

P/N: 75007-0101

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.: 75007-0101

Release:

Commit: 36994

Language: en-US

Modified: 2016-08-24

Formatted: 2016-08-24

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 A65 has features and functions that make it the natural choice for anyone who uses PC software to solve problems and for whom 640 × 512 pixel resolution is sufficient.

Among its main features are GigE Vision and GenICam compliance, which makes it plug-and-play when used with software packages such as IMAQ Vision and Halcon.

Key features:

- Very affordable.
- Compact.
- GigE Vision and GenICam compliant.
- GigE Vision lockable connector.
- PoE (power over Ethernet).
- 8-bit 640 × 512 pixel images streamed at 30 Hz, signal linear
- 14-bit 640 × 512 pixel images streamed at 30 Hz, signal and temperature linear
- Synchronization between cameras possible.
- 1x+1x GPIO.
- Compliant with any software that supports GenICam, including National Instruments IMAQ Vision, Stemmers Common Vision Blox, and COGNEX Vision Pro.

Typical applications:

- Automation and thermal machine vision.
- Entry level "high-speed" R&D.

Imaging and optical data

IR resolution	640 × 512 pixels
Thermal sensitivity/NETD	< 0.05°C @ +30°C (+86°F) / 50 mK
Field of view (FOV)	90° × 69°
Focal length	7.5 mm (0.30 in.)
Spatial resolution (IFOV)	2.27 mrad
F-number	1.4
Image frequency	30 Hz
Focus	Fixed

Detector data

Detector type	Focal plane array (FPA), uncooled VOX microbolometer
Spectral range	7.5–13 μm

P/N: 75007-0101

© 2016, FLIR Systems, Inc.


#75007-0101; r. /36994; en-US

Detector data	
Detector pitch	17 μ m
Detector time constant	Typical 12 ms
Measurement	
Object temperature range	<ul style="list-style-type: none"> -25 to +135°C (-13 to 275°F) -40 to +550°C (-40 to +1022°F)
Accuracy	\pm 5°C (\pm 9°F) or \pm 5% 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 0.5 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
Ethernet	
Ethernet	Control and image
Ethernet, type	Gigabit Ethernet
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	GigE Vision ver. 1.2 Client API GenICam compliant
Ethernet, image streaming	8-bit monochrome @ 30 Hz <ul style="list-style-type: none"> Signal linear/ DDE Automatic/ Manual Flip H&V 14-bit 640 x 512 pixels @ 30 Hz <ul style="list-style-type: none"> Signal linear/ DDE Temperature linear GigE Vision and GenICam compatible
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 0 Power
Ethernet, protocols	TCP, UDP, ICMP, IGMP, DHCP, GigEVision
Digital input/output	
Digital input, purpose	General purpose
Digital input	1x opto-isolated, "0" <1.2 VDC, "1" = 2-25 VDC.
Digital output, purpose	General purpose output to ext. device (programmatically set)
Digital output	1x opto-isolated, 2-40 VDC, max. 185 mA
Digital I/O, isolation voltage	500 VRMS

P/N: 75007-0101

© 2016, FLIR Systems, Inc.

#75007-0101; r. /36994; en-US

Digital input/output	
Digital I/O, supply voltage	2–40 VDC, max. 200 mA
Digital I/O, connector type	12-pole M12 connector (shared with Digital synchronization and External power)
Synchronization in, purpose	Frame synchronization in to control camera
Synchronization in	1×, non-isolated
Synchronization in, type	LVC Buffer @3.3V, "0" <0.8 V, "1">2.0 V.
Synchronization out, purpose	Frame synchronization out to control another FLIR Ax5 camera
Synchronization out	1×, non-isolated
Synchronization out, type	LVC Buffer @ 3.3V, "0"=24 MA max, "1"= -24 mA max.
Digital synchronization, connector type	12-pole M12 connector (shared with Digital I/O and External power)
Power system	
External power operation	12/24 VDC, < 3.5 W nominal < 6.0 W absolute max.
External power, connector type	12-pole M12 connector (shared with Digital I/O and Digital Synchronization)
Voltage	Allowed range 10–30 VDC
Environmental data	
Operating temperature range	–15°C to +60°C (+5°F to +140°F) <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> NOTE</p> <p>The operating temperature range assumes that the camera is mounted on the base support (included in the package) or a similar type of heatsink.</p> </div>
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 40 (IEC 60529) with base support mounted
Shock	25 g (IEC 60068-2-27)
Vibration	2 g (IEC60068-2-6) and MIL-STD810G
Physical data	
Camera size (L × W × H)	104.1 × 49.6 × 46.6 mm (4.1 × 1.9 × 1.8 in.)
Tripod mounting	UNC ¼"-20 (on three sides)
Base mounting	4 × M3 thread mounting holes (bottom)
Housing material	Magnesium and aluminum



FLIR A65 FOV 90 (30 Hz, ver. 2016)

P/N: 75007-0101

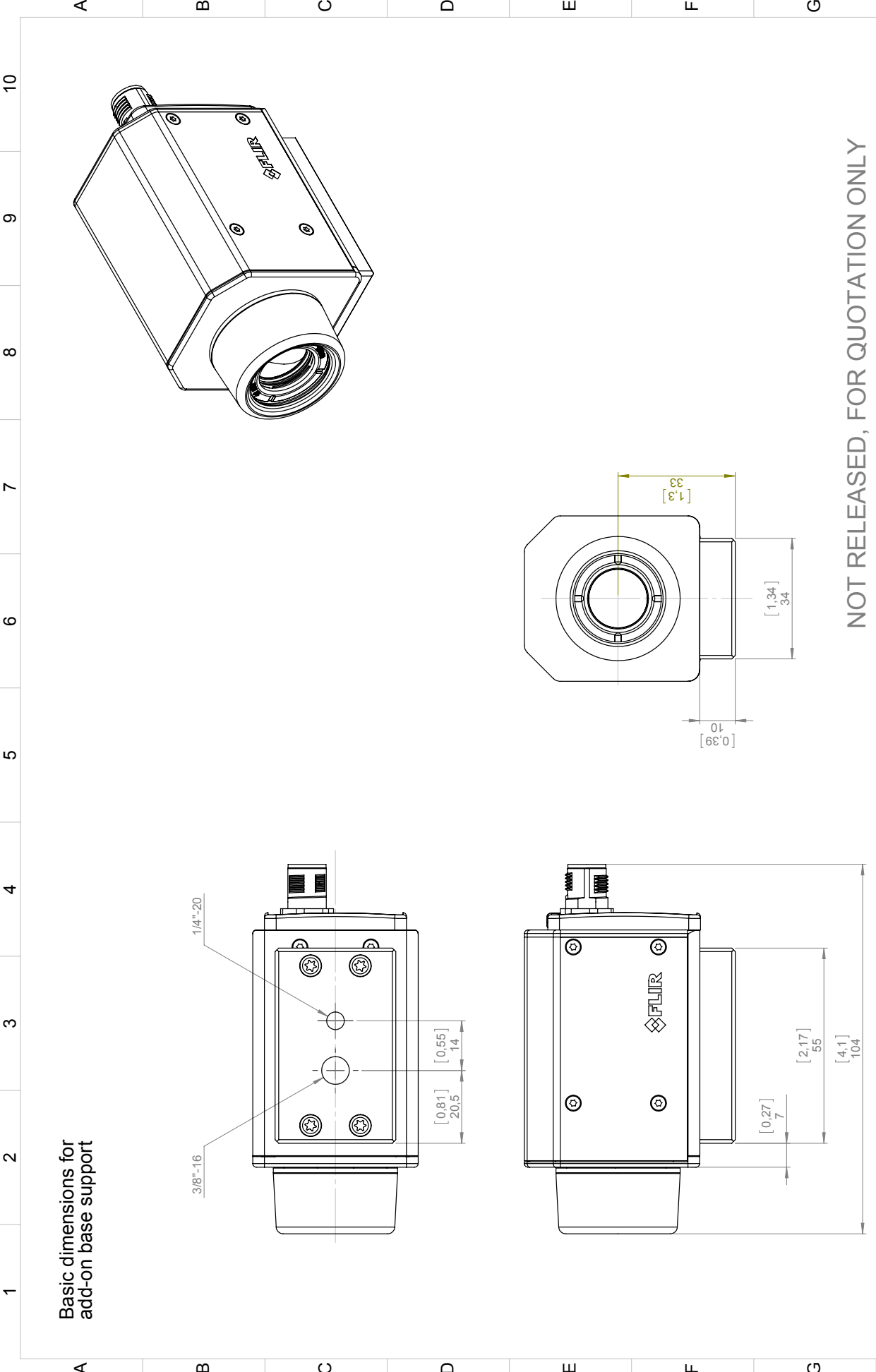
© 2016, FLIR Systems, Inc.

#75007-0101; r. /36994; en-US

Shipping information	
Packaging, type	Cardboard box
List of contents	<ul style="list-style-type: none">• Infrared camera with lens• Base support• Focus adjustment tool• Printed documentation
EAN-13	7332558011621
UPC-12	845188012571
Country of origin	Sweden

Supplies & accessories:

- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T198349; Base support
- T198348; Cable kit Mains (UK,EU,US)
- T198392; Table stand kit
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T127605ACC; Cable M12 Pigtail
- T127606ACC; Cable M12 Sync
- T198342ACC; Focus adjustment tool
- T198594ACC; Transport case Ax5
- T199356; FLIR Ax5 accessory starter kit
- T198584; FLIR Tools
- T198583; FLIR Tools+ (download card incl. license key)
- DSW-10000; FLIR IR Camera Player
- T199233; FLIR Atlas SDK for .NET
- T199234; FLIR Atlas SDK for MATLAB



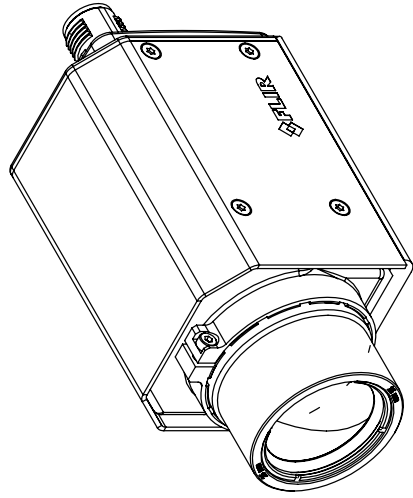
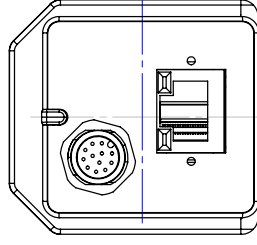
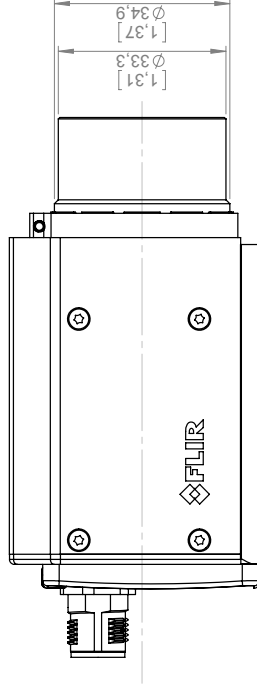
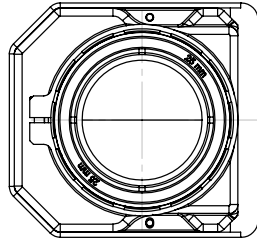
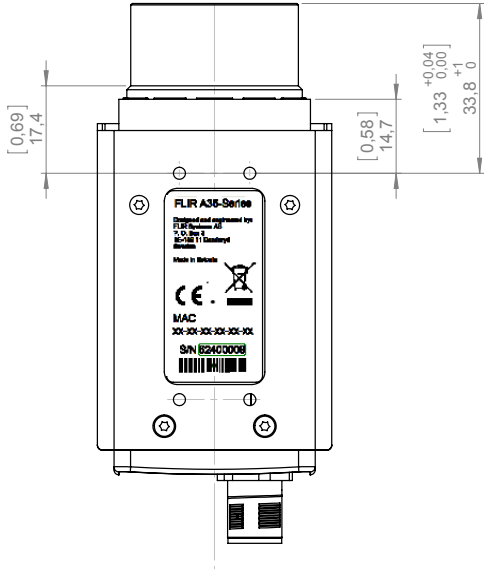
NOT RELEASED, FOR QUOTATION ONLY

		Konstr/Drawing P. MARCUS		Datum/Date 2015-12-14		Konstr/Check -		Material -	
Använd av/Modified by P. MARCUS		Använd/Modified 2015-12-18		Ytfinish/Roughness Ra		Ytbehandling/Surface treatment -		Skala/Scale 1:1	
Ditt ej annat anges/Unless otherwise stated Genför ISO 2768-mK Urtvåg ur/Exempt from ISO 2768-m		Benämning/Denomination Basic dimensions Ax5 w. flag shutter f=7,5 mm to f=100 mm		Blad/Sheet 2(7)		AritN. -		Rev -002	
0,50 ±0,1 Hållåtgärder (30)-120 ±0,3 FLIR-cert. (40)-400 ±0,5 Kontor bråna (40)-1000 ±0,5 Edges broken		Ritz/Tolerance -		Ritz/Tolerance -		Ritz/Tolerance -		Ritz/Tolerance -	

Denna handling får ej delges annan, kopieras
 eller publiceras på annat sätt utan FLIR SYSTEMS AB
 tillstånd. Översättning eller i delar, utan tillstånd
 från FLIR SYSTEMS AB.

This document must not be communicated or
 copied completely or in part, without our permission.
 Any infringement will lead to legal proceedings.

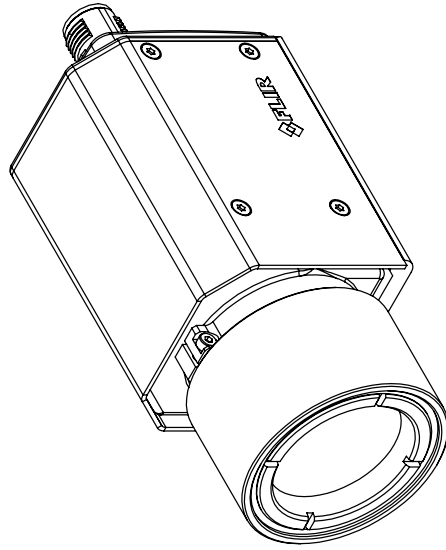
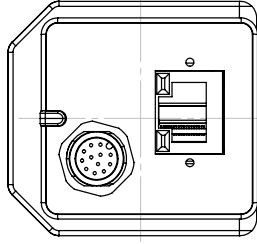
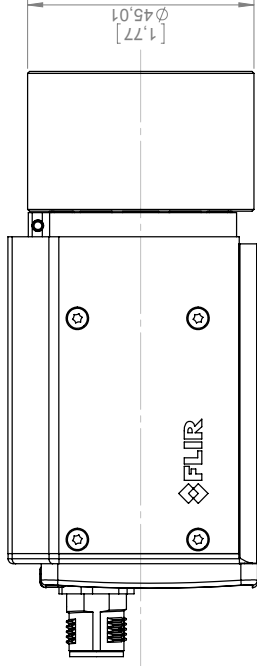
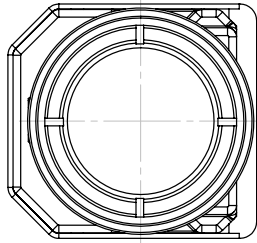
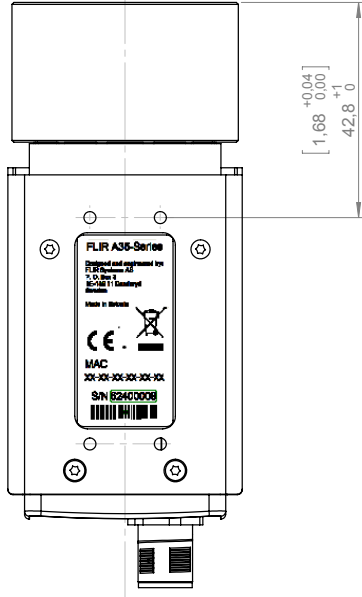
Basic dimensions:
 Camera with focal length
 f=25 mm IR lens.
 Only dimensions valid for
 this IR lens.
 For all other dimensions see pages
 1 and 2.



NOT RELEASED, FOR QUOTATION ONLY

Konstr/Drawing	P. MARCUS		Datum/Date	2015-12-14	Kontroll/Check	-	Material	-
Ändrad av/Modified by	P. MARCUS		Ändrad/Modified	2015-12-18	Ytjämnhet/Roughness	Ra	Ytbehandling/Surface treatment	-
Dir. ej annat angavs/Unless otherwise stated	Gen. tol. ISO 2768-mK		Benämning/Denomination	Basic dimensions Ax5 w. flag shutter f=7,5 mm to f=100 mm				
UTSÄG ur/Exempt from ISO 2768-m	0,50							
0,30	40,1							
(30)-120	40,3							
(120)-400	40,5							
(400)-1600	40,6							
	40,8							
	40,9							
	41,0							
	41,1							
	41,2							
	41,3							
	41,4							
	41,5							
	41,6							
	41,7							
	41,8							
	41,9							
	42,0							
	42,1							
	42,2							
	42,3							
	42,4							
	42,5							
	42,6							
	42,7							
	42,8							
	42,9							
	43,0							
	43,1							
	43,2							
	43,3							
	43,4							
	43,5							
	43,6							
	43,7							
	43,8							
	43,9							
	44,0							
	44,1							
	44,2							
	44,3							
	44,4							
	44,5							
	44,6							
	44,7							
	44,8							
	44,9							
	45,0							
	45,1							
	45,2							
	45,3							
	45,4							
	45,5							
	45,6							
	45,7							
	45,8							
	45,9							
	46,0							
	46,1							
	46,2							
	46,3							
	46,4							
	46,5							
	46,6							
	46,7							
	46,8							
	46,9							
	47,0							
	47,1							
	47,2							
	47,3							
	47,4							
	47,5							
	47,6							
	47,7							
	47,8							
	47,9							
	48,0							
	48,1							
	48,2							
	48,3							
	48,4							
	48,5							
	48,6							
	48,7							
	48,8							
	48,9							
	49,0							
	49,1							
	49,2							
	49,3							
	49,4							
	49,5							
	49,6							
	49,7							
	49,8							
	49,9							
	50,0							
	50,1							
	50,2							
	50,3							
	50,4							
	50,5							
	50,6							
	50,7							
	50,8							
	50,9							
	51,0							
	51,1							
	51,2							
	51,3							
	51,4							
	51,5							
	51,6							
	51,7							
	51,8							
	51,9							
	52,0							
	52,1							
	52,2							
	52,3							
	52,4							
	52,5							
	52,6							
	52,7							
	52,8							
	52,9							
	53,0							
	53,1							
	53,2							
	53,3							
	53,4							
	53,5							
	53,6							
	53,7							
	53,8							
	53,9							
	54,0							
	54,1							
	54,2							
	54,3							
	54,4							
	54,5							
	54,6							
	54,7							
	54,8							
	54,9							
	55,0							
	55,1							
	55,2							
	55,3							
	55,4							
	55,5							
	55,6							
	55,7							
	55,8							
	55,9							
	56,0							
	56,1							
	56,2							
	56,3							
	56,4							
	56,5							
	56,6							
	56,7							
	56,8							
	56,9							
	57,0							
	57,1							
	57,2							
	57,3							
	57,4							
	57,5							
	57,6							
	57,7							
	57,8							
	57,9							
	58,0							
	58,1							
	58,2							
	58,3							
	58,4							
	58,5							
	58,6							
	58,7							
	58,8							
	58,9							
	59,0							
	59,1							
	59,2							
	59,3							
	59,4							
	59,5							
	59,6							
	59,7							
	59,8							
	59,9							
	60,0							
	60,1							
	60,2							
	60,3							
	60,4							
	60,5							
	60,6							
	60,7							
	60,8							
	60,9							
	61,0							
	61,1							
	61,2							
	61,3							
	61,4							
	61,5							
	61,6							
	61,7							
	61,8							
	61,9							
	62,0							
	62,1							
	62,2							
	62,3							
	62,4							
	62,5							
	62,6							
	62,7							
	62,8							
	62,9							
	63,0							
	63,1							
	63,2							
	63,3							
	63,4							
	63,5							
	63,6							
	63,7							
	63,8							
	63,9							
	64,0							
	64,1							
	64,2							
	64,3							
	64,4							
	64,5							
	64,6							
	64,7							
	64,8							
	64,9							
	65,0							
	65,1							
	65,2							
	65,3							
	65,4							
	65,5							
	65,6							
	65,7							
	65,8							
	65,9							
	66,0							
	66,1							
	66,2							
	66,3							
	66,4							
	66,5							
	66,6							
	66,7							
	66,8							
	66,9							
	67,0							
	67,1							
	67,2							
	67,3							
	67,4							
	67,5							
	67,6							
	67,7							
	67,8							
	67,9							
	68,0							
	68,1							
	68,2							
	68,3							
	68,4							
	68,5							
	68,6							
	68,7							
	68,8							
	68,9							
	69,0							
	69,1							
	69,2							
	69,3							
	69,4							
	69,5							
	69,6							
	69,7							
	69,8							
	69,9							
	70,0							
	70,1							
	70,2							
	70,3							
	70,4							
	70,5							
	70,6							
	70,7							
	70,8							
	70,9							
	71,0							
	71,1							
	71,2							
	71,3							
	71,4							
	71,5							
	71,6							
	71,7							
	71,8							
	71,9							
	72,0							
	72,1							
	72,2							
	72,3							
	72,4							
	72,5							
	72,6							
	72,7							
	72,8							
	72,9							
	73,0							
	73,1							
	73,2							
	73,3							
	73,4							
	73,5							
	73,6							
	73,7							
	73,8							
	73,9							
	74,0							
	74,1							
	74,2							
	74,3							
	74,4							
	74,5							
	74,6							
	74,7							
	74,8							
	74,9							
	75,0							

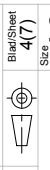
Basic dimensions:
 Camera with focal length
 f=35 mm IR lens.
 Only dimensions valid for
 this IR lens.
 For all other dimensions see pages
 1 and 2.



NOT RELEASED, FOR QUOTATION ONLY

Konstruktör/Drawn	P. MARCUS	Datum/Date	2015-12-14	Kontroll/Check	-	Material	-
Ändrad av/Modified by	P. MARCUS	Ändrad/Modified	2015-12-18	Ytjämnhet/Roughness	Ra	Ytbehandling/Surface treatment	
Dir ej ansvar änges/Unless otherwise stated		Benämning/Denomination		Skala/Scale	1:1	Bladd/Sheet	4(7)
Uttag ur/Excerpt from ISO 2768-m				Artno.		Size	A3
0,50	40,1	Hållfärdighet		Ritn nr/Drawing No	T129297	Rev	-002
(30)-120	40,3	FLIR: cad1					
(20)-400	40,5	Kontor/butika					
(40)-1600	40,6	Ärta/botten					

Basic dimensions Ax5 w. flag shutter
 f=7,5 mm to f=100 mm

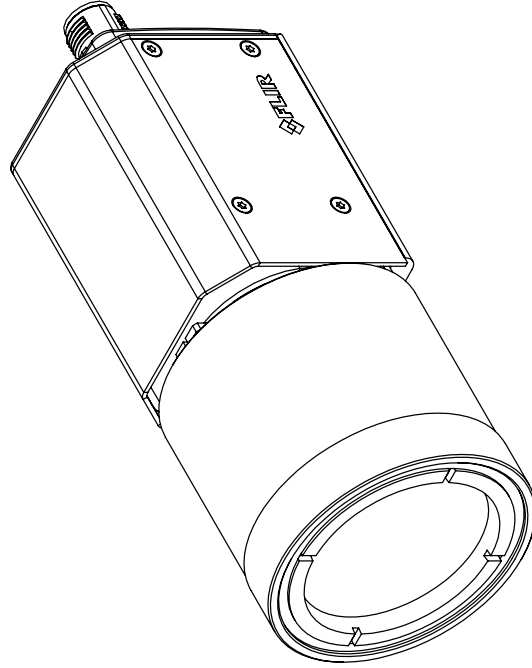
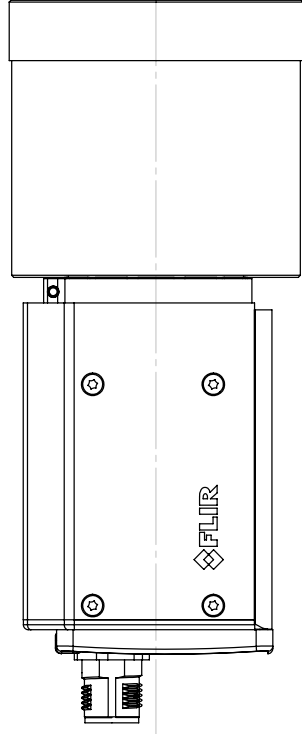
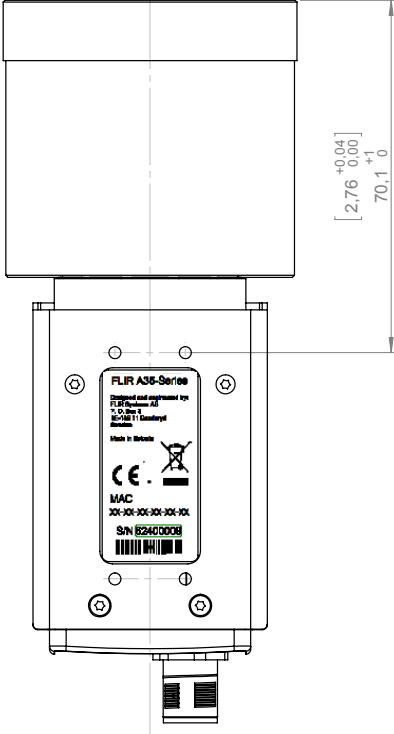
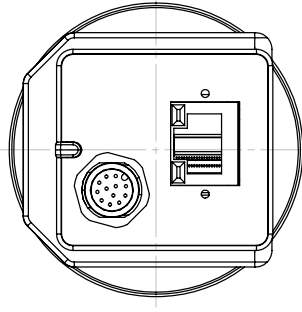
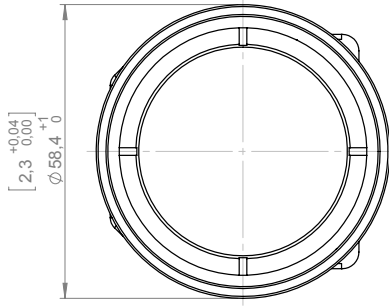


Rev
 -002

This document must not be communicated or copied completely or in part, without our permission. Any infringement will lead to legal proceedings. FLIR SYSTEMS AB

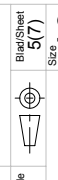
Denna handling får ej delges annan, kopieras eller översatt helt eller delvis utan vårt medgivande. Översättelse eller delvis återgivning utan vårt tillstånd kan föra till rättsliga åtgärder. FLIR SYSTEMS AB

Basic dimensions:
 Camera with focal length
 f=50 mm IR lens.
 Only dimensions valid for
 this IR lens.
 For all other dimensions see pages
 1 and 2.



NOT RELEASED, FOR QUOTATION ONLY

Konstr/Drawn	P. MARCUS		Datum/Date	2015-12-14	Kontroll/Check	-	Material	-
Ändrad av/Modified by	P. MARCUS		Ändrad/Modified	2015-12-18	Ytjämnhet/Roughness	Ra	Y-behandling/Surface treatment	
Genetol /ISO 2768-mK	URTRAG ur/Except from ISO 2768-m		Benämning/Denomination					
0,50	40,1	Hålåbådder						
(30)-120	40,3	Fläkt rad						
(20)-400	40,5	Kontur brutna						
(40)-1600	40,6	Edgar brutna						
Scale/Scale			1:1			Blad/Sheet		
ArtNo.			5(7)			Size		
Rev			T129297			Blad/Sheet		
Ritm nr/Drawing No			-002			Size		
Basic dimensions Ax5 w. flag shutter			f=7,5 mm to f=100 mm			Rev		

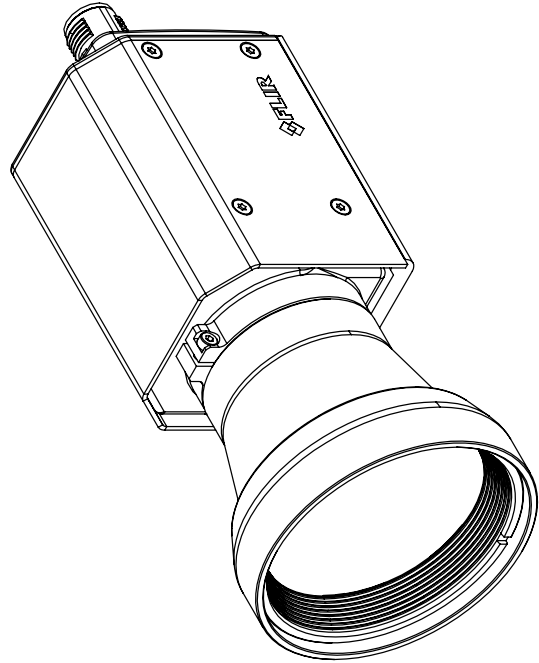
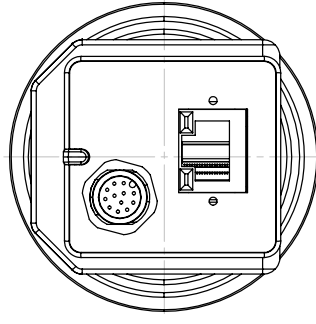
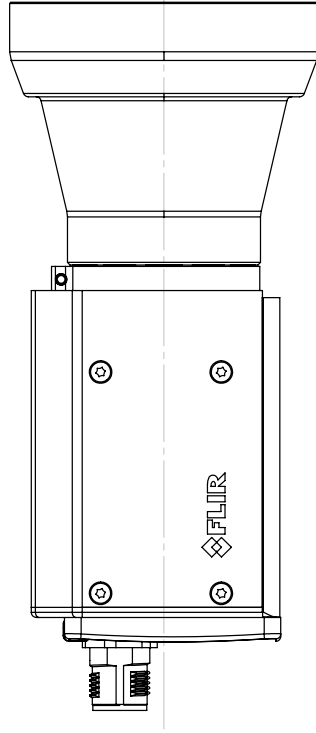
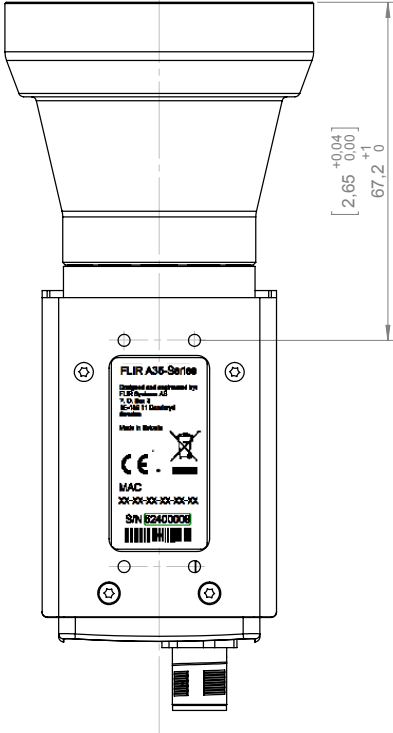


Scale/Scale 1:1
 ArtNo.
 Blad/Sheet 5(7)
 Size
 Rev
 Ritm nr/Drawing No T129297
 -002

This document must not be communicated or copied completely or in part, without our permission. Any infringement will lead to legal proceedings.
 FLIR SYSTEMS AB

Denna handling får ej delges annan, kopieras eller överskrivas helt eller delvis utan vårt medgivande.
 FLIR SYSTEMS AB

Basic dimensions:
 Camera with focal length
 f=60 mm IR lens.
 Only dimensions valid for
 this IR lens.
 For all other dimensions see pages
 1 and 2.



NOT RELEASED, FOR QUOTATION ONLY

Konstr/Drawn	P. MARCUS		Datum/Date	2015-12-14	Kontroll/Check	Material		-		
Ändrad av/Modified by	P. MARCUS		Ändrad/Modified	2015-12-18	Ytjämnhet/Roughness	Ra		µm		
Ditt ej annat anges/Unless otherwise stated			Benämning/Denomination		Behandling/Surface treatment					
Genför ISO 2768-mK			URträge ut/Except from ISO 2768-m		-					
0,50	0,50	40,1	Hålsläpstad	-						
(30)-120	40,3	40,3	Fläkt rad	-						
(40)-400	40,5	40,5	Kontak bultna	-						
(60)-1600	40,8	40,8	Edgar broden	-						
FLIR A35-Series			Scale/Scale		1:1		AttNo.		-	
FLIR Ax5			Blad/Sheet		6(7)		Size		A3	
S/N B2400008			Ritn nr/Drawing No		T129297		Rev		-002	

Basic dimensions Ax5 w. flag shutter
 f=7,5 mm to f=100 mm



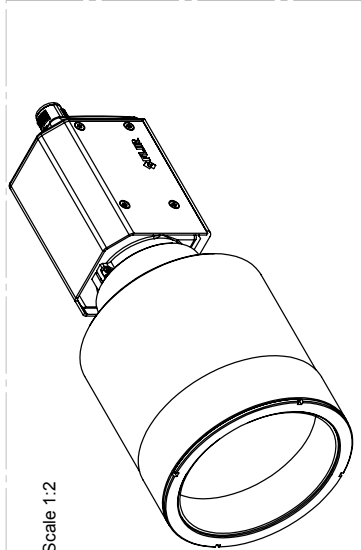
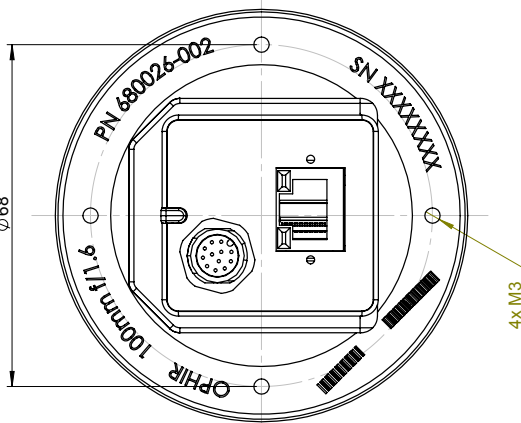
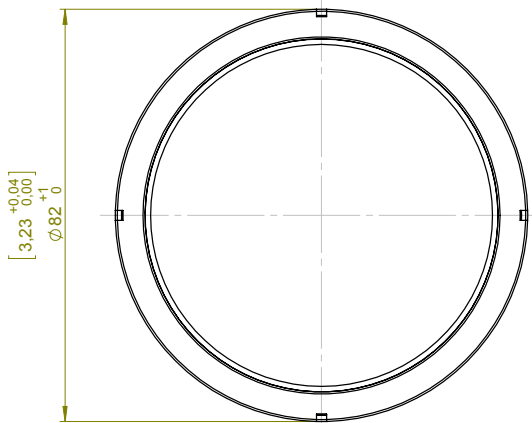
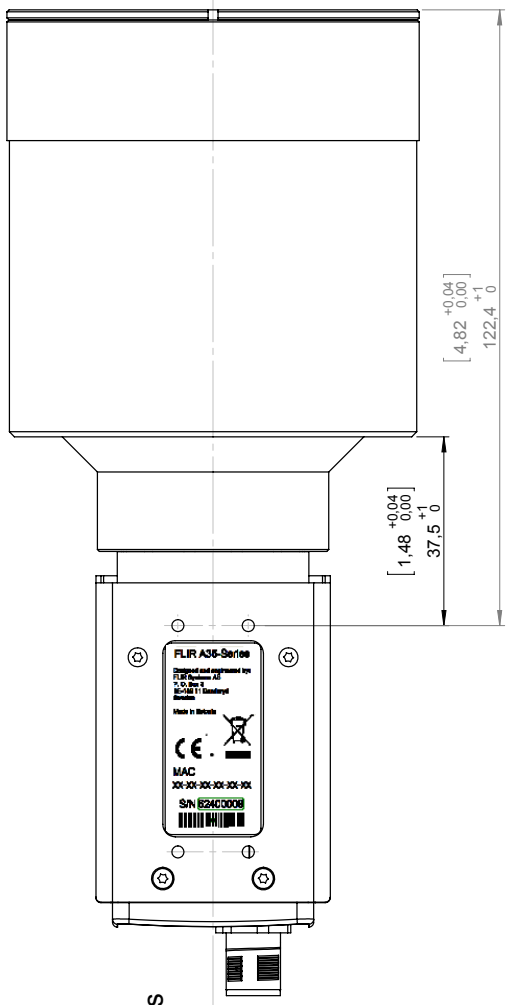
Rev

T129297

Rev

-002

Basic dimensions:
 Camera with focal length
 f=100 mm IR lens.
 Only dimensions valid for
 this IR lens.
 For all other dimensions see pages
 1 and 2.



NOT RELEASED, FOR QUOTATION ONLY

Konstruktör/Drawn	P. MARCUS		Datum/Date	2015-12-14		Kontroll/Check	-		Material	-	
Ändrad av/Modified by	P. MARCUS		Ändrad/Modified	2015-12-18		Ytjämnhet/Roughness	Ra		Ytbehandling/Surface treatment	-	
Dir. ej annat angavs/Unless otherwise stated	Utryck ur/Except from ISO 2768-mK		Benämning/Denomination								
0.50	40.1	Hålsläpplig									
(30)-120	40.3	Flät i rad									
(40)-400	40.5	Kant i bruna									
(40)-1000	40.8	Är i bruna									
Storlek/Scale			1:1			Bladd/Sheet			7(7)		
Art.Nr.						Rev			A3		
Ritn nr/Drawing No			T129297			Rev			-002		

Basic dimensions Ax5 w. flag shutter
 f=7,5 mm to f=100 mm



This document must not be communicated or copied completely or in part, without our permission. Any infringement will lead to legal proceedings. FLIR SYSTEMS AB

Denna handling får ej delas annan, kopieras eller översäskas utan vårt medgivande. Ombräskelse eller annan användning utan vårt tillstånd kommer att behandlas enligt gällande lag. FLIR SYSTEMS AB



July 2, 2013

AQ320030

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 2002/96/EC Waste electrical and electronic equipment; WEEE
(As applicable)

Standards:

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

System: **FLIR AXX series**

FLIR Systems AB
Quality Assurance


Björn Svensson
Director