

P/N: 73513-0102

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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	
<p>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.</p> <p>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.</p>	
Key features:	
<ul style="list-style-type: none"> • Very affordable. • Compact (40 mm × 43 mm × 106 mm). • GigE Vision and GenICam compliant. • GigE Vision lockable connector. • PoE (power over Ethernet). • 8-bit 640 × 512 pixel images streamed at 7.5 Hz, signal linear • 14-bit 640 × 512 pixel images streamed at 7.5 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:	
<ul style="list-style-type: none"> • 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)	45° × 37°
Focal length	13 mm (0.5 in.)
Spatial resolution (IFOV)	1.31 mrad
F-number	1.25
Image frequency	7.5 Hz
Focus	Fixed
Detector data	
Detector type	Focal plane array (FPA), uncooled VOX microbolometer
Spectral range	7.5–13 μm

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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 @ 7.5 Hz <ul style="list-style-type: none"> Signal linear/ DDE Automatic/ Manual Flip H&V 14-bit 640 x 512 pixels @ 7.5 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

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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 +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	<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 (IEC 60068-2-6)
Physical data	
Weight	0.200 kg (0.44 lb.)
Camera size (L × W × H)	106 × 40 × 43 mm (4.2 × 1.6 × 1.7 in.)
Tripod mounting	UNC ¼"-20 (on three sides)
Base mounting	4 × M3 thread mounting holes (bottom)
Housing material	Magnesium and aluminum



FLIR A65 f=13 mm with SC kit (7.5 Hz)

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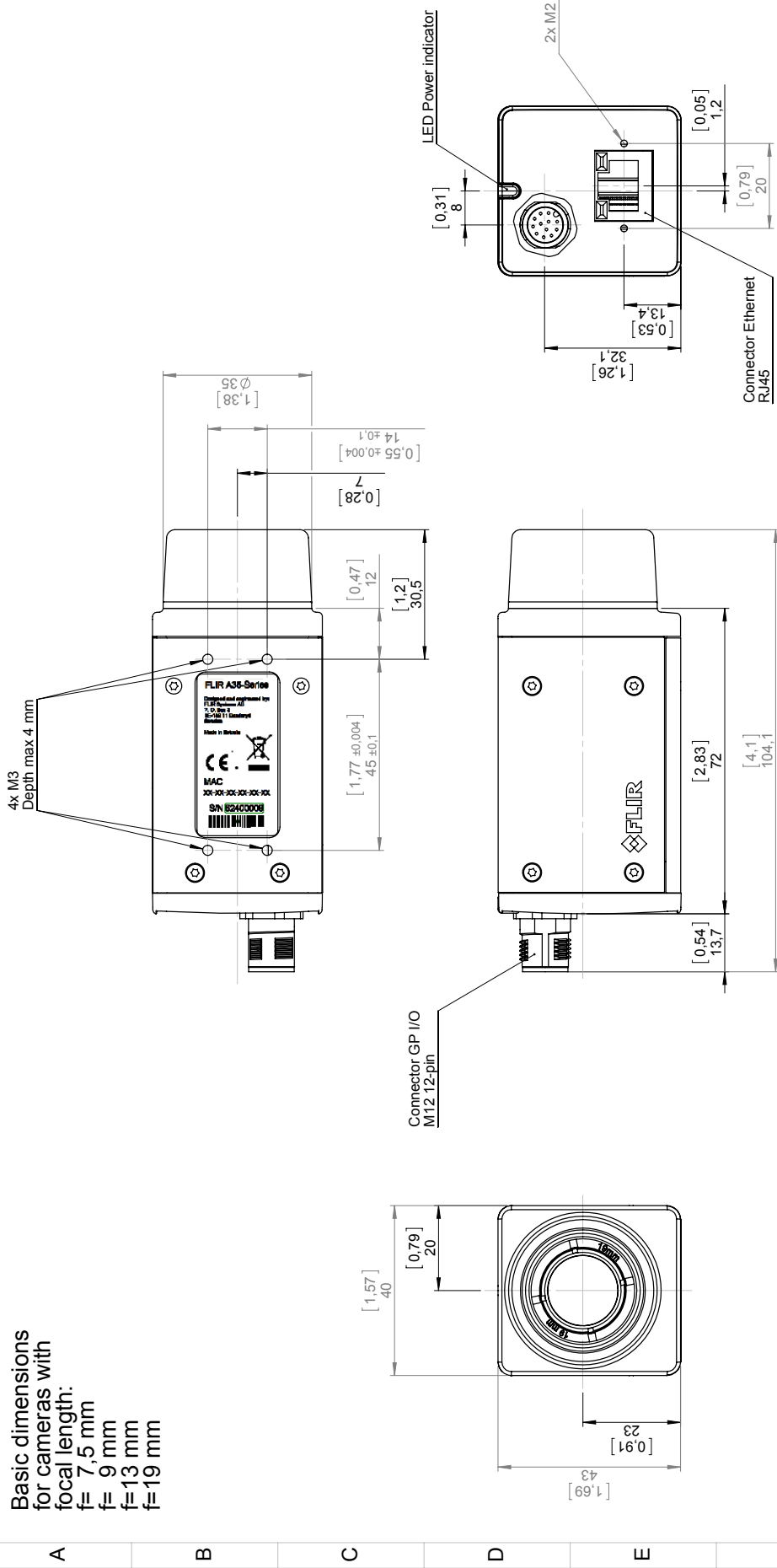
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Shipping information	
Packaging, type	Cardboard box
List of contents	<ul style="list-style-type: none">• Hard transport case• Infrared camera with lens• Base support• Cable tie (2 ea.)• Ethernet cable CAT-6, 2m/6.6 ft (2 ea.)• FLIR ResearchIR Standard 4• Focus adjustment tool• Gooseneck• Mains cable kit (UK,EU,US)• PoE Injector (power over Ethernet)• Printed documentation• Table stand• User documentation CD-ROM
Packaging, weight	5.3 kg (11.7 lb.)
Packaging, size	370 × 180 × 320 mm (14.6 × 7.1 × 12.6 in.)
EAN-13	7332558010624
UPC-12	845188011291
Country of origin	Sweden

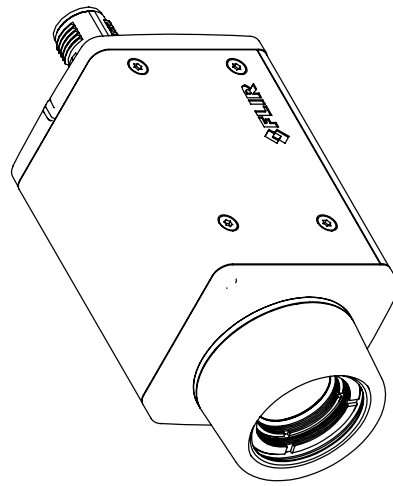
Supplies & accessories:

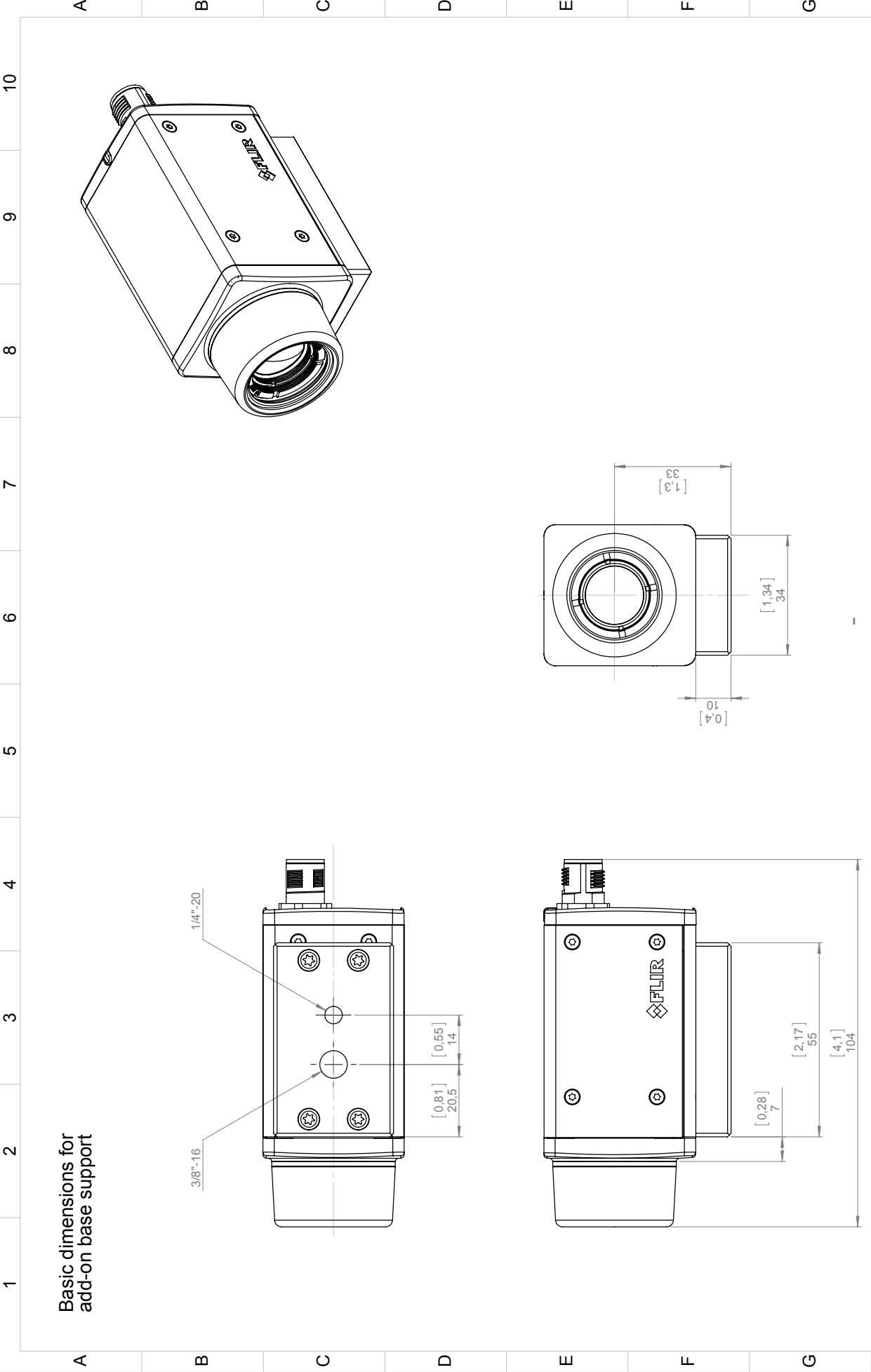
- T951004ACC; Ethernet cable CAT-6, 2m/6.6 ft.
- T198349; Base support
- T198348; Cable kit Mains (UK,EU,US)
- T911112; PoE injector
- T198392; Table stand kit
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T127605ACC; Cable M12 Pigtail
- T127606ACC; Cable M12 Sync
- T198584; FLIR Tools
- T198583; FLIR Tools+ (license only)
- DSW-10000; FLIR IR Camera Player

Basic dimensions
for cameras with
focal length:
f= 7,5 mm
f= 9 mm
f=13 mm
f=19 mm



FLIR		Blatt/Sheet 1(7)	Size A3	Rev A
Konstr/Drawing P. MARCUS	Kontroll/Check MABR	Materiel -	Skala/Scale 1:1	ArtNo. T128116
Datum/Date 2014-01-29	Ändrad av/Modified by 2014-02-11	Ytbehandling/Roughness Ra	Ytbehandling/Surface treatment µm	Revidering No -
Ändrad av/Modified by P. MARCUS		Benämning/Denomination Basic dimensions Ax5 f=7,5 mm to f=100 mm		
Där ej annat anges/Unless otherwise stated Genom ISO 2768-mK Utgång utöver/Except from ISO 2768-m 0,5-6 ±0,1 Hållarsradier 6,3-320 ±0,2 Fillet radii 120-400 ±0,5 Kanter brutna 400-1000 ±0,8 Edges broken				



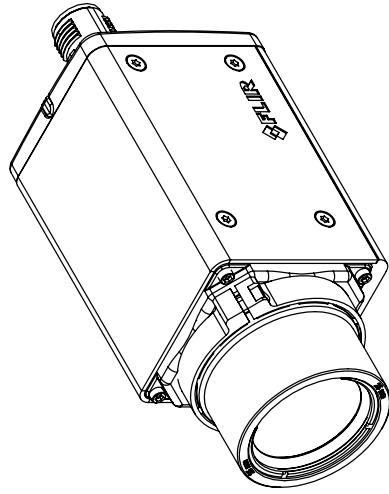
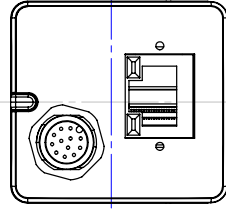
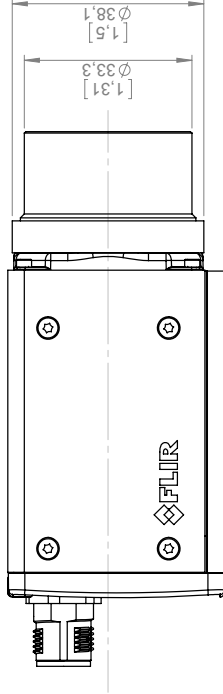
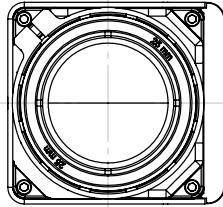
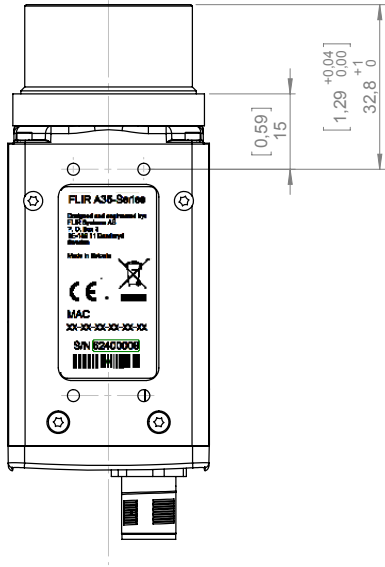


FLIR Blad/Sheet Size: 2(7) A3 Rev: A		Skal/Scale: 1:1 Aritn.		Ritt nr/Drawing No: T128116	
Konstr/Drawn: P. MARCUS Använd av/Modified by: P. MARCUS Datum/Date: 2014-01-29 Ändrad/Modified: 2014-02-11 Benämning/Denomination:		Kontroll/Check: MABR Ytjämnhet/Roughness: Ra Material: - Ytbehandling/Surface treatment:		Basic dimensions Ax5 f=7,5 mm to f=100 mm	
Ditt ej annat angavs/Unless otherwise stated Gen. tol. ISO 2768-mK UTMät. ur/Except from ISO 2768-m		0,50 ±0,1 Hålsläpplader 0,30 ±0,1 Filat. radi. (30)-120 ±0,3 (20)-400 ±0,5 (40)-1600 ±0,5 Kanter brutna Edges broken			

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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.



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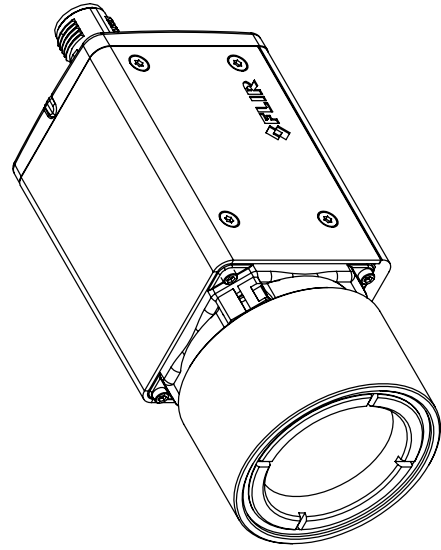
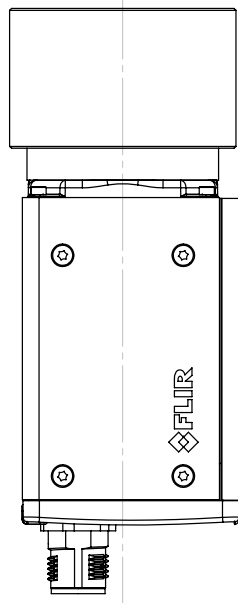
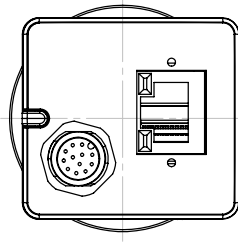
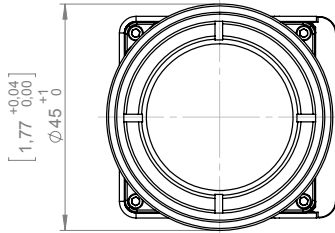
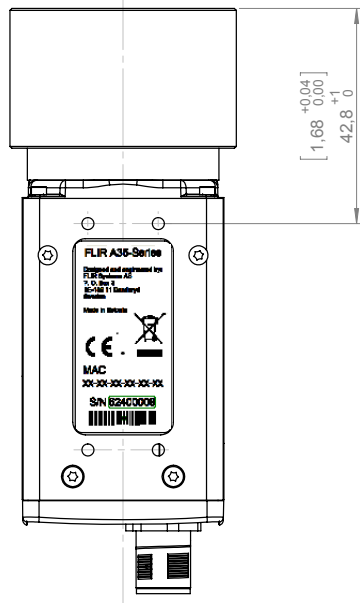
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Dir. ej annat angavs/Unless otherwise stated	Gen. tol. ISO 2768-mK	Benämning/Denomination					
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(40)-400	40.5						
(40)-1600	40.6						
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Basic dimensions Ax5
 f=7,5 mm to f=100 mm

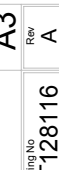
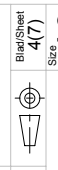


Scale/Scale 1:1
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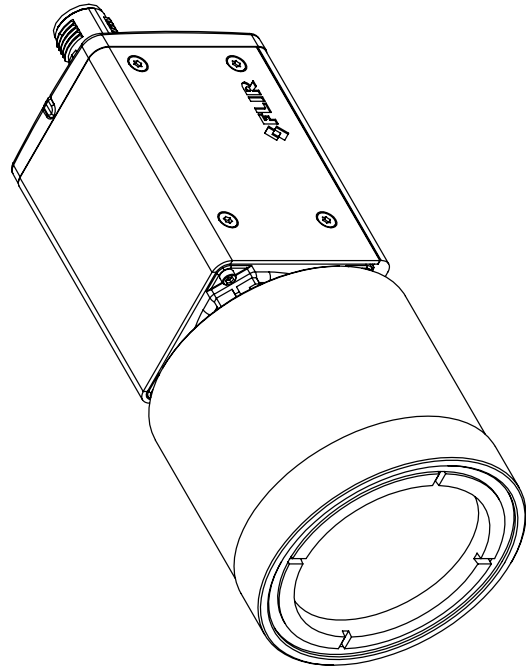
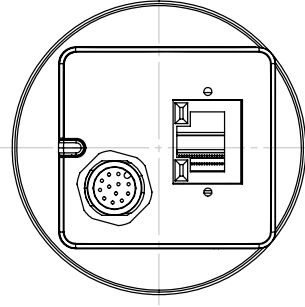
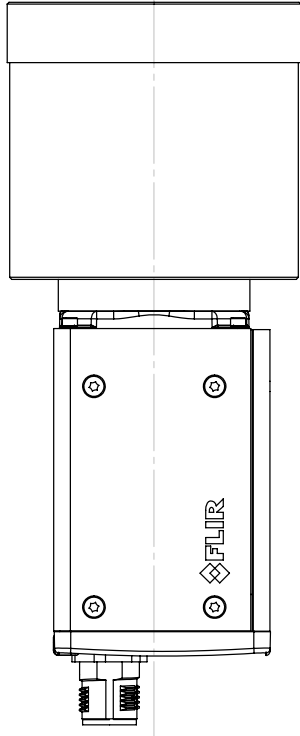
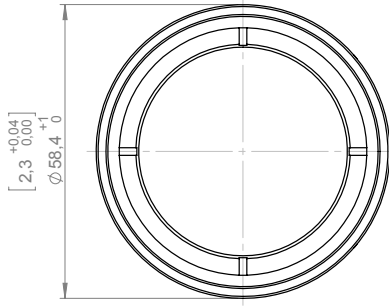
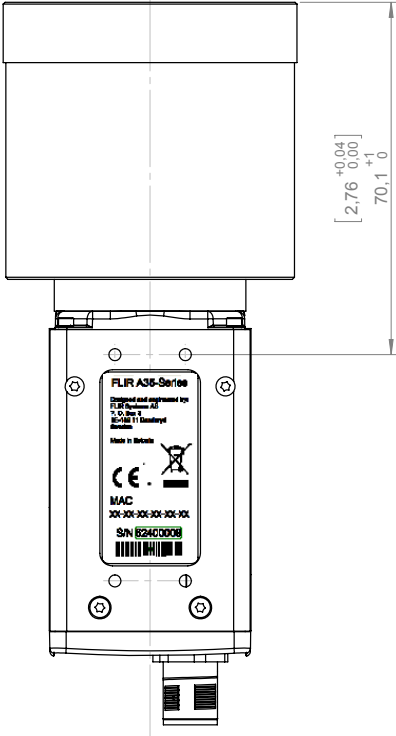
Basic dimensions:
 Camera with focal length
 f=35 mm IR lens.
 Only dimensions valid for
 this IR lens.
 For all other dimensions see pages
 1 and 2.



Konstr/Drawing	P. MARCUS	Datum/Date	2014-01-29	Kontroll/Check	MABR	Material	-
Ändrad av/Modified by	P. MARCUS	Ändrad/Modified	2014-02-11	Ytjämnhet/Roughness	Ra	Y-behandling/Surface treatment	
Gen./ISO	ISO 2768-mK	Benämning/Denomination					
Ditt ej annat angavs/Unless otherwise stated Utmått ut/Except from ISO 2768-m 0,5-0,2 Hålltolerans (30)-120 40,3 (120)-400 40,3 (400)-1600 40,3 Kanten brutna Edges broken							
Basic dimensions Ax5 f=7,5 mm to f=100 mm							
Skala/Scale	1:1	Bladd/Sheet	4(7)	Bladd/Scale	Size	A3	Rev
Ättno.		Ritn nr/Drawing No	T128116				A



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.



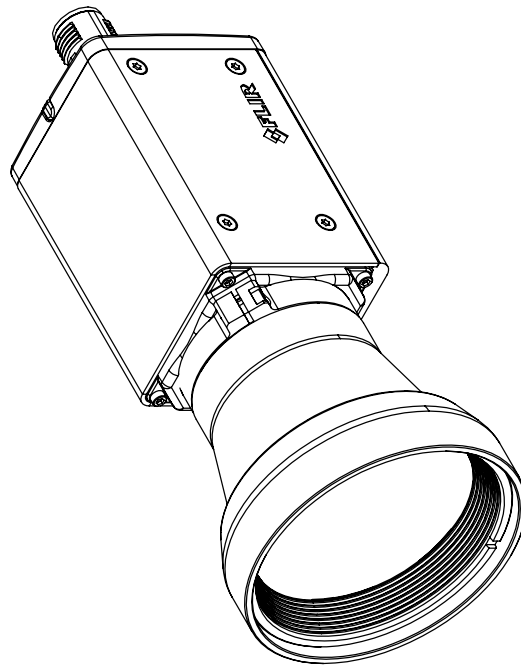
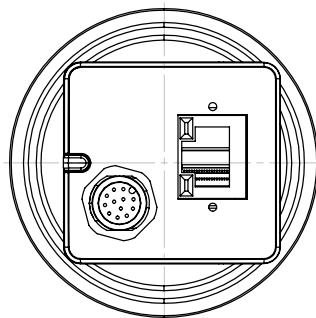
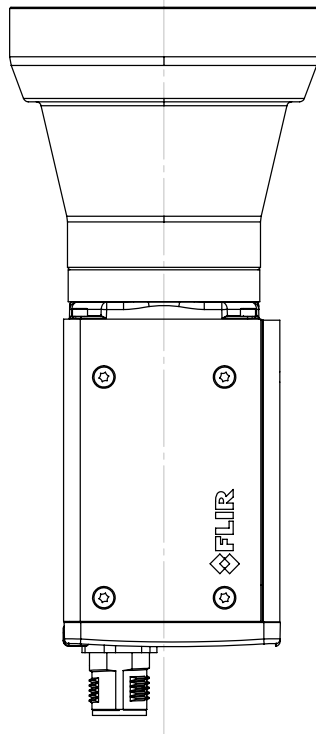
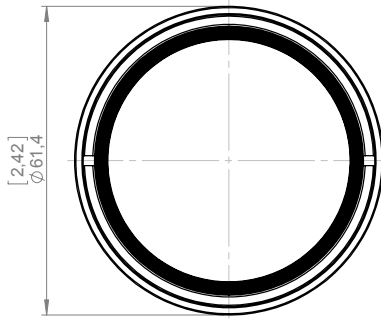
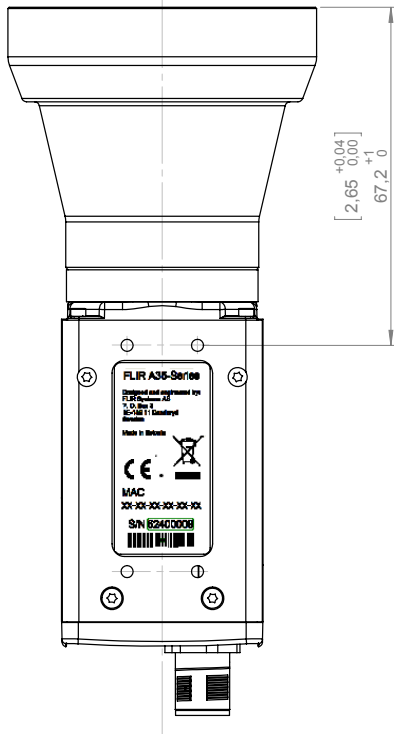
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Ändrad av/Modified by	P. MARCUS	Ändrad/Modified	2014-02-11	Ytjämnhet/Roughness	Ra	Ytbehandling/Surface treatment	-
		Benämning/Denomination			µm		
Dir ej annat anges/Unless otherwise stated Genför ISO 2768-mK Utdrag ur Eksempel från ISO 2768-m 0,50 40,1 Hållåtgärdar (30)-120 40,3 Fläkt rad (120)-400 40,3 Kenter brutna (40)-1600 40,3 Edges broken							
Basic dimensions Ax5 f=7,5 mm to f=100 mm							
Skala/Scale	1:1	Bladd/Sheet	5(7)	Bladd/Sheet	Size	A3	Rev
Ättno.		Ritn nr/Drawing No	T128116				A



Bladd/Sheet
 Size
 A3

Rev
 A

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.

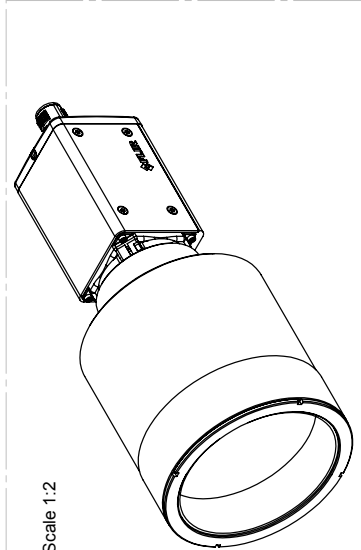
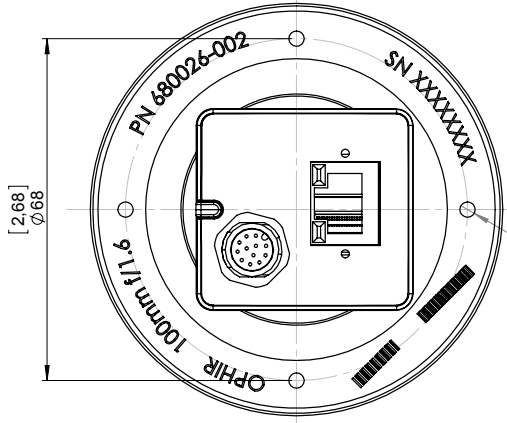
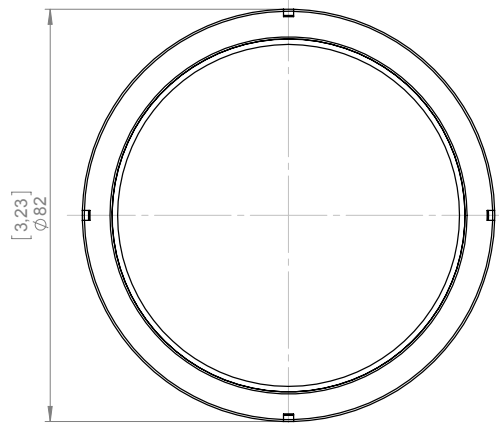
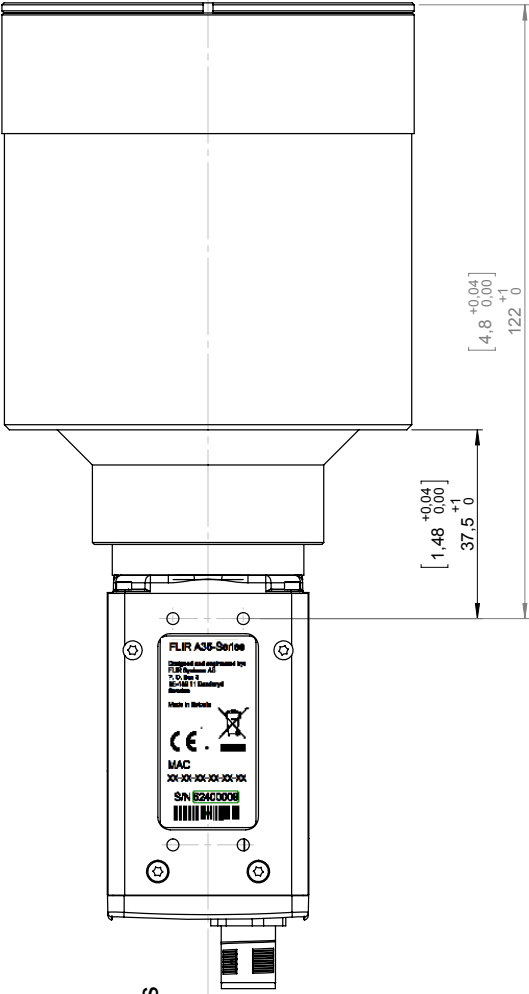


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Konstr/Drawn P. MARCUS	Datum/Date 2014-01-29	Kontroll/Check MABR	Material -
Ändrad av/Modified by P. MARCUS	Ändrad/Modified 2014-02-11	Ytfinish/Roughness Ra	Ytbehandling/Surface treatment µm
Dir. ej annat angavs/Unless otherwise stated Gen. tol. ISO 2768-mK Utmått ut/Except from ISO 2768-m	Benämning/Denomination	Bladd/Sheet 6(7)	Bladd/Sheet A3
0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50		Skala/Scale 1:1	Rev A
		ATNo.	Ritn nr/Drawing No T128116
		Basic dimensions Ax5 f=7,5 mm to f=100 mm	

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.



Konstruktör/Drawn	P. MARCUS	Datum/Date	2014-01-29	Kontroll/Check	MABR	Material	-
Ändrad av/Modified by	P. MARCUS	Ändrad/Modified	2014-02-11	Ytjämnhet/Roughness	Ra	Ytbehandling/Surface treatment	
Dir. ej annat anges/Unless otherwise stated	Genetol ISO 2768-mK	Benämning/Denomination					
UTdrag ur/Excerpt from ISO 2768-m	0.5/0.5						
	(30)-120						
	(20)-400						
	(40)-1600						
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Basic dimensions Ax5
 f=7,5 mm to f=100 mm

Blad/Sheet	7(7)
Size	A3
Rev	A
Ritn nr/Drawing No	T128116



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