

P/N: 60901-1103

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General description

The FLIR A310pt Pan & Tilt is an affordable solution for anyone who needs to solve problems that require built in "smartness" such as analysis and alarm functionality. The FLIR A310pt Pan & Tilt has all the necessary features and functions to build distributed single- or multi-camera solutions to cover large areas to monitor such as in coal pile monitoring and sub-station monitoring using standard Ethernet hardware and software protocols.

The FLIR A310pt precision pan/tilt mechanism gives operators accurate pointing control while providing fully programmable scan patterns, radar slew-to-cue, and slew-to-alarm functionality.

Multi-sensor configurations also include a day/night 36x zoom color CCD camera on the same pan/tilt package.

Key features:

- Built-in extensive analysis functionality.
- Extensive alarm functionality, as a function of analysis and more.
- H.264, MPEG-4, and MJPEG streaming.
- Built-in web server.
- 100 Mbps Ethernet (100 m cable, wireless, fiber, etc.).
- Composite video output.
- Precise pan/tilt mechanism.
- Daylight camera.
- IP66 rated.
- IP control: FLIR PT series cameras can be integrated into any existing TCP/IP network and controlled using a personal computer.
- Serial control interface, use Pelco D or Bosch commands over RS-232, RS-422, or RS-485 to remotely control the FLIR A310 pt.
- Multi-camera software: FLIR Sensors Manager allows users to manage and control a FLIR PT series camera in a TCP/IP network.

Imaging and optical data

| | |
|---------------------------|---|
| IR resolution | 320 × 240 pixels |
| Thermal sensitivity/NETD | < 0.05°C @ +30°C (+86°F) / 50 mK |
| Field of view (FOV) | 25° × 18.8° |
| Minimum focus distance | 0.4 m (1.31 ft.) |
| Focal length | 18 mm (0.7 in.) |
| Spatial resolution (IFOV) | 1.36 mrad |
| Lens identification | Automatic |
| F-number | 1.3 |
| Image frequency | 9 Hz |
| Focus | Automatic or manual (built in motor) |
| Zoom | 1–8x continuous, digital, interpolating zooming on images |



FLIR A310pt 25° (9 Hz) PAL

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| Detector data | |
|------------------------|--|
| Detector type | Focal plane array (FPA), uncooled microbolometer |
| Spectral range | 7.5–13 μm |
| Detector pitch | 25 μm |
| Detector time constant | Typical 12 ms |

| Measurement | |
|--------------------------|--|
| Object temperature range | <ul style="list-style-type: none">-20 to +120°C (-4 to +248°F)0 to +350°C (+32 to +662°F) |
| Accuracy | $\pm 4^\circ\text{C}$ ($\pm 7.2^\circ\text{F}$) or $\pm 4\%$ of reading |

| Measurement analysis | |
|---|--|
| Spotmeter | 10 |
| Area | 10 boxes with max./min./average/position (7 if FLIR Sensors Manager is used) |
| Isotherm | 1 with above/below/interval |
| 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 |
| Reflected apparent temperature correction | Automatic, based on input of reflected temperature |
| External optics/windows correction | Automatic, based on input of optics/window transmission and temperature |
| Measurement corrections | Global and individual object parameters |

| Alarm | |
|-----------------|---|
| Alarm functions | 6 automatic alarms on any selected measurement function, camera temperature |

| Set-up | |
|-----------------|--|
| Color palettes | Color palettes (BW, BW inv, Iron, Rain) |
| Set-up commands | Date/time, Temperature ($^\circ\text{C}/^\circ\text{F}$) |

| Imaging and optical data (visual camera) | |
|---|--|
| Field of view (FOV) | 57.8° (H) to 1.7° (H) |
| Focal length | 3.4 mm (wide) to 122.4 mm (tele) |
| F-number | 1.6 to 4.5 |
| Focus | Automatic or manual (built in motor) |
| Optical Zoom | 36x continuous |
| Electronic Zoom | 12x continuous, digital, interpolating |

| Detector data (visual camera) | |
|--------------------------------------|---------------------|
| Focal plane array (FPA) | 1/4" Exview HAD CCD |
| Effective pixels | 380.000 |

| Technical specification (pan & tilt) | |
|---|--|
| Azimuth Range | Az velocity 360° continuous, 0.1 to 60°/sec max |
| Elevation Range | El velocity $\pm 45^\circ$, 0.1 to 30°/sec. max |



FLIR A310pt 25° (9 Hz) PAL

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| Technical specification (pan & tilt) | |
|--------------------------------------|---|
| Programmable presets | 128 |
| Automatic heaters | Clears window from ice. Switched on at +4°C (39°F). Switched off at +15°C (59°F). |

| Ethernet | |
|---------------------------|--|
| Ethernet | Control, result and image |
| Ethernet, type | 100 Mbps |
| Ethernet, standard | IEEE 802.3 |
| Ethernet, connector type | RJ-45 |
| Ethernet, communication | |
| Ethernet, video streaming | Two independent channels for each camera - MPEG-4, H.264, or M-JPEG |
| Ethernet, protocols | TCP, UDP, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP |

| Composite video | |
|-----------------|--|
| Video out | Composite video output, PAL compatible |
| Video, standard | CVBS (ITU-R-BT.470 PAL) |

| Power system | |
|--------------|--|
| Power | 24 VAC (21-30 VAC; 24 VAC: 215 VA max. with heater) or 24 VDC (21-30 VDC; 24 VDC: 195 W max. with heater). |

| Environmental data | |
|----------------------------------|---|
| Operating temperature range | -25°C to +50°C (-13°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) |
| EMC | <ul style="list-style-type: none">• EN 61000-6-2 (Immunity)• EN 61000-6-3 (Emission)• FCC 47 CFR Part 15 Class B (Emission) |
| Encapsulation | IP 66 (IEC 60529) |
| Bump | 5 g, 11 ms (IEC 60068-2-27) |
| Vibration | 2 g (IEC 60068-2-6) |

| Physical data | |
|------------------|---|
| Weight | 17.8 kg (39.3 lb.) |
| Size (L x W x H) | 460 x 467 x 326 mm (18.1 x 18.4 x 12.8 in.) |
| Base mounting | |
| Housing material | Aluminum |

| Shipping information | |
|----------------------|--|
| Packaging, type | Cardboard box |
| List of contents | <ul style="list-style-type: none">• Pan & tilt with infrared camera including lens and visual camera• FLIR Sensors Manager download card• Lens cap• Printed documentation• Small accessories kit |
| Packaging, weight | |



FLIR A310pt 25° (9 Hz) PAL

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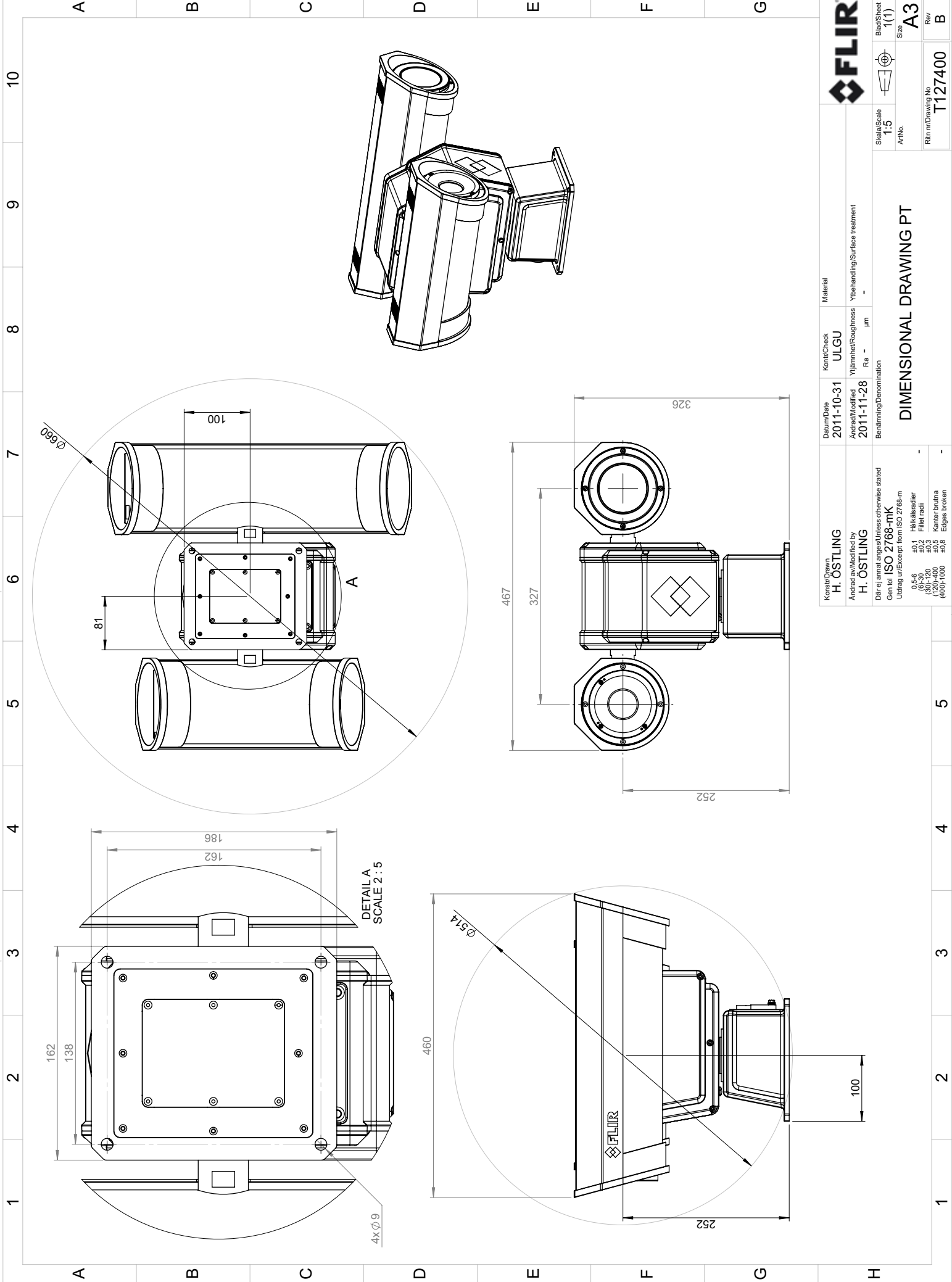
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| Shipping information | |
|----------------------|---|
| Packaging, size | 671 × 564 × 464 mm (26.4 × 22.2 × 18.3 in.) |
| EAN-13 | 7332558007891 |
| UPC-12 | 845188008260 |
| Country of origin | Sweden |

Supplies & accessories:

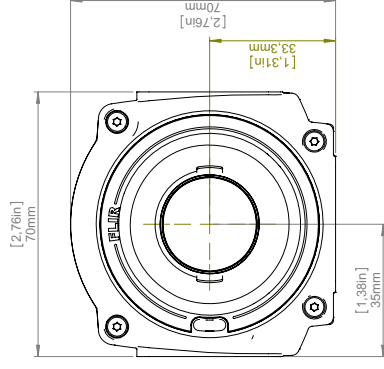
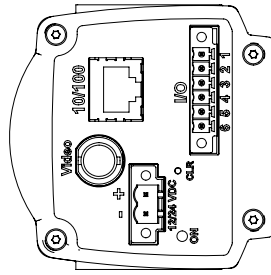
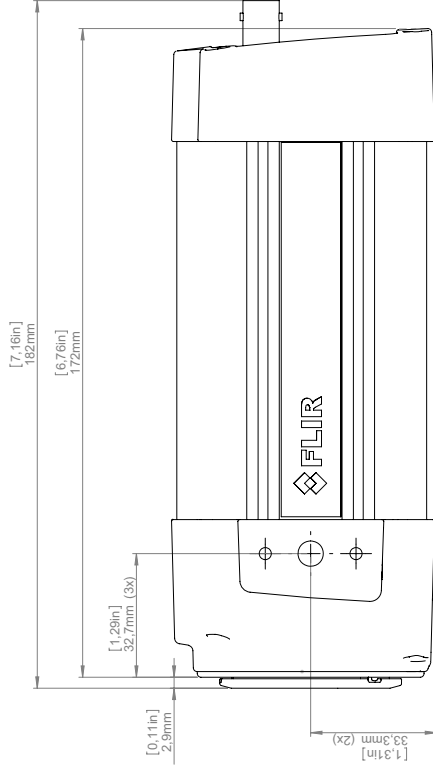
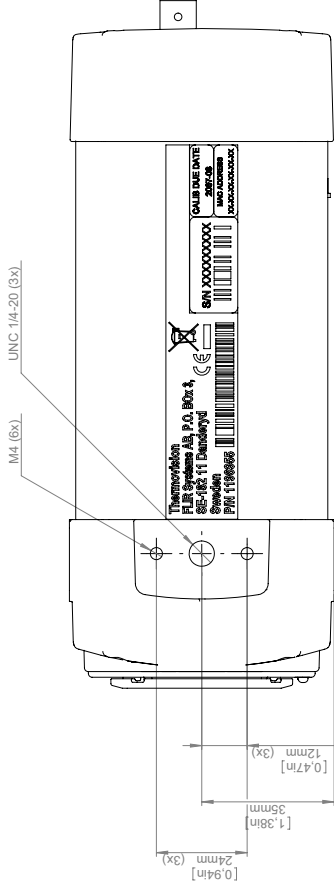
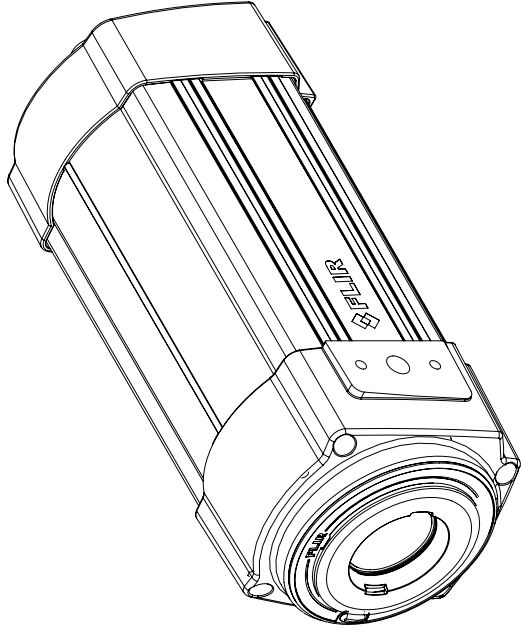
- T197000; High temp. option +1200°C (+2192°F)
- 4119468; ADAPTER PLATE - PT-SERIES
- 223-0017-00; JOYSTICK ASSY, NEXUS CONSOLE
- 500-0461-00; PEDESTAL MOUNT ASSY - PT-SERIES
- 500-0509-00; POLE ADAPTER - PT-SERIES
- 4124857; POWER SUPPLY ASSY, 24VAC - PT-series
- 500-0460-00; WALL MOUNT ASSY - PT-SERIES
- 324-0010-00; Hard case - PT-SERIES
- 4130235; FLIR Sensors Manager, pro



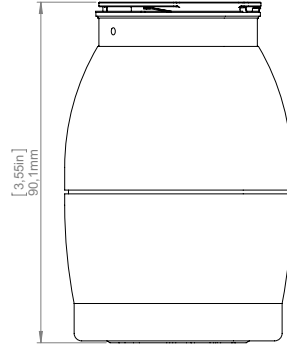
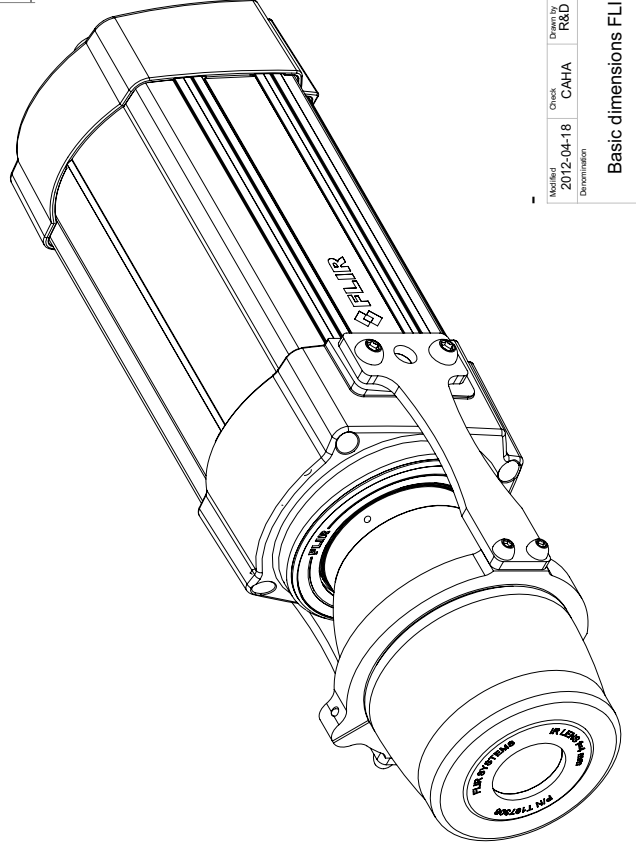
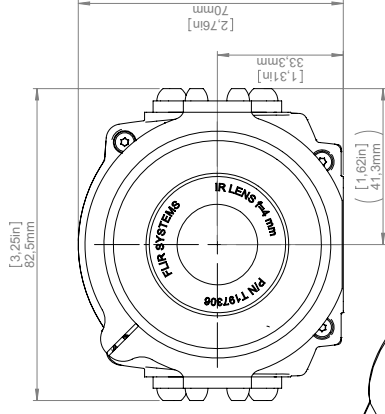
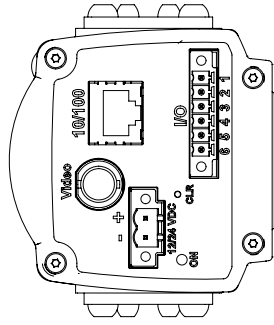
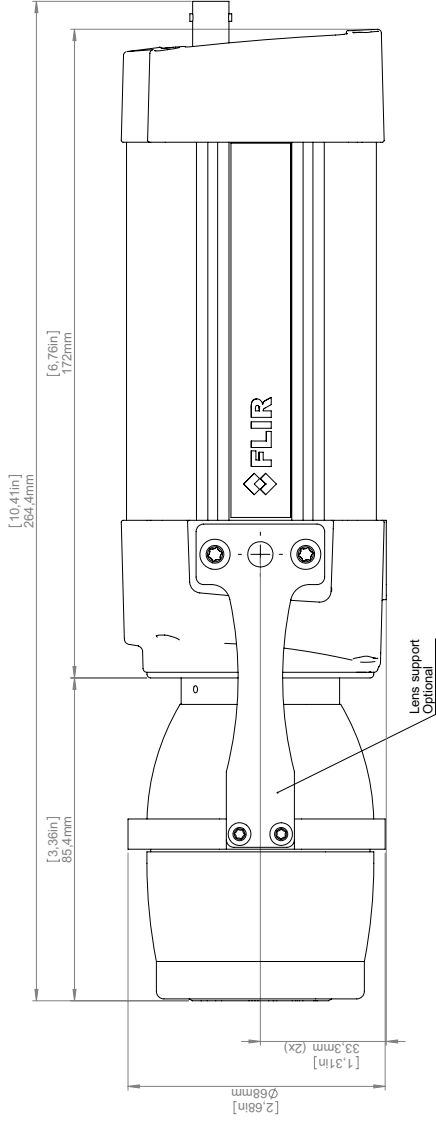
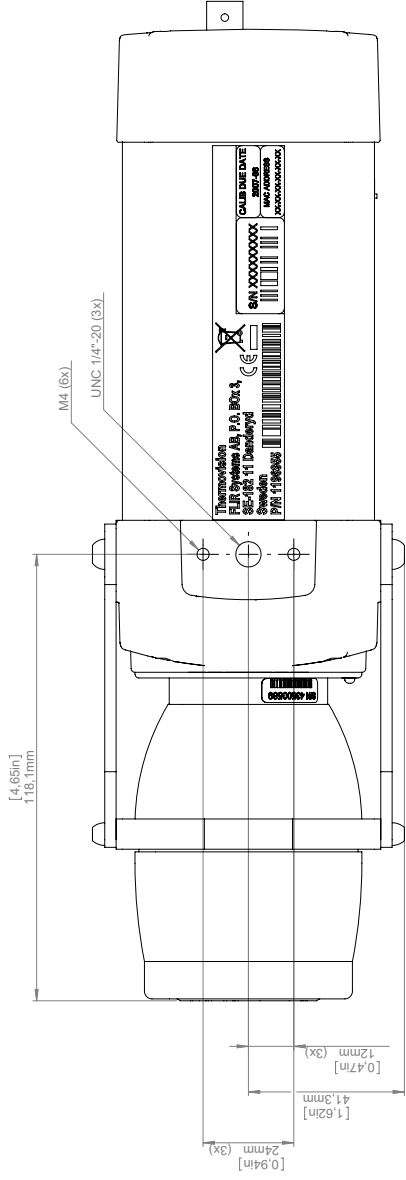
| | | | | |
|--------------------|-------|--------------------------------------|-------------------|----------|
| FLIR | | Blank Sheet 1(1) | Size A3 | Rev B |
| Sheet/Scale 1:5 | ArNo. | Rlin nr/Drawing No T127400 | | |

| | | | | | | | | | | | | | | | | | | | |
|--|--------------------------------------|--|--------------------------------|-------|-----------|----------------|---|--------|-----------|--------------|---|-----------|-----------|---------------|---|------------|-----------|--------------|---|
| Konstör/Drawn H. ÖSTLING | Datum/Date 2011-10-31 | Kontroll/Check ULGU | Material | | | | | | | | | | | | | | | | |
| Ändrad av/Modified by H. ÖSTLING | Ändrad/Modified 2011-11-28 | Ytfinish/Roughness Ra - μm | Ytbehandling/Surface treatment | | | | | | | | | | | | | | | | |
| Ditt ej ämnat anpassningsfritt uttryck Gen töl ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m | | | | | | | | | | | | | | | | | | | |
| <table border="0"> <tr> <td>0.5-6</td> <td>± 0.1</td> <td>Hålklarsradier</td> <td>-</td> </tr> <tr> <td>(6)-30</td> <td>± 0.2</td> <td>Fyller radii</td> <td>-</td> </tr> <tr> <td>(320)-400</td> <td>± 0.3</td> <td>Kanter brutna</td> <td>-</td> </tr> <tr> <td>(400)-1000</td> <td>± 0.8</td> <td>Edges broken</td> <td>-</td> </tr> </table> | | | | 0.5-6 | ± 0.1 | Hålklarsradier | - | (6)-30 | ± 0.2 | Fyller radii | - | (320)-400 | ± 0.3 | Kanter brutna | - | (400)-1000 | ± 0.8 | Edges broken | - |
| 0.5-6 | ± 0.1 | Hålklarsradier | - | | | | | | | | | | | | | | | | |
| (6)-30 | ± 0.2 | Fyller radii | - | | | | | | | | | | | | | | | | |
| (320)-400 | ± 0.3 | Kanter brutna | - | | | | | | | | | | | | | | | | |
| (400)-1000 | ± 0.8 | Edges broken | - | | | | | | | | | | | | | | | | |
| DIMENSIONAL DRAWING PT | | | | | | | | | | | | | | | | | | | |

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



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



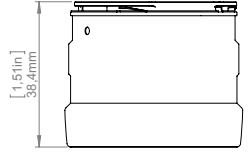
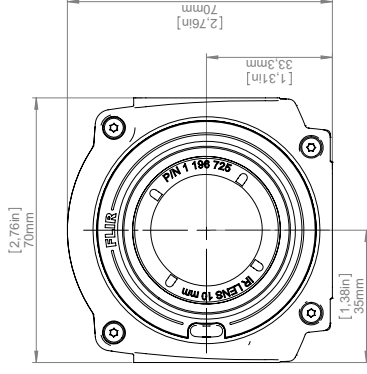
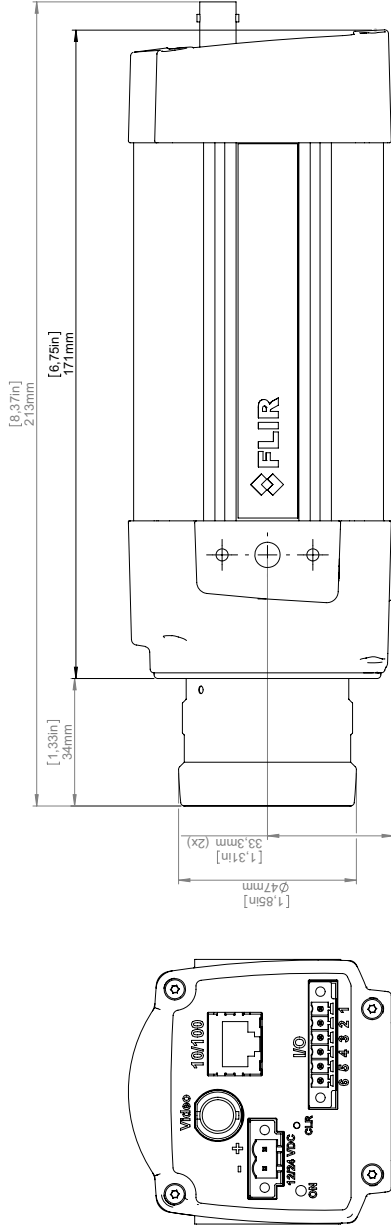
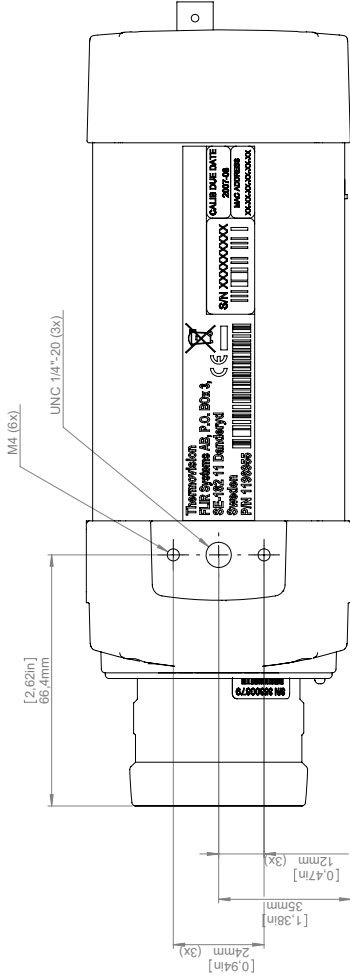
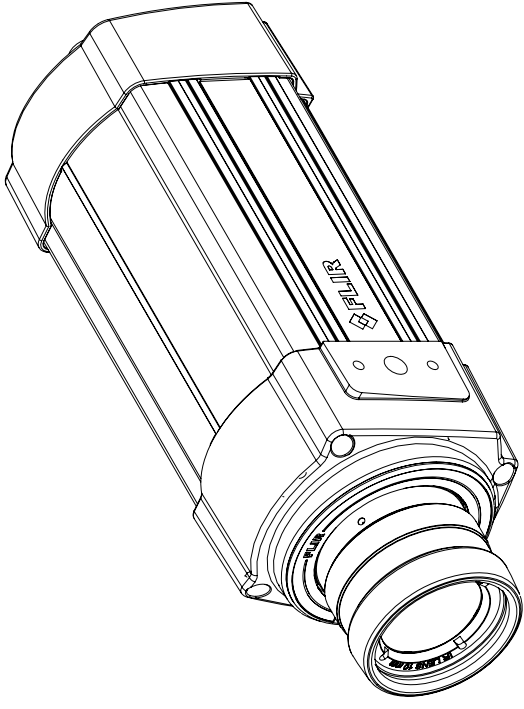
For additional dimensions see page 1

| | | | | | | | |
|-------------|------------|-------|------|----------|------------------|-------------|---------|
| Model/Modif | 2012-04-18 | Check | CAHA | Drawn by | R&D Thermography | Size | A3 |
| Dimension | | | | | | Scale | 1:1 |
| | | | | | | Sheet | 2(8) |
| | | | | | | Drawing No. | T125002 |
| | | | | | | Size | A |

Basic dimensions FLIR A3xx/SC3xx

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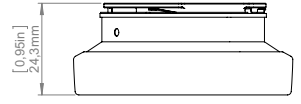
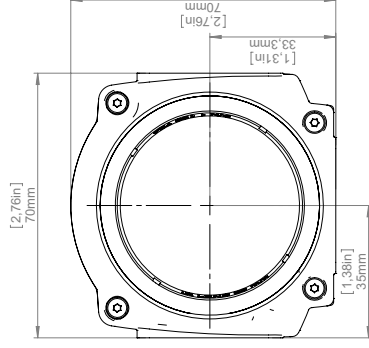
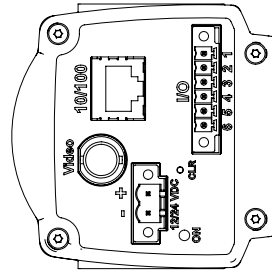
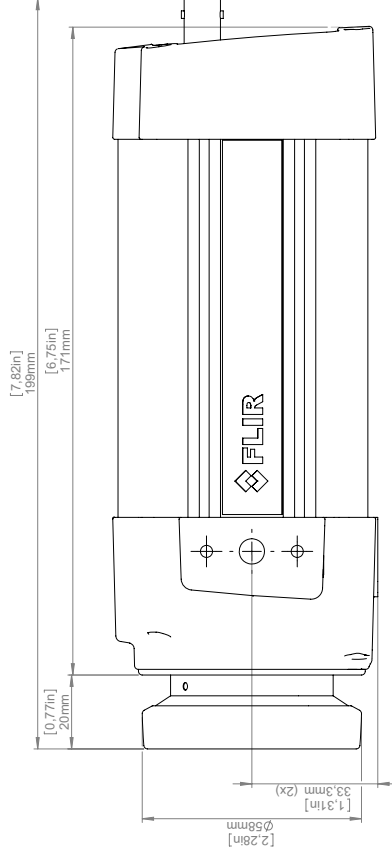
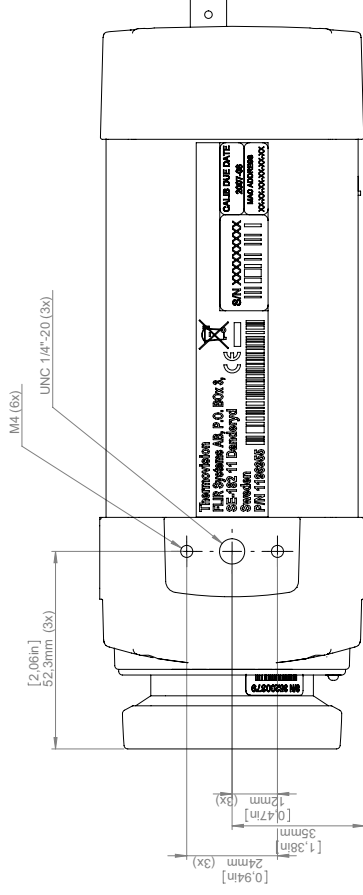
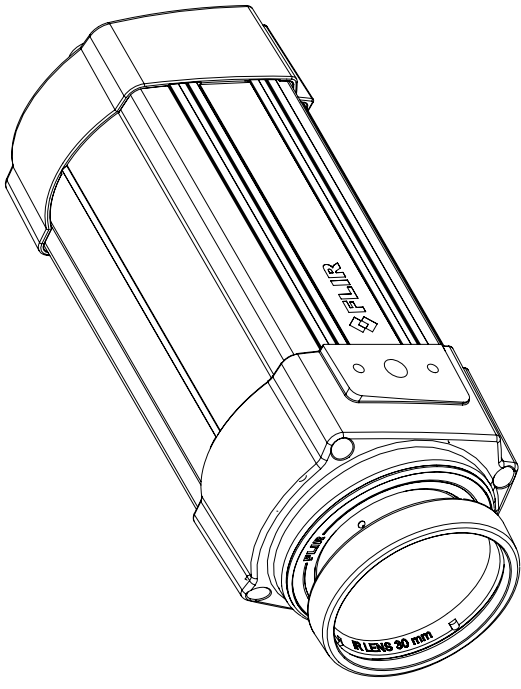
Camera with Lens IR f=10 mm (45°)



For additional dimensions see page 1

| | | | | | | | |
|---|-----------------|------------------------------|------------|-----------------|--------------|---------------|------------------|
| Model/Rev 2012-04-18 | Checked CAHA | Drawn By R&D Thermography | Size A3 | Sheet 1 of 1 | Scale 1:1 | Sheet 3(8) | Sheet T125002 |
| Description Basic dimensions FLIR A3xx/SC3xx | | | | | | | |

Camera with Lens IR f=30 mm (15°)

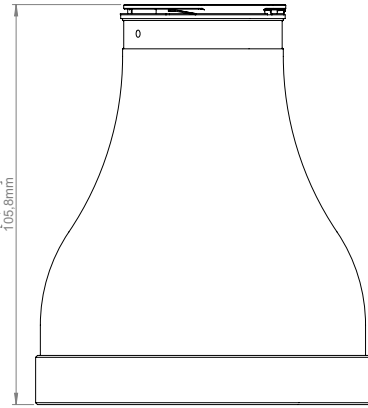
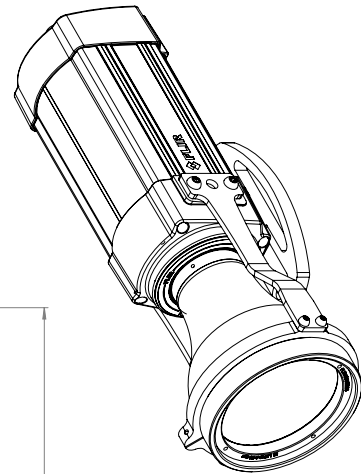
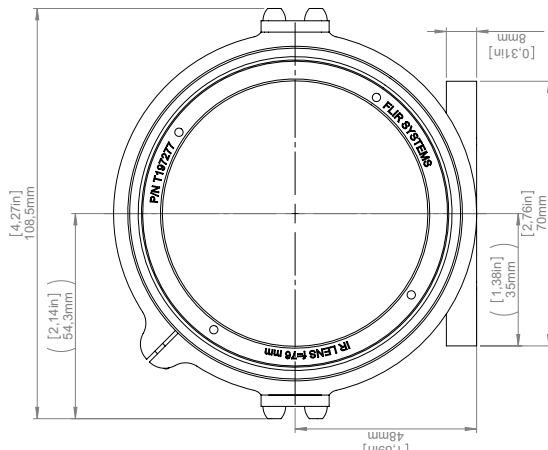
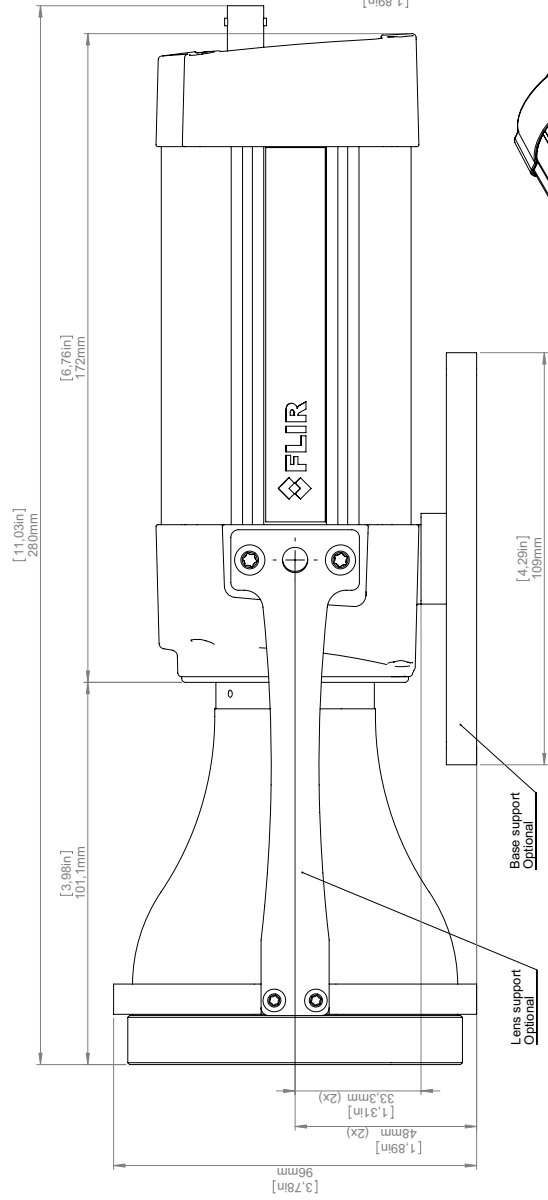
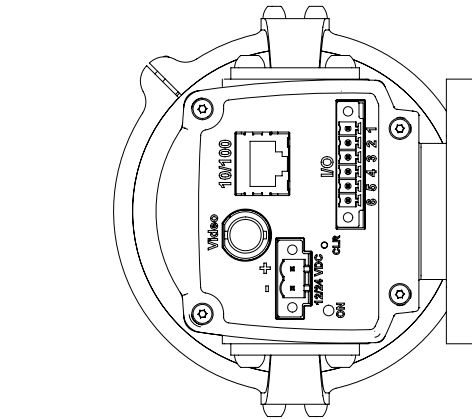
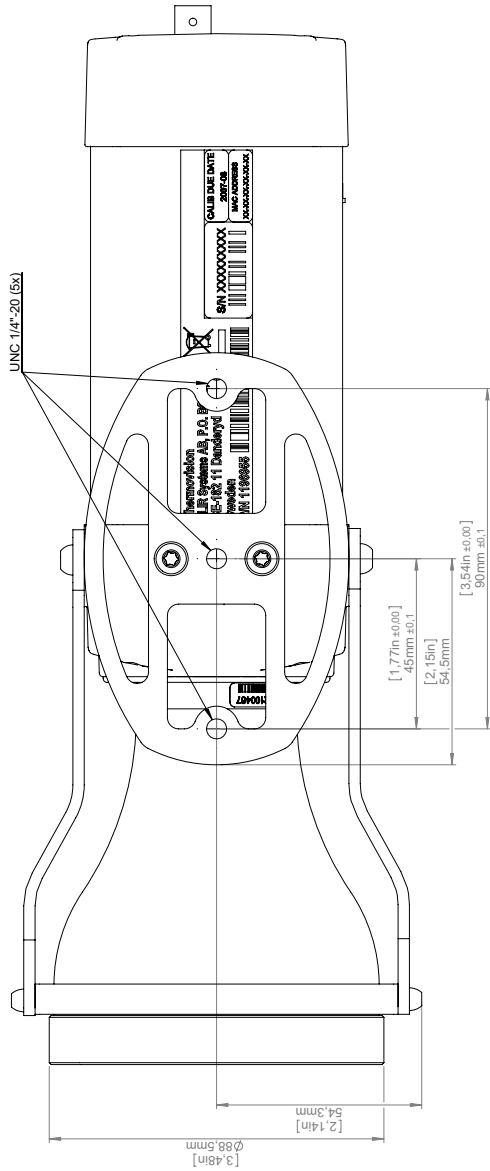


For additional dimensions see page 1

| | | | | | | | |
|--------------------------------------|-----------------|------------------------------|------------|--------------|---------------|----------------------|-----------|
| Model/Ref 2012-04-18 Dimension | Checked CAHA | Drawn by R&D Thermography | Size A3 | Scale 1:1 | Sheet 4(8) | Drawn No. T125002 | Size A |
|--------------------------------------|-----------------|------------------------------|------------|--------------|---------------|----------------------|-----------|

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

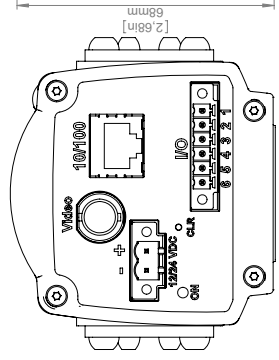
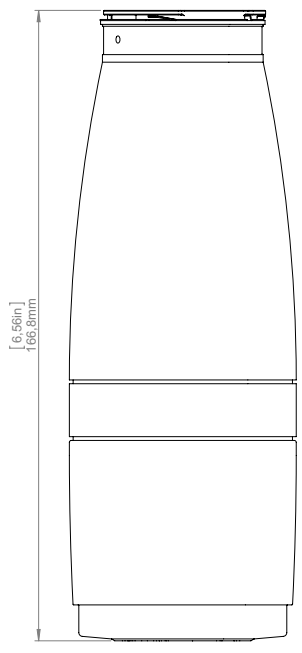
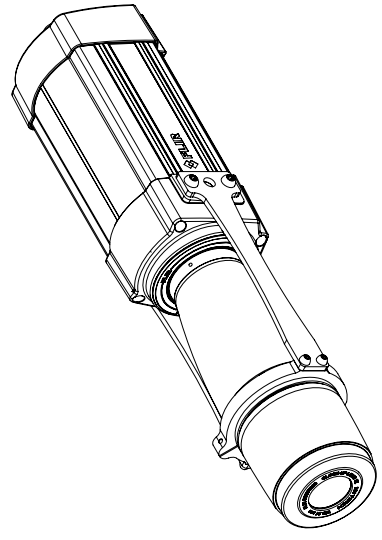
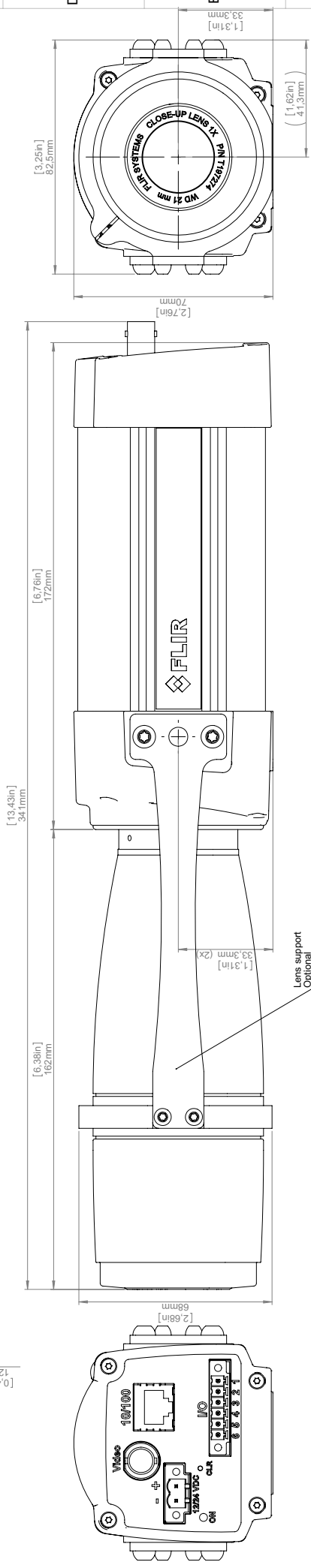
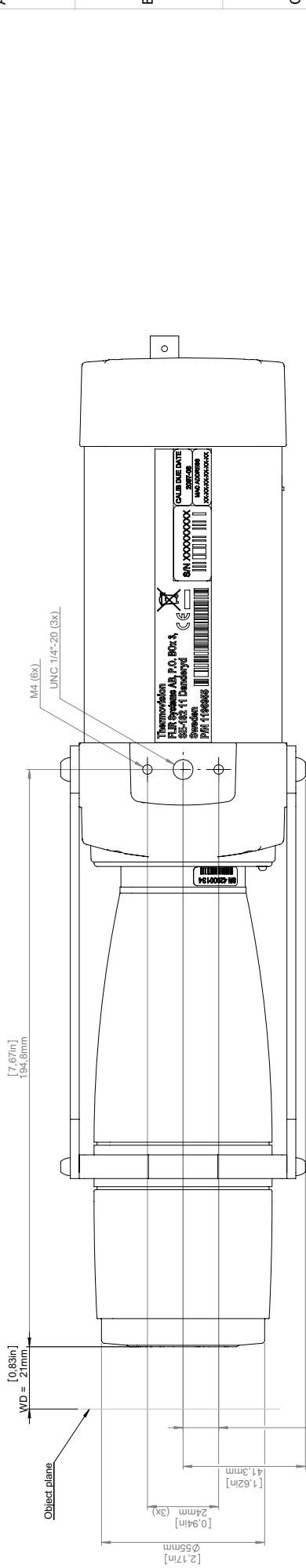


For additional dimensions see page 1

| | | | | | |
|-------------------------|---------------|------------------------------|------------------------|--------------|---------------|
| Model/Ref 2012-04-18 | Check CAHA | Drawn by R&D Thermography | Size A3 | Scale 1:1 | Sheet 5(8) |
| Dimension | | | Drawing No. T125002 | | |

Basic dimensions FLIR A3xx/SC3xx

Camera with Close-up lens 1X (25 μm) incl support



For additional dimensions see page 1

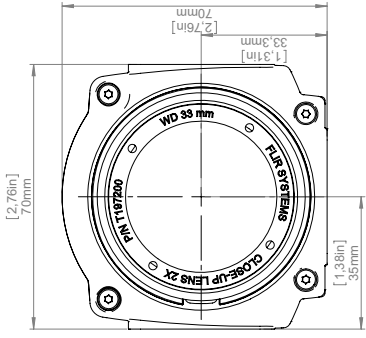
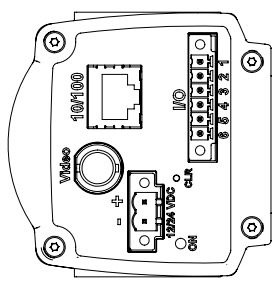
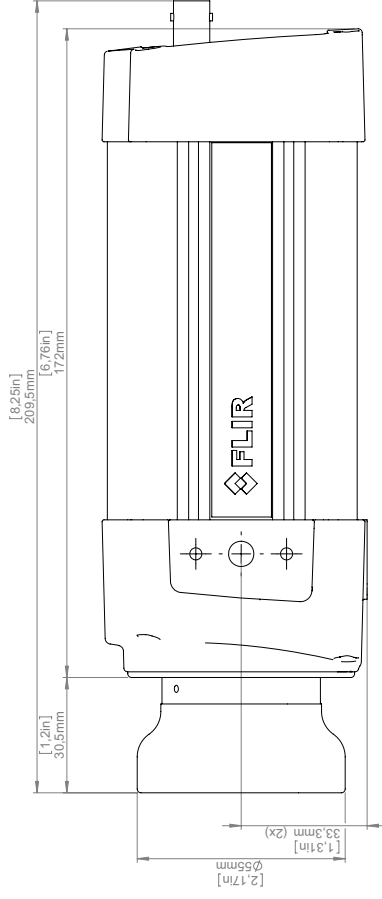
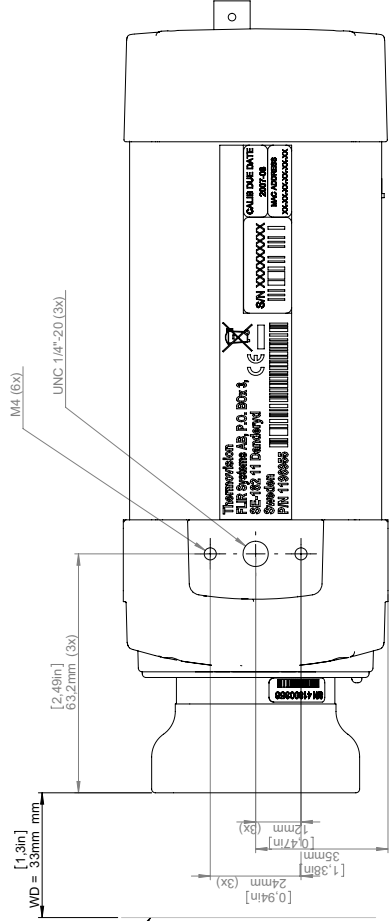
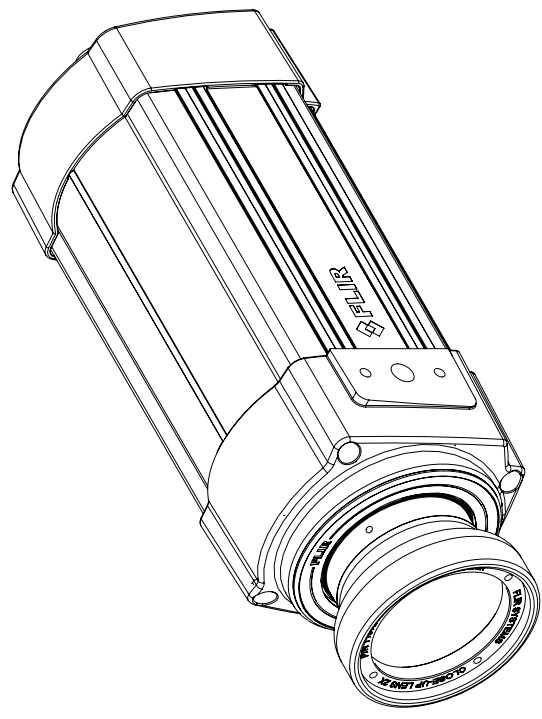
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| Denomination | | | | | | Scale | 1:1 |
| | | | | | | Sheet | 6(8) |
| | | | | | | Drawing No. | T125002 |
| | | | | | | Size | A |



Basic dimensions FLIR A3xx/SC3xx

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Camera with Close-up lens 2X (50 μm)



For additional dimensions see page 1

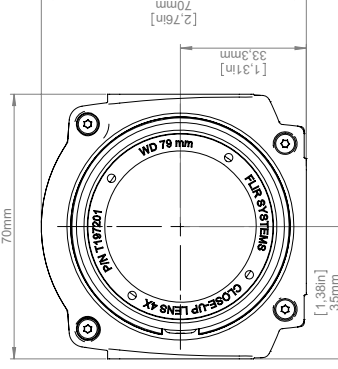
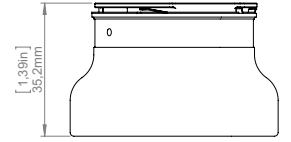
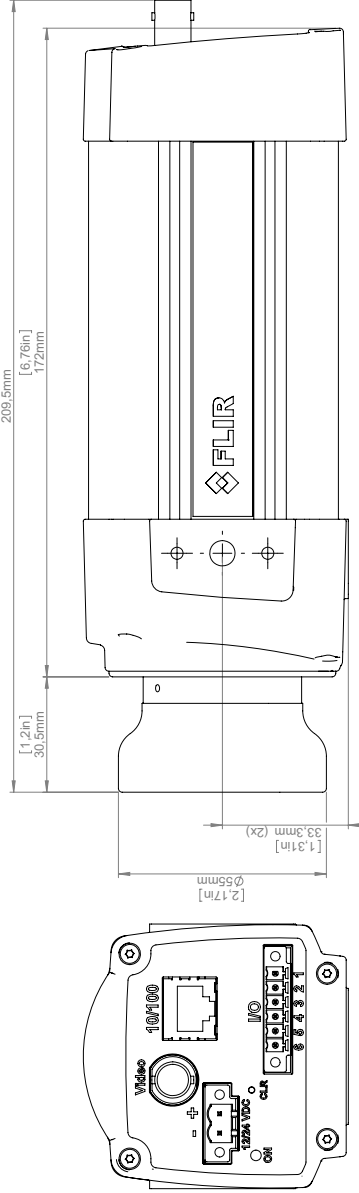
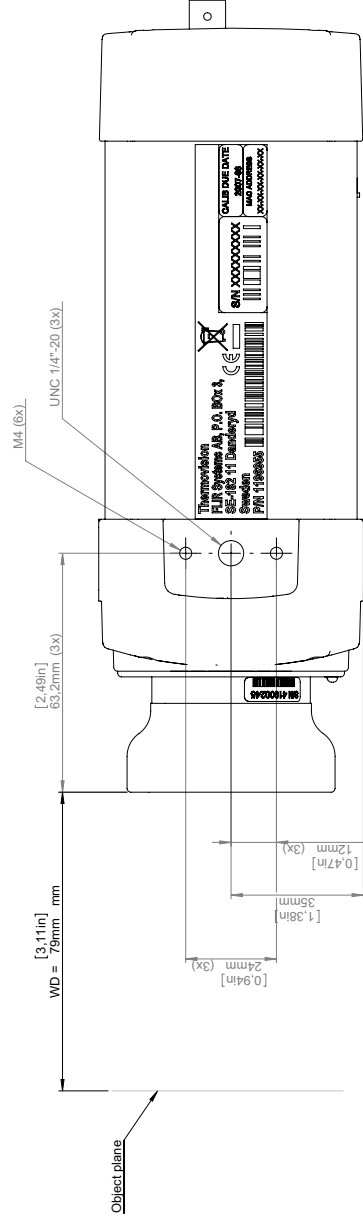
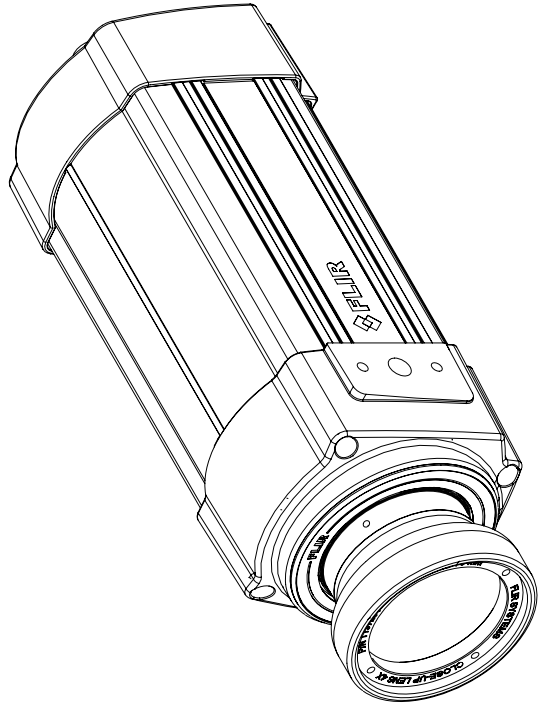
| | | | | | | | |
|-----------|------------|-------|------|----------|------------------|-------------|---------|
| Model No. | 2012-04-18 | Check | CAHA | Drawn by | R&D Thermography | Size | A3 |
| Revision | | | | | | Scale | 1:1 |
| Drawn by | | | | | | Sheet | 7(8) |
| Dimension | | | | | | Drawing No. | T125002 |
| | | | | | | Sheet | A |

Basic dimensions FLIR A3xx/SC3xx



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Camera with Close-up lens 4X (100 µm)



For additional dimensions see page 1

| | | | | | | | |
|-----------|------------|-------|------|----------|------------------|-------------|---------|
| Model No. | 2012-04-18 | Check | CAHA | Drawn by | R&D Thermography | Size | A3 |
| Revision | 1.1 | Scale | 1:1 | Sheet | 8(8) | Drawing No. | T125002 |
| Dimension | | | | | | Sheet | A |

Basic dimensions FLIR A3xx/SC3xx

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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


Standards:

**Emission: EN 61000-6-4; Electro magnetic Compatibility
Generic standards - Emission**

**Immunity: EN 61000-6-2; Electro magnetic Compatibility;
Generic standards - Immunity**

System: FLIR A310pt series

FLIR Systems AB
Quality Assurance



Björn Svensson
Director