

P/N: 61201-1103

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<http://www.flir.com>

Customer support

<http://support.flir.com>

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General description	
<p>The main purpose of the housing on the FLIR A310f is to increase the environmental specification of the standard FLIR A310 to IP66 without affecting any of the features available in the camera itself.</p> <p>The built-in FLIR A310 camera offers an affordable and accurate temperature measurement solution for anyone who needs to solve problems that need built in "smartness" such as analysis, alarm functionality, and autonomous communication using standard protocols. The FLIR A310 camera also has all the necessary features and functions to build distributed single- or multi-camera solutions utilizing standard Ethernet hardware and software protocols.</p> <p>The FLIR A310 camera also has built in support to connect to industrial control equipment such as PLCs, and allows for sharing of analysis and alarm results and simple control using the Ethernet/IP and Modbus TCP field bus protocols.</p>	
Key features:	
<ul style="list-style-type: none"> • Encapsulation to IP66. • Support for the Ethernet/IP field bus protocol (analyze, alarm, and simple camera control). • Support for the Modbus TCP field bus protocol (analyze, alarm, and simple camera control). • Built-in extensive analysis functionality. • Extensive alarm functionality, as a function of analysis and more. • On schedule: file sending (FTP) or e-mail (SMTP) of analysis results or images. • On alarms: file sending (FTP) or e-mail (SMTP) of analysis results or images. • MPEG-4 streaming. • PoE (Power over Ethernet). • Built-in web server. • General purpose I/O. • 100 Mbps Ethernet (100 m cable, wireless, fiber, etc.). • Synchronization through SNTP. • Composite video output. • Multi-camera utility software: FLIR IP Config and FLIR IR Monitor included. • Open and well-described TCP/IP protocol for control and set-up. • 16-bit 320 × 240 pixel images at 7–8 Hz, radiometric. 	
Typical applications:	
<ul style="list-style-type: none"> • Safety with temperature alarms (multi-camera applications), fire prevention, critical vessel monitoring, and power utility asset management. • Volume-oriented industrial control (multi-camera installation is possible). 	
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

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Imaging and optical data	
Image frequency	30 Hz
Focus	Automatic or manual (built in motor)
Zoom	1–8× continuous, digital, interpolating zooming on images
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	±4°C (±7.2°F) or ±4% of reading
Measurement analysis	
Spotmeter	10
Area	10 boxes with max./min./average/position (7 if FLIR Sensors Manage is used)
Isotherm	1 with above/below/interval
Measurement option	Measurement Mask Filter Schedule response: File sending (ftp), email (SMTP)
Difference temperature	Delta temperature between measurement functions or reference temperature
Reference temperature	Manually set or captured from any measurement function
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, Digital In, Camera temperature, timer
Alarm output	Digital Out, log, store image, file sending (ftp), email (SMTP), notification
Set-up	
Color palettes	Color palettes (BW, BW inv, Iron, Rain)
Set-up commands	Date/time, Temperature (°C/°F)

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Storage of images	
Storage media	Built-in memory for image storage
File formats	Standard JPEG, 16-bit measurement data included

Ethernet	
Ethernet	Control, result and image
Ethernet, type	100 Mbps
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	TCP/IP socket-based FLIR proprietary
Ethernet, video streaming	MPEG-4, ISO/IEC 14496-1 MPEG-4 ASP@L5
Ethernet, image streaming	16-bit 320 × 240 pixels @ 7-8 Hz - Radiometric
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 0
Ethernet, protocols	Ethernet/IP, Modbus TCP, TCP, UDP, SNMP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP

Digital input/output	
Digital input, purpose	Image tag (start/stop/general), Input ext. device (programmatically read)
Digital input	2 opto-isolated, 10–30 VDC
Digital output, purpose	As function of ALARM, Output to ext. device (programmatically set)
Digital output	2 opto-isolated, 10–30 VDC, max. 100 mA
Digital I/O, isolation voltage	500 VRMS
Digital I/O, supply voltage	12/24 VDC, max. 200 mA
Digital I/O, connector type	6-pole jackable screw terminal

Composite video	
Video out	Composite video output, PAL and NTSC compatible
Video, standard	CVBS (ITU-R-BT.470 PAL/SMPTE 170M NTSC)
Video, connector type	Standard BNC connector

Power system	
External power operation	The camera operates on 12/24 VDC, 9 W max. (allowed range: 10-30 VDC) and heaters on 24 VDC, 25 W max. In total: 34 W.
External power, connector type	2-pole jackable screw terminal
Voltage	Allowed range 10–30 VDC

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)

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Environmental data	
Encapsulation	IP 66 (IEC 60529)
Bump	5 g, 11 ms (IEC 60068-2-27)
Vibration	2 g (IEC 60068-2-6)
Physical data	
Weight	5 kg (11.0 lb.)
Size (L x W x H)	460 x 140 x 159 mm (18.1 x 5.5 x 6.3 in.)
Base mounting	
Housing material	Aluminum
System features	
External power operation (heater)	24 VDC, 25 W max.
External power, connector type (heater)	2-pole jackable screw terminal
Voltage (heater)	Allowed range 21-30 VDC
Automatic heaters	Clears window from ice
Shipping information	
Packaging, type	Cardboard box
List of contents	<ul style="list-style-type: none"> • Infrared camera with lens and environmental housing • FLIR Sensors Manager download card • FLIR Tools & Utilities CD-ROM • Lens cap • Printed documentation • Small accessories kit
Packaging, weight	
Packaging, size	534 x 207 x 230 mm (21.0 x 8.1 x 9.1 in.)
EAN-13	7332558004821
UPC-12	845188004842
Country of origin	Sweden

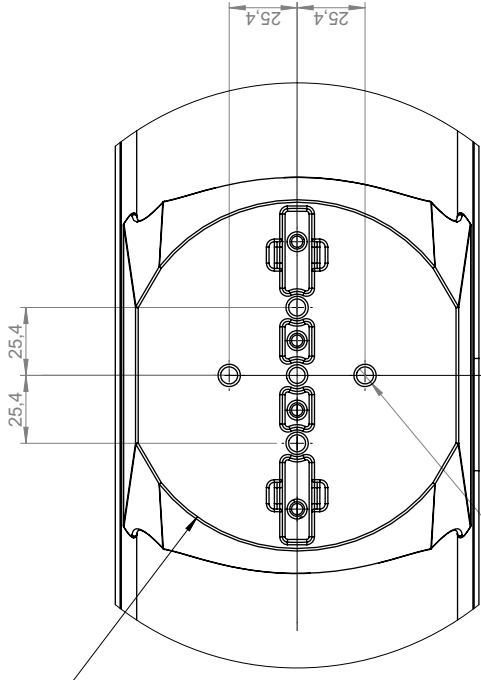
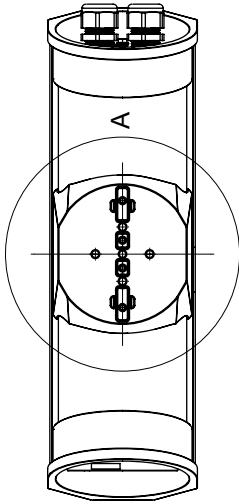
Supplies & accessories:

- T197000; High temp. option +1200°C (+2192°F)
- T911182; Power supply for A3xx f, IP66
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- 1910586ACC; Power cable, pigtailed
- 908929; Video cable, 3.0 m/9.8 ft.
- 324-0004-00; HARD CASE - WITH FOAM, F - SERIES
- 500-0463-00; PEDESTAL MOUNT ASSY - F-SERIES
- 4119507; POLE ADAPTER - F-SERIES
- 500-0462-00; WALL MOUNT ASSY - F-SERIES
- T198584; FLIR Tools
- T198583; FLIR Tools+ (download card incl. license key)
- DSW-10000; FLIR IR Camera Player
- APP-10002; FLIR Tools Mobile (Android Application)
- T198567; ThermoVision™ System Developers Kit Ver. 2.6
- T198566; ThermoVision™ LabVIEW® Digital Toolkit Ver. 3.3
- 4130235; FLIR Sensors Manager, pro

1 2 3 4 5 6 7 8 9 10

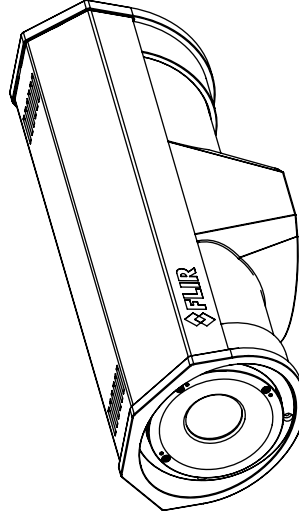
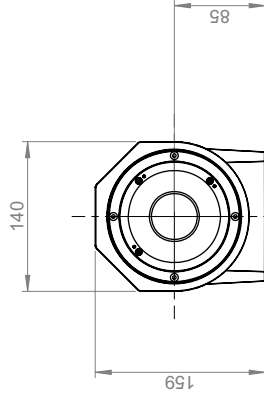
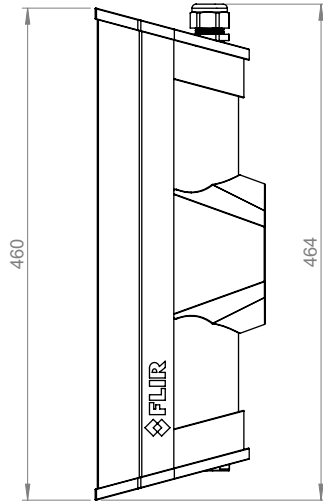
A B C D E F G

NOMINAL BASE SURFACE DIAMETER, $\phi 127$



DETAIL A
SCALE 1 : 2

5x 1/4 - 20 ∇ 19 mm

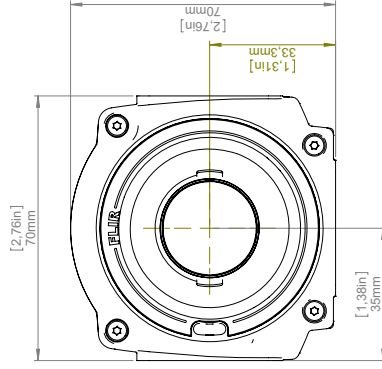
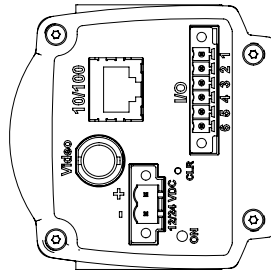
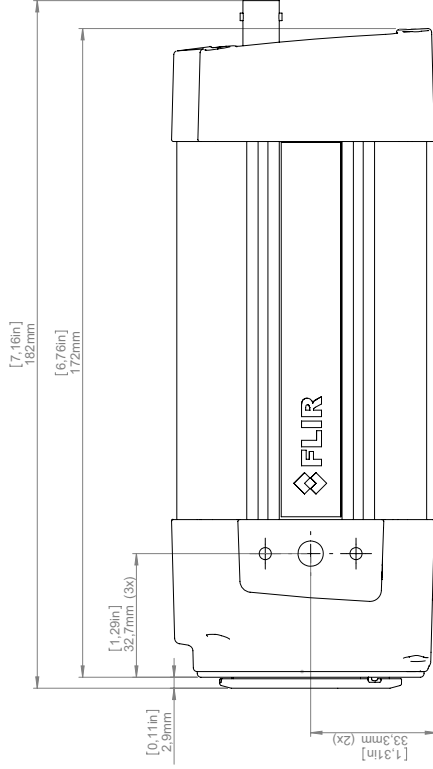
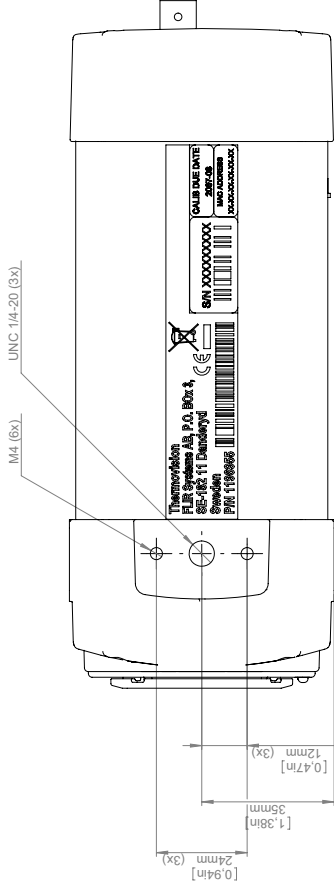
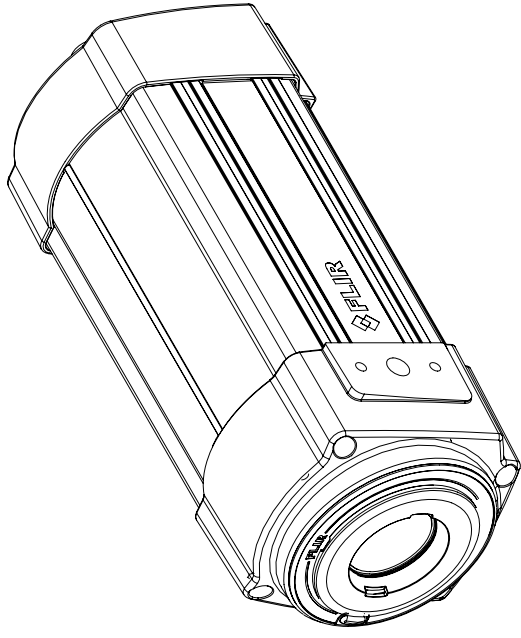


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Konstør/Drawn H. ÖSTLING	Datum/Date 2011-11-25	Kontroll/Check HAOS	Material -
Ändrad av/Modified by H. ÖSTLING	Ändrad/Modified 2011-11-28	Ytjämnhet/Roughness Ra - μm	Ytehandling/Surface treatment -
Ditt ej ämnat användas utom såsom uttryckligen angivits. Genfölj ISO 2768-mK 0.6-6 Hållkradsradier (6)-30 Filler radii (20)-400 ± 0.3 Kanter brutna (400)-1000 ± 0.8 Edges broken			
DIMENSIONAL DRAWING			
F-SERIES			
Blad/Sheet 1(1)	Skala/Scale 1:5	Storlek/Size A3	Rev A
Rit nr/Drawing No. T127376			

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



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Modified: 2012-04-18
Dimension: CAHA

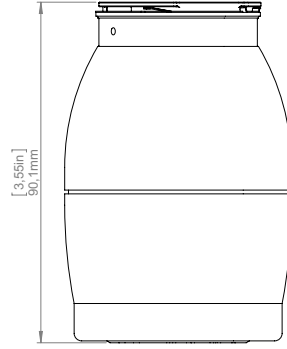
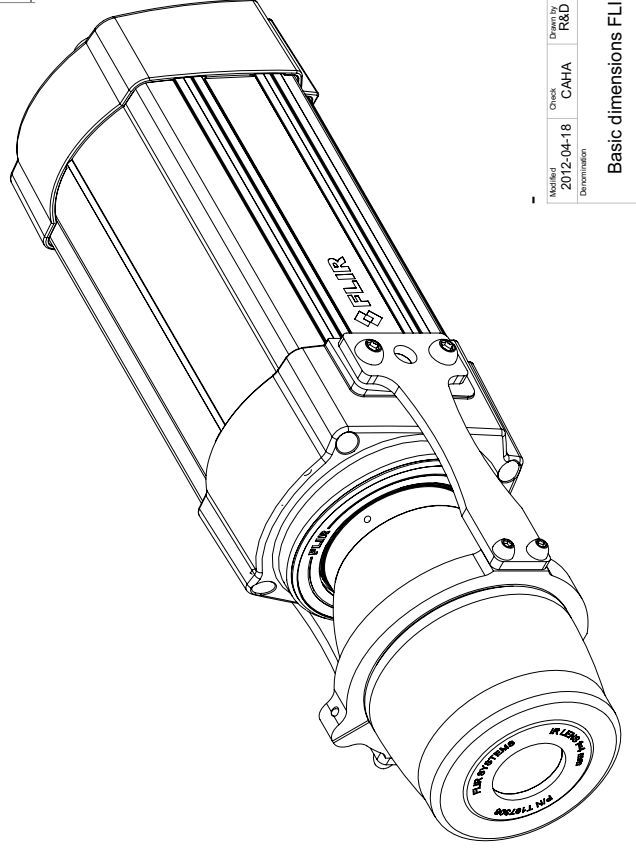
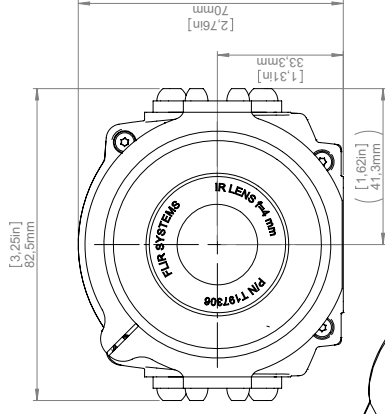
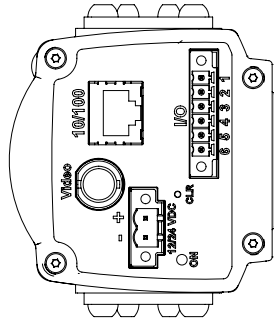
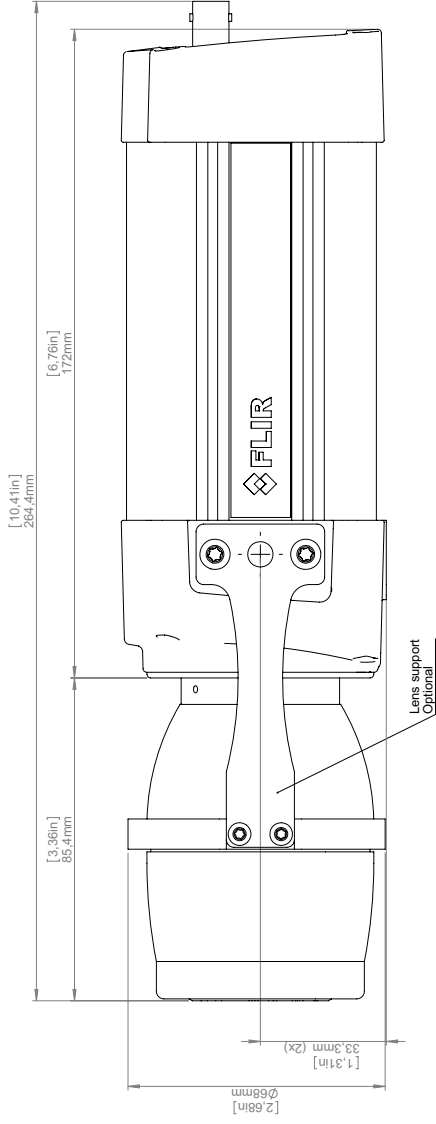
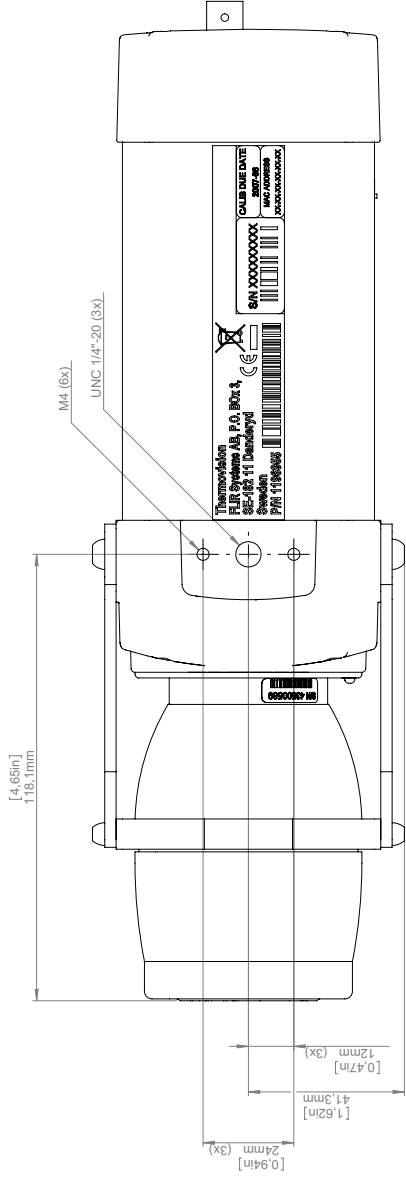
Checked by: CAHA

Drawn by: R&D Thermography

Size: A3
Scale: 1:1
Drawing No.: T125002

Basic dimensions FLIR A33x/SC3xx

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



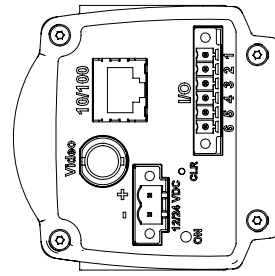
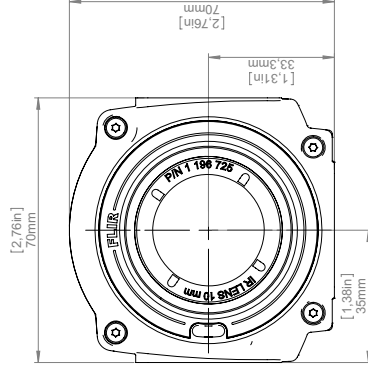
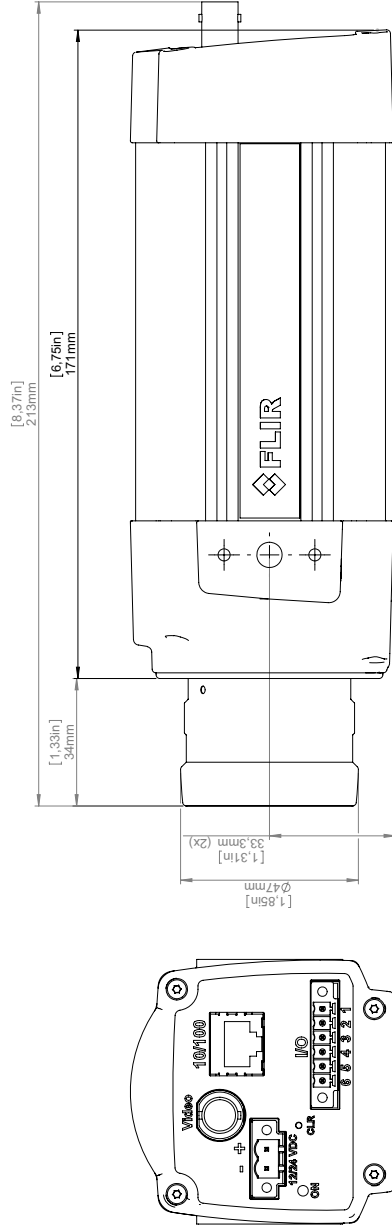
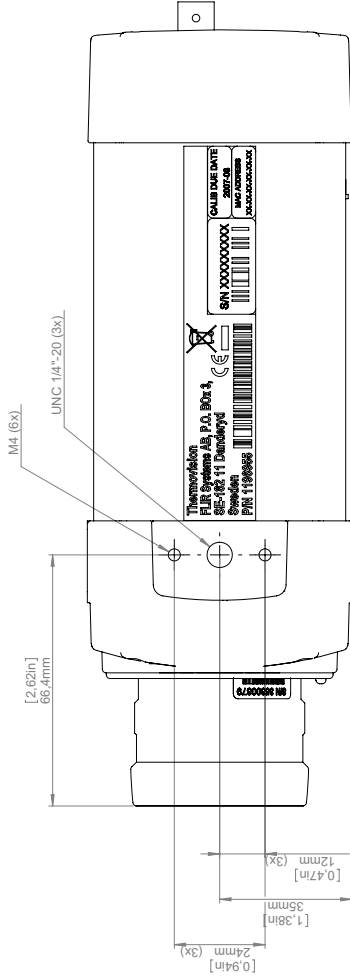
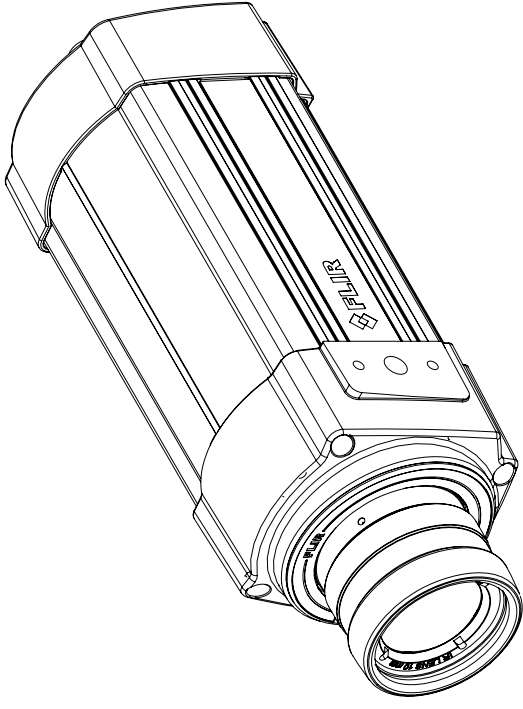
For additional dimensions see page 1

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Basic dimensions FLIR A3xx/SC3xx

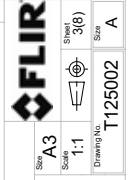
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Camera with Lens IR f=10 mm (45°)



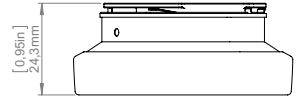
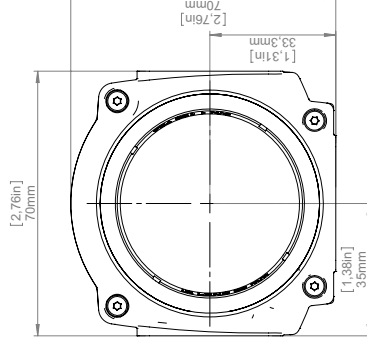
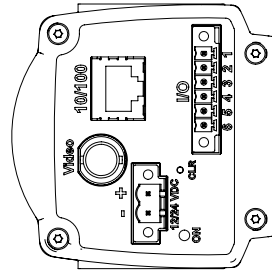
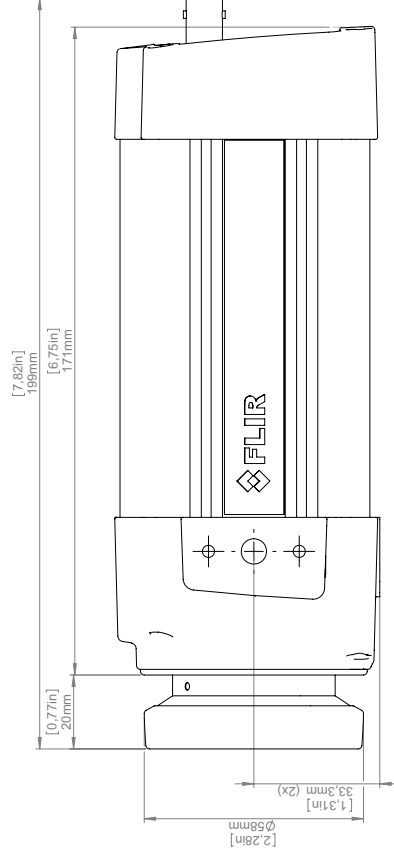
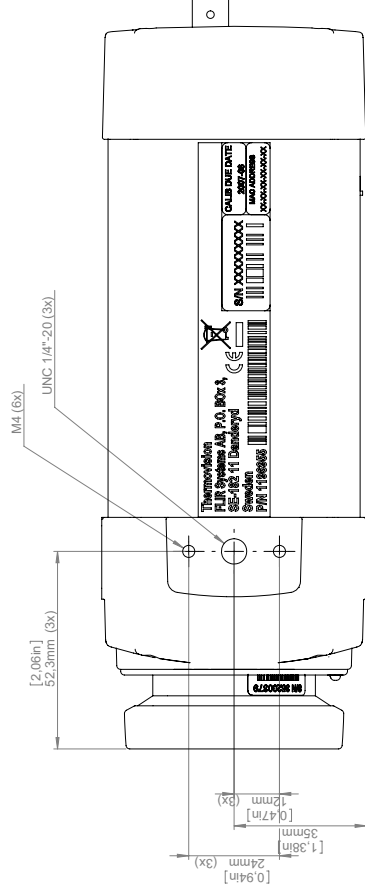
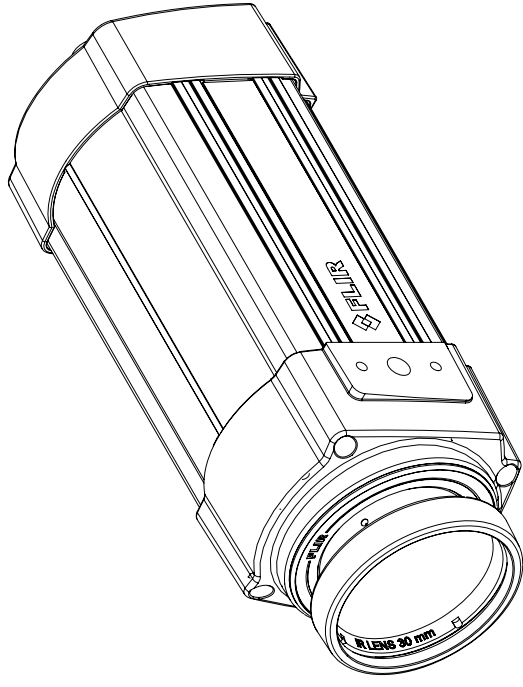
For additional dimensions see page 1

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Camera with Lens IR f=30 mm (15°)



For additional dimensions see page 1

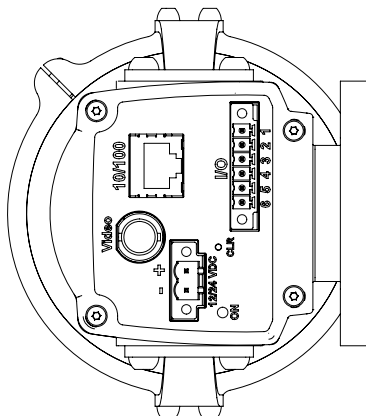
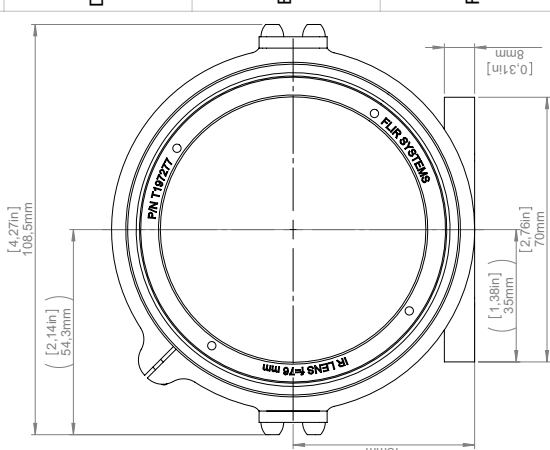
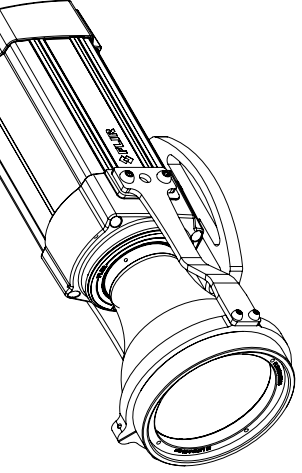
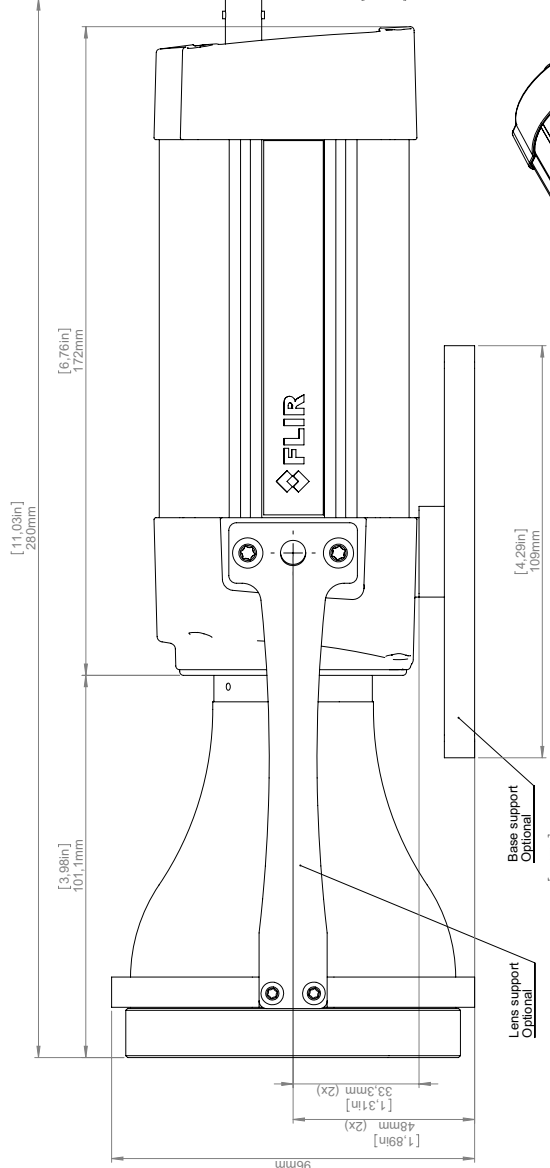
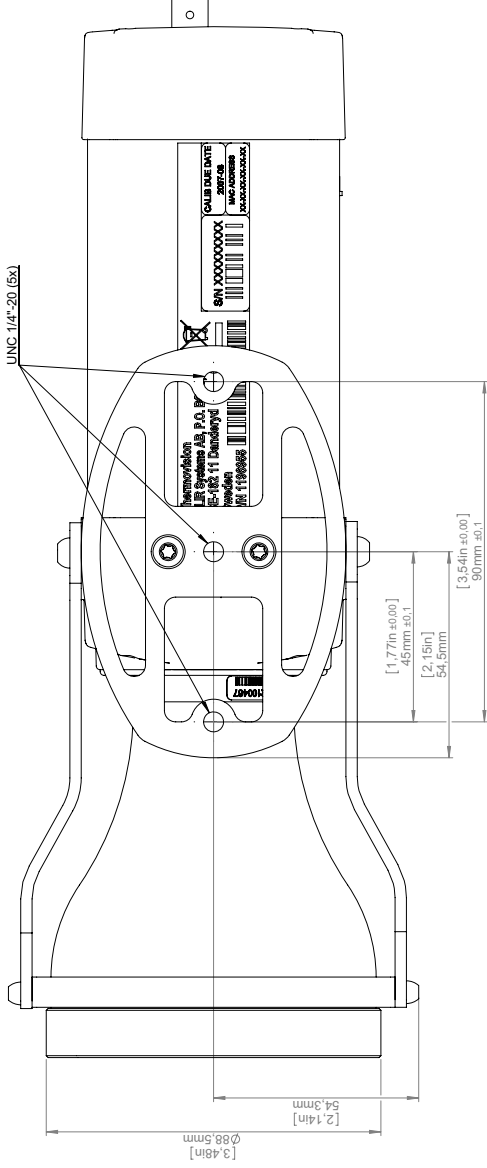
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Basic dimensions FLIR A3xx/SC3xx



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



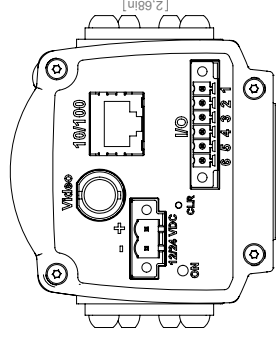
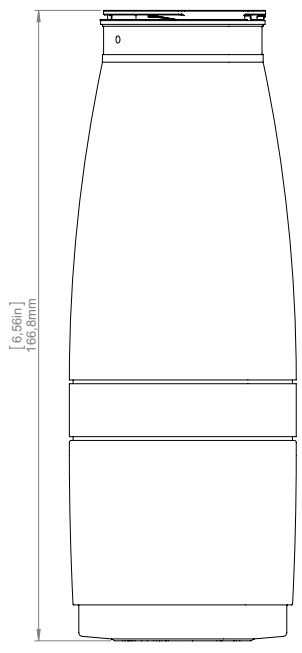
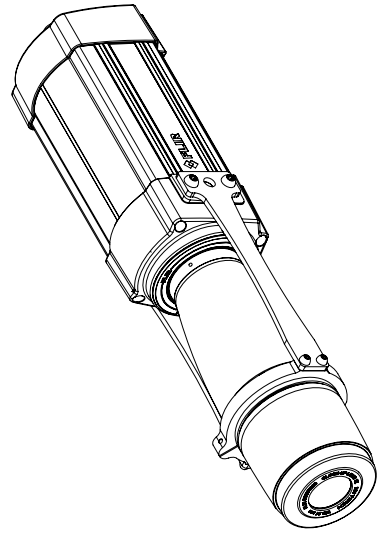
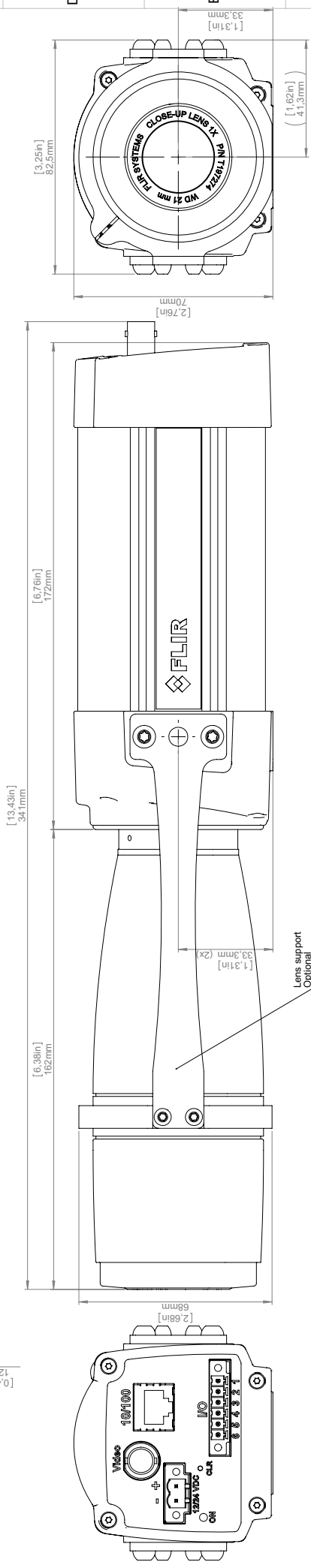
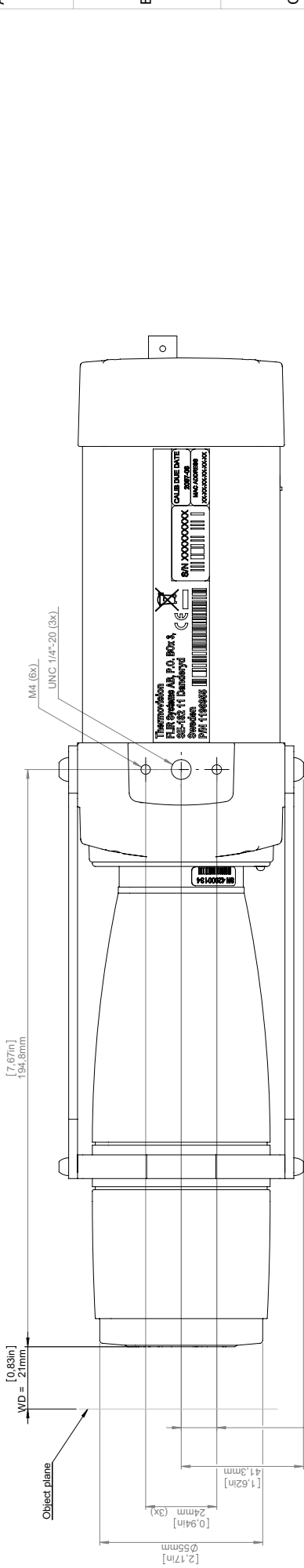
For additional dimensions see page 1

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Basic dimensions FLIR A3xx/SC3xx

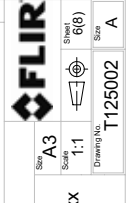
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Camera with Close-up lens 1X (25 μm) incl support



For additional dimensions see page 1

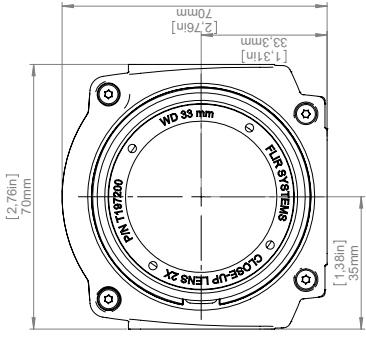
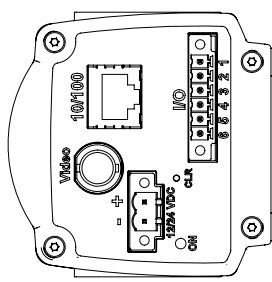
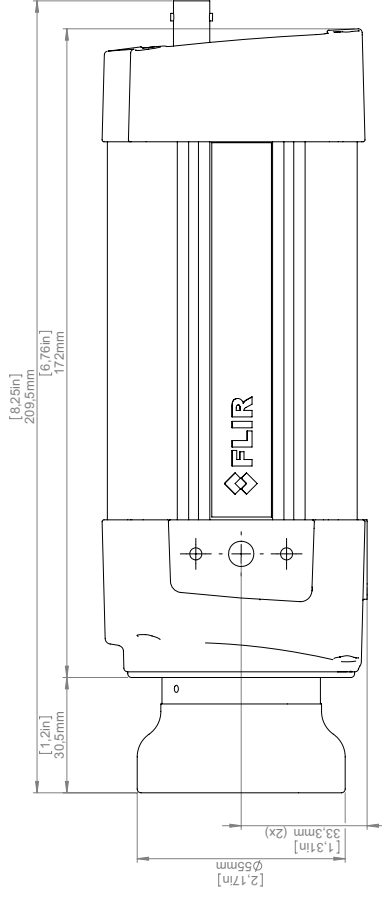
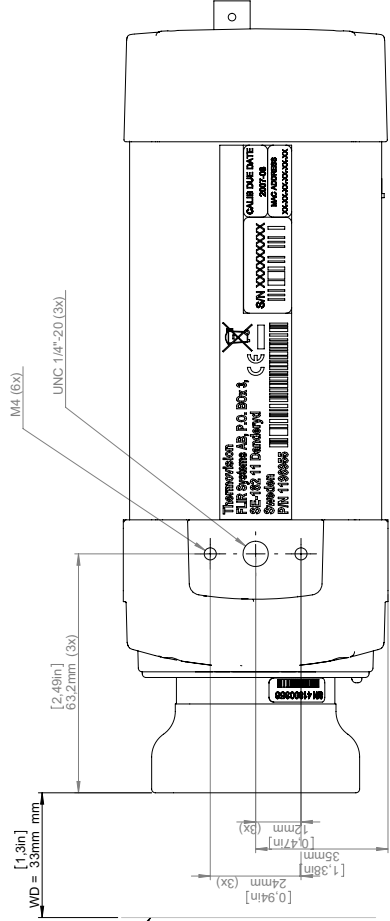
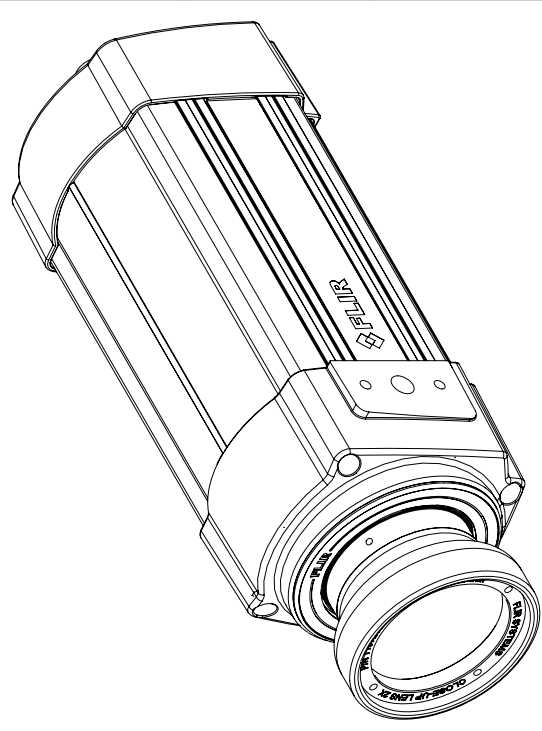
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Basic dimensions FLIR A3xx/SC3xx

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Camera with Close-up lens 2X (50 µm)



For additional dimensions see page 1

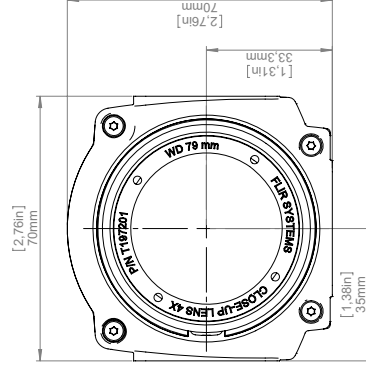
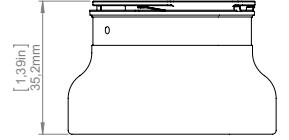
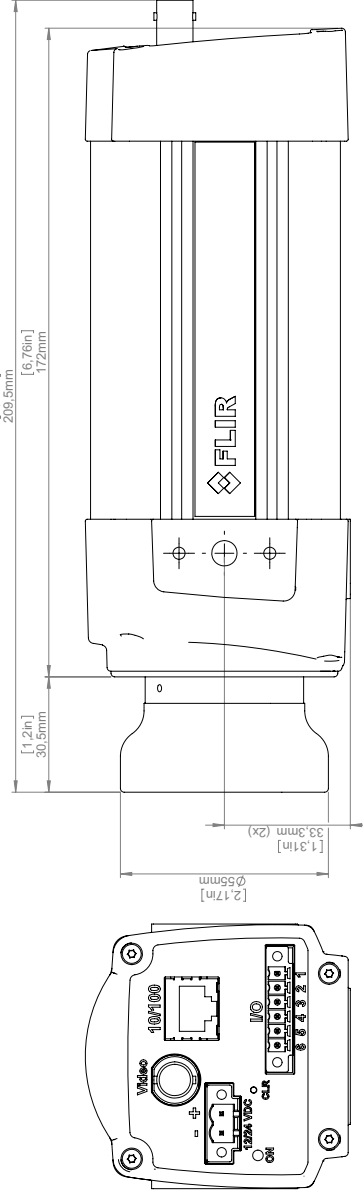
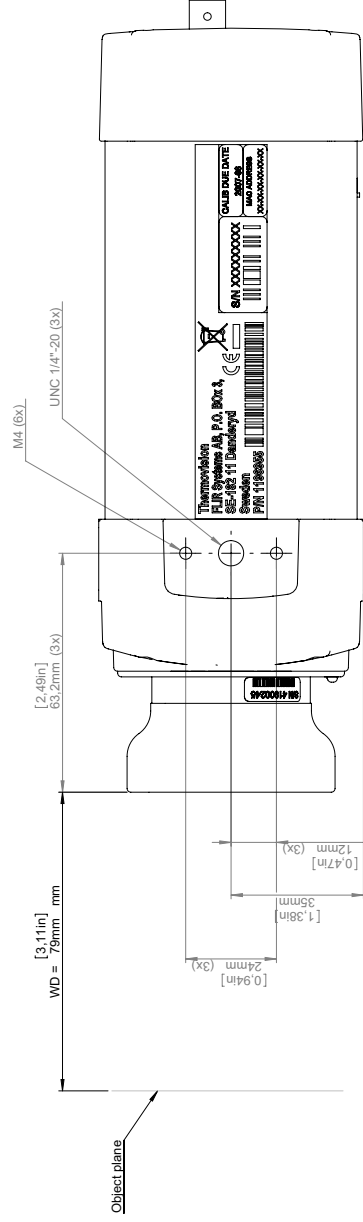
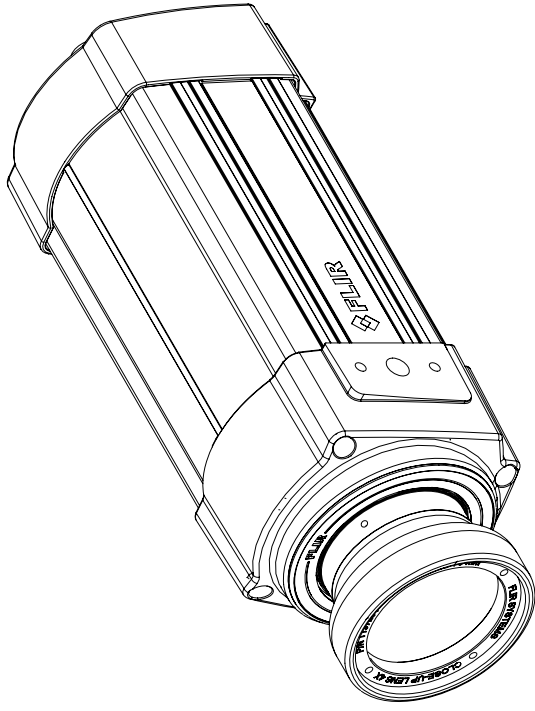
Model No.	2012-04-18	Check	CAHA	Drawn by	R&D Thermography	Size	A3
Dimensions						Scale	1:1
						Sheet	7(8)
						Drawing No.	T125002
						Rev.	A

Basic dimensions FLIR A3xx/SC3xx



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Camera with Close-up lens 4X (100 μm)



For additional dimensions see page 1

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

Basic dimensions FLIR A3xx/SC3xx



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

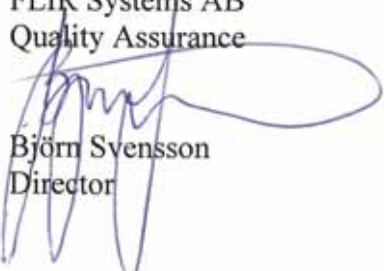
Standards:

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

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

System: **FLIR A310f series**

FLIR Systems AB
Quality Assurance



Björn Svensson
Director