

P/N: 55904-7422

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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) | 15° × 11° |
| Minimum focus distance | 0.5 m (1.64 ft.) |
| Focal length | 41 mm (1.63 in.) |
| Spatial resolution (IFOV) | 0.41 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 | 1.33 kg (2.93 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 |

| 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 | 7332558007051 |

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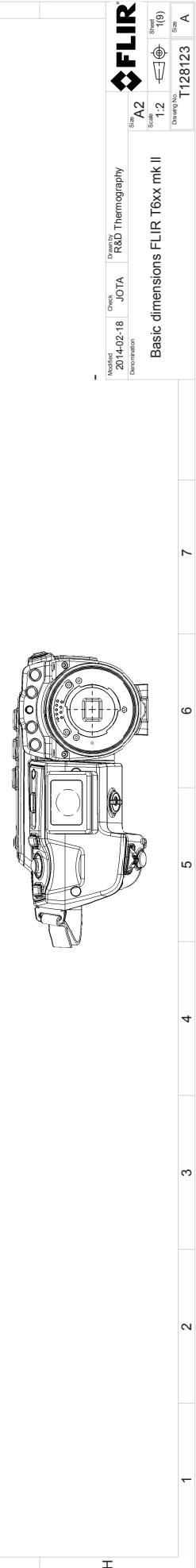
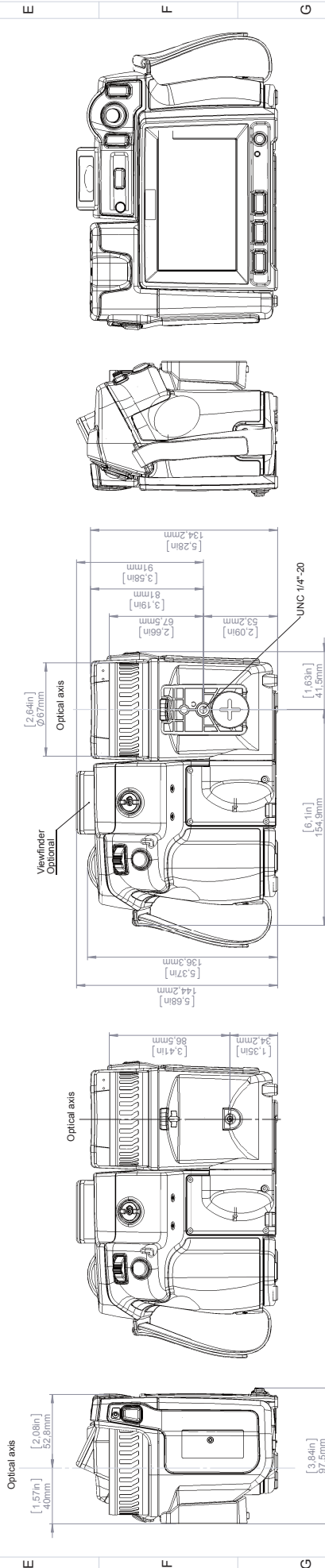
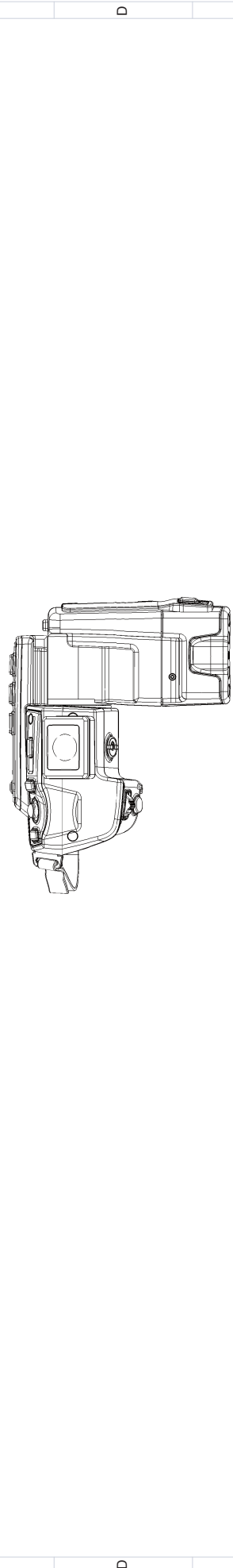
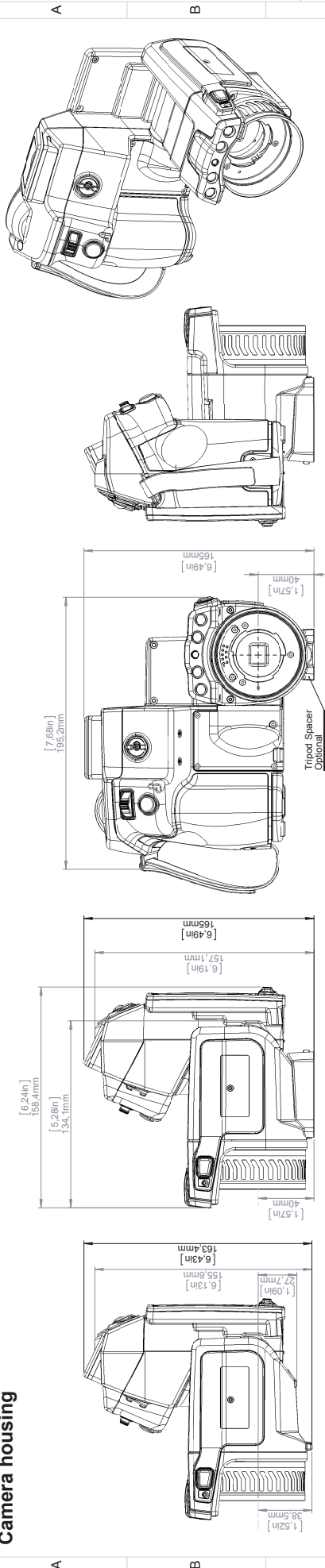
#55904-7422; r. -/15419; en-US


| Shipping information | |
|----------------------|--------------|
| UPC-12 | 845188007393 |
| Country of origin | Sweden |

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, 2.9x (50 µm) with case
- T198060; Close-up IR lens, 5.8x (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, 1.5x (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)
- 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

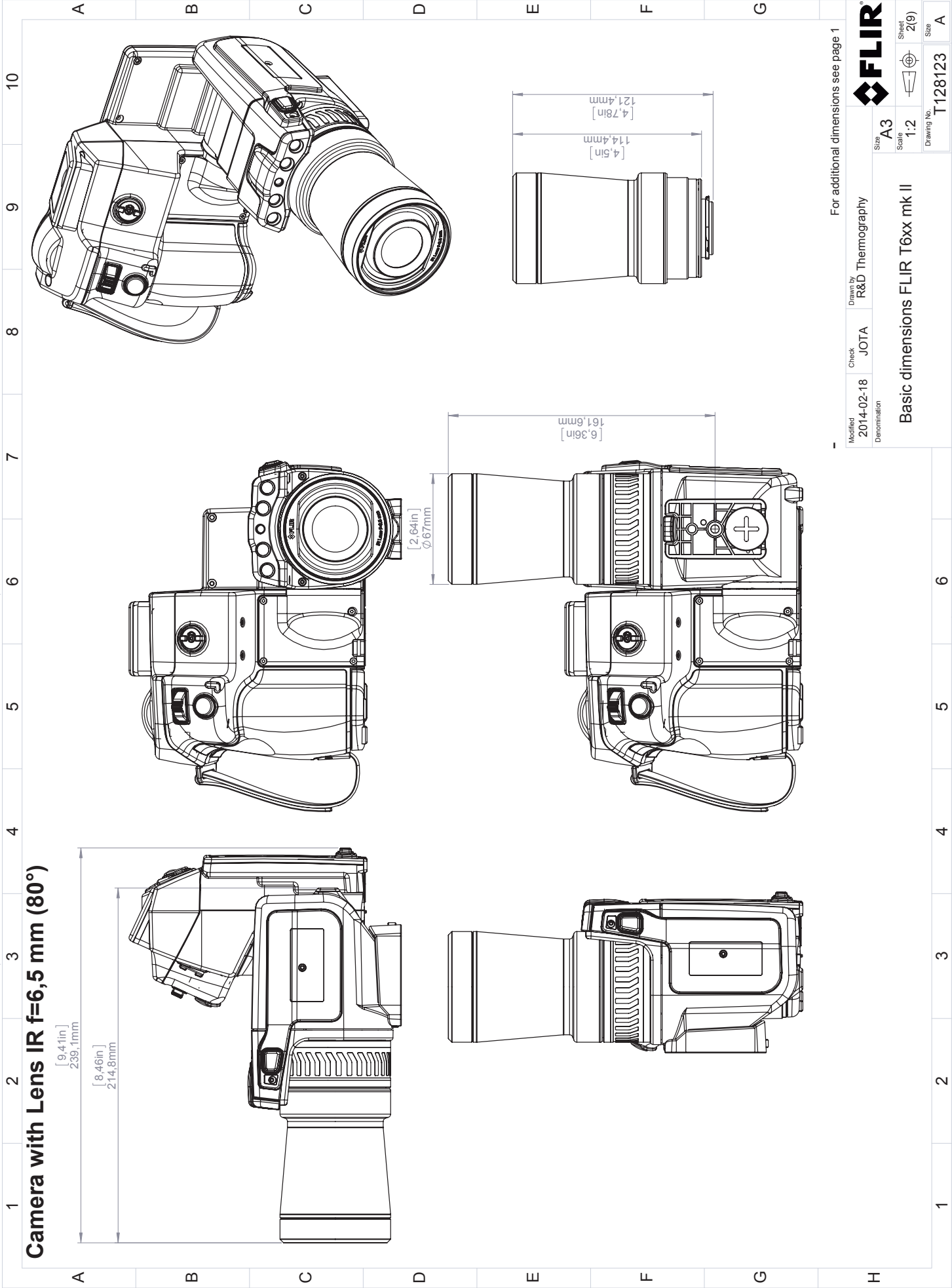
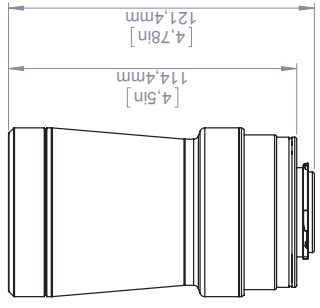
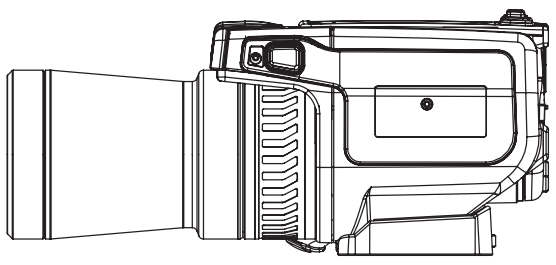
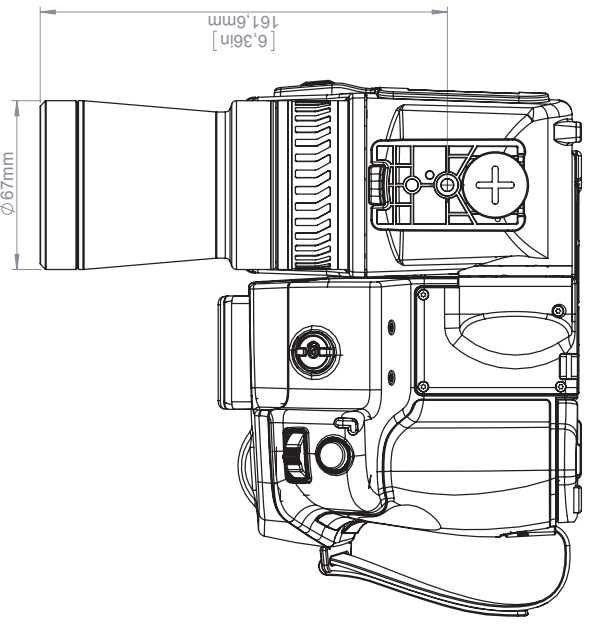
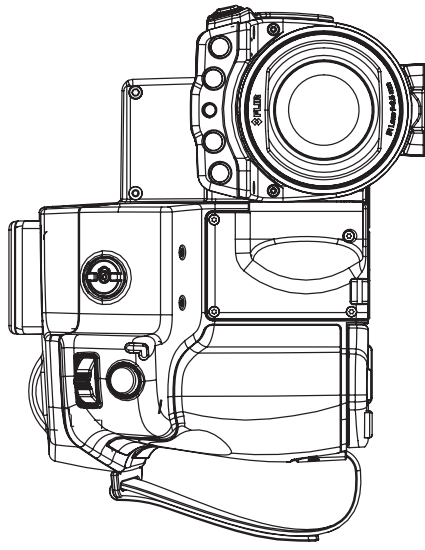
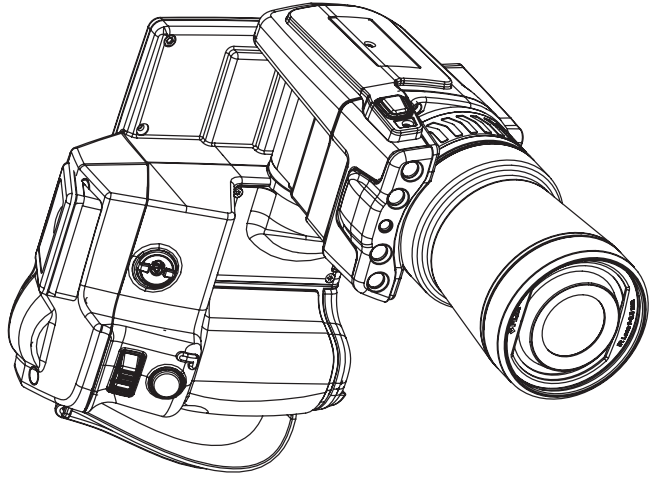
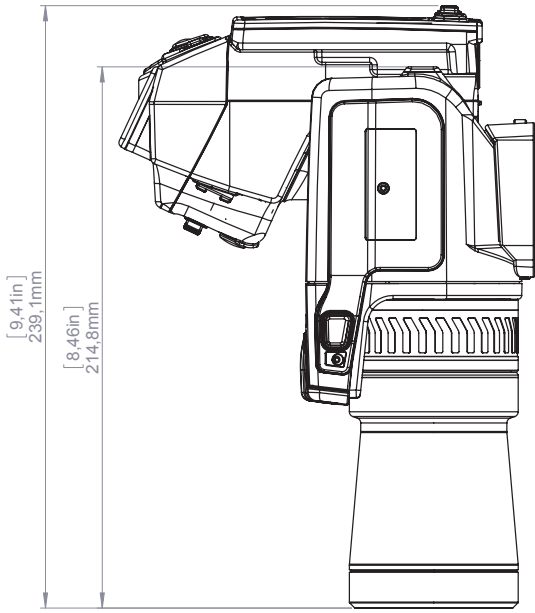



FLIR
 Model: 2014-02-18
 Check: JOTA
 Drawn by: R&D Thermography
 Scale: 1:2
 Sheet: 1(9)
 Drawing No.: T128123
 Size: A

Basic dimensions FLIR T6xx mk II

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Camera with Lens IR f=6,5 mm (80°)

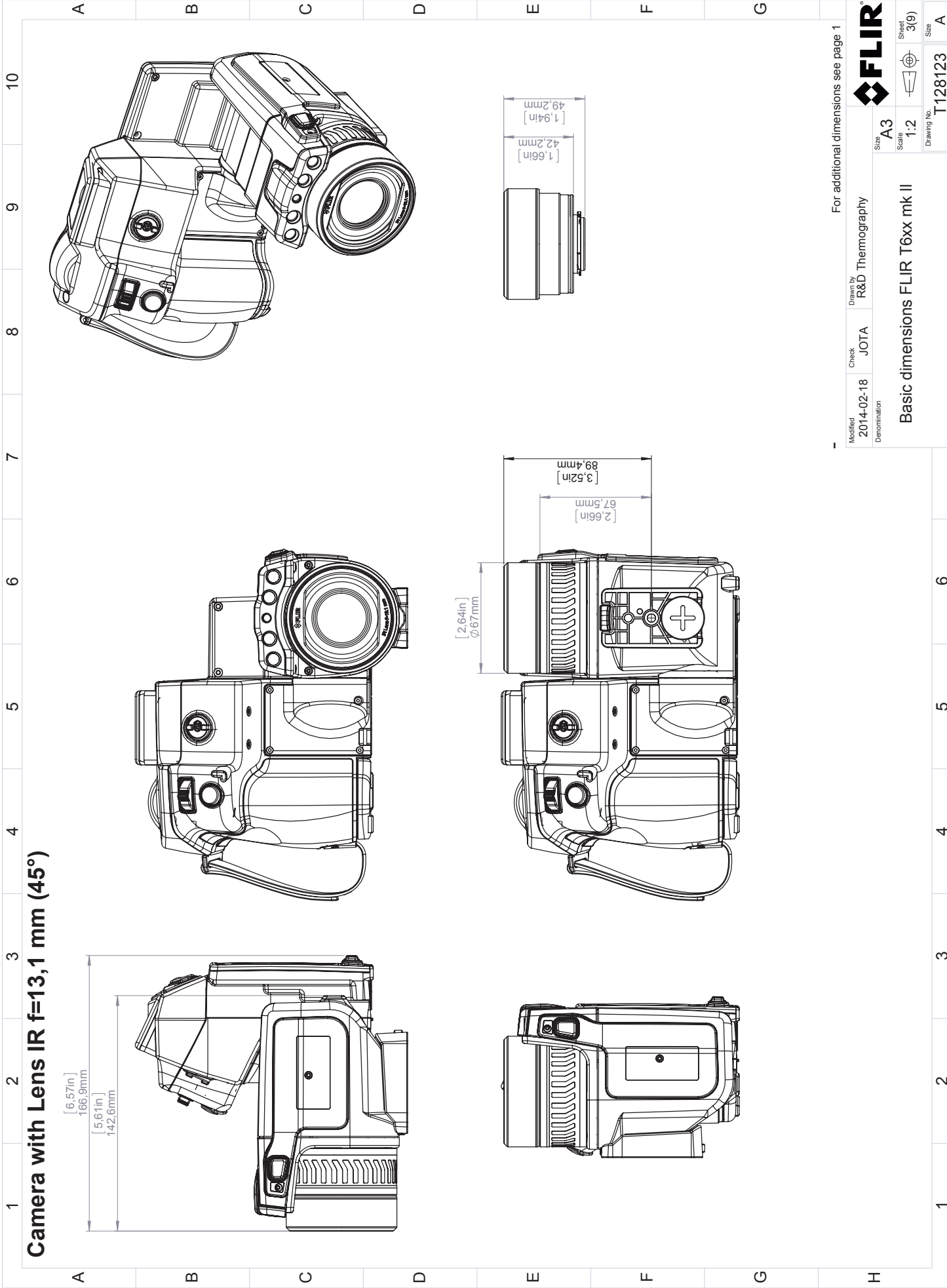


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| Denomination | | Basic dimensions FLIR T6xx mk II | | Scale 1:2 | Drawing No. T128123 | |
| | | | | | | Size A |

For additional dimensions see page 1

Camera with Lens IR f=13,1 mm (45°)

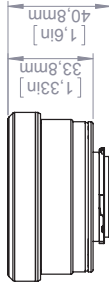
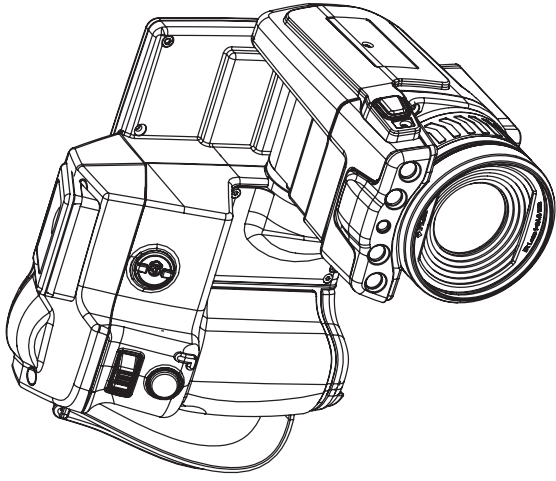
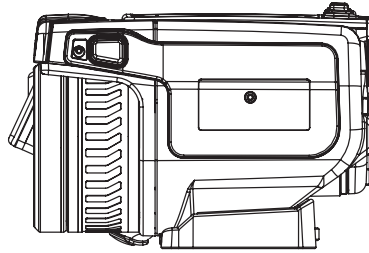
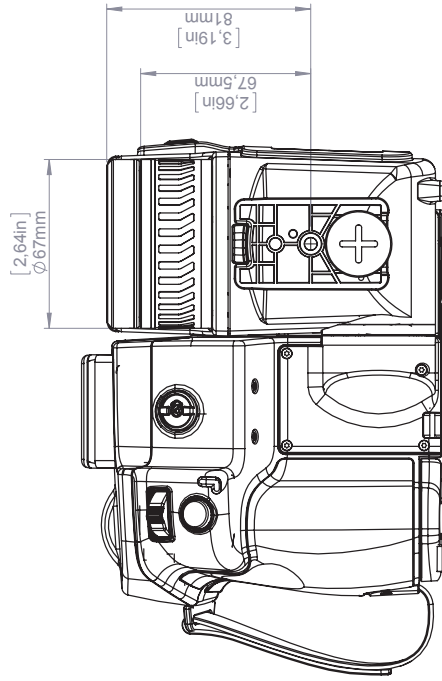
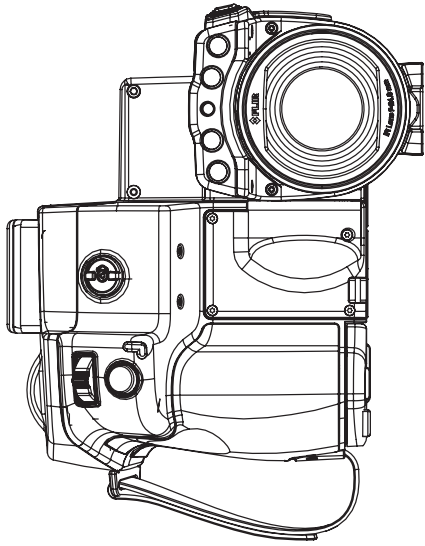
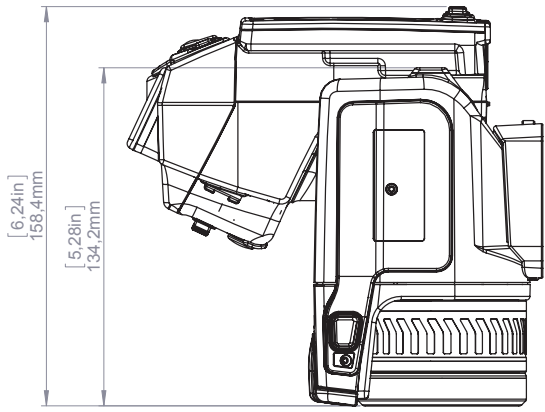


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| Denomination | | Basic dimensions FLIR T6xx mk II | | Scale 1:2 | Drawing No. T128123 | |
| | | | | | | Size A |

For additional dimensions see page 1

Camera with Lens IR f=24,6 mm (25°)

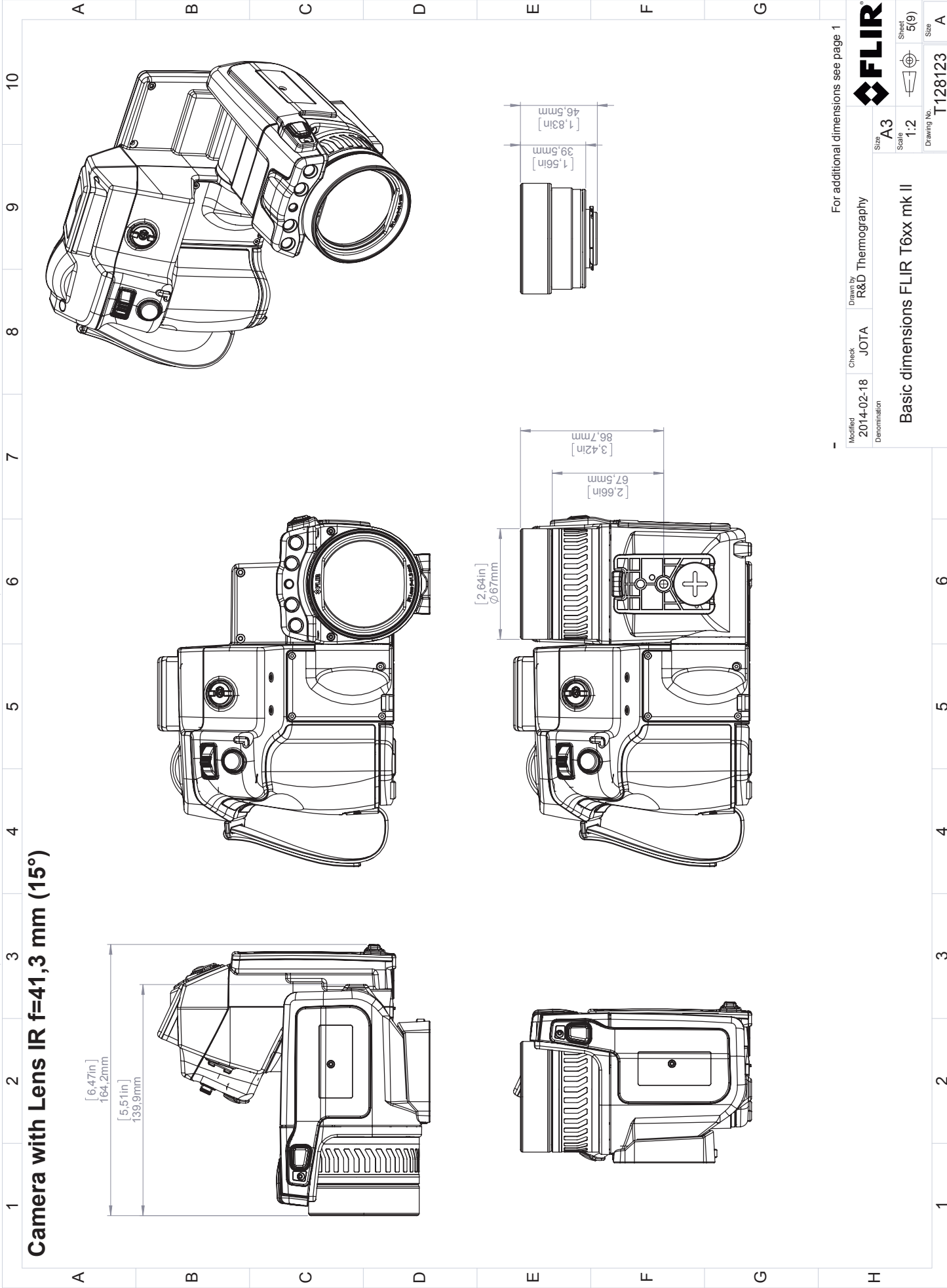


For additional dimensions see page 1

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|--|---------------|------------------------------|--------------|------------------------|
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| | | | | Size A |



Camera with Lens IR f=41,3 mm (15°)

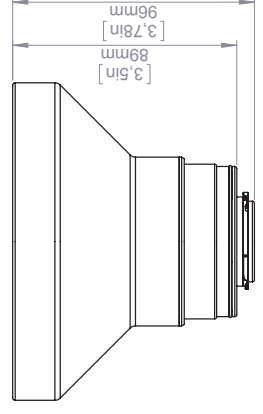
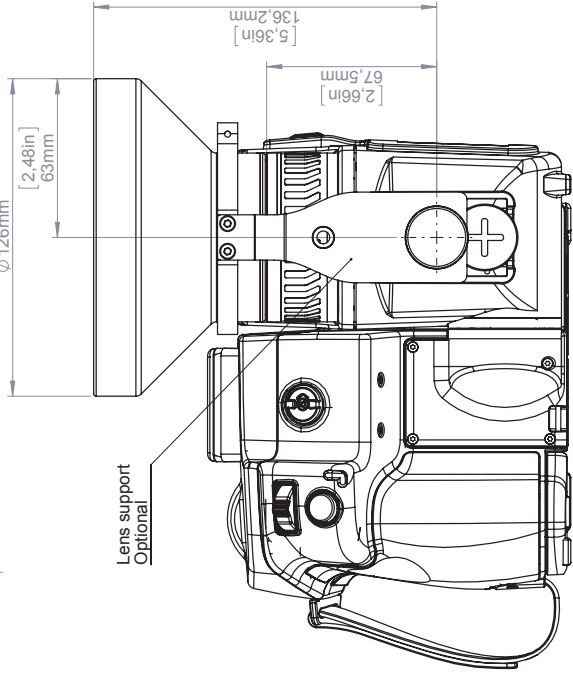
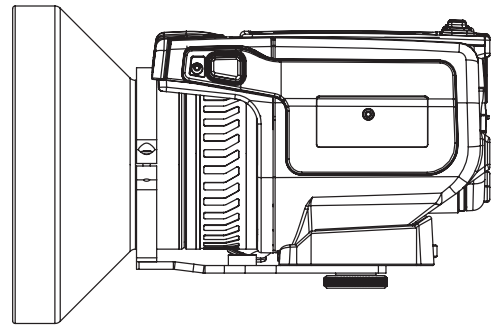
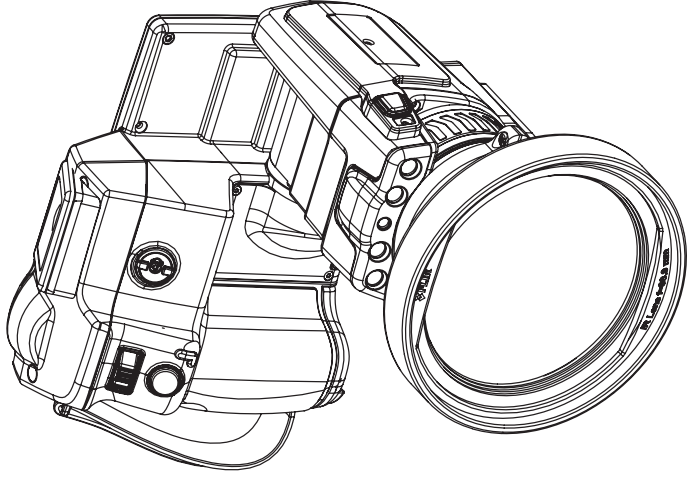
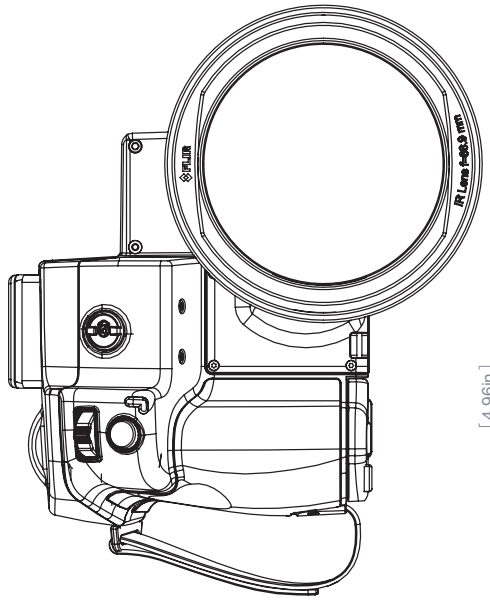
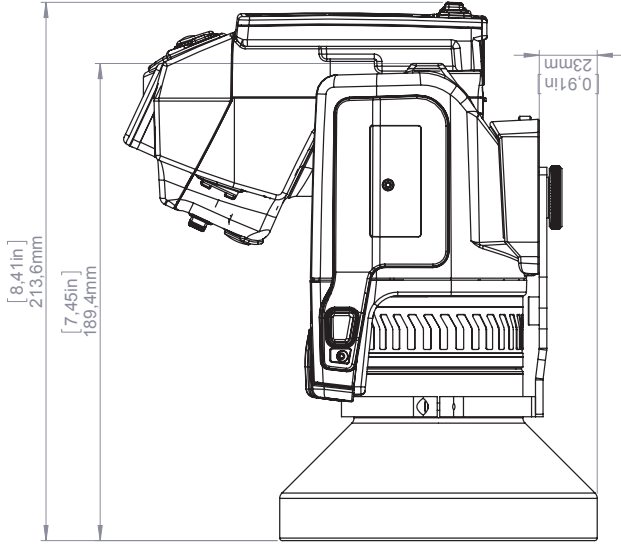


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For additional dimensions see page 1

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| Denomination Basic dimensions FLIR T6xx mk II | | | Sheet 5(9) |
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| | | | Size A |

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



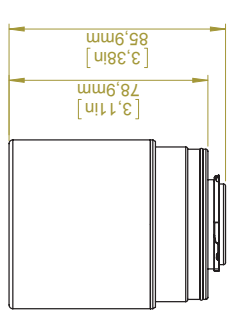
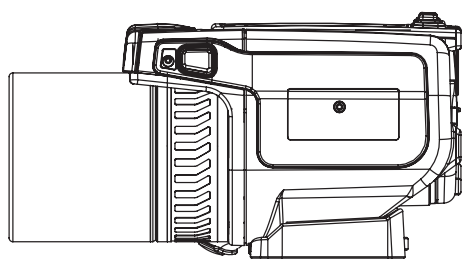
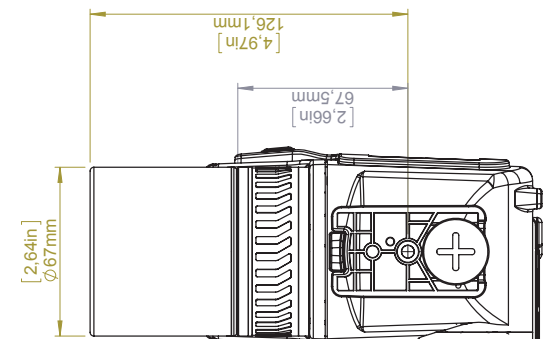
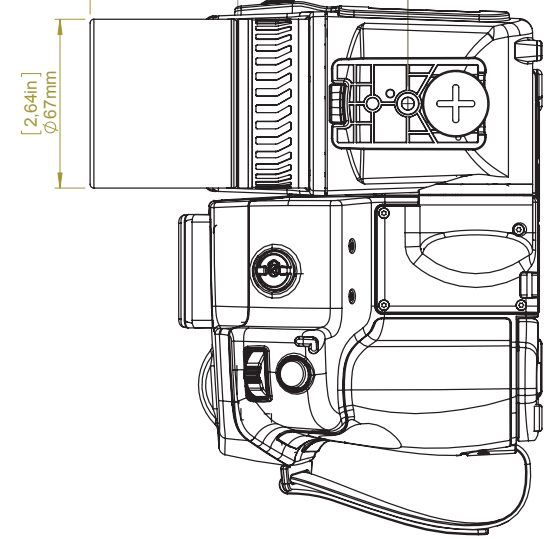
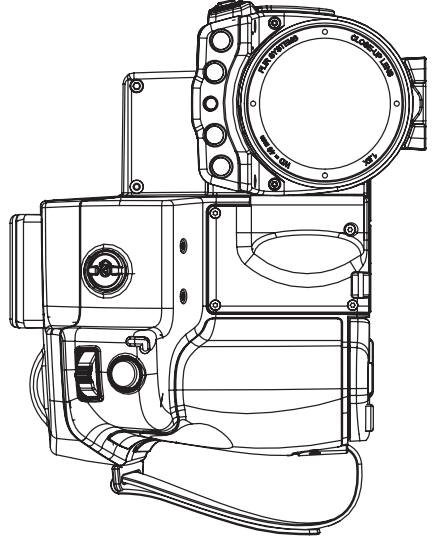
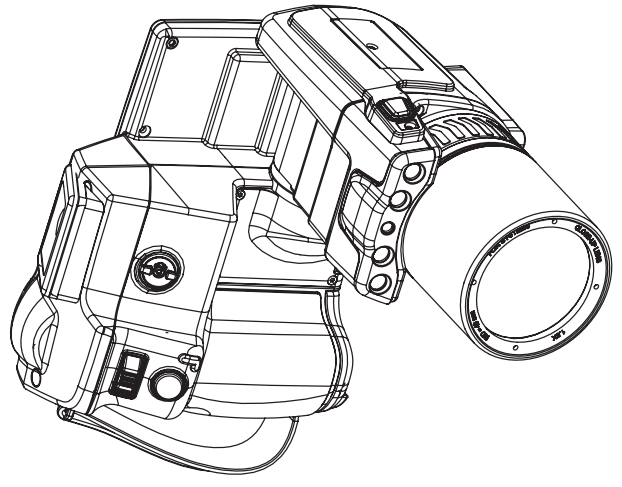
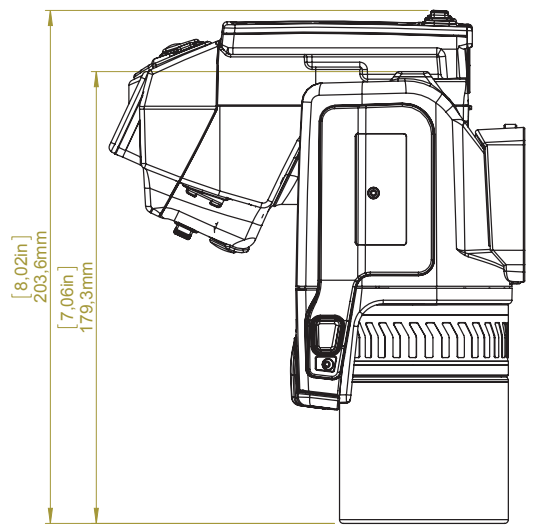
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| Denomination Basic dimensions FLIR T6xx mk II | | | Scale 1:2 | Drawing No. T128123 |
| | | | | Size A |

For additional dimensions see page 1



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



[8,02in]
203,6mm

[7,06in]
179,3mm

[2,64in]
Ø67mm

[4,97in]
126,1mm

[2,66in]
67,5mm

[3,11in]
78,9mm

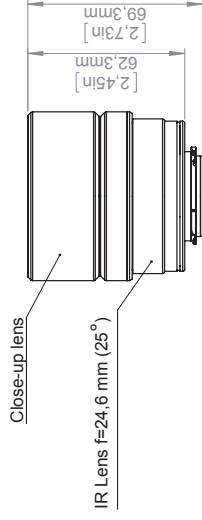
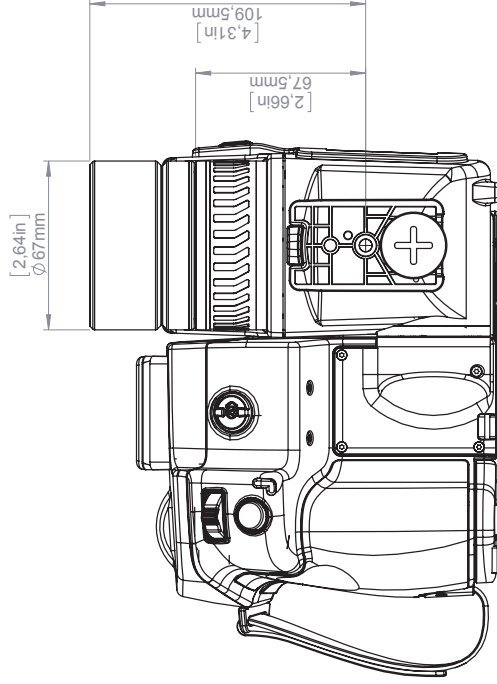
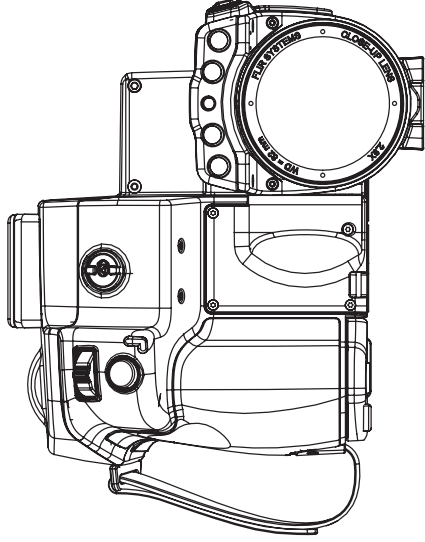
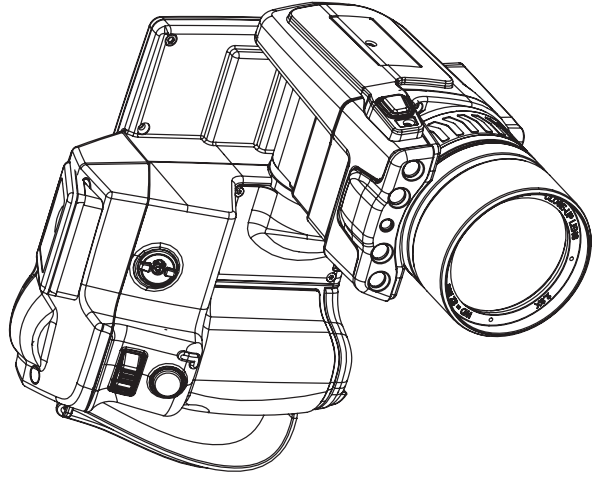
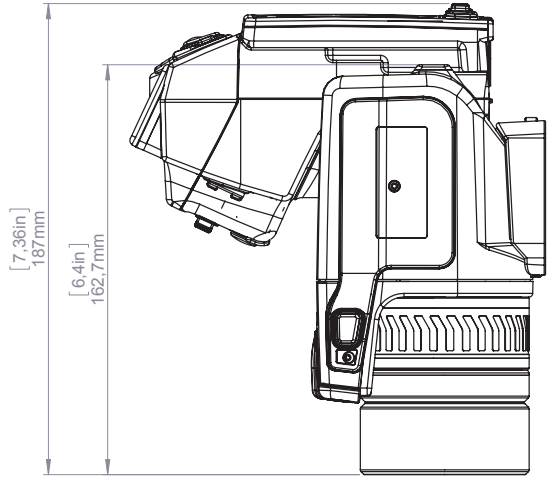
[3,38in]
85,9mm

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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)



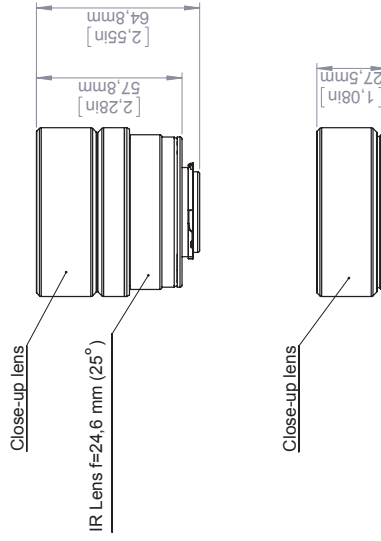
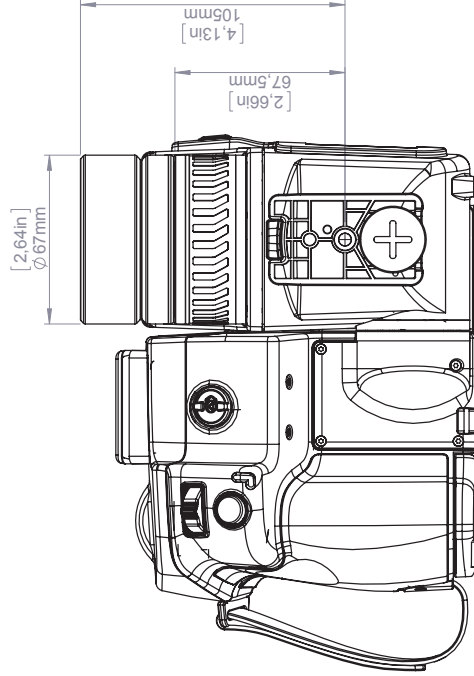
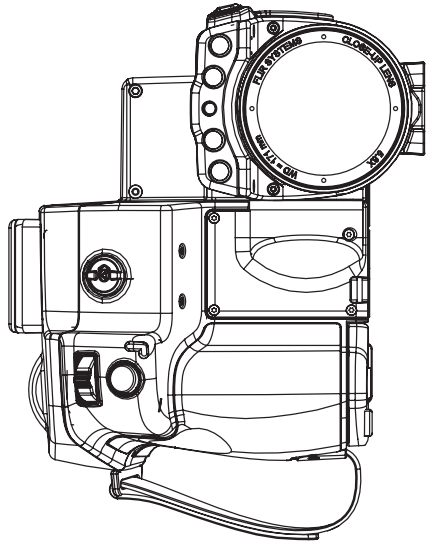
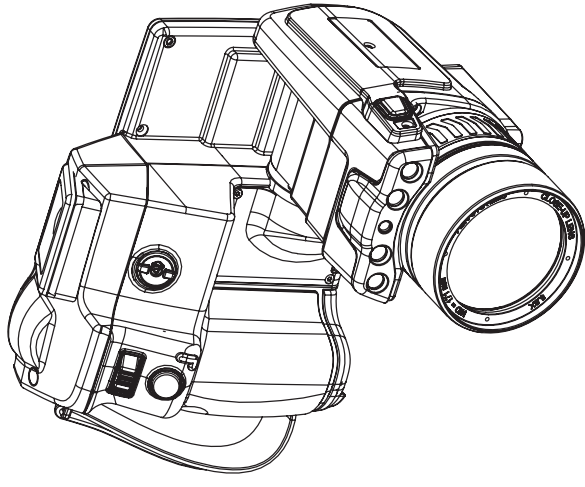
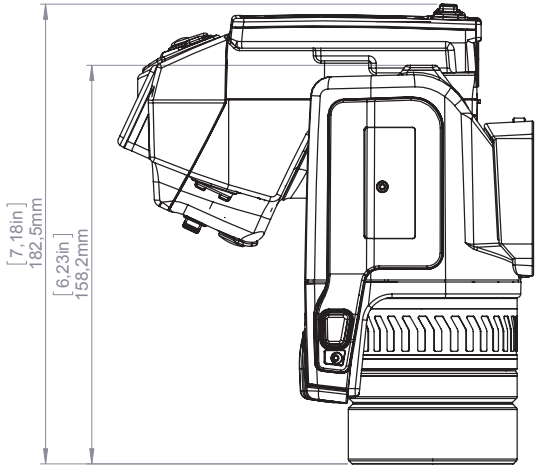
For additional dimensions see page 1

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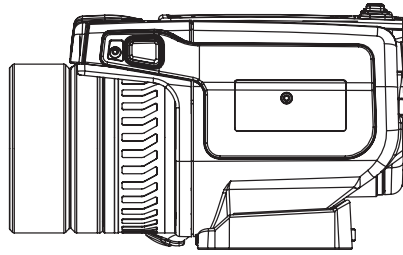
Camera with Close-up lens 5,8X (100 μm)



Close-up lens

IR Lens f=24,6 mm (25°)

Close-up lens



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 |



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