

P/N: 55001-0303

Copyright

© 2016, FLIR Systems, Inc.

All rights reserved worldwide. Names and marks appearing herein are either registered trademarks or trademarks of FLIR Systems and/or its subsidiaries. All other trademarks, trade names or company names referenced herein are used for identification only and are the property of their respective owners.

Document identity

Publ. No.: 55001-0303

Release:

Commit: 38889

Language: en-US

Modified: 2016-12-09

Formatted: 2016-12-09

Website

<http://www.flir.com>

Customer support

<http://support.flir.com>

Disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply. Products described herein may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions.



General description

The FLIR A655sc is an excellent choice for those working in R&D and require the highest frame rates and 640 × 480 pixel resolution. When using the camera in R&D, it is highly recommended to use the FLIR ResearchIR software from FLIR Systems.

The camera is equipped with a 45° lens.

Key features:

- Affordable.
- 16-bit 640 × 480 pixel images at 50 Hz.
- Start recording in FLIR ResearchIR using digital input.
- Windowing mode: 640 × 240 pixels at 100 Hz or 640 × 120 pixels at 200 Hz.

Typical applications:

- Mid- or high-end industrial R&D.

Imaging and optical data

IR resolution	640 × 480 pixels
Thermal sensitivity/NETD	< 0.03°C @ +30°C (+86°F) / 30 mK
Field of view (FOV)	45° × 34° (55° diagonal)
Minimum focus distance	0.15 m (0.49 ft.)
Focal length	13.1 mm (0.52 in.)
Spatial resolution (IFOV)	1.23 mrad
Lens identification	Automatic
F-number	1.0
Image frequency	50 Hz (100/200 Hz with windowing)
Focus	Automatic or manual (built in motor)

Detector data

Detector type	Focal plane array (FPA), uncooled microbolometer
Spectral range	7.5–14 μm
Detector pitch	17 μm
Detector time constant	Typical 8 ms

P/N: 55001-0303

© 2016, FLIR Systems, Inc.

#55001-0303; r. /38889; en-US

Measurement	
Object temperature range	–40°C to +150°C (–40°F to +302°F) 100 to +650°C (+212 to +1202°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading
Measurement analysis	
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 object parameters
USB	
USB	Control and image
USB, standard	USB 2 HS
USB, connector type	USB Mini-B
USB, communication	TCP/IP socket-based FLIR proprietary
USB, image streaming	16-bit 640 × 480 pixels @ 25 Hz - Signal linear - Temperature linear - Radiometric
USB, protocols	TCP, UDP, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP
Ethernet	
Ethernet	Control and image
Ethernet, type	Gigabit Ethernet
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	TCP/IP socket-based FLIR proprietary and GenICam protocol
Ethernet, image streaming	16-bit 640 × 480 pixels @ 50 Hz 16-bit 640 × 240 pixels @ 100 Hz 16-bit 640 × 120 pixels @ 200 Hz - Signal linear - Temperature linear - Radiometric GigE Vision and GenICam compatible
Ethernet, protocols	TCP, UDP, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP

P/N: 55001-0303

© 2016, FLIR Systems, Inc.

#55001-0303; r. /38889; en-US

Digital input/output	
Digital input, purpose	Image tag (start, stop, general), Image flow control, (stream on/off), Input ext. device (programmatically read)
Digital input	2 opto-isolated, 0–1.5 V = low, 3–25 V = high
Digital output, purpose	Output to ext. device (programmatically set)
Digital output	2 opto-isolated, ON = supply (max. 100 mA), OFF = open
Digital I/O, isolation voltage	500 VRMS
Digital I/O, supply voltage	6–24 VDC, max. 200 mA
Digital I/O, connector type	6-pole jackable screw terminal
Power system	
External power operation	12/24 VDC, 24 W absolute max.
External power, connector type	2-pole jackable screw terminal
Voltage	Allowed range 10–30 VDC
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)
EMC	• EN 61000-6-2:2001 (Immunity) • EN 61000-6-3:2001 (Emission) • FCC 47 CFR Part 15 Class B (Emission)
Encapsulation	IP 30 (IEC 60529)
Shock	25 g (IEC 60068-2-27)
Vibration	2 g (IEC 60068-2-6)
Physical data	
Weight	0.94 kg (2.07 lb.)
Camera size (L × W × H)	225 × 73 × 75 mm (8.8 × 2.9 × 3.0 in.)
Camera size, excl. lens (L × W × H)	203 × 73 × 75 mm (8.0 × 2.9 × 3.0 in.)
Tripod mounting	UNC ¼"-20 (on three sides)
Base mounting	2 × M4 thread mounting holes (on three sides)
Housing material	Aluminum
Comments to physical data	Outline dimensional drawings and STEP files can be found at http://support.flir.com

P/N: 55001-0303

© 2016, FLIR Systems, Inc.

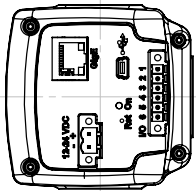
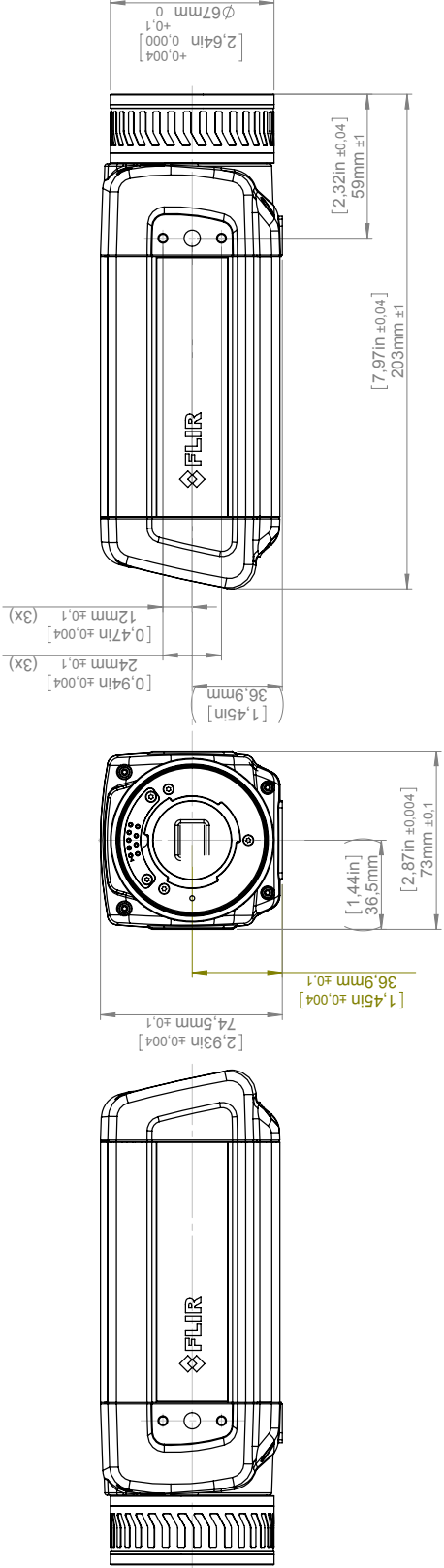
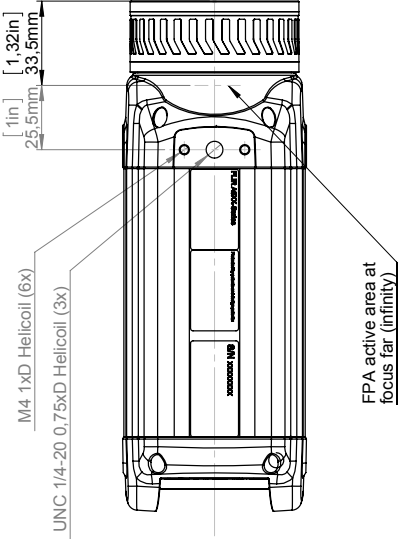
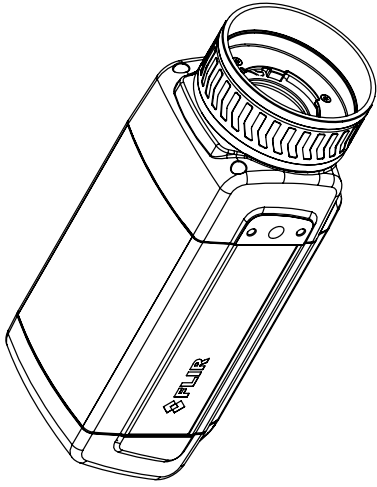
#55001-0303; r. /38889; en-US

Shipping information	
Packaging, type	Cardboard box
List of contents	• Infrared camera with lens • Ethernet cable • FLIR ResearchIR Max 4 (licence only) • Hard transport case • Mains cable • Power cable, pig-tailed • Power supply • Printed documentation • USB cable
Packaging, weight	
Packaging, size	360 × 180 × 550 mm (14.2 × 7.1 × 21.7 in.)
EAN-13	7332558003329
UPC-12	845188002800
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
- T198065; IR lens, f=6.5 mm (80°) with case
- T198165; IR lens, f=88.9 mm (7°) with case and support for A6xx/A6xxsc
- T198066; Close-up IR lens, 1.5× (25 µm) with case
- T197896; High temperature option +300°C to 2000°C (+572°F to 3632°F)
- 1910400; Power cord EU
- 1910401; Power cord US
- 1910402; Power cord UK
- T910922; Power supply, incl. multi plugs, for A3xx, A3xxsc, A6xx and A6xxsc
- T911182; Power supply for A3xx f, IP66
- 1910423; USB cable Std A <-> Mini-B
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- 1910586ACC; Power cable, pigtailed
- T197871ACC; Hard transport case for A3xx/A6xx series
- T197870ACC; Cardboard box for A3xx/A6xx series
- T126889ACC; Filter holder for A6xx lenses
- T198584; FLIR Tools
- T198583; FLIR Tools+ (download card incl. license key)
- DSW-10000; FLIR IR Camera Player
- 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
- T198567; ThermoVision™ System Developers Kit Ver. 2.6
- T198566; ThermoVision™ LabVIEW® Digital Toolkit Ver. 3.3

Camera housing



© 2012, FLIR Systems, Inc. All rights reserved worldwide. No part of this drawing may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from FLIR Systems, Inc. Specifications subject to change without further notice. Dimensional data is based on nominal values. Products may be subject to regional market considerations. License procedures may apply. Product may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions. Diversion contrary to US law is prohibited.

Modified
2012-04-18

Check
CAHA

Drawn by
R&D Thermography

Size
A3

Scale
1:2

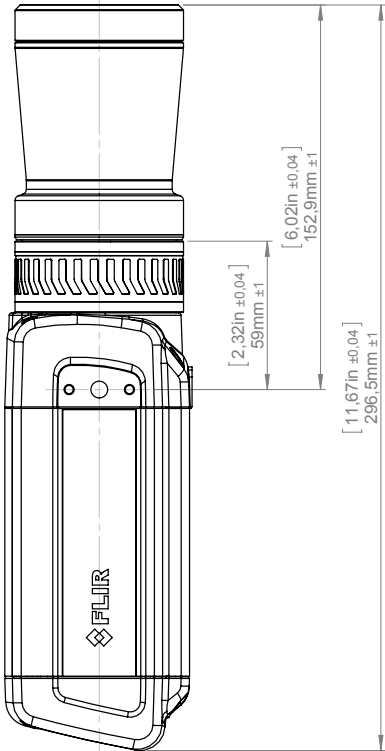
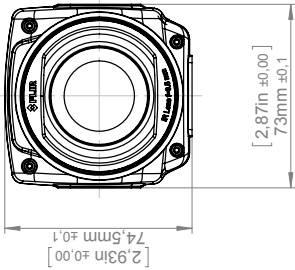
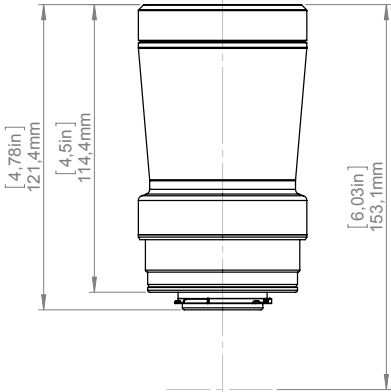
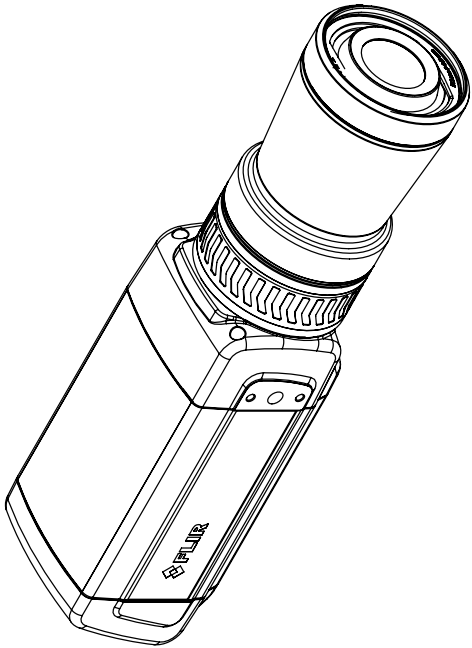
Drawing No.
T126925

Sheet
1(9)

Size
A

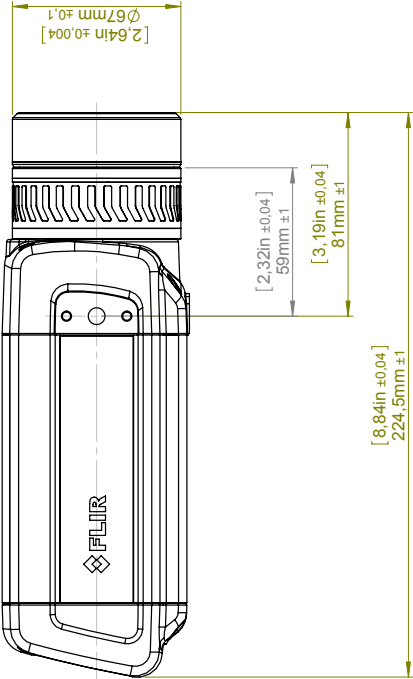
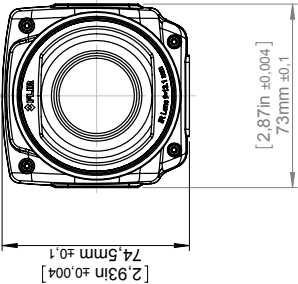
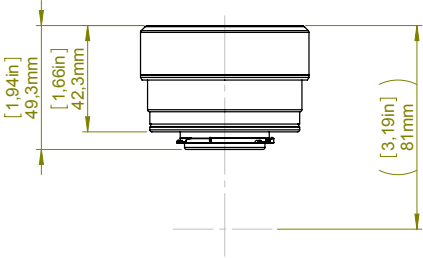
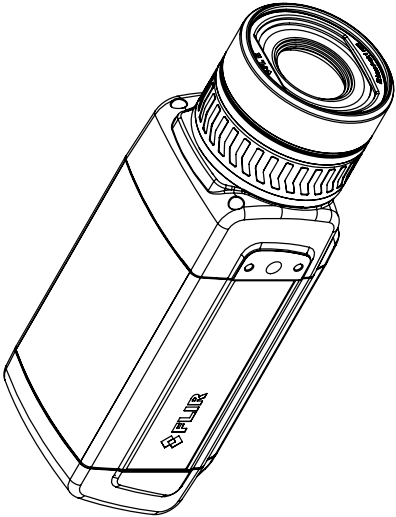
Basic dimensions FLIR A/SC 6xx

Camera with Lens IR f=6,5 mm (80°)



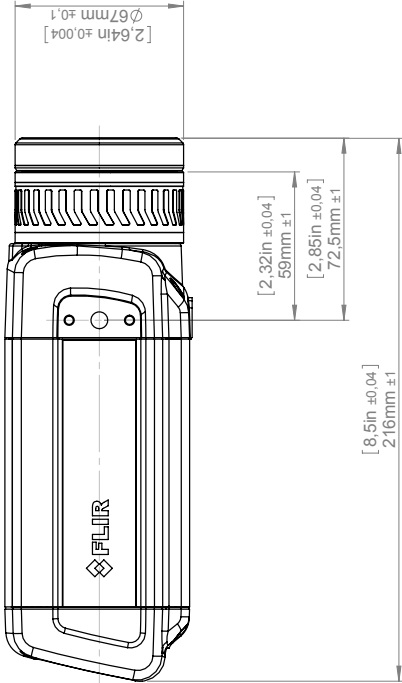
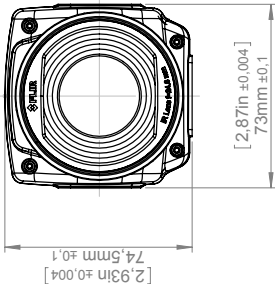
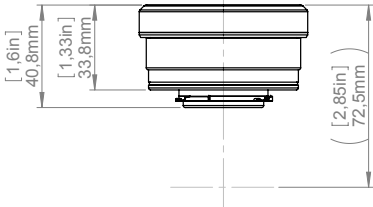
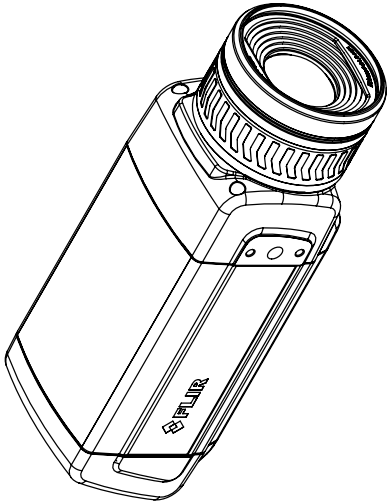
For additional dimensions see page 1			
Modified 2012-04-18	Check CAHA	Drawn by R&D Thermography	FLIR®
Denomination		Size A3	Sheet 2(9)
Basic dimensions FLIR A/SC 6xx		Scale 1:2	Size A
		Drawing No. T126925	

Camera with Lens IR f=13,1 mm (45°)



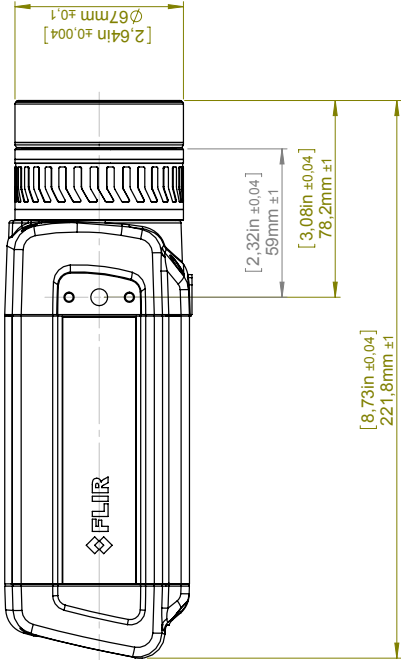
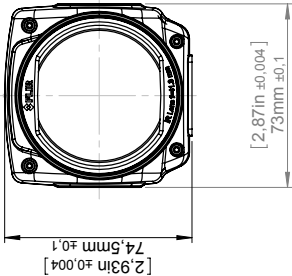
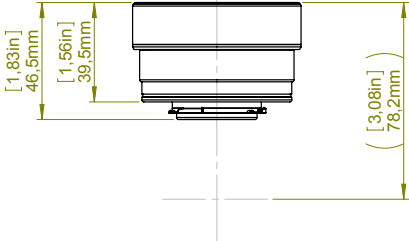
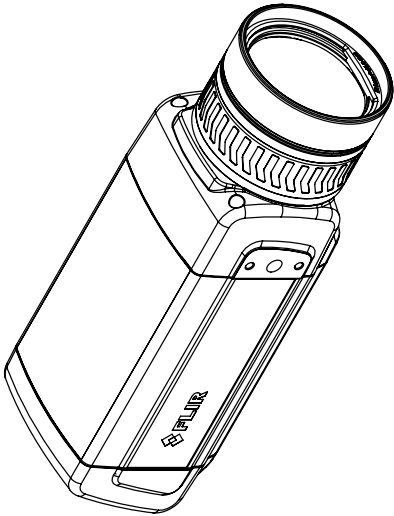
For additional dimensions see page 1			FLIR®		
Modified 2012-04-18	Check CAHA	Drawn by R&D Thermography	Size A3	Scale 1:2	Sheet 3(9)
Basic dimensions FLIR A/SC 6xx			Drawing No. T126925		
			Size A		

Camera with Lens IR f=24,6 mm (25°)



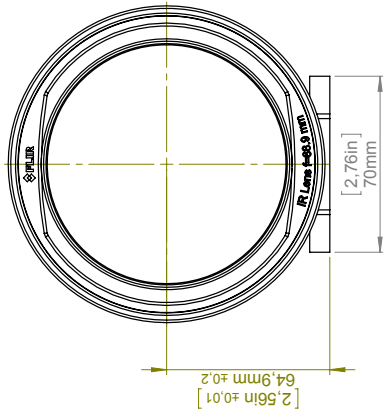
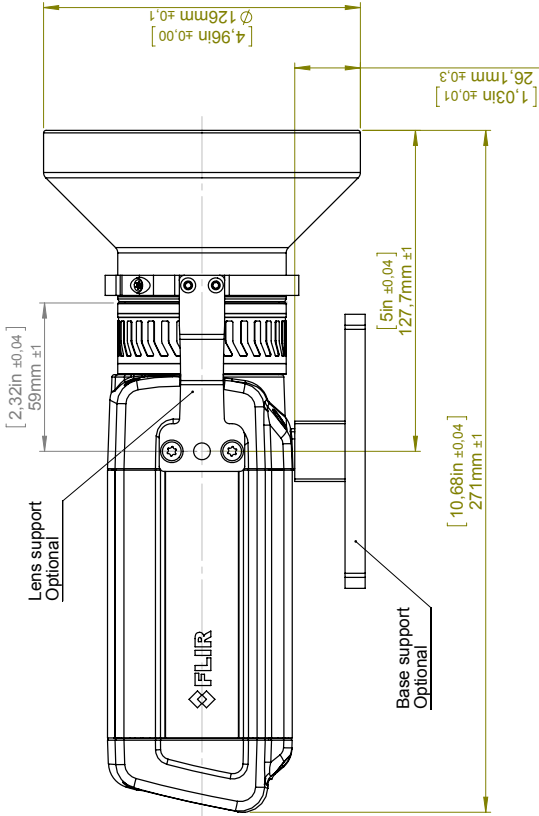
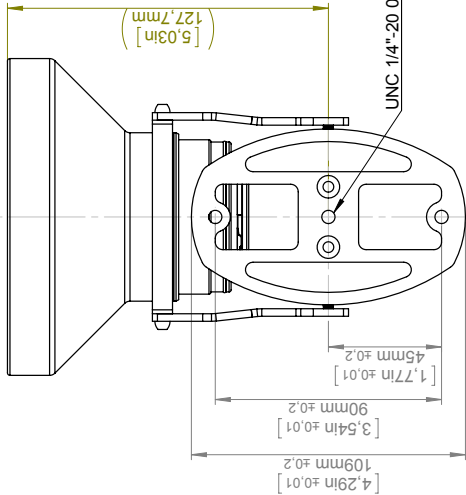
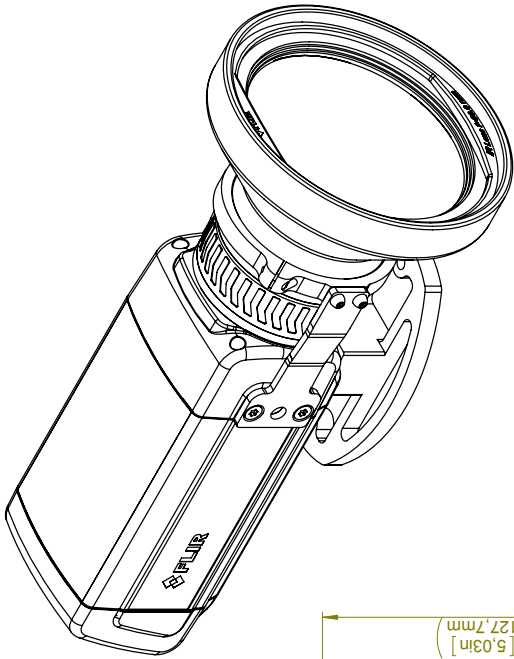
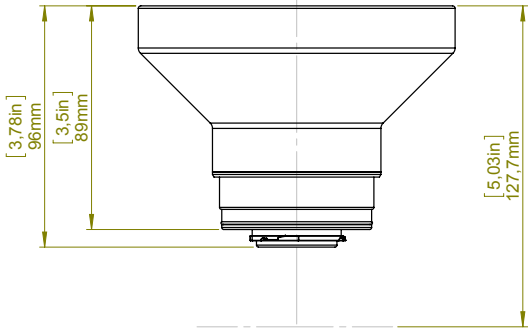
For additional dimensions see page 1			
Modified 2012-04-18	Check CAHA	Drawn by R&D Thermography	FLIR®
Denomination		Size A3	Sheet 4(9)
Basic dimensions FLIR A/SC 6xx		Scale 1:2	Size A
		Drawing No. T126925	

Camera with Lens IR f=41,3 mm (15°)



For additional dimensions see page 1			
Modified 2012-04-18	Check CAHA	Drawn by R&D Thermography	
Denomination			
Basic dimensions FLIR A/SC 6xx			
Size A3	Scale 1:2	Sheet 5(9)	
Drawing No. T126925	Size A		

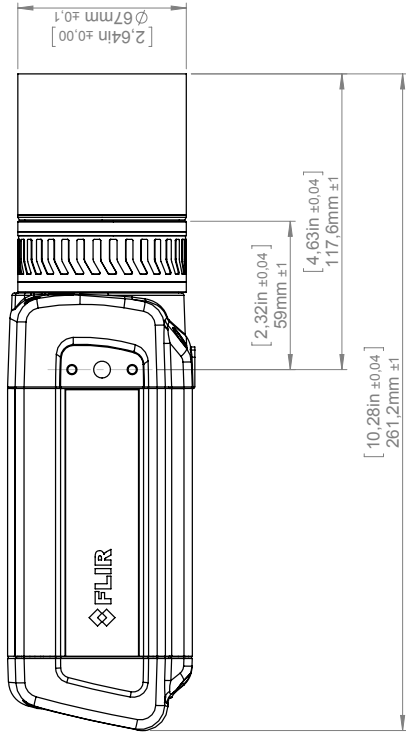
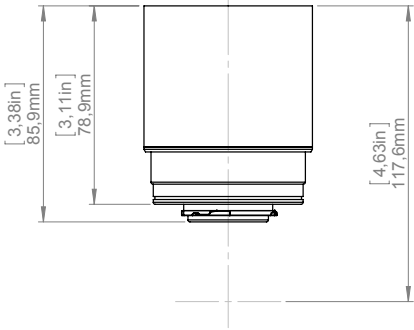
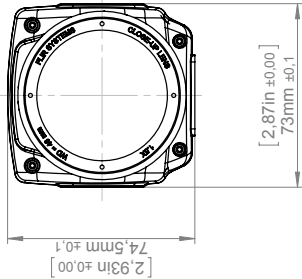
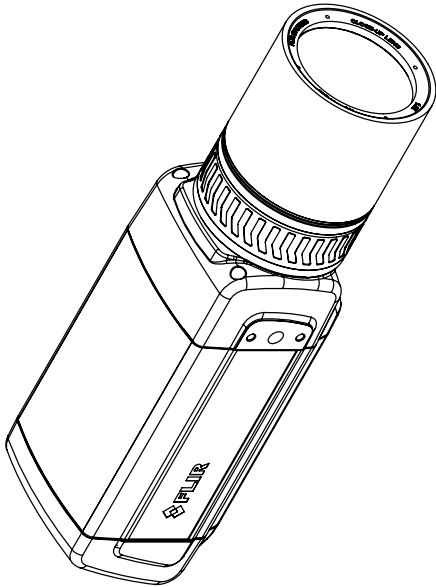
Camera with Lens IR f=88,9 mm (7°) incl support



© 2012, FLIR Systems, Inc. All rights reserved worldwide. No part of this drawing may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from FLIR Systems, Inc. Specifications subject to change without further notice. Dimensional data is based on nominal values. Products may be subject to regional market considerations. License procedures may apply. Product may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions. Diversion contrary to US law is prohibited.

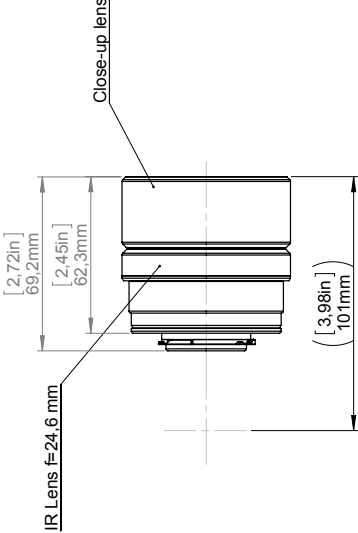
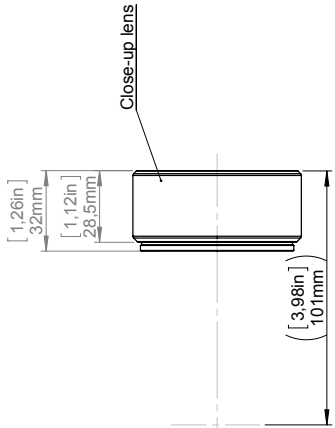
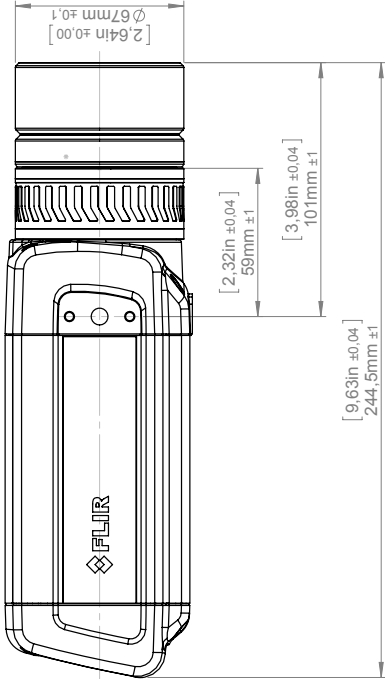
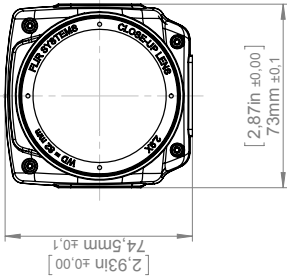
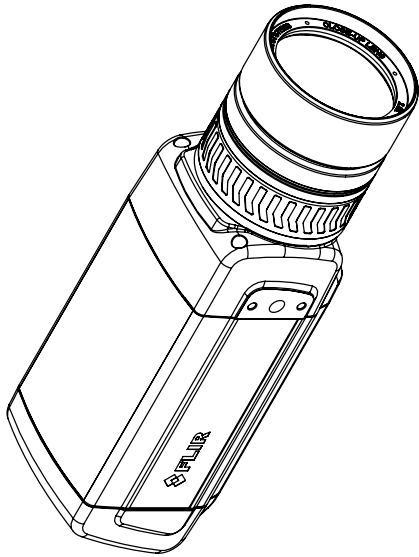
For additional dimensions see page 1					
Modified 2012-04-18	Check CAHA	Drawn by R&D Thermography	Size A3	Basic dimensions FLIR A/SC 6xx	
Denomination			Scale 1:2		Sheet 6
			Drawing No. T126925	Size A	

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



For additional dimensions see page 1			
Modified 2012-04-18	Check CAHA	Drawn by R&D Thermography	FLIR®
Denomination		Size A3	Sheet 7(9)
Basic dimensions FLIR A/SC 6xx		Scale 1:2	Size A
		Drawing No. T126925	

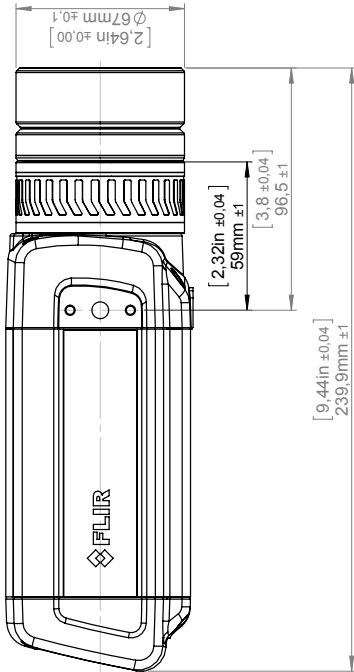
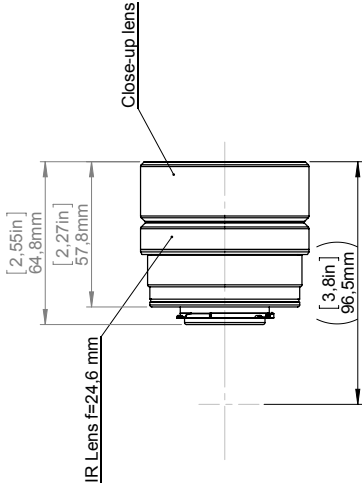
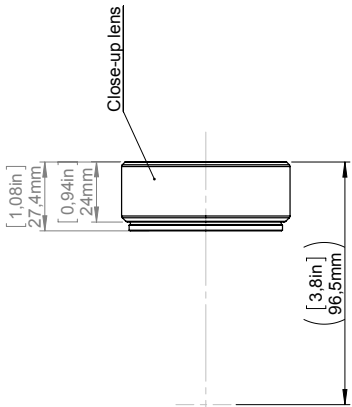
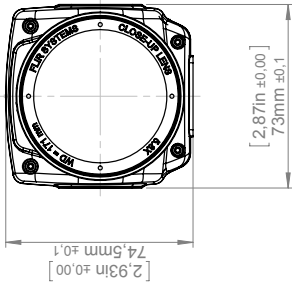
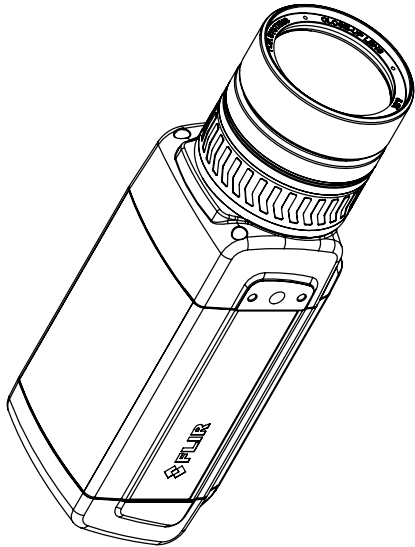
Camera with Close-up lens 2,9X (50 µm)



© 2012, FLIR Systems, Inc. All rights reserved worldwide. No part of this drawing may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from FLIR Systems, Inc. Specifications subject to change without further notice. Dimensional data is based on nominal values. Products may be subject to regional market considerations. License procedures may apply. Product may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions. Diversion contrary to US law is prohibited.

For additional dimensions see page 1			FLIR®		
Modified 2012-04-18	Check CAHA	Drawn by R&D Thermography	Size A3	Scale 1:2	Sheet 8(9)
Basic dimensions FLIR A/SC 6xx			Drawing No. T126925		
			Size A		

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



For additional dimensions see page 1			FLIR®		
Modified 2012-04-18	Check CAHA	Drawn by R&D Thermography	Size A3	Scale 1:2	Sheet 9(9)
Denomination Basic dimensions FLIR A/SC 6xx			Drawing No. T126925		
			Size A		

Digital I/O connection diagrams for FLIR A3xx/A6xx series

