# FLIR T840 42°

## P/N: 82503-0201

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**Document identity**

**Website**

http://www.flir.com

**Customer support**

http://support.flir.com

**Disclaimer**

| Imaging and optical data | |
|---|---|
| Infrared resolution | 464 × 348 pixels |
| UltraMax (super-resolution)[1] | In FLIR Tools |
| NETD | <30 mK @ +30°C (+86°F) |
| Field of view | 42° × 32° |
| Minimum focus distance | 0.15 m (0.49 ft.) |
| Minimum focus distance with MSX | 0.65 m (2.13 ft.) |
| Focal length | 10 mm (0.39 in.) |
| Spatial resolution (IFOV) | 1.66 mrad/pixel |
| Available extra lenses | • 24° (AutoCal)<br>• 14° (AutoCal)<br>• 6° (service calibration required) |
| Lens identification | Automatic |
| f number | 1.1 |
| Image frequency | 30 Hz |
| Focus | • Continuous LDM<br>• One-shot LDM<br>• One-shot contrast<br>• Manual |
| Field of view match | Yes |
| Digital zoom | 1–6× continuous |

| Detector data | |
|---|---|
| Focal plane array/spectral range | Uncooled microbolometer/7.5–14 μm |
| Detector pitch | 17 μm |

| Image presentation | |
|---|---|
| Resolution (display) | 640 × 480 pixels (VGA) |
| Surface brightness (cd/m$^2$) | 400 |
| Screen size | 4 in. |

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1. Not supported when using macro.

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| Image presentation | |
|---|---|
| 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 | 2 |
| Viewfinder | Yes |
| Image adjustment | • Automatic<br>• Automatic maximum<br>• Automatic minimum<br>• Manual |

| Image presentation modes | |
|---|---|
| Infrared image | Yes |
| Visual image | Yes |
| 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 | Automatic maximum/minimum markers within area |
| Measurement presets | • No measurements<br>• Center spot<br>• Hot spot<br>• Cold spot<br>• User preset 1<br>• User preset 2 |
| Difference temperature | Yes |
| Reference temperature | Yes |
| Emissivity correction | Yes, variable from 0.01 to 1.0 or selected from materials list |
| Measurement corrections | Yes |

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| Measurement analysis | |
|---|---|
| External optics/windows correction | Yes |
| Screening | 0.5°C (0.9°F) accuracy at 37°C (98.6°F) with reference |

| Alarm | |
|---|---|
| Color alarm (isotherm) | • Above<br>• Below<br>• Interval<br>• Condensation (moisture/humidity/dewpoint)<br>• Insulation |
| Measurement function alarm | Audible/visual alarms (above/below) on any selected measurement function |

| Set-up | |
|---|---|
| Color palettes | • Iron<br>• Gray<br>• Rainbow<br>• Arctic<br>• Lava<br>• Rainbow HC |
| Setup commands | Local adaptation of units, language, date, and time formats |
| Languages | 21 |

| Service functions | |
|---|---|
| Camera software update | Use PC software FLIR Tools |

| Storage of images | |
|---|---|
| Storage media | Removable memory: SD card |
| Time lapse (Periodic image storage) | 10 seconds to 24 hours (infrared) |
| Remote control operation | • Using FLIR Tools (using USB cable)<br>• FLIR Tools Mobile (over Wi-Fi) |
| Image file format | Standard JPEG, measurement data included. Infrared-only mode. |

| Image annotations | |
|---|---|
| Voice | 60 seconds with built-in microphone and speaker (and via Bluetooth) on still images and video |
| Text | Text from predefined list or soft keyboard on touchscreen |
| Visual image annotation | Yes |
| Image sketch | Yes: on infrared only |
| Sketch | From touchscreen |
| METERLiNK | Wireless connection (Bluetooth) to:<br><br>FLIR meters with METERLiNK |
| Laser distance meter information | Yes |
| Area measurement information | Yes |
| GPS | Location data automatically added to every still image and first frame in video from built-in GPS |

| Video recording in camera | |
|---|---|
| Radiometric infrared-video recording | RTRR (.csq) |
| Non-radiometric infrared-video recording | H.264 to memory card |
| Visual video recording | H.264 to memory card |

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| Video streaming | |
|---|---|
| Radiometric infrared-video streaming (compressed) | Over UVC |
| Non-radiometric video streaming (compressed: IR, MSX, visual, Picture in Picture) | • H.264 (AVC) over RTSP (Wi-Fi)<br>• MPEG4 over RTSP (Wi-Fi)<br>• MJPEG over UVC and RTSP (Wi-Fi) |
| Visual video streaming | Yes |

| Digital camera | |
|---|---|
| Resolution | 5 MP with LED light |
| Focus | Fixed |
| Field of view | 53° × 41° |
| Video lamp | Built-in LED light |

| Laser pointer | |
|---|---|
| Laser alignment | Position is automatically displayed on the infrared image |
| Laser distance meter | Activated by dedicated button |
| Laser | Class 2, 0.05–40 m (0.16–131 ft.) ±1% of measured distance |

| Data communication interfaces | |
|---|---|
| Interfaces | USB 2.0, Bluetooth, Wi-Fi, DisplayPort |
| METERLiNK/Bluetooth | Communication with headset and external sensors |
| Wi-Fi | Peer to peer (ad hoc) 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 |
| Video out | DisplayPort |
| Video connector type | DisplayPort over USB Type-C |

| Radio | |
|---|---|
| Operating frequency | Bluetooth + EDR/LE: 2402–2480 MHz<br><br>WLAN 2.4 GHz: 2412–2462 MHz<br><br>WLAN 5 GHz: 5150–5350 MHz (DFS: only slave mode)<br><br>Note that frequency band 5150–5350 MHz is for indoor use only, see national regulations. |
| RF output (EIRP) | Bluetooth + EDR/LE: < 10 dBm<br><br>WLAN: < 17 dBm |
| Antenna | Integrated PIFA antenna (gain: maximum 1.4 dBi) |

| Power system | |
|---|---|
| Battery type | Rechargeable Li-ion battery |
| Battery voltage | 3.6 V |
| Battery operating time | > 4 hours at 25°C (68°F) with typical use |
| Charging system | In camera (AC adapter or 12 V from a vehicle) or two-bay charger |
| Charging time (using two-bay charger) | 3.5 h to 90% capacity, on-screen indicator |

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| Power system | |
|---|---|
| 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 |

| Environmental data | |
|---|---|
| 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)/2 cycles |
| EMC | • ETSI EN 301 489-1 (radio)<br>• ETSI EN 301 489-17<br>• EN 61000-6-2 (immunity)<br>• EN 61000-6-3 (emission)<br>• FCC 47 CFR Part 15 Class B (emission) |
| Radio spectrum | • ETSI EN 300 228<br>• FCC Part 15.249<br>• RSS-247 Issue 2 |
| Encapsulation | IP 54 (IEC 60529) |
| Shock | 25g (IEC 60068-2-27) |
| Vibration | 2g (IEC 60068-2-6) |
| Safety | EN/UL/CSA/PSE 60950-1 |

| Physical data | |
|---|---|
| Weight (including battery) | 1.4 kg (3.1 lb.) |
| Size (L × W × H) | • Lens vertical: 150.5 × 201.3 × 84.1 mm (5.9 × 7.9 × 3.3 in.)<br>• Lens horisontal: 150.5 × 201.3 × 167.3 mm (5.9 × 7.9 × 6.6 in.) |
| Battery weight | 195 g (6.89 oz.) |
| Battery size (L × W × H) | 59 × 66 × 94 mm (2.3 × 2.6 × 3.7 in.) |
| Tripod mounting | UNC ¼″-20 |
| Housing material | PCABS with TPE, magnesium |
| Color | Black |

| Warranty and service | |
|---|---|
| Warranty | http://www.flir.com/warranty/ |

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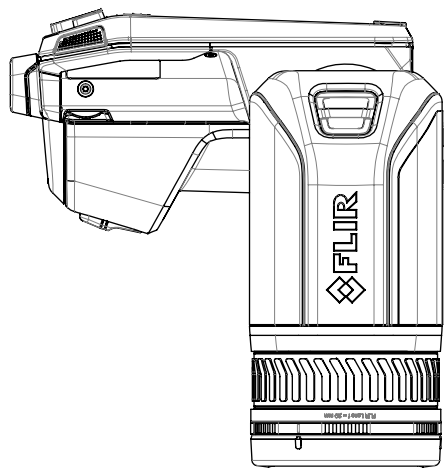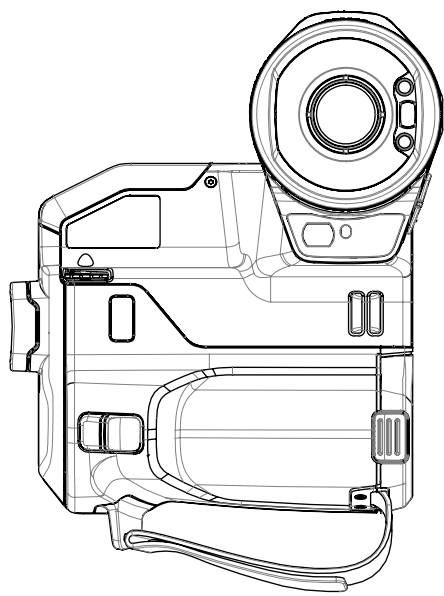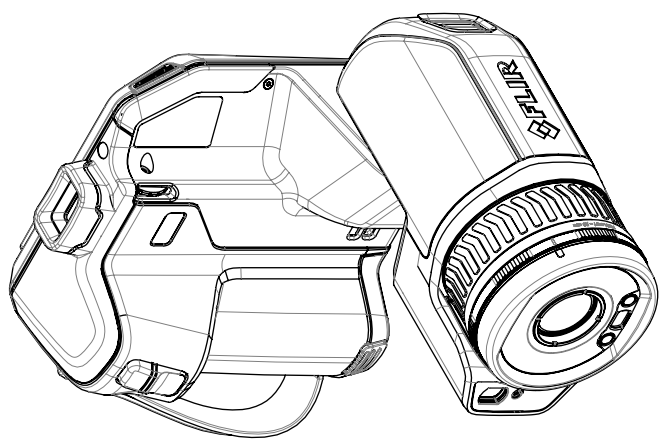| Shipping information | |
|---|---|
| Packaging, type | Cardboard box |
| Packaging, contents | • Accessory box I:<br><br>   ◦ Power supply for battery charger<br>   ◦ Power supply, 15 W/3 A<br>   ◦ Printed documentation<br>   ◦ SD card (8 GB)<br>   ◦ USB 2.0 A to USB Type-C cable<br>   ◦ USB Type-C to HDMI and PD adapter<br>   ◦ USB Type-C to USB Type-C cable (USB 2.0 standard)<br><br>• Accessory box II:<br><br>   ◦ Lens cap strap<br>   ◦ Lens cleaning cloth<br>   ◦ Neck strap<br>   ◦ Small eyecup<br><br>• Battery (2 ea)<br>• Battery charger<br>• Hard transport case<br>• Infrared camera with lens<br>• Lens cap, front<br>• Lens cap, front and rear (only for extra lenses) |
| Packaging, size | 500 × 190 × 370 mm (19.7 × 7.5 × 14.6 in.) |
| EAN-13 | 4743254004184 |
| UPC-12 | 845188019013 |
| Country of origin | Estonia |

**Supplies & accessories:**

- T130337ACC; Calibration target
- T199588; Lens 14° + case
- T199589; Lens 24° + case
- T199590; Lens 42° + case
- T300095; Lens 6° with 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
- 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
- T199300ACC; Battery
- T199610; Battery charger
- T199347ACC; Hard transport case
- T199609; Option, Macro mode 71/103 µm for 24°
- T300030; Option, No radio
- T198495; Pouch
- T197771ACC; Bluetooth Headset
- T198583; FLIR Tools+ (download card incl. license key)
- T198696; FLIR ResearchIR Max 4 (hardware sec. dev.)
- T199013; FLIR ResearchIR Max 4 (printed license key)
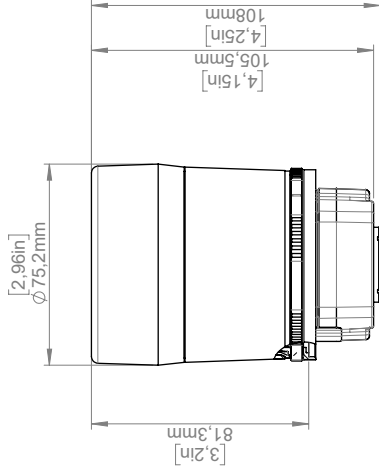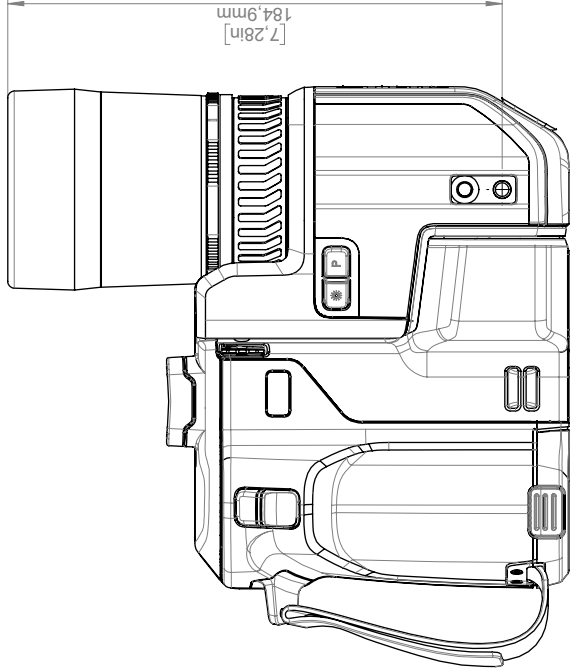- T199043; FLIR ResearchIR Max 4 Upgrade (printed license key)

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# Camera housing

24,3mm
[0.96in]

119,4mm
[4,7in]

25mm
[0.98in]

UNC ¼" -20

38,5mm
[1,52in]

Optical axis

162,8mm
[6,41in]

25mm
[0.98in]

140mm
[5,51in]

150,5mm
[5,93in]

47,9mm
[1,89in]

68,7mm
Ø [2,7in]

Optical axis

47,9mm
[1,89in]

36,2mm
[1,43in]

125,5mm
[4,94in]

119,4mm
[4,7in]

36,1mm
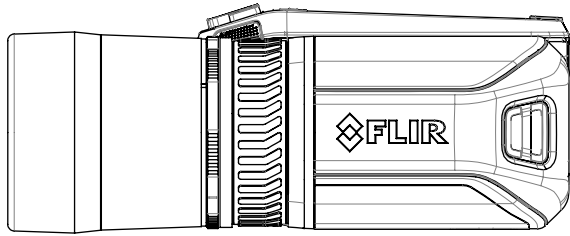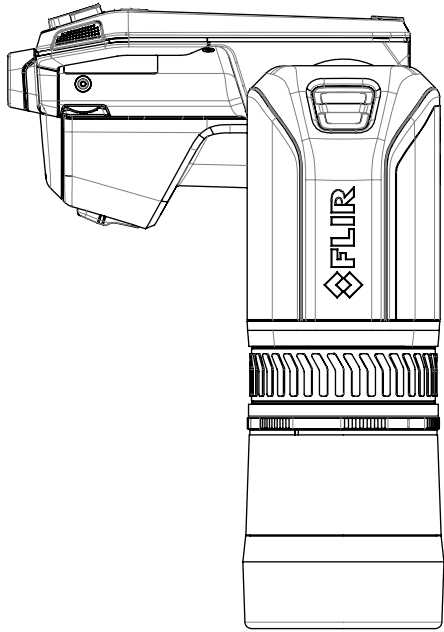[1,42in]

47,9mm
[1,89in]

Optical axis

36mm
[1,42in]
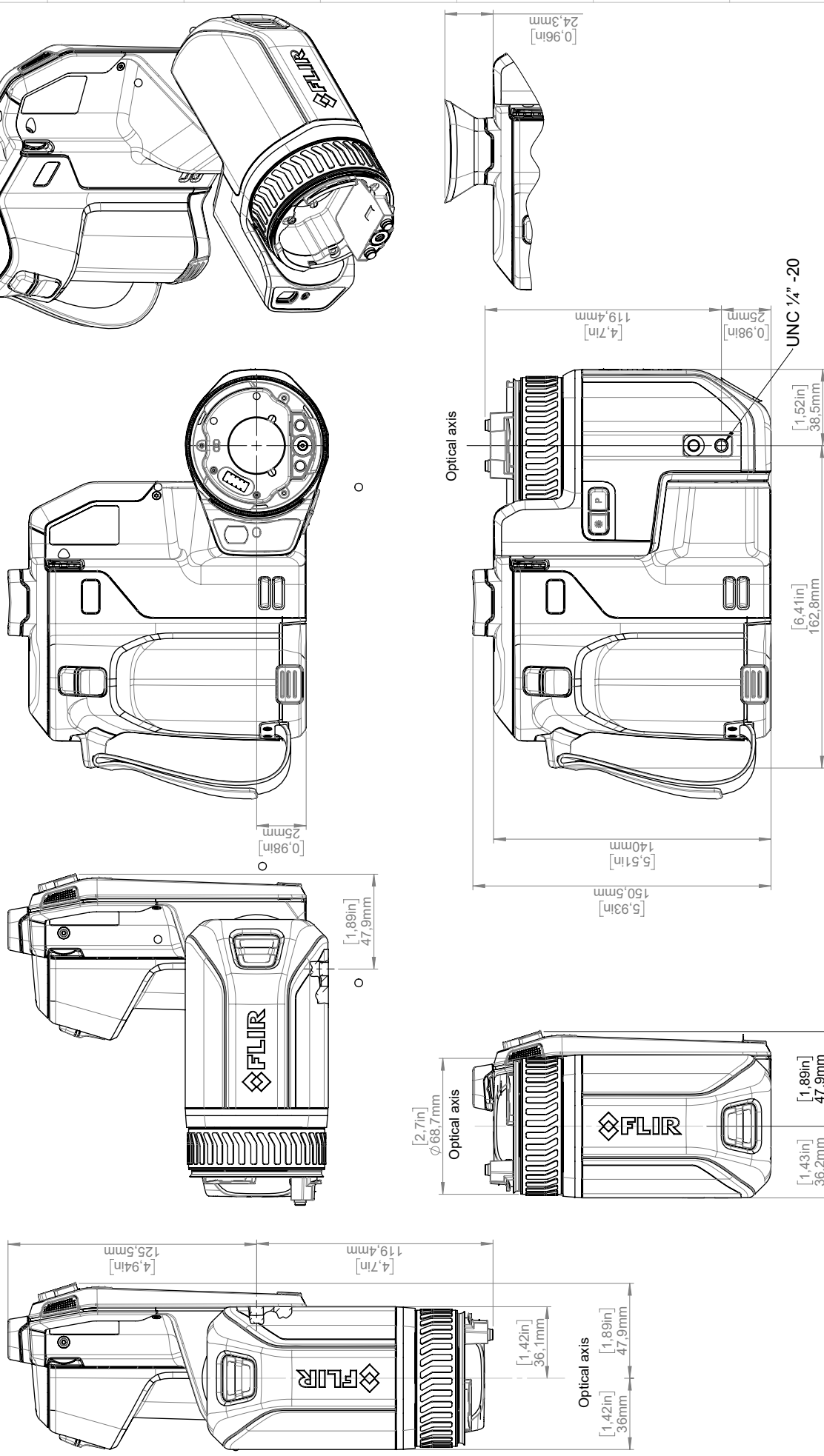
Camera with Lens IR f=10mm (42°)

Camera with Lens IR f=17mm (24°)

Camera with Lens IR f=29mm (14°)

45,4mm
[1,79in]

42,8mm
[1,68in]

Ø72mm
[2,83in]

18,7mm
[0,73in]

122,9mm
[4,84in]

FLIR

| | | |
|---|---|---|
| Modified 2018-09-24 | Check JOHE | Drawn by R&D Instruments |
| Denomination | | |

Basic dimensions FLIR T8xx

Size A3

Scale 1:5

Sheet 2(4)

Rev A

Drawing No. T129914

# Camera with Lens IR f=70mm (6°)
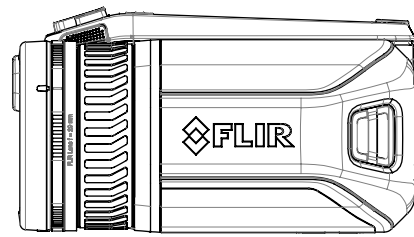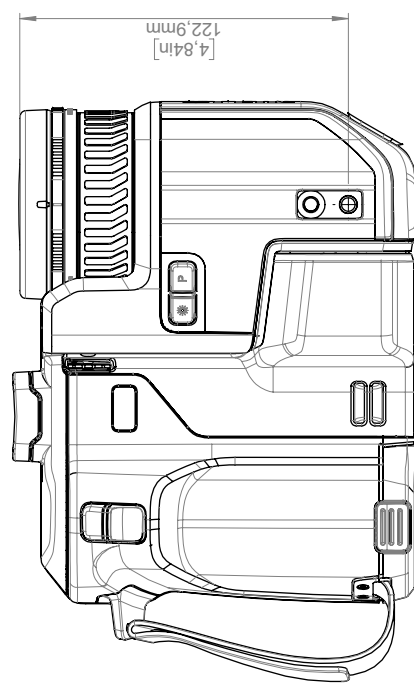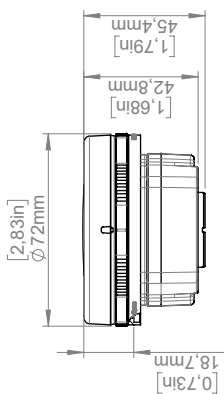
For additional dimensions see page 1

108mm
[4,25in]
105,5mm
[4,15in]

Ø75,2mm
[2,96in]

81,3mm
[3,2in]

184,9mm
[7,28in]

February 2, 2019     Täby, Sweden                                    AQ320246

## CE Declaration of Conformity – EU Declaration of Conformity

Product: FLIR T5XX-, T8XX- and GF7X-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 T5XX-, T8XX- and GF7X-series (Product Model Name FLIR-T8210).
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:**

| | | |
|---|---|---|
| EMC Radio: | ETSI EN 301 489-1 + -17 | EMC for radio, broadband data transmission |
| Emission: | EN 61000-6-3/A1:2011 | EMC – Generic standards |
| Immunity: | EN 61000-6-2:2005 | Electromagnetic Compability Generic |
| | EN 301489-1:2016 v2.1.0 | ERM – EMC for radio equipment |
| | EN 301489-17:2012 v2.2.1 | ERM – EMC Wideband data |
| Laser: | EN 60825-1 | Safety of laser products |
| Radio: | ETSI EN 300 328 v2.1.1 | Harmonized EN covering essential requirements of the R&TTE Directive |
| | ETSI EN 301 893 v.2.1.1 | 5GHz WLAN |
| | EN 303 413 v1.1.0 | Radio Spectrum Efficiency (gps) |
| SAR: | EN 50566:2013/AC:2014 | Handheld and body mounted wireless |
| | EN 62209-02:2010 | Handheld and body mounted wireless |
| Safety: | IEC 60950-1:2005+A1:2009+A2:2013 EN 60950-1:2006+A11:2009+AC:2011+A12:2011 | Information technology equipment |
| RoHS: | EN 50581:2012 | Technical documentation |

**FLIR Systems AB**
Quality Assurance

*[signature]*

Lea Dabiri
Quality Manager