

P/N: 62103-1205

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Website

<http://www.flir.com>

Customer support

<http://support.flir.com>

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General description

The FLIR T420 is a camera that offers good performance at an affordable price. Excellent ergonomics, a walk-up-and-use interface, and easy communication make the FLIR T420 a truly user-friendly camera for the beginner or advanced user.

Benefits:

- Excellent ergonomics: The FLIR T420 has a tiltable infrared unit and auto-orientation, which make it easy to capture images from any angle comfortably. The small size and low weight of the camera facilitate its use over a full working day.
- Affordable performance: The FLIR T420 is equipped with the innovative Multi Spectral Dynamic Imaging (MSX) feature, which produces an image richer in detail than ever before. You can highlight objects of interest, on both the infrared and the visual images, by sketching or adding predefined stamps directly onto the camera's touch screen.
- Extensive communication options: The Wi-Fi connectivity of the FLIR T420 allows you to connect to smart phones or tablets, 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 infrared image.
- Support for UltraMax: When enabling UltraMax in the camera, the resolution of images can be substantially enhanced when importing the images into FLIR Tools.

Imaging and optical data

| | |
|---------------------------|--------------------------------|
| IR resolution | 320 × 240 pixels |
| MSX resolution | 320 × 240 pixels |
| UltraMax | Yes |
| Thermal sensitivity/NETD | <40 mK @ +30°C (+86°F) |
| 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) | 1.36 mrad |
| F-number | 1.3 |
| Image frequency | 60 Hz |
| Focus | Automatic (one shot) or manual |
| Digital zoom | 2x and 4x |

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| Detector data | |
|------------------------------|--|
| Detector type | Focal plane array (FPA), uncooled microbolometer |
| Spectral range | 7.5–13 µm |
| Detector pitch | 25 µm |
| Image presentation | |
| Display | Touch screen, 3.5 in. LCD, 320 × 240 pixels |
| Auto orientation | Automatic landscape or portrait |
| Image adjustment | Auto or manual |
| Image presentation modes | |
| Thermal MSX | Thermal image with enhanced detail presentation |
| Picture in Picture | Resizable and movable IR area on visual image |
| Measurement | |
| Object temperature range | <ul style="list-style-type: none"> –20°C to +120°C (–4°F to +248°F) 0°C to +650°C (+32°F to +1202°F) |
| Accuracy | ±2°C (±3.6°F) or 2%, whichever is greater, at 25° C (77°F) nominal. |
| Measurement analysis | |
| Spotmeter | 5 |
| Area | 5 + 5 areas (boxes or circles) with max./min./average (in post-acquisition analysis) |
| Automatic hot/cold detection | Auto hot or cold spotmeter markers within area |
| Measurement presets | No measurements, Center spot, Hot spot, Cold spot, 3 spots, Hotspot-spot, Hotspot-temperature |
| Difference temperature | Delta temperature between measurement functions or reference temperature |
| Reference temperature | Manually set using difference temperature |
| Emissivity correction | Variable from 0.01 to 1.0 or selected from materials list |
| Measurement corrections | Emissivity, reflected temperature, relative humidity, atmospheric temperature, object distance, external IR window compensation |
| Colors (palettes) | Iron, Rainbow, Rainbow HC, White hot, Black hot, Arctic, Lava |
| Alarm | |
| Color Alarm (isotherm) | Above/below/interval |
| Measurement function alarm | Audible/visual alarms (above/below) on any selected measurement function |
| Screening | Difference temperature alarm, audible |
| Set-up | |
| Set-up commands | Save options, Programmable button, Reset options, Set up camera, Wi-Fi, Compass, Bluetooth, Language, Time & units, Camera information |

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| Service functions | |
|-------------------------------------|--|
| Camera software update | Use PC software FLIR Tools |
| Storage of images | |
| Image storage | Standard JPEG, including digital photo and measurement data, on memory card |
| Image storage mode | <ul style="list-style-type: none"> Simultaneous storage of thermal and digital photo in same JPEG file. Optional to store digital photo as a separate JPEG file. |
| Time lapse | 15 seconds to 24 hours |
| Image annotations (in still images) | |
| 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) |
| METERLiNK | Wireless connection (Bluetooth) to: FLIR meters with METERLiNK |
| Report generation | <ul style="list-style-type: none"> Instant Report (*.pdf file) in camera including IR and visual images Separate PC software with extensive report generation |
| Geographic Information System | |
| Compass | Camera direction automatically added to every still 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 | <ul style="list-style-type: none"> MPEG-4 using Wi-Fi Uncompressed colorized video using USB |
| Visual video streaming | <ul style="list-style-type: none"> MPEG-4 using Wi-Fi Uncompressed colorized video using USB |
| Digital camera | |
| Built-in digital camera | 3.1 Mpxels with LED light (photo as separate image) |
| Digital camera, focus | Fixed focus |
| Digital camera, FOV | Adapts to the IR lens |
| Built-in digital lens data | FOV 53° × 41° |
| Digital camera, aspect ratio | 4:3 |

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| 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 |
| Laser power | 1 mW |
| Laser wavelength | 635 nm (red) |
| Data communication interfaces | |
| Interfaces | USB-mini, USB-A, Bluetooth, Wi-Fi, composite video |
| METERLiNK/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 |
| 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 Mini-B: 2.0 |
| Composite video | |
| Video out | Composite |
| Video, standard | CVBS (ITU-R-BT.470 PAL/SMPTE 170M NTSC) |
| Video, connector type | 4-pole 3.5 mm jack |
| Radio | |
| Wi-Fi | <ul style="list-style-type: none"> Standard: 802.11 b/g Frequency range: 2412–2462 MHz Max. output power: 15 dBm |
| METERLiNK/Bluetooth | Frequency range: 2402–2480 MHz |
| Antenna | Internal |
| Power system | |
| 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 |
| 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) |

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| Power system | |
|----------------------------------|--|
| 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"> • 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 B (Emission) • ICES-003 |
| Radio spectrum | <ul style="list-style-type: none"> • ETSI EN 300 328 • FCC Part 15.247 • RSS-210 |
| 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) |
| Safety | EN/UL/CSA/PSE 60950-1 |
| Physical data | |
| Camera weight, incl. battery | 0.855 kg (1.88 lb.) |
| Camera size (L × W × H) | 106 × 201 × 125 mm (4.2 × 7.9 × 4.9 in.), with built-in lens pointing forward |
| Tripod mounting | UNC ¼"-20 (adapter needed) |
| Material | <ul style="list-style-type: none"> • Polycarbonate + acrylonitrile butadiene styrene (PC-ABS) • Thixomold magnesium • Thermoplastic elastomer (TPE) |
| Color | Graphite gray and black |

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| Shipping information | |
|----------------------|---|
| Packaging, type | Cardboard box |
| List of contents | <ul style="list-style-type: none"> • Infrared camera with lens • Battery (2 ea.) • Battery charger • Camera lens cap • Calibration certificate • FLIR ResearchIR Standard 4 • IR lens, f = 10 mm, 45° incl. case • Printed documentation • Hard transport case • Memory card • Neckstrap • Power supply, incl. multi-plugs • Sunshield • USB cable • Video cable |
| Packaging, weight | |
| Packaging, size | 495 × 192 × 370 mm (19.49 × 7.56 × 14.57 in.) |
| EAN-13 | 7332558008515 |
| UPC-12 | 845188008871 |
| Country of origin | Sweden |

Supplies & accessories:

- 1196961; IR lens, f = 30 mm, 15° incl. case
- 1196960; IR lens, f = 10 mm, 45° incl. case
- T197215; Close-up 4× (100 µm) incl. case
- T197214; Close-up 2× (50 µm) incl. case
- T197408; IR lens, 76 mm (6°) with case and mounting support for T/B-200/400
- T197412; IR lens, 4 mm (90°) with case and mounting support for T/B2xx-4xx
- T197000; High temp. option +1200°C (+2192°F)
- T910814; Power supply, incl. multi plugs
- T197650; 2-bay battery charger, incl. power supply with multi plugs
- 1196398ACC; Battery
- T199361ACC; Battery Li-ion 7.2 V, 2.2 Ah, 16 Wh
- 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
- T198370ACC; Hard transport case for FLIR T/B2xx-4xx
- T198495; Pouch for FLIR T6xx and T4xx series
- 1124545; Pouch
- T198493; Sun shield
- T198499; Neck strap
- T197771ACC; Bluetooth Headset
- T911093; Tool belt
- 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



FLIR T420 with SC kit (incl. Wi-Fi, incl. 45° lens)

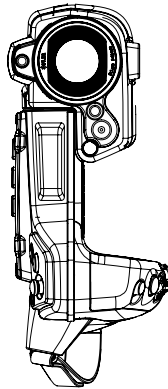
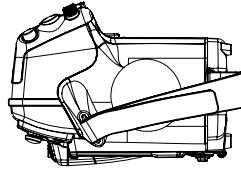
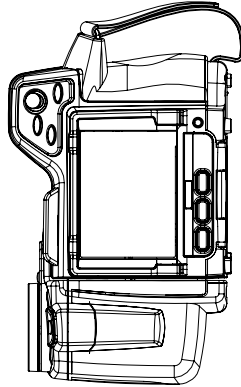
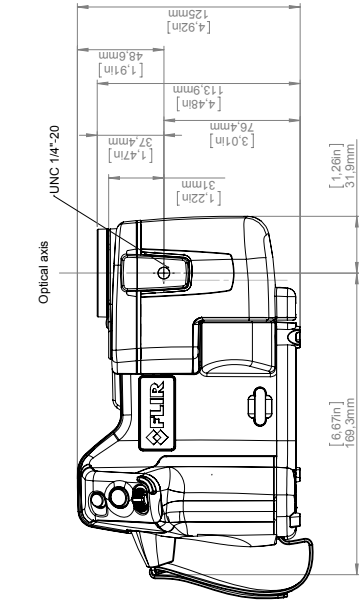
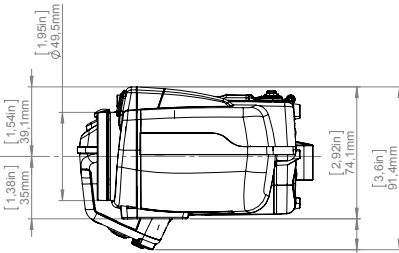
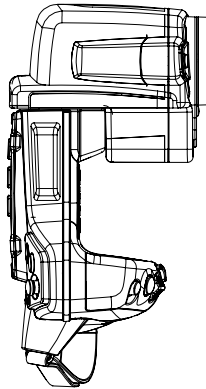
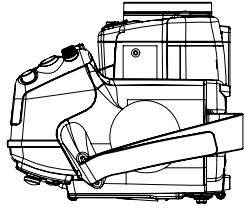
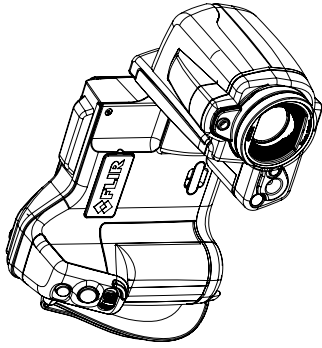
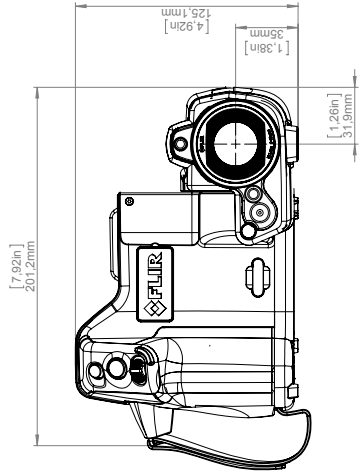
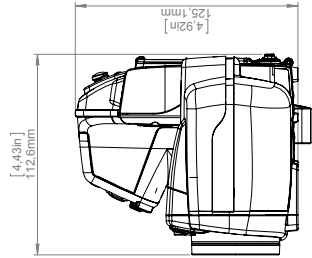
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- T198583; FLIR Tools+ (download card incl. license key)
- DSW-10000; FLIR IR Camera Player
- APP-10002; FLIR Tools Mobile (Android Application)
- APP-10004; FLIR Tools (MacOS Application)
- T198697; FLIR ResearchIR Max + HSDR 4 (hardware sec. dev.)
- 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

Camera with built-in IR lens f=18 mm (25°)

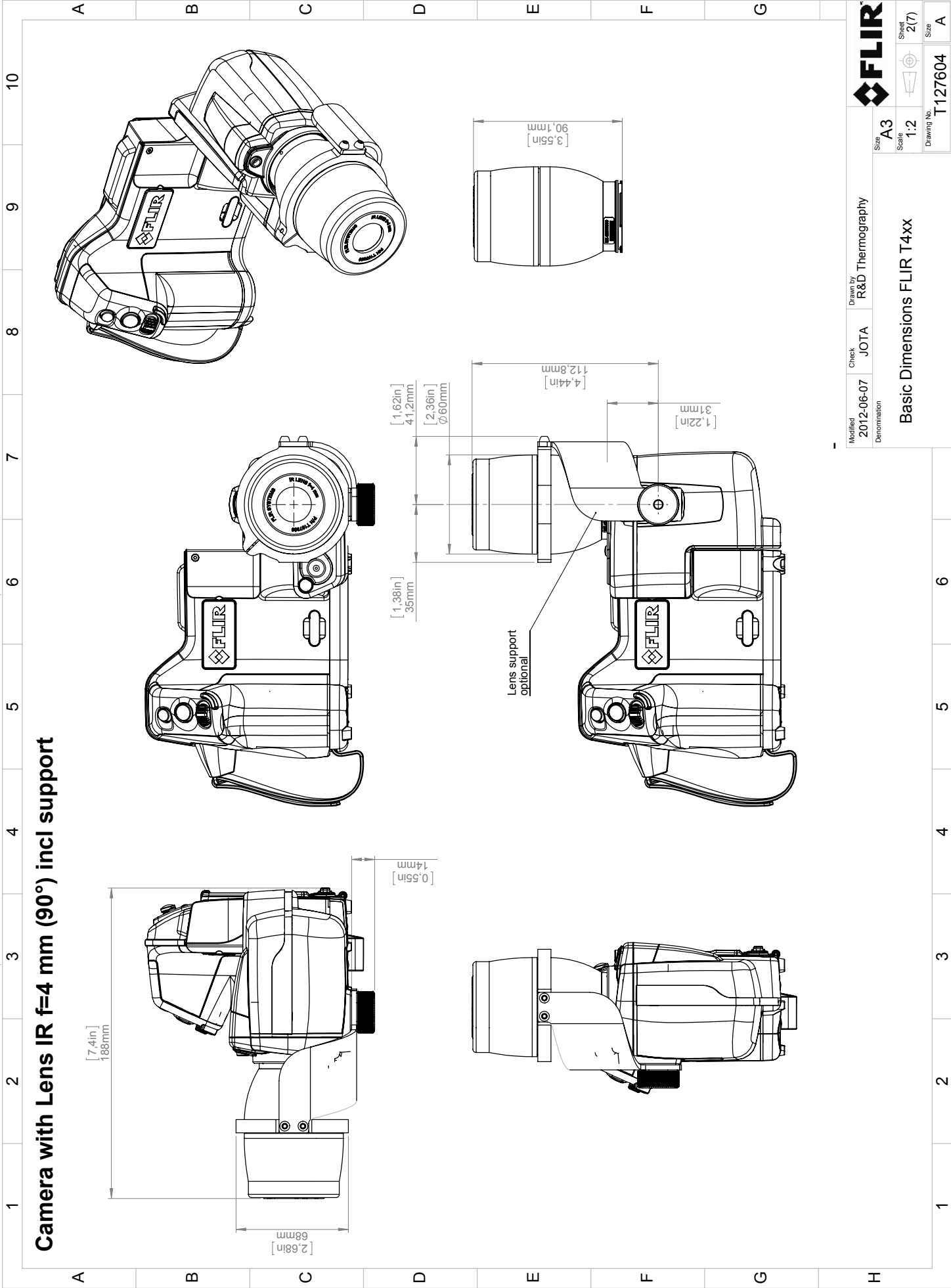


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| Modified 2012-06-07 | | Check JOTA | Drawn by R&D Thermography | Size A3 | |
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| Drawing No. T127604 | | Sheet 1(7) | | Size A | |

Basic Dimensions FLIR T4xx

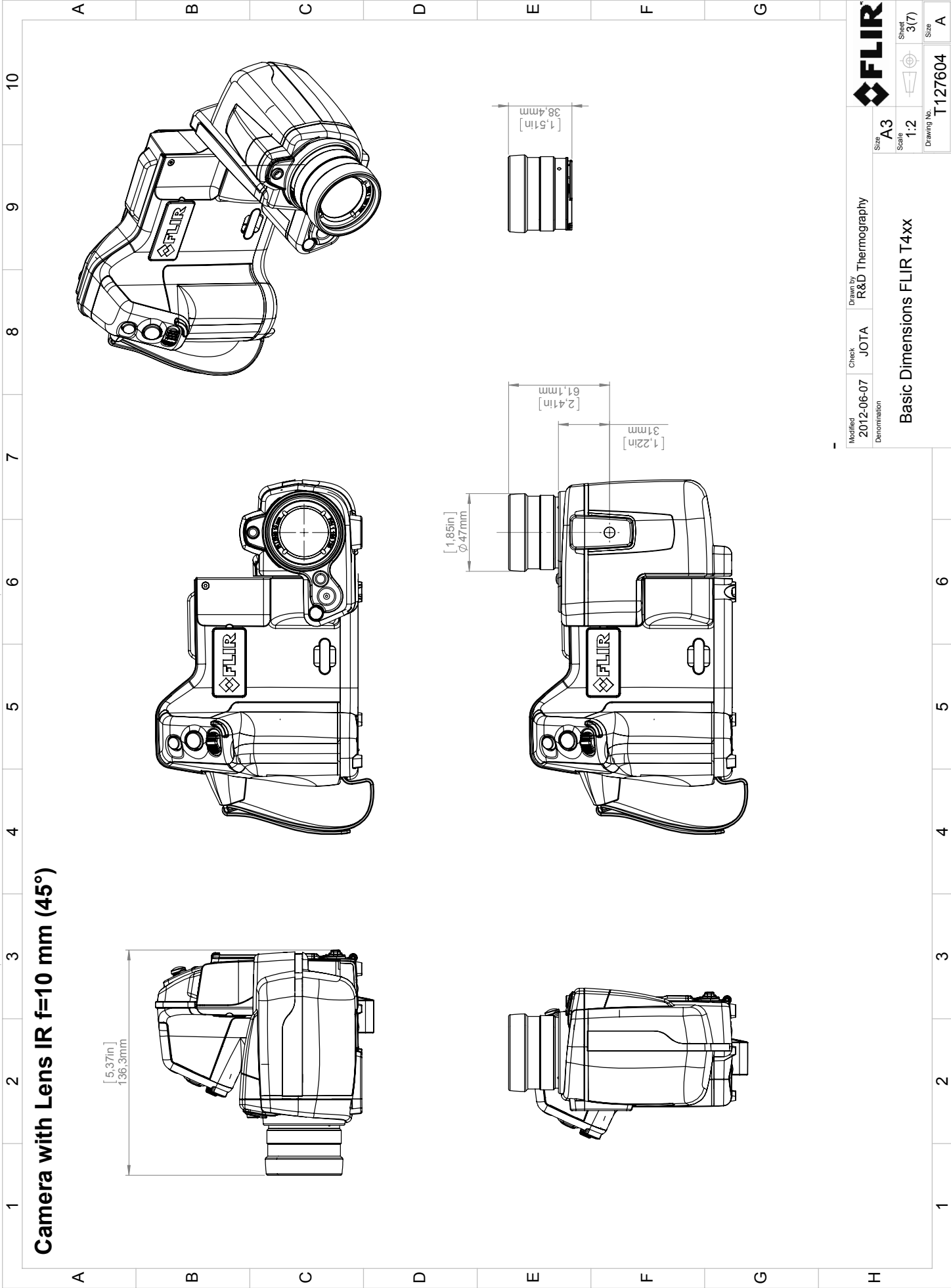


Camera with Lens IR f=4 mm (90°) incl support



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| Modified 2012-06-07 Denomination | | Check JOTA | Drawn by R&D Thermography | FLIR | |
| Size A3 | | Scale 1:2 | Sheet 2(7) | Basic Dimensions FLIR T4xx | |
| Drawing No. T127604 | | Size A | | | |

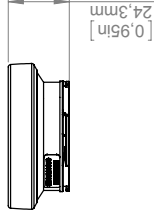
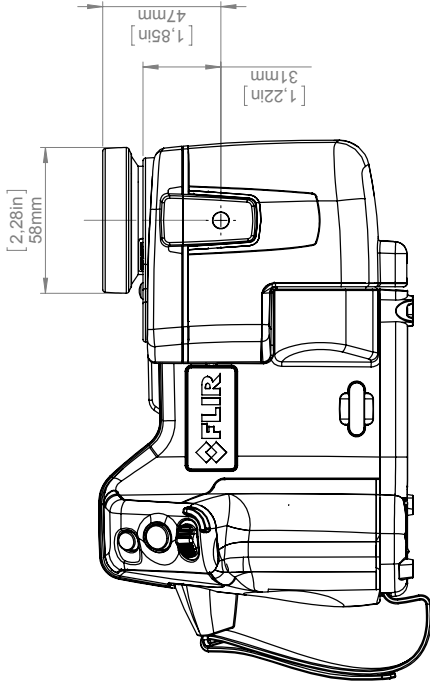
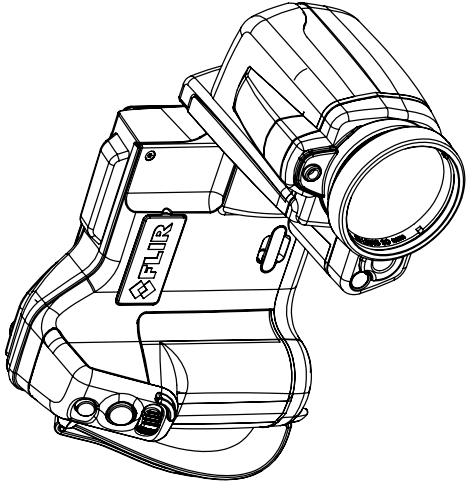
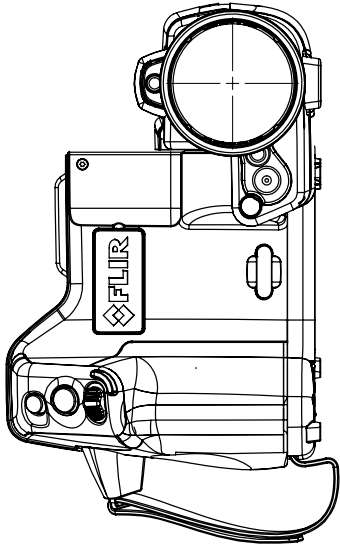
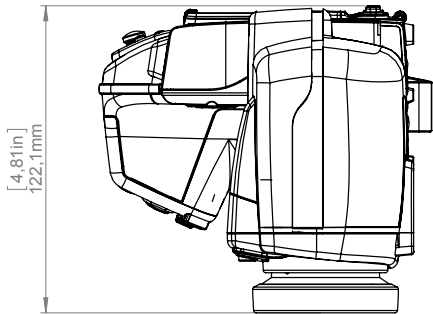


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| Modified 2012-06-07 Denomination | Check JOTA | Drawn by R&D Thermography | FLIR | | |
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| | | | Scale 1:2 | | |
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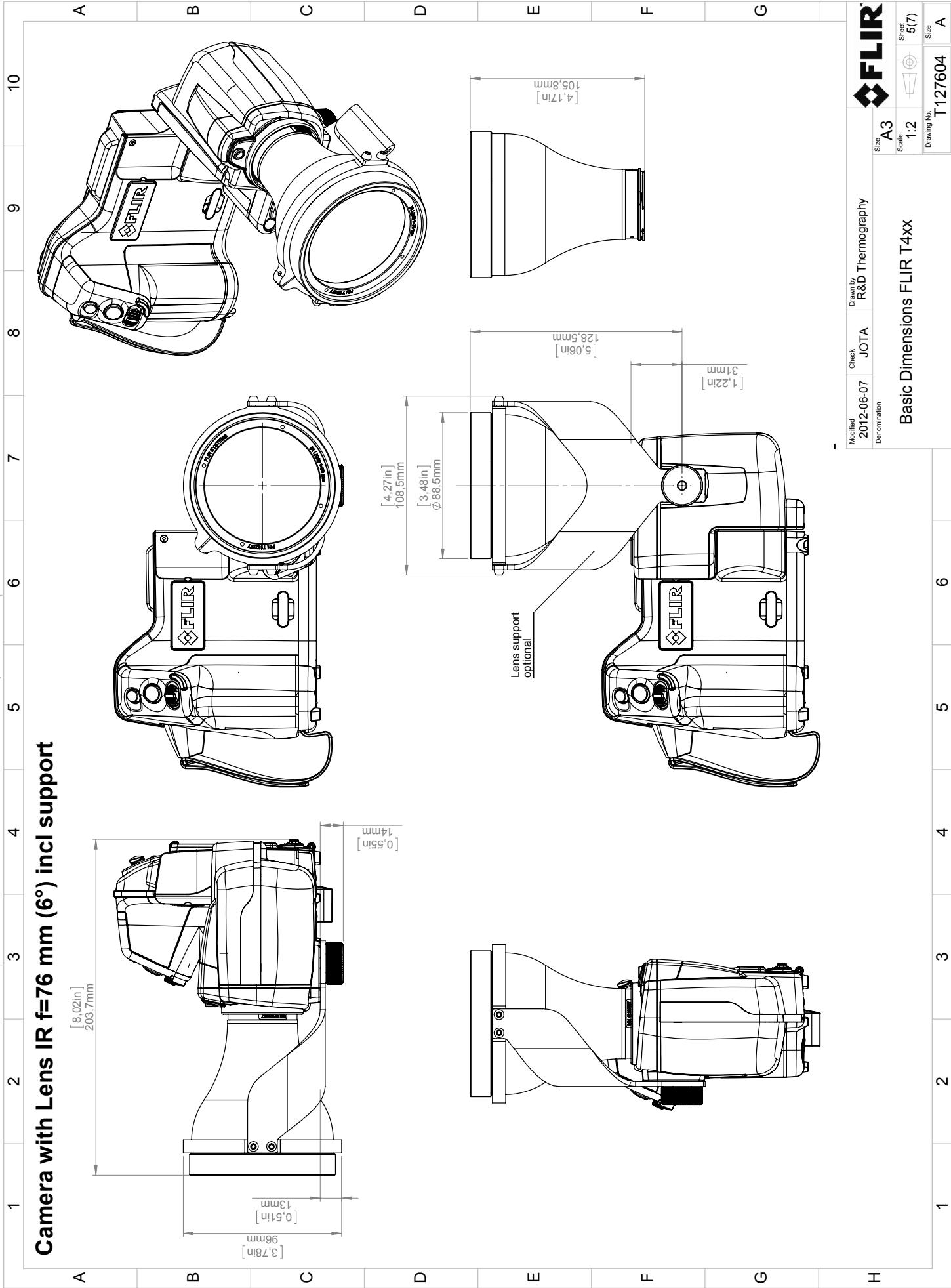
Basic Dimensions FLIR T4xx

Camera with Lens IR f=30 mm (15°)




| | | | | | | |
|--|---------------|------------------------------|----------------------------|---|---------------|--|
| Modified 2012-06-07 Denomination | Check JOTA | Drawn by R&D Thermography | FLIR™ | | | |
| | | | Size A3 |  | Sheet 4(7) |  |
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| | | | Basic Dimensions FLIR T4xx | | | |

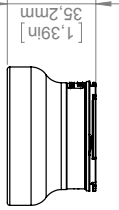
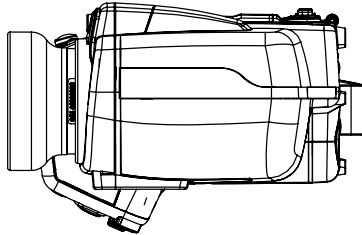
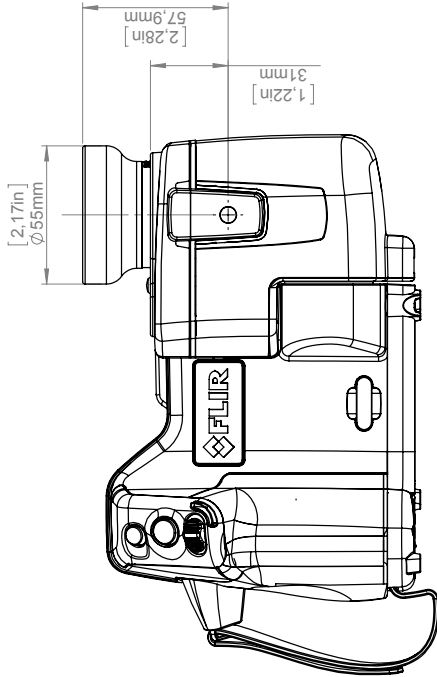
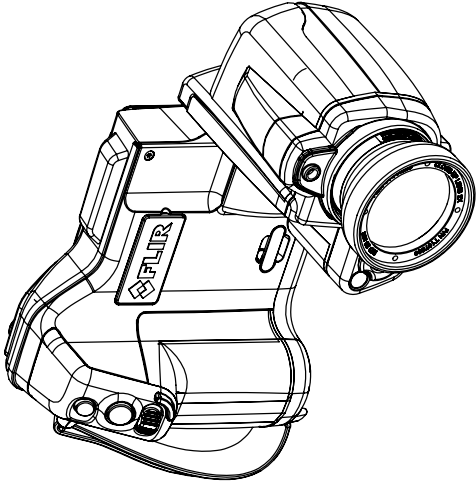
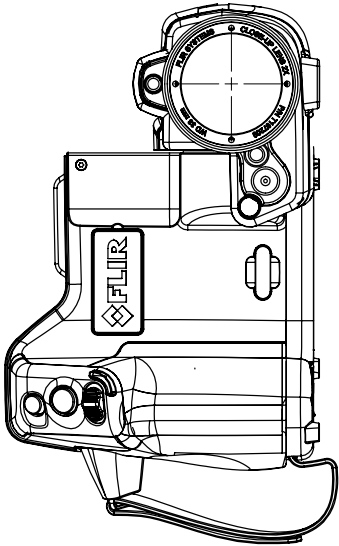
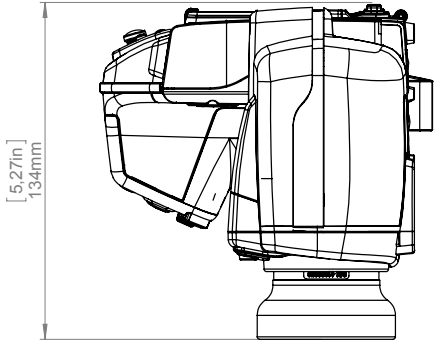
Camera with Lens IR f=76 mm (6°) incl support



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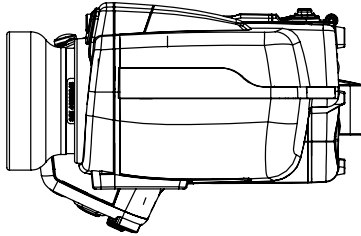
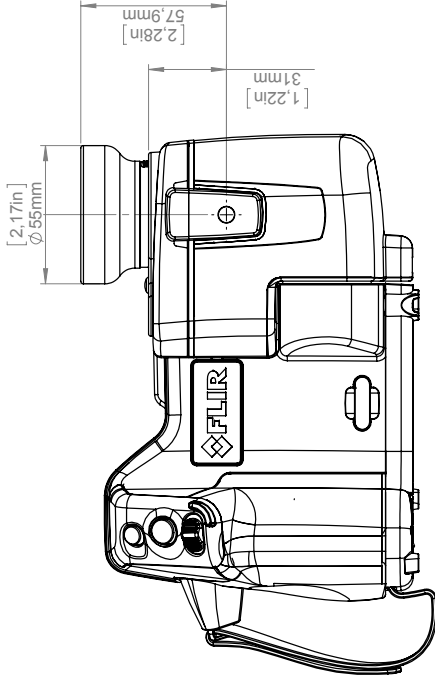
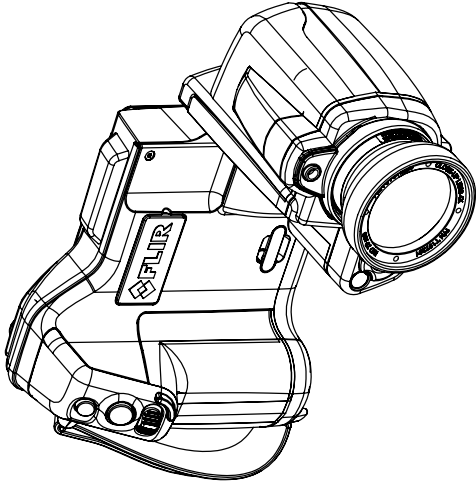
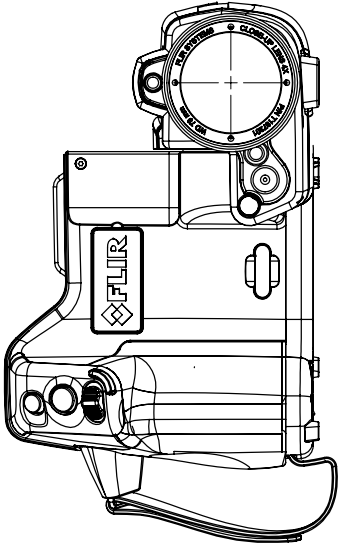
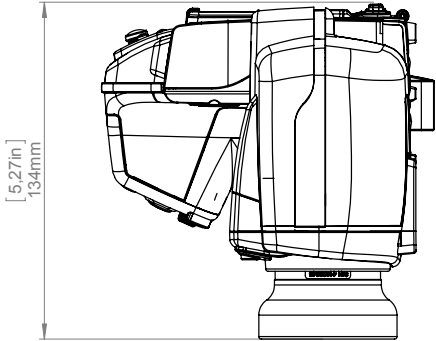
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| Modified 2012-06-07 Denomination | | Check JOTA | Drawn by R&D Thermography |  | |
| Size A3 | | Scale 1:2 |  Sheet 5(7) | | |
| Basic Dimensions FLIR T4xx | | Drawing No. T127604 | Size A | | |

Camera with Close-up lens 2X (50 µm)



| | | | | | |
|--|---------------|------------------------------|------------------------|---------------|-----------|
| Modified 2012-06-07 Denomination | Check JOTA | Drawn by R&D Thermography | FLIR | | |
| Basic Dimensions FLIR T4xx | | | Size A3 | Sheet 6(7) | Size A |
| | | | Scale 1:2 | | |
| | | | Drawing No. T127604 | | |

Camera with Close-up lens 4X (100 μm)



| | | | | | | | | |
|----------------------------|--|---------------|------------------------------|--|------------|------------------------|---|---------------|
| Modified 2012-06-07 | | Check JOTA | Drawn by R&D Thermography | | Size A3 | |  | |
| Denomination | | | | | | Scale 1:2 |  | Sheet 7(7) |
| | | | | | | Drawing No. T127604 | | Size A |
| Basic Dimensions FLIR T4xx | | | | | | | | |

October 15, 2012

AQ125912

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:

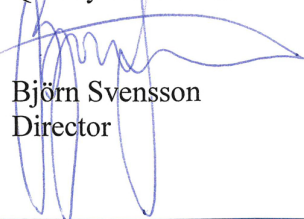
| | |
|-------------------------------|---|
| Directive 2004/108/EC; | Electromagnetic Compatibility |
| Directive 2006/95/EC; | "Low voltage Directive" (Power Supply) |
| Directive 1999/5/EC | "R&TTE on radio equipment and telecommunications terminal equipment" |
| Directive 2002/96/EC | Waste electrical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

Standards:

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

System: **FLIR T4XX series**

FLIR Systems AB
Quality Assurance



Björn Svensson
Director