



FLIR A35 f=9 mm with SC kit

P/N: 73309-0102

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Website

<http://www.flir.com>

Customer support

<http://support.flir.com>

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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
Detector pitch	25 µm
Detector time constant	Typical 12 ms

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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
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

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Digital input/output	
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)  NOTE The operating temperature range assumes that the camera is mounted on the base support (included in the package) or a similar type of heatsink.
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	1 × UNC ¼"-20 (with Base support accessory, included in the delivery box)
Base mounting	4 × M3 thread mounting holes (bottom)
Housing material	Magnesium and aluminum
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
Packaging, weight	



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Shipping information	
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 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
- 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

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

4x M3
Depth max 4 mm

Connector GP I/O
M12 12-pin

LED Power indicator

Connector Ethernet
RJ45

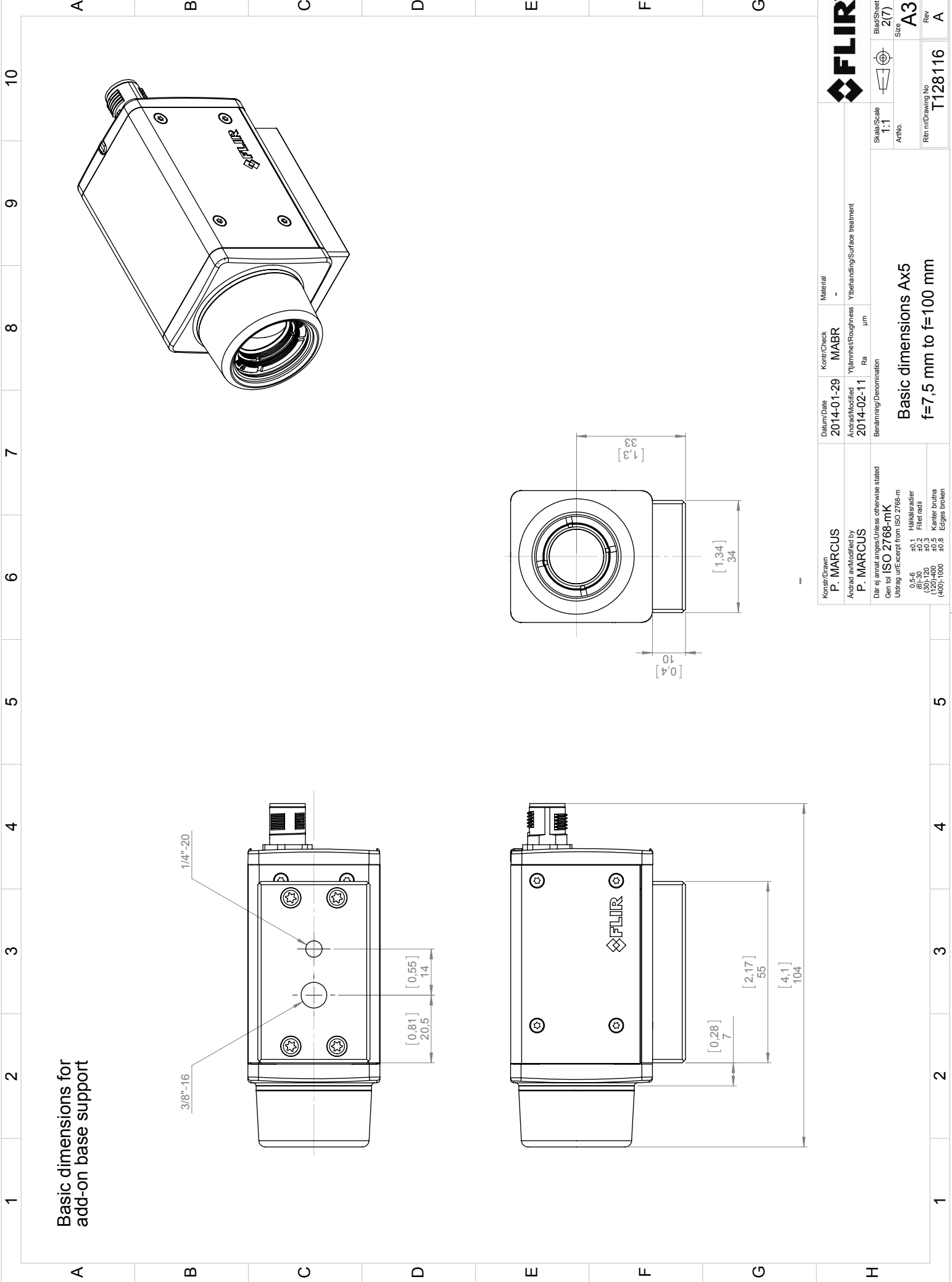
Basic dimensions Ax5
f=7,5 mm to f=100 mm



Konstr/Drawn	2014-01-29	Kontr/Check	Material
P. MARCUS	2014-01-29	MABR	-
Andrad av/Modified by	Andrad/Modified	Ylämäär/Roughness	Ytbehandling/Surface treatment
P. MARCUS	2014-02-11	Ra μm	
Benämning/Denomination			

Sheet/Scale	1:1
Size	A3
Rev	A

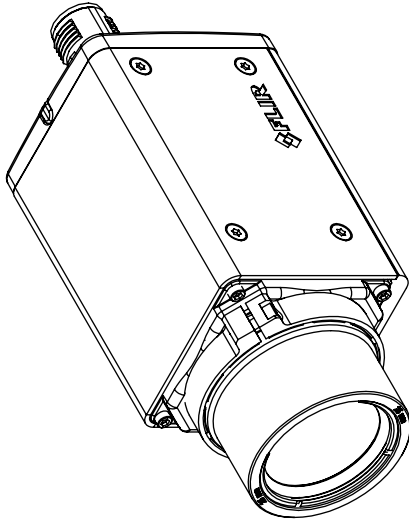
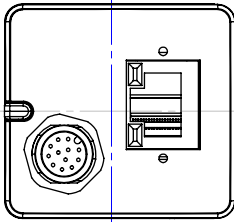
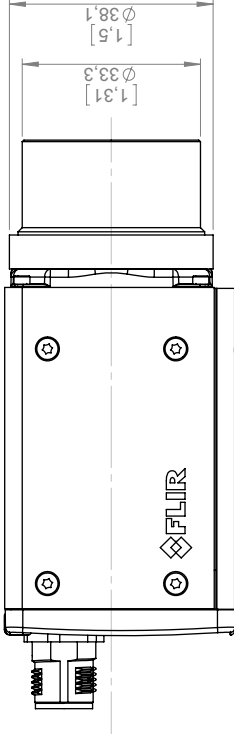
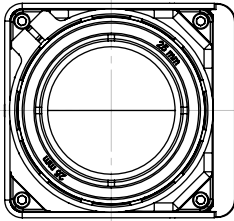
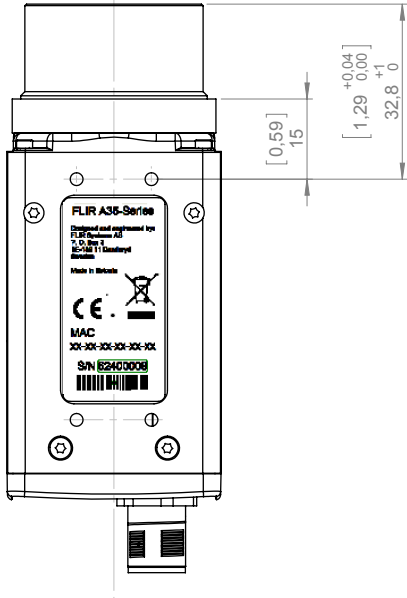
Ritn nr/Drawing No	T128116
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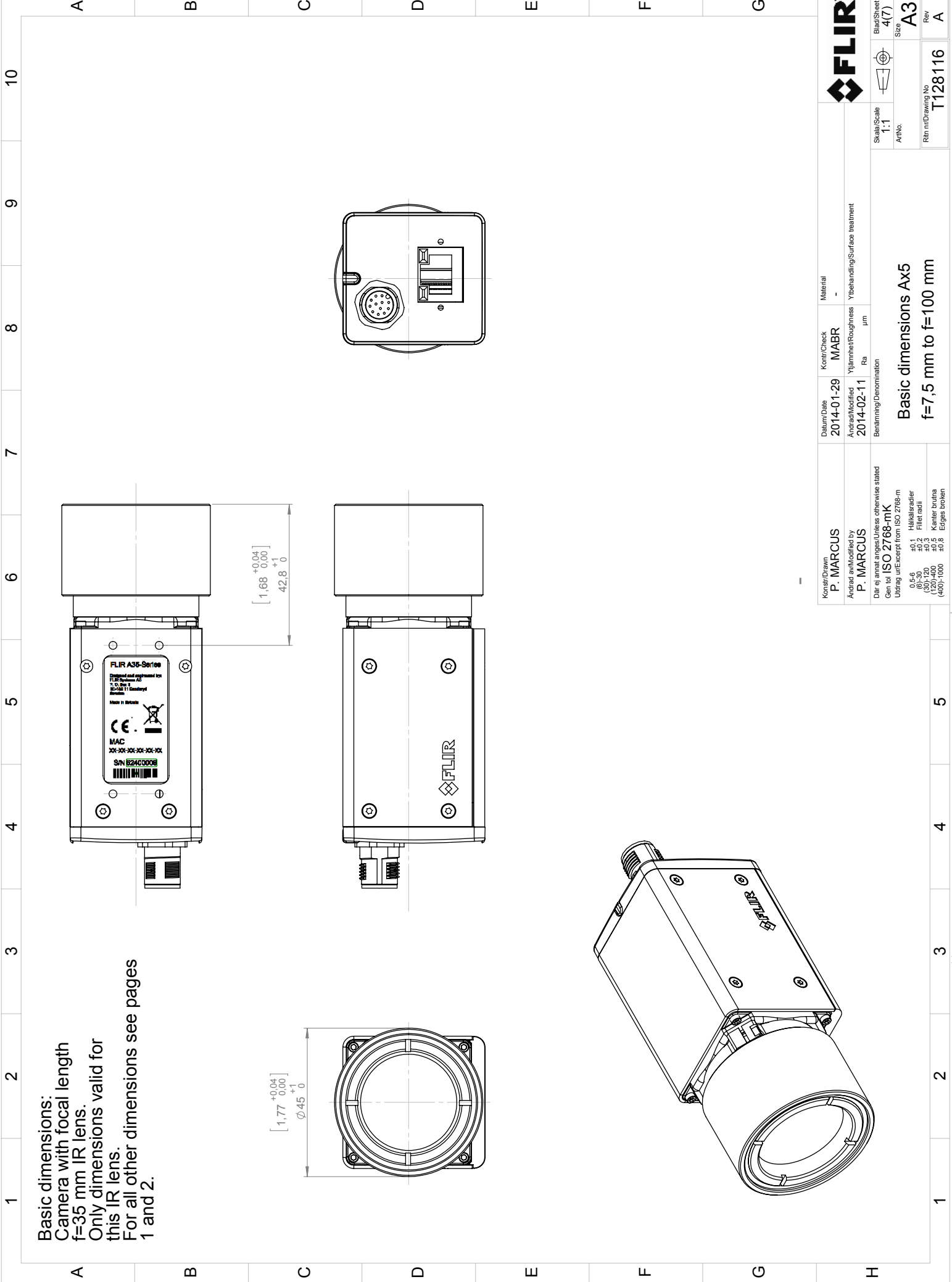
Konstr/Drawn P. MARCUS		Datum/Date 2014-01-29	Kontr/Check MABR	Material -
Ändrad av/Modified by P. MARCUS		Ändrad/Modified 2014-02-11	Ytlämne/Roughness Ra	Ytbehandling/Surface treatment µm
Där ej annat anges/Unless otherwise stated Gen töl ISO 2768-mK Utmått ut/Excerpt from ISO 2768-m		Benämning/Denomination Basic dimensions Ax5 f=7.5 mm to f=100 mm		
0.5-6 ±0.1 Hållarsradier (6)-30 ±0.2 Fillet radii (120)-400 ±0.5 Kanter brutna (400)-1000 ±0.8 Edges broken		Skala/Scale 1:1		
		Blad/Sheet 2(7)		
		Rev A3		
		Ritning/Drawing No. T128116		



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 -	FLIR	
Ändrad av/Modified by P. MARCUS		Ändrad/Modified 2014-02-11	Ytämne/Roughness Ra	Ytbehandling/Surface treatment µm	A3	
Där ej annat anges/Unless otherwise stated Utdrag ur/Excerpt from ISO 2768-m		Benämning/Denomination Basic dimensions Ax5 f=7.5 mm to f=100 mm		Scale/Scale 1:1		Blad/Sheet 3(7)
0.5-6 ±0.1 Hållarsradier (6)-30 ±0.2 Fillet radii (120)-400 ±0.5 Kanter brutna (400)-1000 ±0.8 Edges broken		Rev A		Ritning/Drawing No T128116		Size

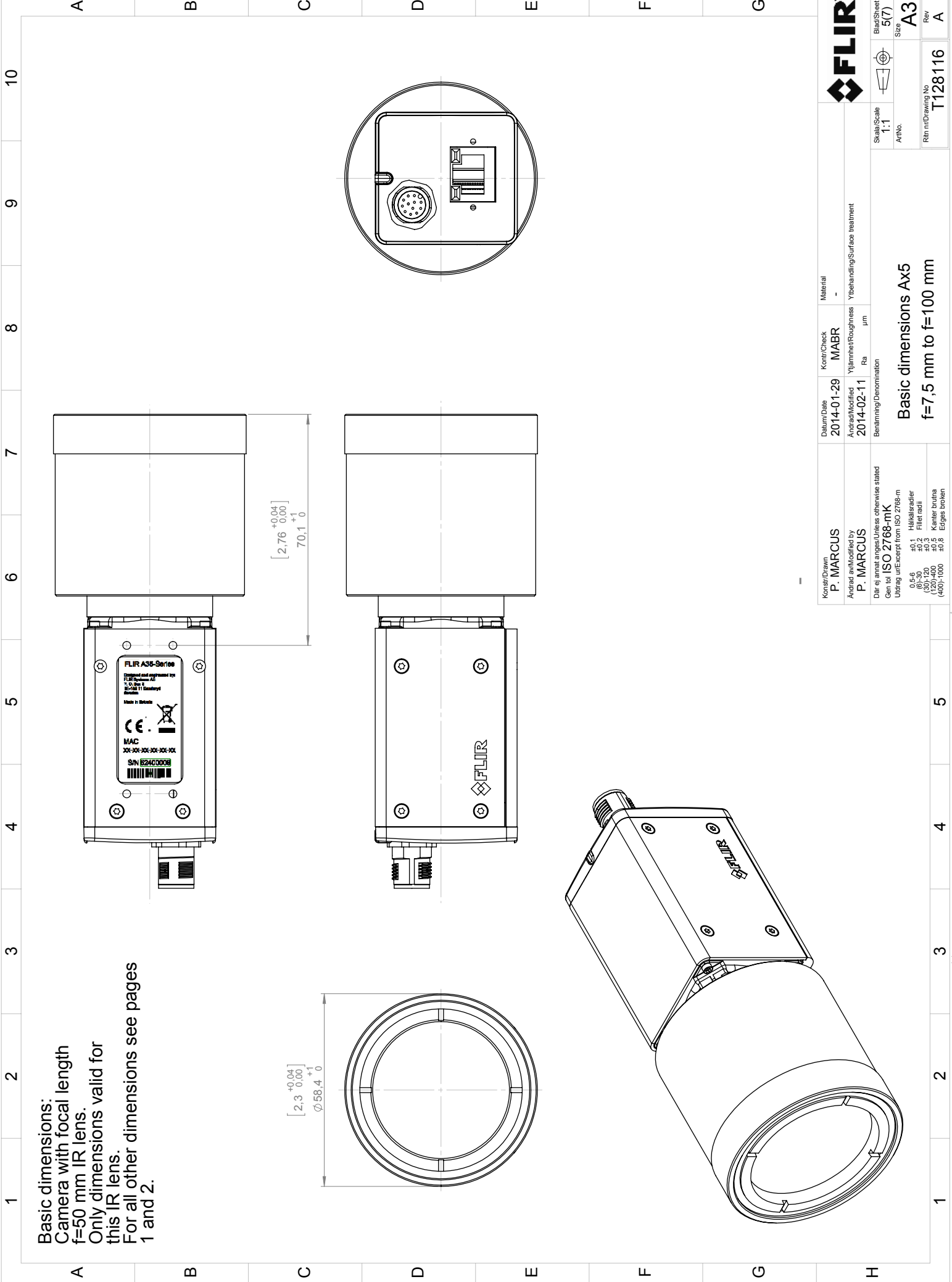


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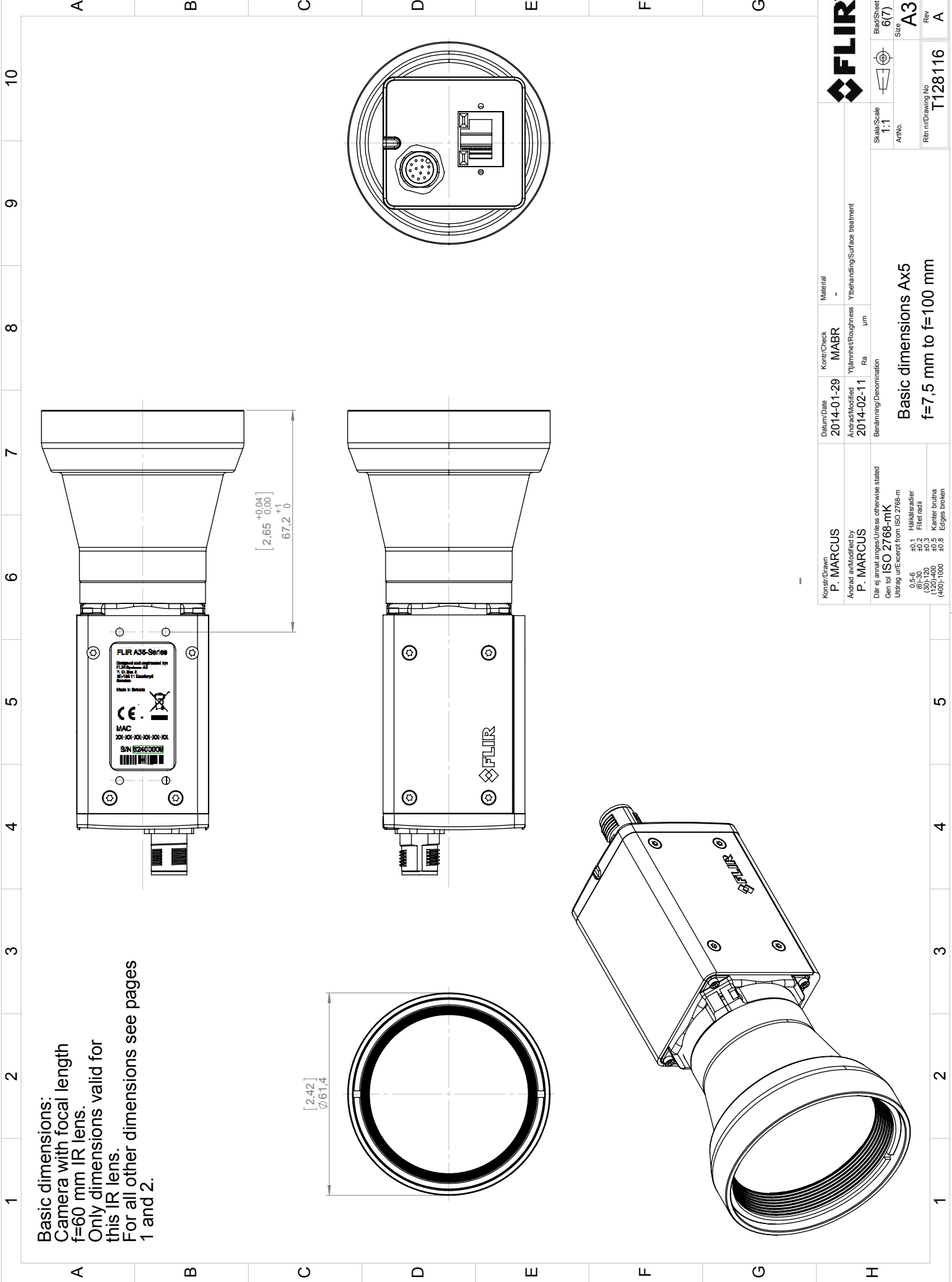
Konstr/Drawn P. MARCUS		Datum/Date 2014-01-29	Kontr/Check MABR	Material -
Ändrad av/Modified by P. MARCUS		Ändrad/Modified 2014-02-11	Ytlämne/Roughness Ra	Ytbehandling/Surface treatment µm
Där ej annat anges/Unless otherwise stated Utdrag ur/Excerpt from ISO 2768-m		Benämning/Denomination Basic dimensions Ax5 f=7.5 mm to f=100 mm		
0.5-6 6.3-30 30-120 120-400 (400)-1000		±0.1 Hållarsradier ±0.2 Fillet radii ±0.5 Kanter brutna ±0.8 Edges broken		
Skala/Scale 1:1		Blad/Sheet 4(7)		
Rev A		Ritning/Drawing No T128116		





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.

		Konstr/Drawn P. MARCUS		Datum/Date 2014-01-29	Kontr/Check MABR	Material -
Ändrad av/Modified by P. MARCUS		Ändrad/Modified 2014-02-11		Ytlämme/Roughness Ra		Ytbehandling/Surface treatment µm
Där ej annat anges/Unless otherwise stated Gen töl ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m		Benämning/Denomination Basic dimensions Ax5 f=7.5 mm to f=100 mm		Skala/Scale 1:1		Blad/Sheet 5(7)
0.5-6 60-300 120-400 400-1000		±0.1 ±0.1 ±0.2 ±0.5		Hållfärdighet Fillet radi Kantler brutna Edges broken		Rev A
T128116		Ritning/Drawing No.		A3		



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.

		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	Ytbehandling/Surface treatment		
Där ej annat anges/Unless otherwise stated		Benämning/Denomination				
Gen töl ISO 2768-mK		Basic dimensions Ax5				
Utdrag ur/Excerpt from ISO 2768-m		f=7,5 mm to f=100 mm				
0,5-6 60-300 120-400 (400)-1000		±0,1 Hållarsradier ±0,2 Fillet radii ±0,5 Kanter brutna ±0,8 Edges broken				
Skala/Scale 1:1		Blad/Sheet 6(7)		Rev A		
Artno.				Ritn nr/Drawing No T128116		

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.

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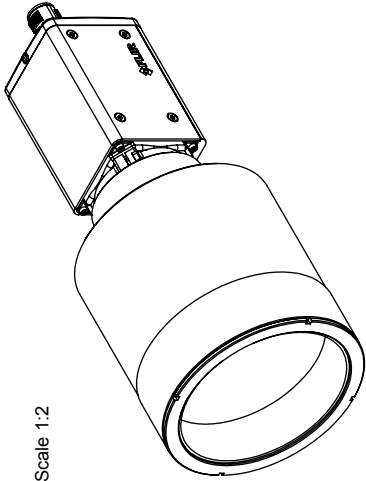
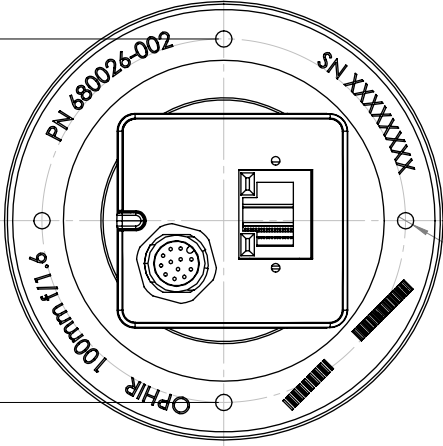
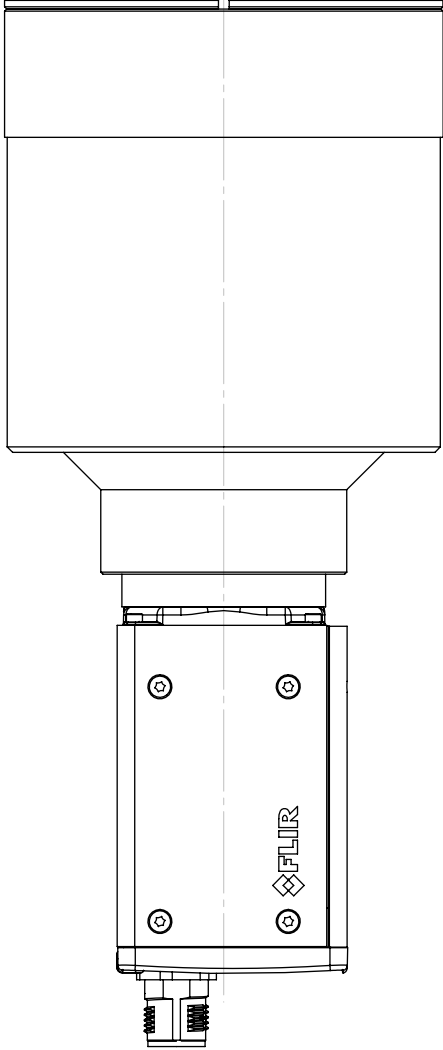
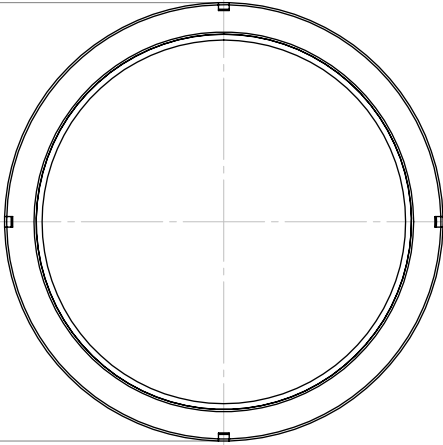


[1,48 ^{+0,04} _{0,00}]
37,5 0

[4,8 ^{+0,04} _{0,00}]
122 0

[3,23]
Ø 82

[2,68]
Ø 68



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	Ytlämne/Roughness Ra	Ytbehandling/Surface treatment
Benämning/Denomination Basic dimensions Ax5 f=7,5 mm to f=100 mm			
Där ej annat anges/Unless otherwise stated			
Utdrag ur/Excerpt from ISO 2768-m			
Gen tol ISO 2768-mK			
0,5-6 ±0,1 Hållarsradier			
(6,3)-30 ±0,2 Fillet radii			
(120)-400 ±0,5 Kanter brutna			
(400)-1000 ±0,8 Edges broken			
Scale/Scale 1:1			Blad/Sheet 7(7)
ArtNo.			Size A3
Ritning/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:

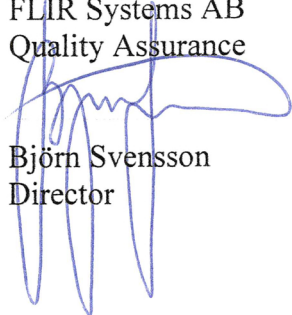
Directive 2004/108/EC;	Electromagnetic Compatibility
Directive 2006/95/EC;	"Low voltage Directive" (Power Supply)
Directive 2002/96/EC	Waste electrical and electronic equipment; WEEE (As applicable)

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



Björn Svensson
Director