FLIR A35 f=9 mm with SC kit

P/N: 73309-0102

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http://www.flir.com

Customer support

http://support.flir.com

General description
The FLIR A35 has features and functions that make it the natural choice for anyone who uses PC software to solve problems and for whom 320 × 256 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 (40 mm × 43 mm × 106 mm). • GigE Vision and GenICam compliant. • GigE Vision lockable connector. • PoE (power over Ethernet). • 8-bit 320 × 256 pixel images streamed at 60 Hz, signal linear. • 14-bit 320 × 256 pixel images streamed at 60 Hz, signal and temperature linear. • High frame rates (60 Hz). • 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	320 × 256 pixels
Thermal sensitivity/NETD	< 0.05°C @ +30°C (+86°F) / 50 mK
Field of view (FOV)	48° × 39°
Focal length	9 mm (0.35 in.)
Spatial resolution (IFOV)	2.78 mrad
F-number	1.25
Image frequency	60 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	25 µm
Detector time constant	Typical 12 ms

Measurement	
Object temperature range	• –25 to +135°C (–13 to 275°F) • –40 to +550°C (–40 to +1022°F)
Accuracy	±5°C (±9°F) or ±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 @ 60 Hz • Signal linear/ DDE • Automatic/ Manual • Flip H&V 14-bit 320 × 256 pixels @ 60 Hz • 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	1× opto-isolated, “0” <1.2 VDC, “1” = 2–25 VDC.
Digital output, purpose	General purpose output to ext. device (programmatically set)
Digital output	1× 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	• 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

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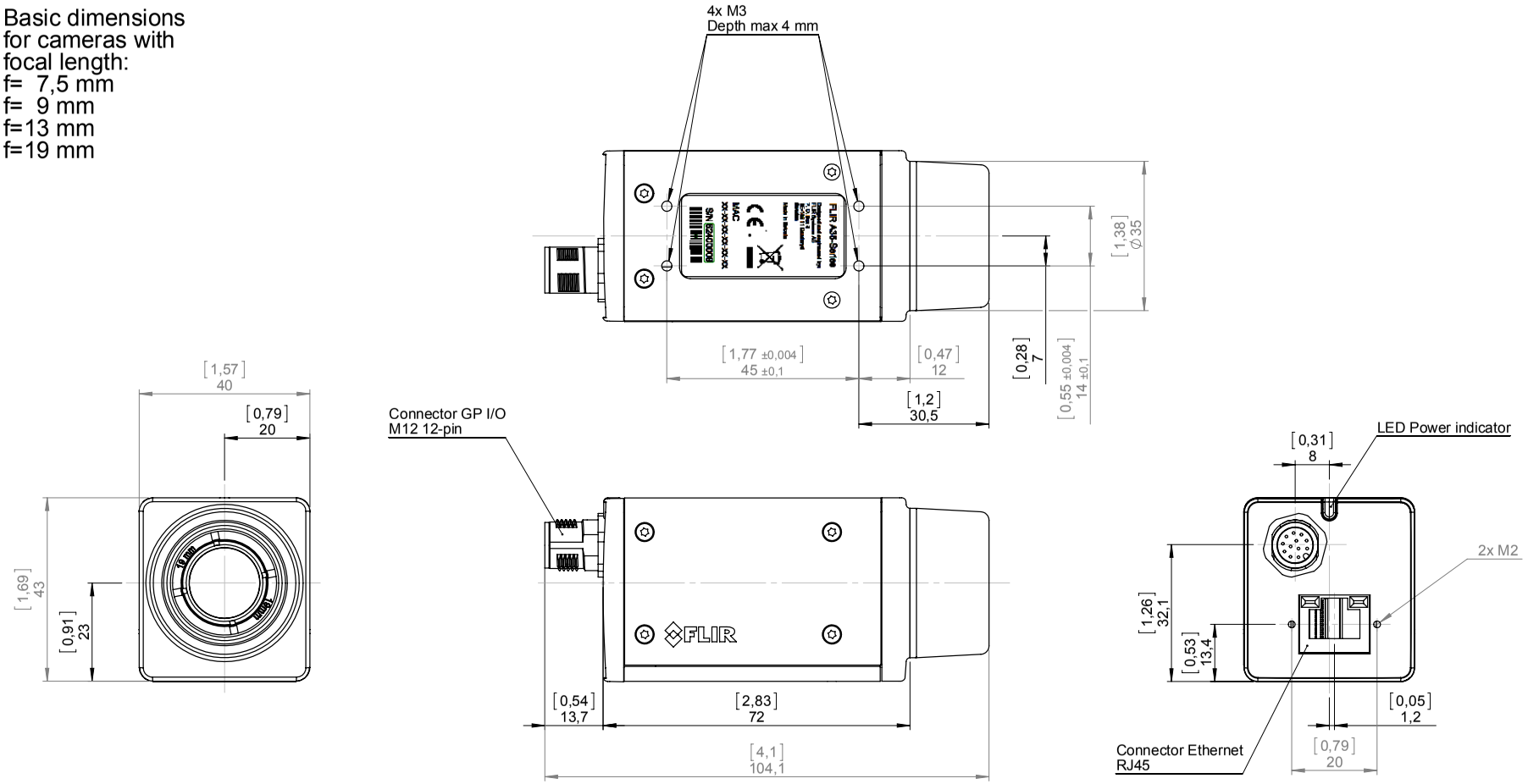
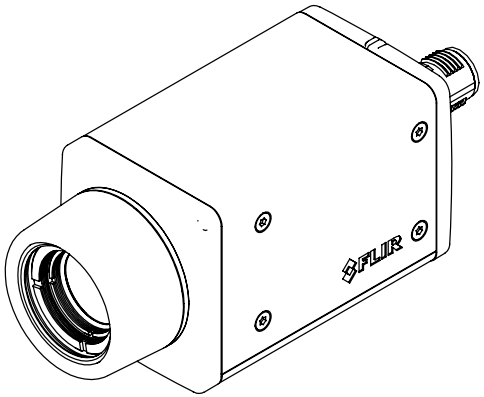
Shipping information	
Packaging, type	Cardboard box
List of contents	• Hard transport case • Infrared camera with lens • Base support • Cable tie (2 ea.) • Ethernet cable CAT-6, 2m/6.6 ft (2 ea.) • FLIR ResearchIR Standard 4 • Focus adjustment tool • Gooseneck • Mains cable kit (UK,EU,US) • PoE Injector (power over Ethernet) • Printed documentation • Table stand • User documentation CD-ROM
Packaging, weight	
Packaging, size	370 × 180 × 320 mm (14.6 × 7.1 × 12.6 in.)
EAN-13	7332558010570
UPC-12	845188011246
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

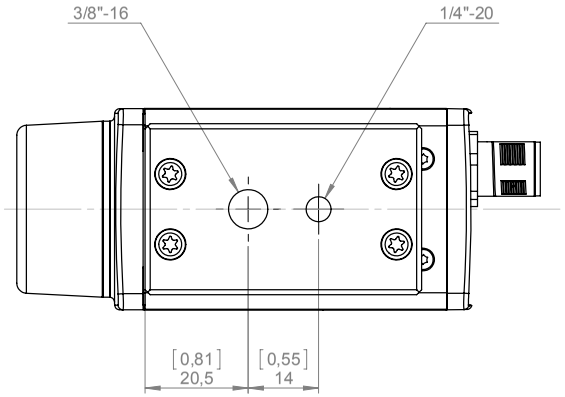
Basic dimensions
for cameras with
focal length:
f= 7,5 mm
f= 9 mm
f=13 mm
f=19 mm

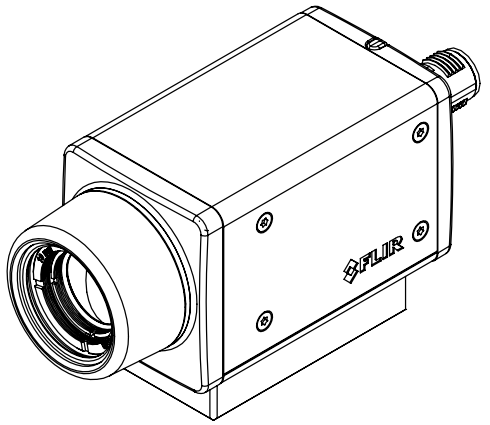


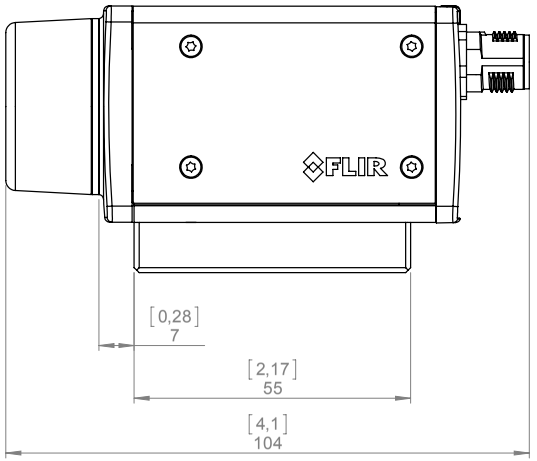


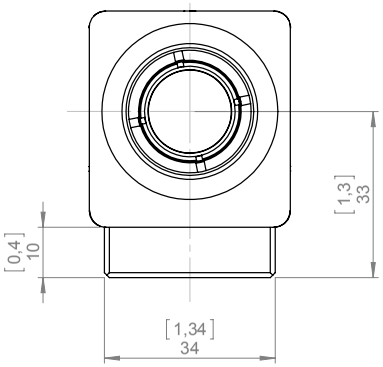
Konstr/Drawn: P. MARCUS	Datum/Date: 2014-01-29	Kontr/Check: MABR	Material: -	
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2014-02-11	Ytjämnhet/Roughness: Ra µm	Ytbehandling/Surface treatment	
Där ej annat anges/Unless otherwise stated Gen tol ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m 0,5-6 ±0,1 Hålkälsradier (6)-30 ±0,2 Fillet radii (30)-120 ±0,3 (120)-400 ±0,5 Kanter brutna (400)-1000 ±0,8 Edges broken	Benämning/Denomination: Basic dimensions Ax5 f=7,5 mm to f=100 mm			
Skala/Scale 1:1				Blad/Sheet 1(7)
ArtNo.				Size A3
Ritn nr/Drawing No T128116				Rev A

Basic dimensions for add-on base support









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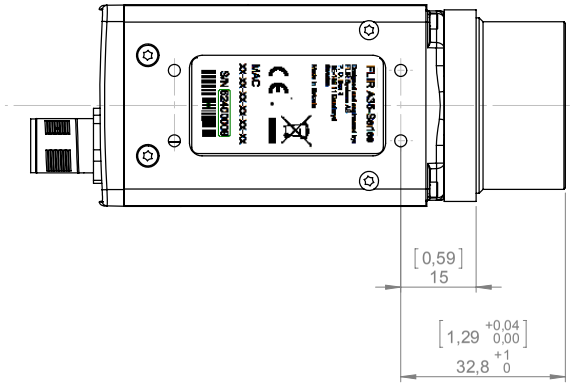
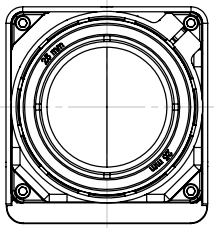
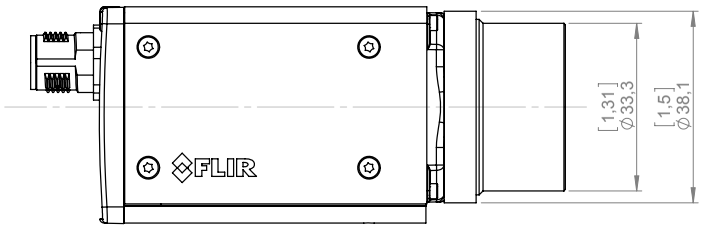
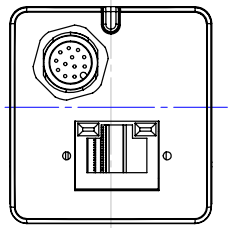
Konstr/Drawn: P. MARCUS	Datum/Date: 2014-01-29	Kontr/Check: MABR	Material: -	FLIR
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2014-02-11	Ytjämnhet/Roughness: Ra µm	Ytbehandling/Surface treatment	
Där ej annat anges/Unless otherwise stated Gen tol ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m 0,5-6 ±0,1 Hålkälsradier (6)-30 ±0,2 Fillet radii (30)-120 ±0,3 (120)-400 ±0,5 Kanter brutna (400)-1000 ±0,8 Edges broken	Benämning/Denomination: Basic dimensions Ax5 f=7,5 mm to f=100 mm			Skala/Scale 1:1 · Blad/Sheet 2(7) · ArtNo. · Size A3 · Ritn nr/Drawing No T128116 · Rev A

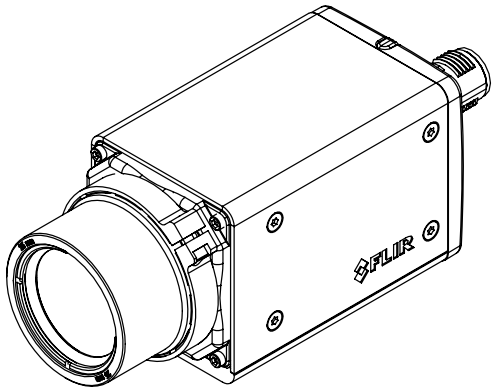
Basic dimensions:
Camera with focal length
f=25 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.





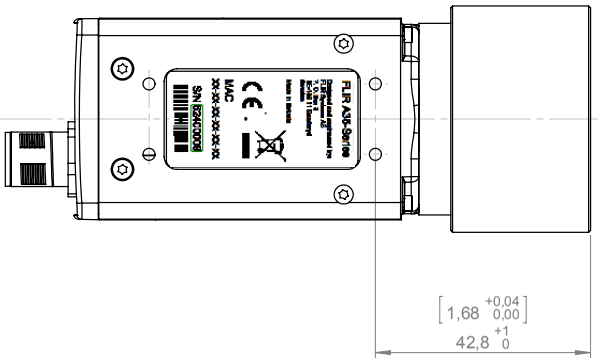


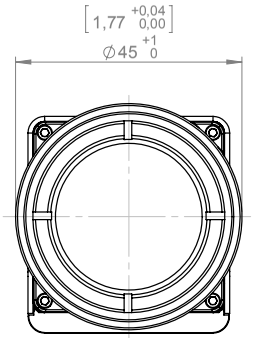


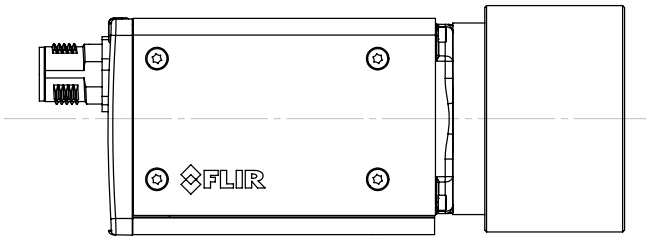


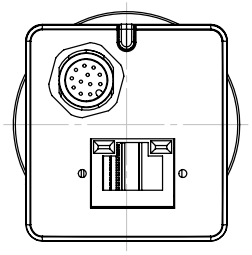
Konstr/Drawn: P. MARCUS	Datum/Date: 2014-01-29	Kontr/Check: MABR	Material: -		
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2014-02-11	Ytjämnhet/Roughness Ra µm	Ytbehandling/Surface treatment		
Där ej annat anges/Unless otherwise stated Gen tol ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m: 0,5-6 ±0,1 Hålkälsradier; (6)-30 ±0,2 Fillet radii; (30)-120 ±0,3; (120)-400 ±0,5 Kanter brutna; (400)-1000 ±0,8 Edges broken	Benämning/Denomination: Basic dimensions Ax5 f=7,5 mm to f=100 mm			Skala/Scale 1:1	Blad/Sheet 3(7)
				ArtNo.	Size A3
				Ritn nr/Drawing No T128116	Rev A

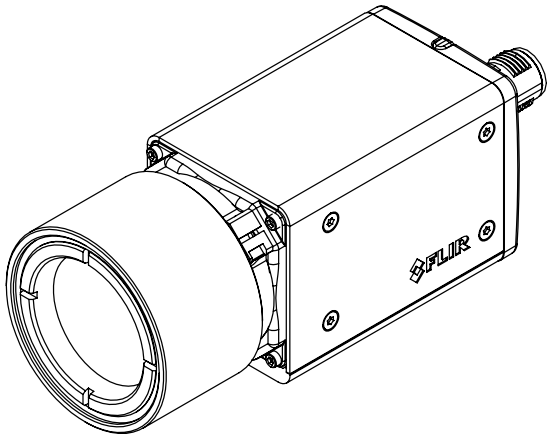
Basic dimensions:
Camera with focal length
f=35 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.





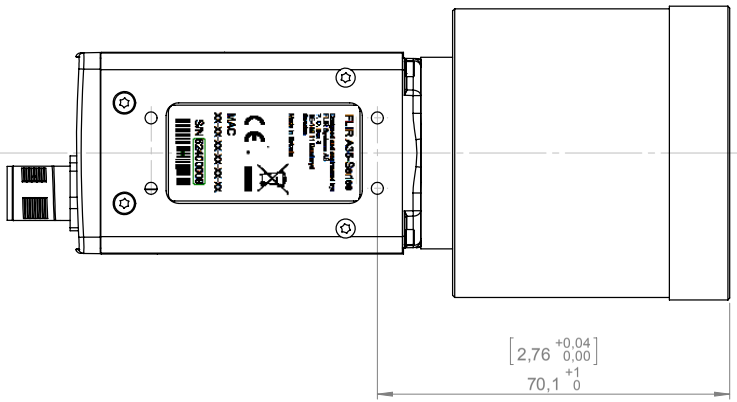


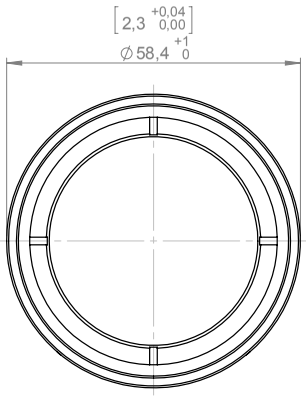


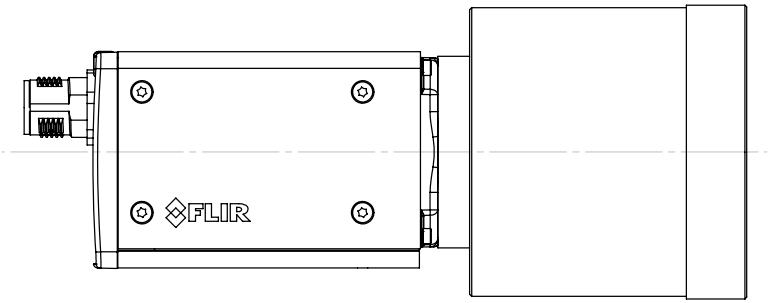


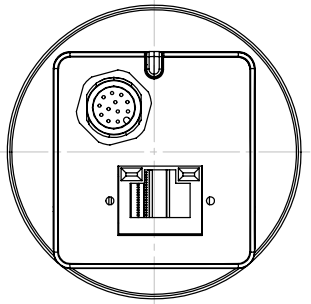
Konstr/Drawn: P. MARCUS	Datum/Date: 2014-01-29	Kontr/Check: MABR	Material: -		
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2014-02-11	Ytjämnhet/Roughness: Ra µm	Ytbehandling/Surface treatment		
Där ej annat anges/Unless otherwise stated Gen tol ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m 0,5-6 ±0,1 Hålkälsradier (6)-30 ±0,2 Fillet radii (30)-120 ±0,3 (120)-400 ±0,5 Kanter brutna (400)-1000 ±0,8 Edges broken	Benämning/Denomination: Basic dimensions Ax5 f=7,5 mm to f=100 mm			Skala/Scale 1:1	Blad/Sheet 4(7)
				ArtNo.	Size A3
				Ritn nr/Drawing No T128116	Rev A

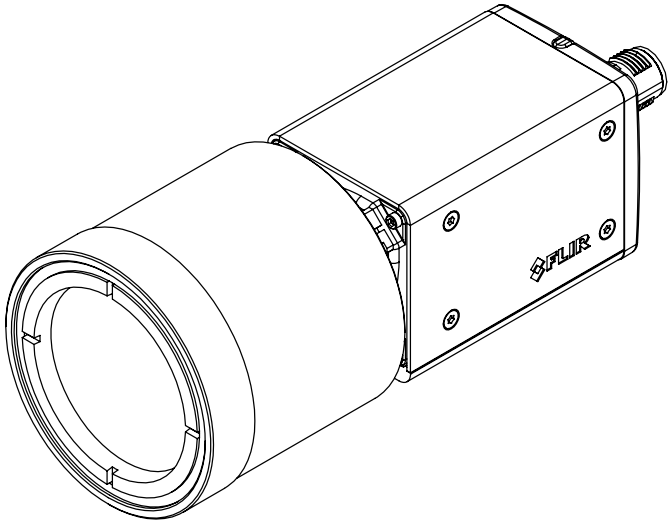
Basic dimensions:
Camera with focal length
f=50 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.











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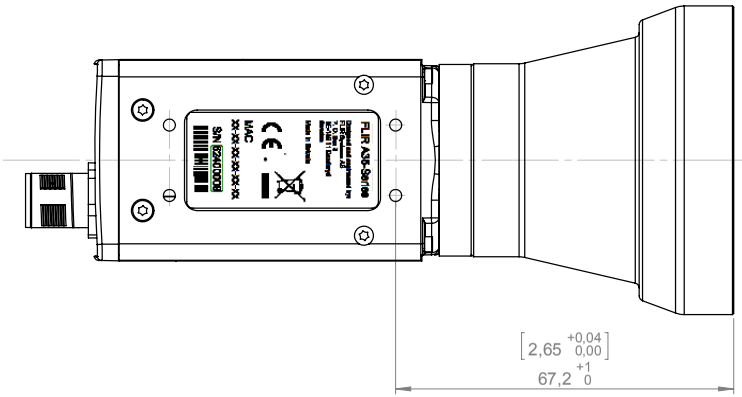
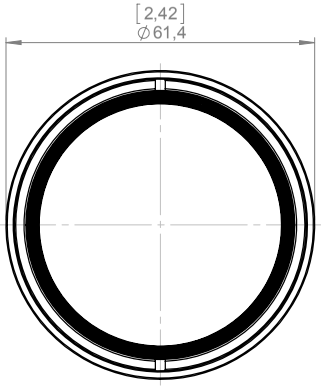
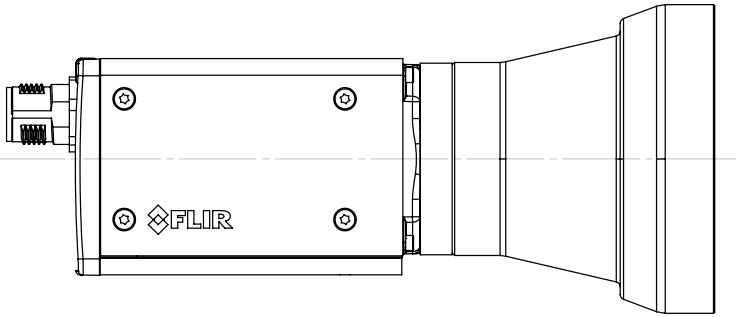
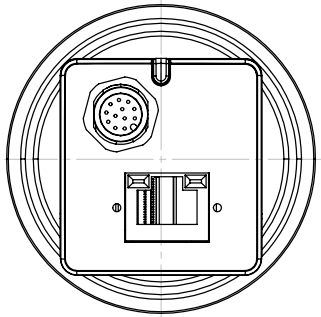
Konstr/Drawn: P. MARCUS	Datum/Date: 2014-01-29	Kontr/Check: MABR	Material: -		
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2014-02-11	Ytjämnhet/Roughness Ra µm	Ytbehandling/Surface treatment		
Där ej annat anges/Unless otherwise stated Gen tol ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m 0,5-6 ±0,1 Hålkälsradier (6)-30 ±0,2 Fillet radii (30)-120 ±0,3 (120)-400 ±0,5 Kanter brutna (400)-1000 ±0,8 Edges broken	Benämning/Denomination: Basic dimensions Ax5 f=7,5 mm to f=100 mm			Skala/Scale 1:1	Blad/Sheet 5(7)
				ArtNo.	Size A3
				Ritn nr/Drawing No T128116	Rev A

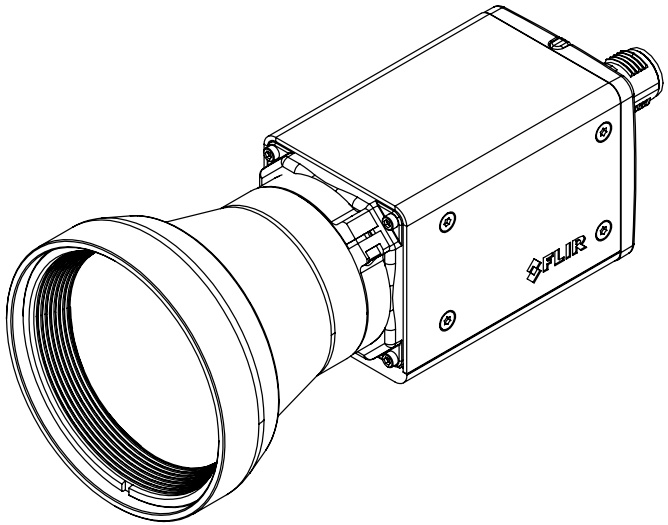
Basic dimensions:
Camera with focal length
f=60 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.











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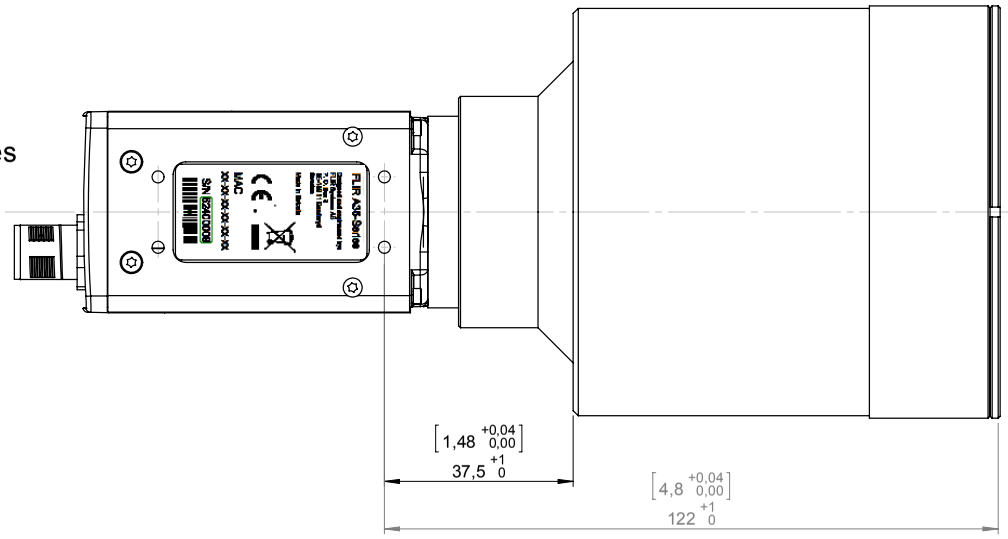
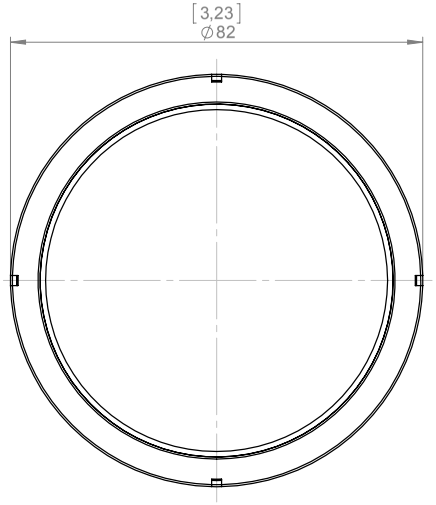
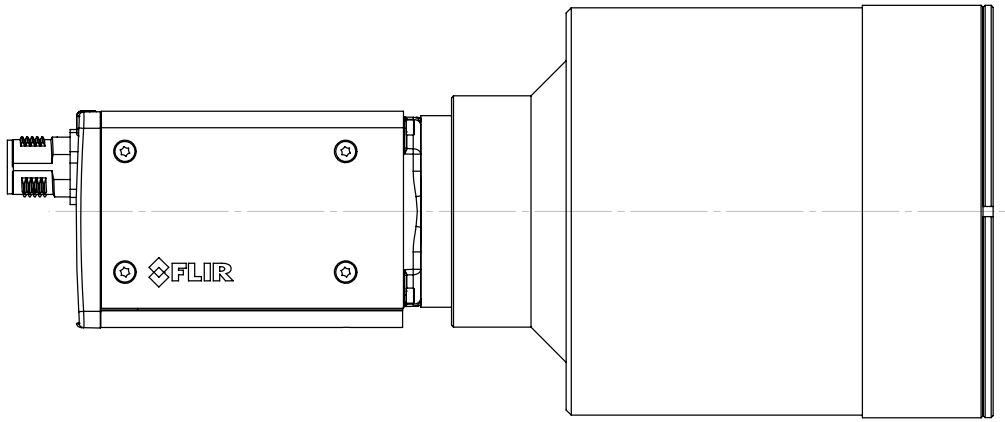
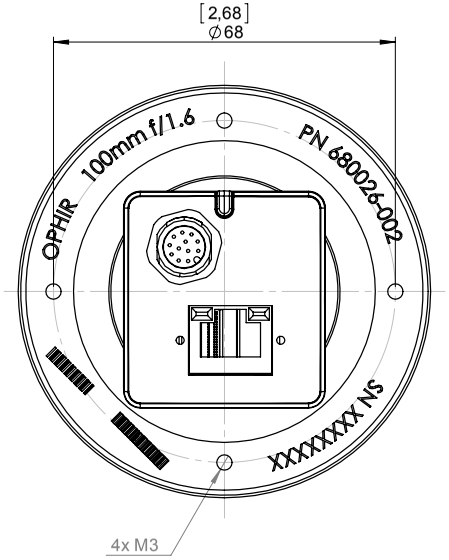
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2014-02-11	Ytjämnhet/Roughness: Ra µm	Ytbehandling/Surface treatment	
Där ej annat anges/Unless otherwise stated Gen tol ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m: 0,5-6 ±0,1 Hålkälsradier; (6)-30 ±0,2 Fillet radii; (30)-120 ±0,3; (120)-400 ±0,5 Kanter brutna; (400)-1000 ±0,8 Edges broken	Benämning/Denomination: Basic dimensions Ax5 f=7,5 mm to f=100 mm			Skala/Scale 1:1 · Blad/Sheet 6(7) · ArtNo. · Size A3 · Ritn nr/Drawing No T128116 · Rev A

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.

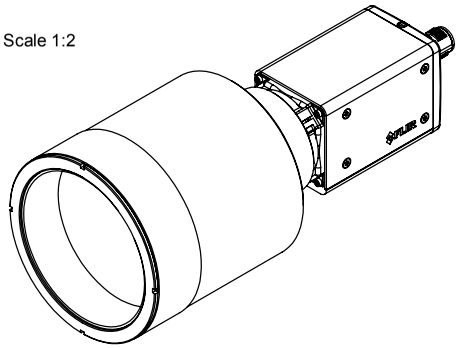








Scale 1:2



Konstr/Drawn: P. MARCUS	Datum/Date: 2014-01-29	Kontr/Check: MABR	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2014-02-11	Ytjämnhet/Roughness: Ra µm	Ytbehandling/Surface treatment

Där ej annat anges/Unless otherwise stated
Gen tol ISO 2768-mK
Utdrag ur/Excerpt from ISO 2768-m

0,5-6	±0,1	Hålkälsradier
(6)-30	±0,2	Fillet radii
(30)-120	±0,3	
(120)-400	±0,5	Kanter brutna
(400)-1000	±0,8	Edges broken

Benämning/Denomination

Basic dimensions Ax5
f=7,5 mm to f=100 mm

Skala/Scale: 1:1	Blad/Sheet: 7(7)
ArtNo.	Size: A3
Ritn nr/Drawing No: T128116	Rev: A

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

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