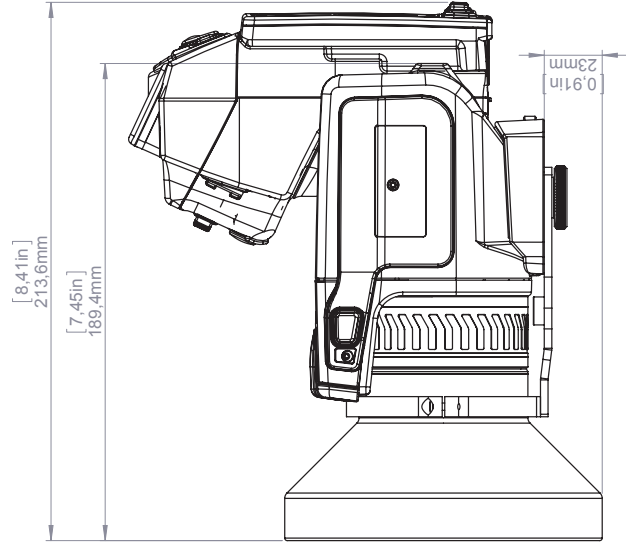
Camera with Lens IR f=41,3 mm (15°)



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Modified	Check	Drawn by	Size	For additional dimensions see page 1	
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Denomination			Scale	Sheet	Size
Basic dimensions FLIR T6xx mk II			1:2	5(9)	A
			Drawing No.	T128123	

Camera with Lens IR f=88,9 mm (7°) incl support

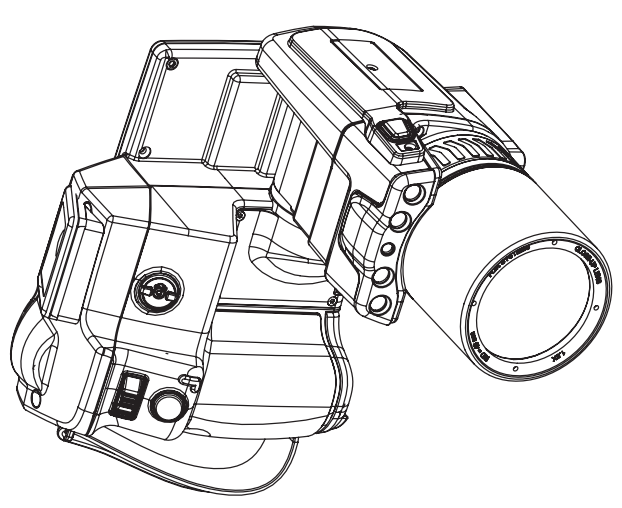
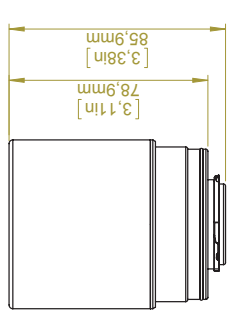
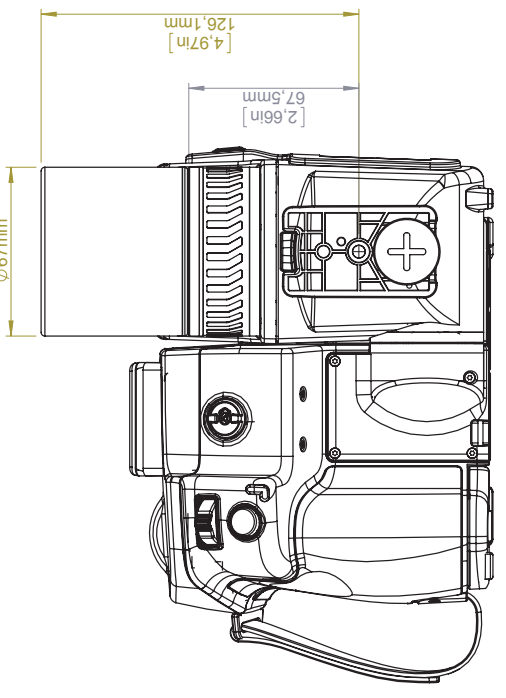
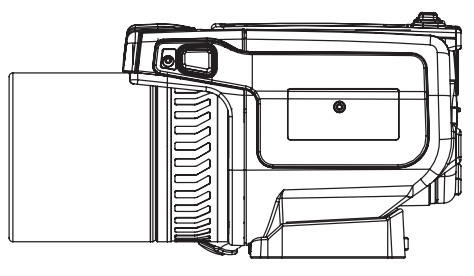
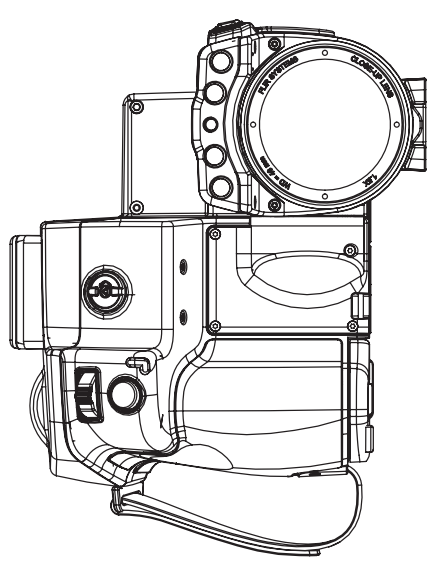
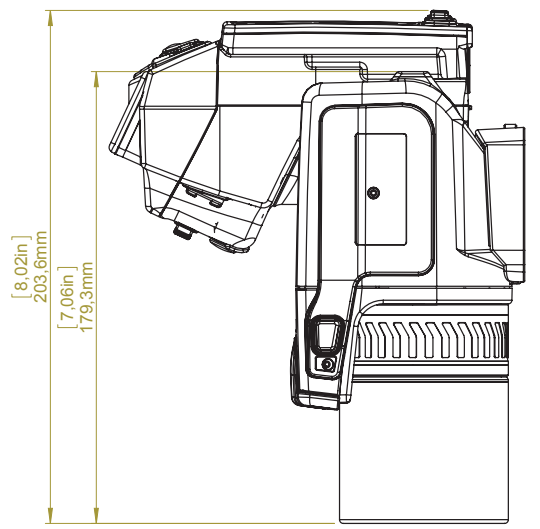


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Denomination	Basic dimensions FLIR T6xx mk II		Scale 1:2	Drawing No. T128123	

For additional dimensions see page 1

Camera with Close-up lens 1,5X (25 µm)

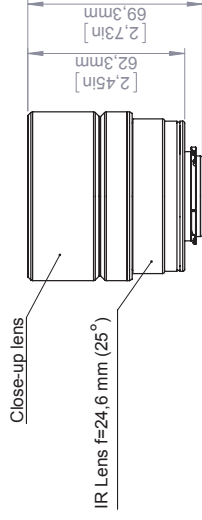
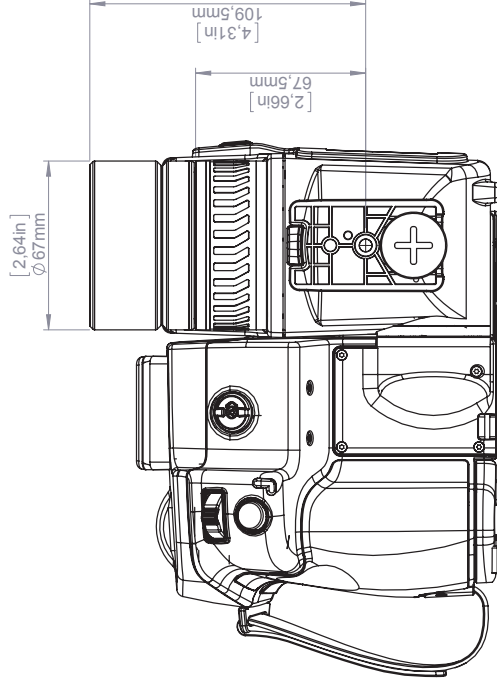
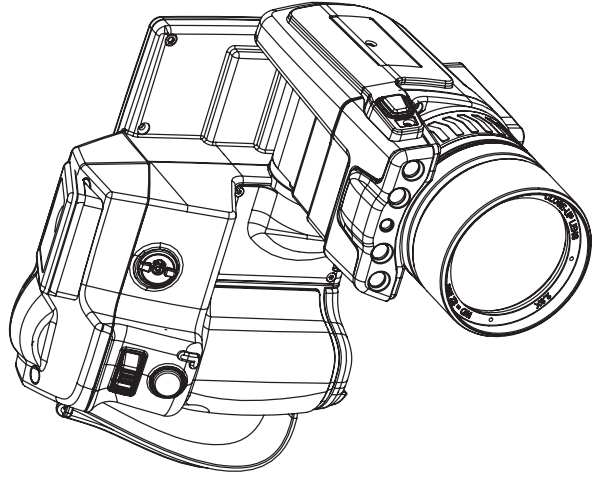
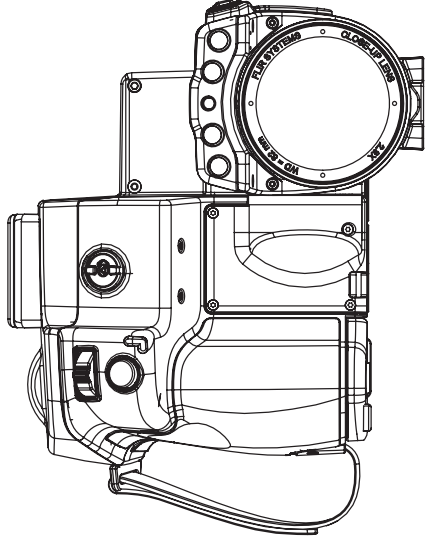
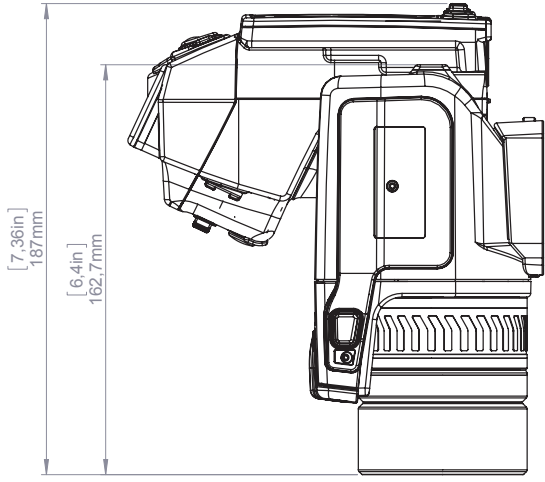


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Modified 2014-02-18	Check JOTA	Drawn by R&D Thermography	Size A3	Sheet 7(9)	
Denomination Basic dimensions FLIR T6xx mk II			Scale 1:2	Drawing No. T128123	
					Size A

For additional dimensions see page 1

Camera with Close-up lens 2,9X (50 µm)



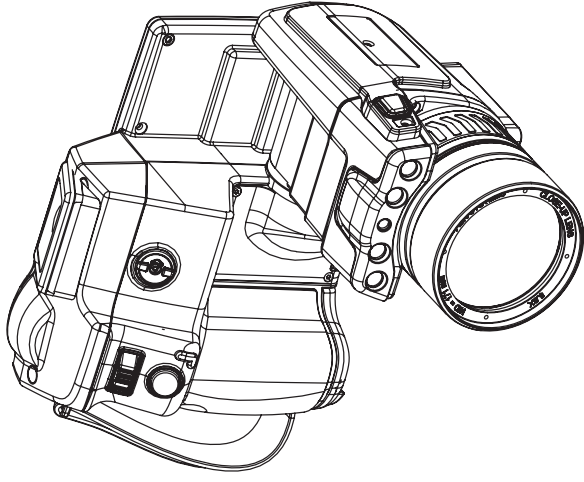
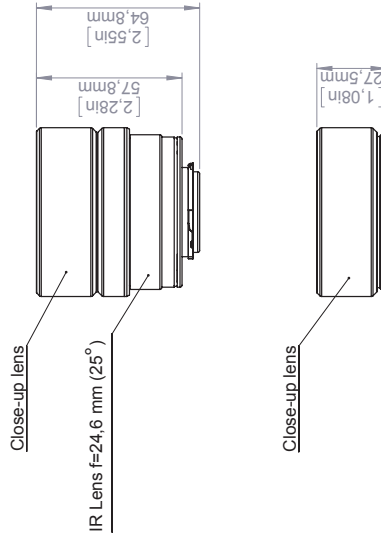
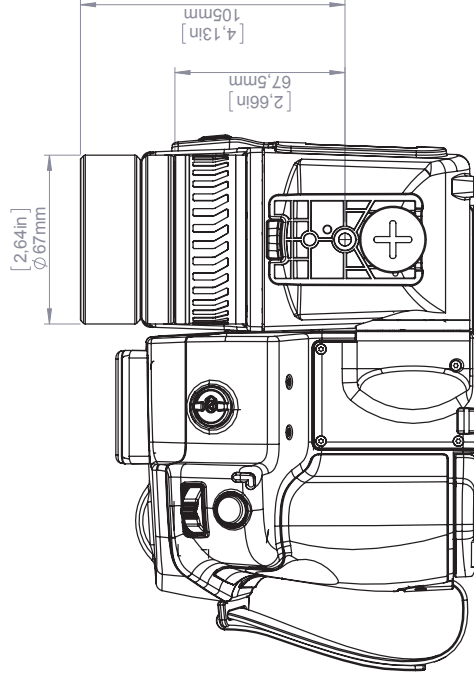
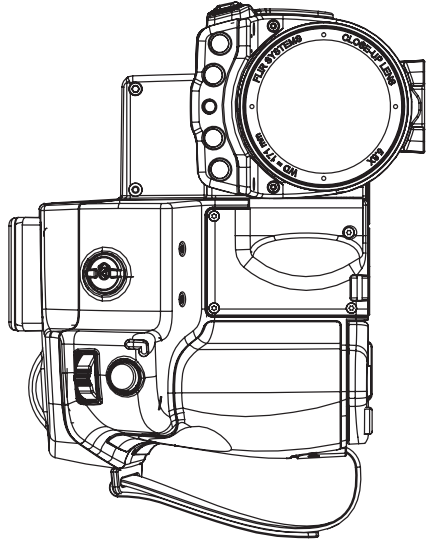
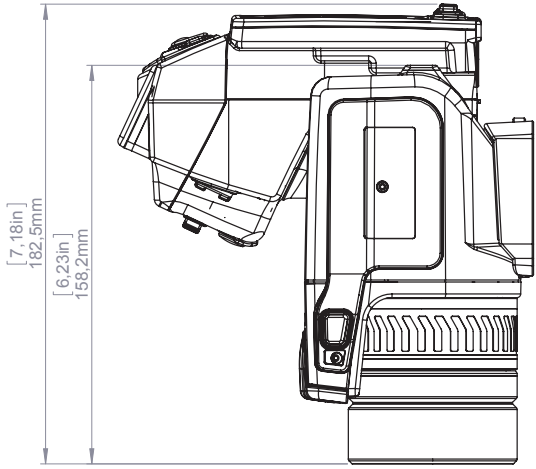
For additional dimensions see page 1

Modified 2014-02-18	Check JOTA	Drawn by R&D Thermography	Size A3	Sheet 8(9)
Denomination Basic dimensions FLIR T6xx mk II			Scale 1:2	Drawing No. T128123
				Size A



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Camera with Close-up lens 5,8X (100 µm)



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For additional dimensions see page 1

Modified 2014-02-18	Check JOTA	Drawn by R&D Thermography	Size A3	Sheet 9(9)
Denomination Basic dimensions FLIR T6xx mk II			Scale 1:2	Drawing No. T128123
				Size A

