

P/N: 75007-0101

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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, Stammers 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

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Detector data	
Detector pitch	17 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 @ 30 Hz - Signal linear/ DDE - Automatic/ Manual - Flip H&V 14-bit 640 × 512 pixels @ 30 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 +60°C (+5°F to +140°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 (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)

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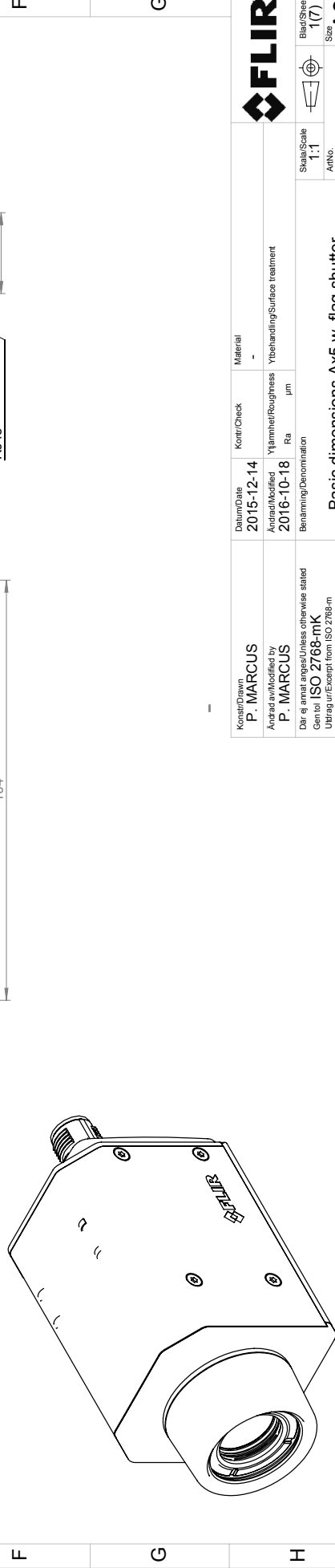
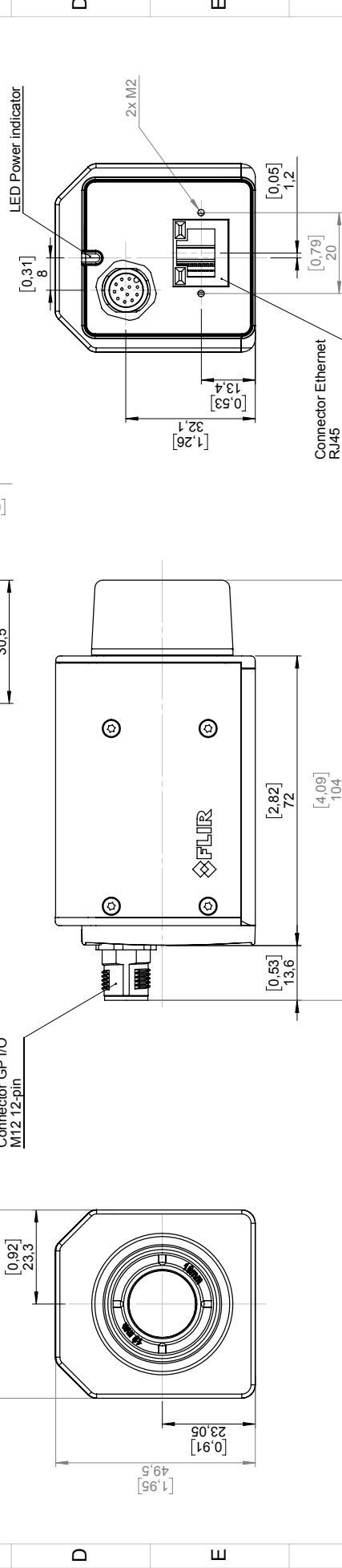
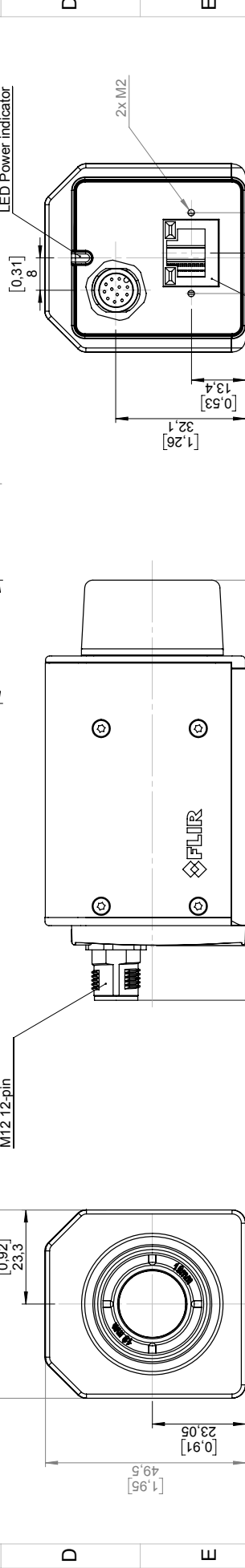
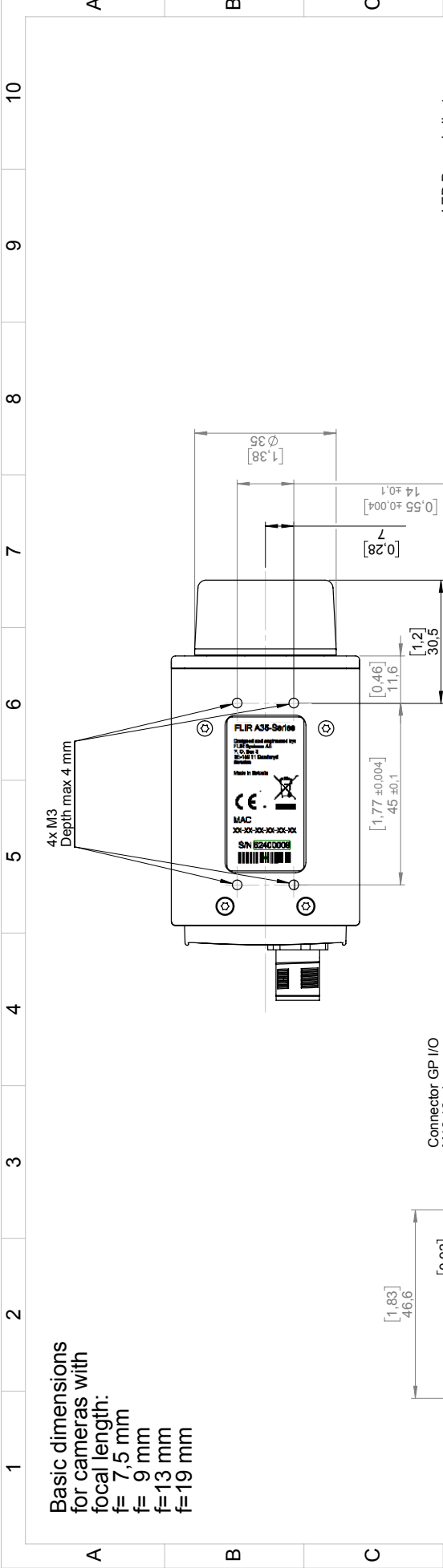
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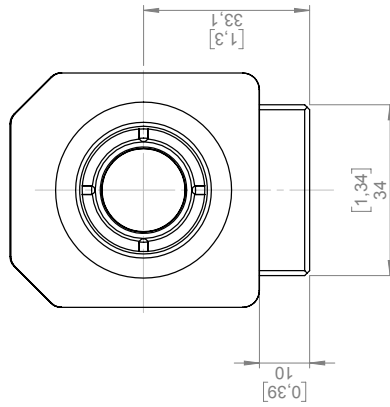
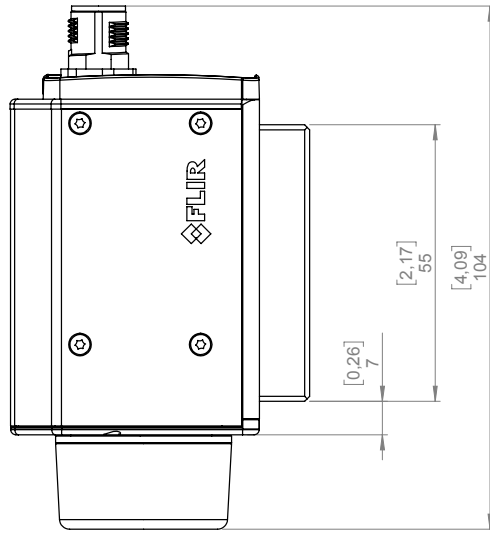
Shipping information	
Packaging, type	Cardboard box
List of contents	• Infrared camera with lens • Base support • Focus adjustment tool • Printed documentation
EAN-13	7332558011621
UPC-12	845188012571
Country of origin	Sweden

Supplies & accessories:

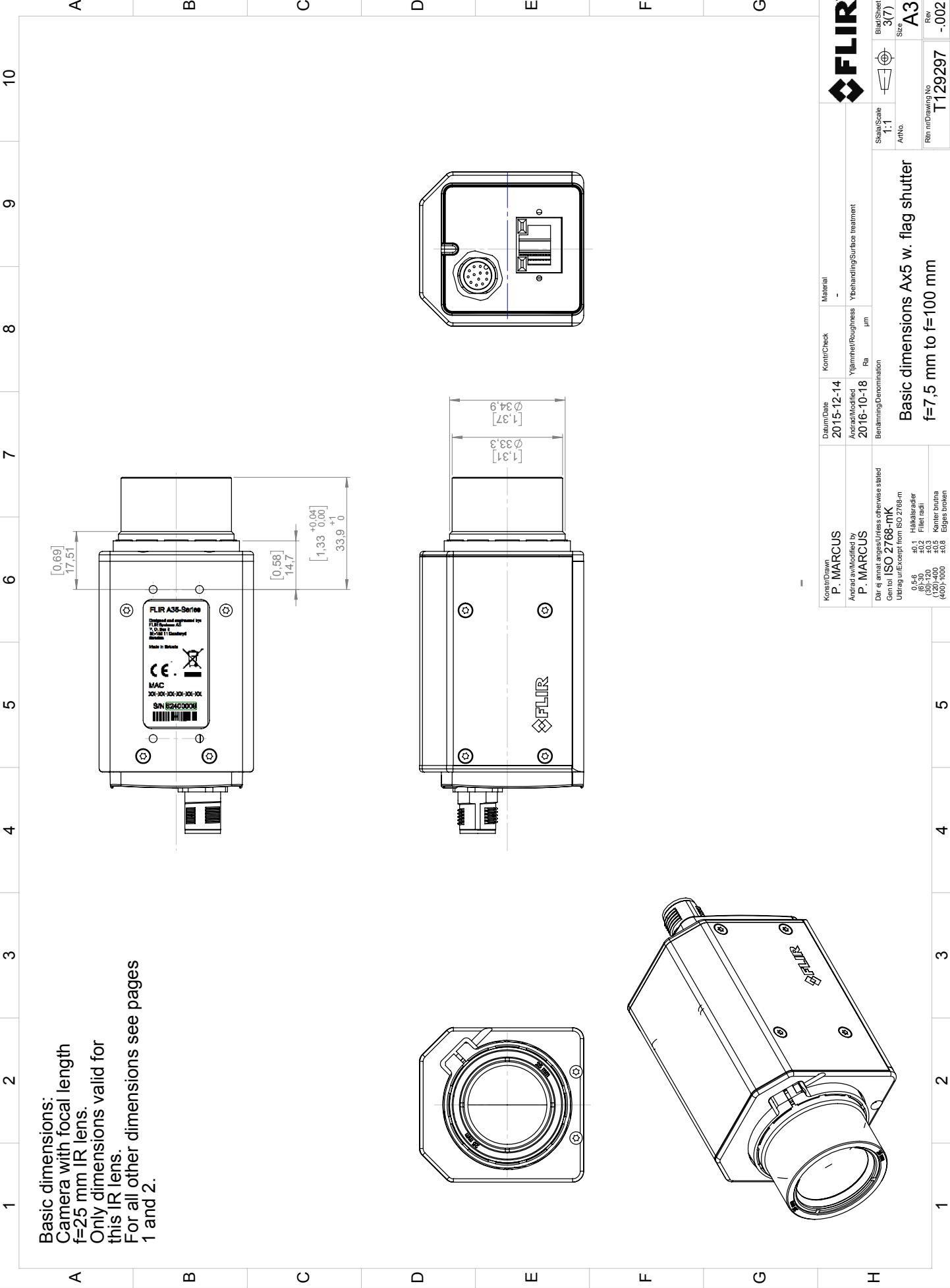
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T198349; Base support
- T198348; Cable kit Mains (UK,EU,US)
- T198392; Table stand kit
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T127605ACC; Cable M12 Pigtail
- T127606ACC; Cable M12 Sync
- T198342ACC; Focus adjustment tool
- T198594ACC; 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



	I
Konst/Drawing: P. MARCUS Datum/Date: 2015-12-14 Kontroll/Check: Material: - Ändrad av/Modified by: P. MARCUS År/månat/Roughness 2016-10-18 Ytbehandling/Surface treatment Ra µm	
Där ej annat anges/Unless otherwise stated Gen till ISO 2768-mK Ultrag ut/Except from ISO 2768-m 0,5-6 ±0,1 Hålklipsler (B)-30 ±0,2 Fillet radi (C)-10 ±0,3 (D)-400 ±0,4 Kontur bultna (400)-1000 ±0,8 Edges broken	
Skala/Scale 1:1 AntNo.	
Burt/Sheet 1(7) Size A3	
Rev	-002
Ritm nr/Drawing No.	T129297



Konstr/Drawn P. MARCUS Andrit or Modified by P. MARCUS	Datum/Date 2015-12-14 Andrit/Modified 2016-10-18	Kontr/Check - Material Vitehandling/Surface treatment µm		Scale/Scale 1:1 Art.No. 2(7) Size A3 Rev -002
Benennung/Denomination Basic dimensions Ax5 w. flag shutter f=7,5 mm to f=100 mm				
Darf ich anpasst/unless otherwise is stated Gen. no. ISO 2768-mK Uttrag nur/Except from ISO 2768-m				
0.5-5 0.2 0.1 0.05 6-30 40.2 14.5 8.5 Fillet radii 130-120 40.3 14.6 8.6 Konstr. bores 400-1000 40.8 14.9 8.7 Edges bores				

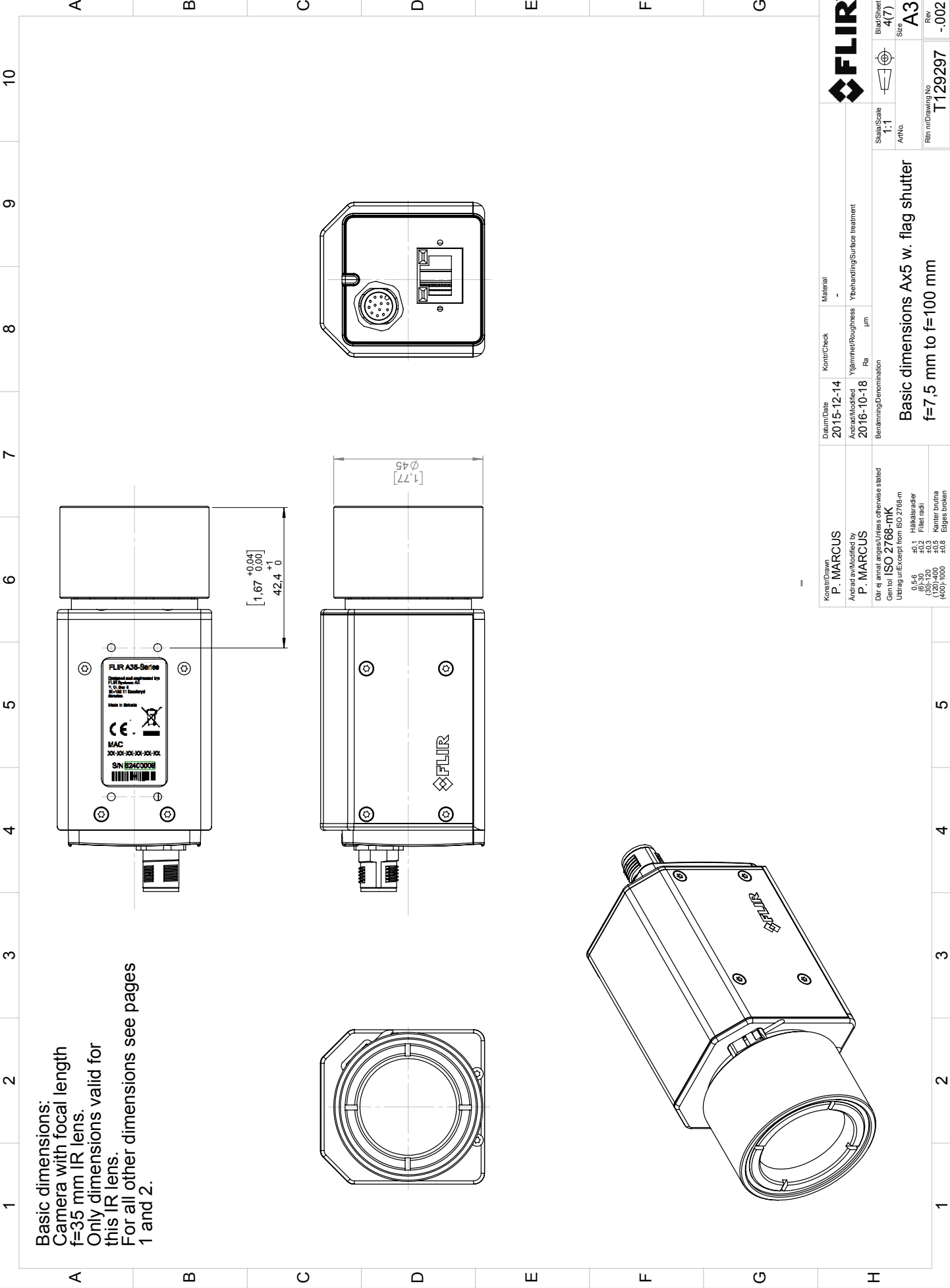


Basic dimensions:
Camera with focal length
f=25 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.

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Kontroll/Drawn P. MARCUS		Datum/Date 2015-12-14	Kontroll/Check -	Material -
Ändrad av/Modified by P. MARCUS		Ändrad/Modified 2016-10-18	Ytjämnhet/Roughness Ra	Ytbehandling/Surface treatment
Där ej annat anges/Unless otherwise stated Genlöst ISO 2768-mK Utmått ut/Except from ISO 2768-m		Benämning/Denomination		
0,53 ±0,1 30-120 ±0,3 400-400 ±0,5 400-1600 ±0,5		Hållfasthet Fillet cast Kontak brutna Edges broken		
FLIR		Basic dimensions Ax5 w. flag shutter f=7,5 mm to f=100 mm		
FLIR		Skala/Scale 1:1	Blad/Sheet 3(7)	Rev A3
FLIR		Ärtno. -	Ritn nr/Drawing No T129297	-002

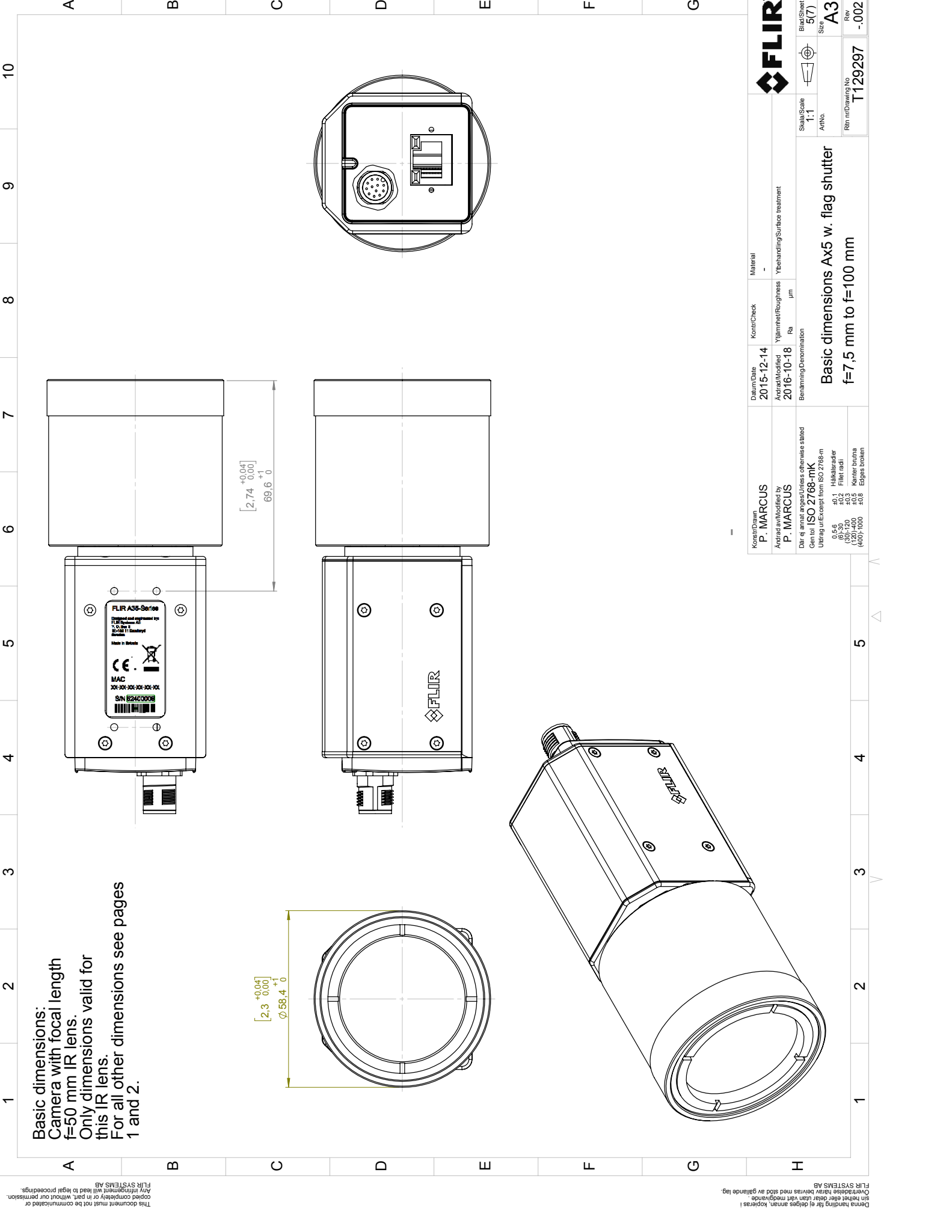


Basic dimensions:
Camera with focal length
f=35 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.

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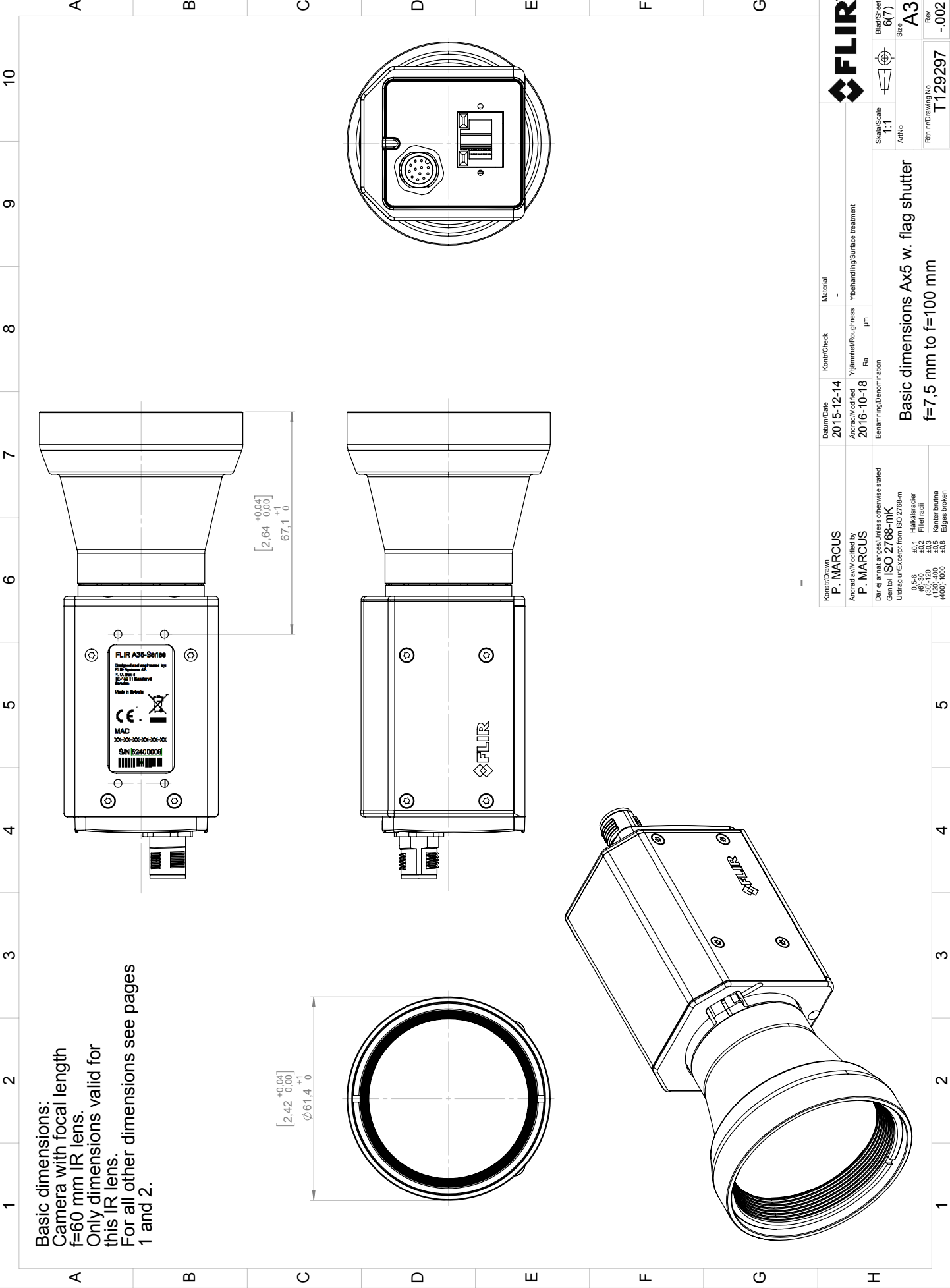
Kontroll/Drawn P. MARCUS		Datum/Date 2015-12-14	Kontroll/Check -	Material -	FLIR	
Ändrad av/Modified by P. MARCUS		Ändrad/Modified 2016-10-18	Ytjämnhet/Roughness Ra	Ytbehandling/Surface treatment	Blad/Sheet 4(7)	
Där ej annat anges/Unless otherwise stated Genlöst ISO 2768-mK Utmått ut/Except from ISO 2768-m		Benämning/Denomination		Skala/Scale 1:1	A3	
0,5/3 (30)-120 ±0,3 Fläkt: god		±0,1 Hållfasthet ±0,3 Fläkt: god		Artno.	Size 4(7)	
±0,5 (120)-400 ±0,5 Kant: brutna ±0,5 Edges broken		Rev		Ritn nr/Drawing No T129297	-002	

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



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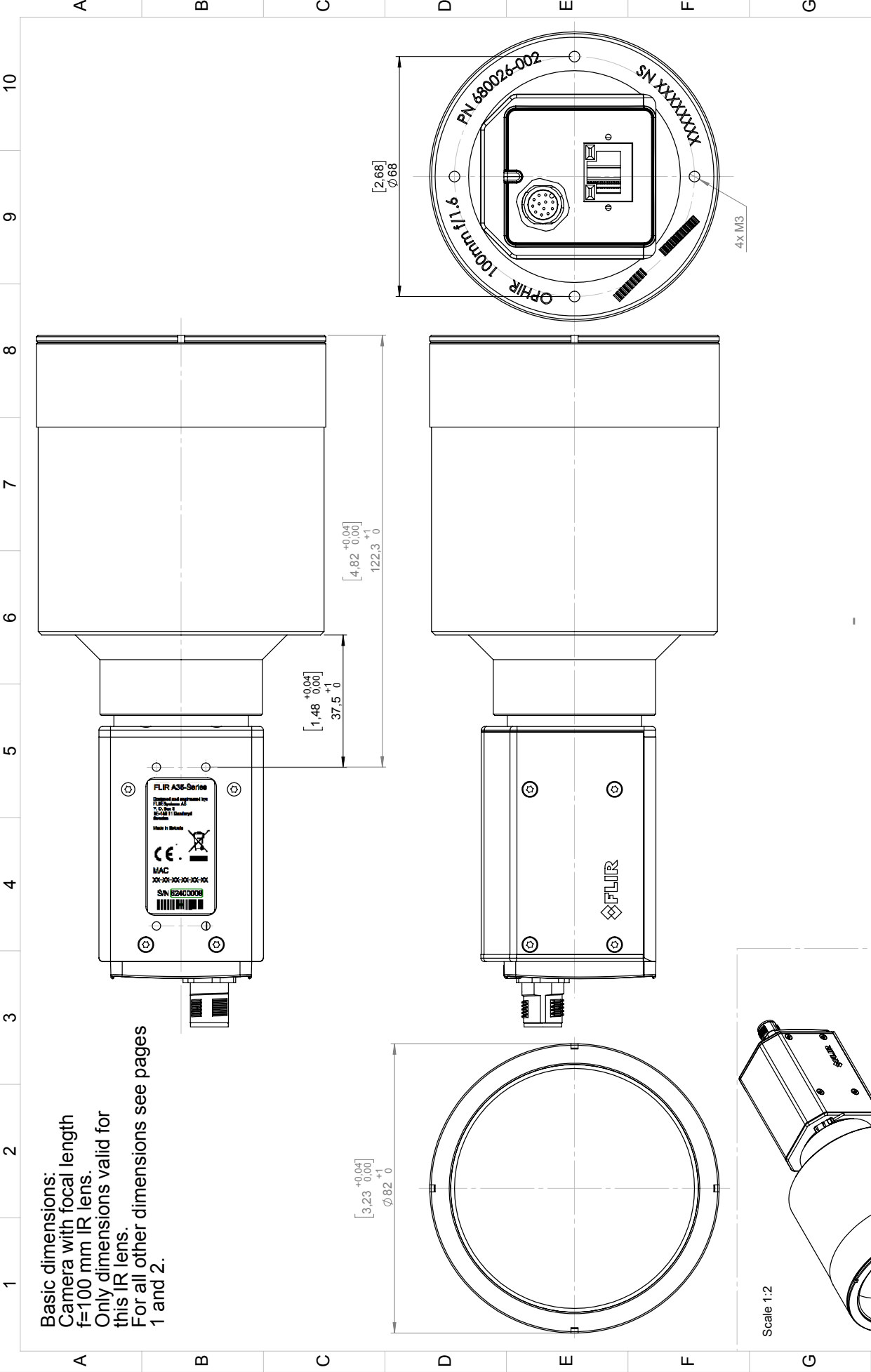
Basic dimensions:
Camera with focal length
f=60 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.

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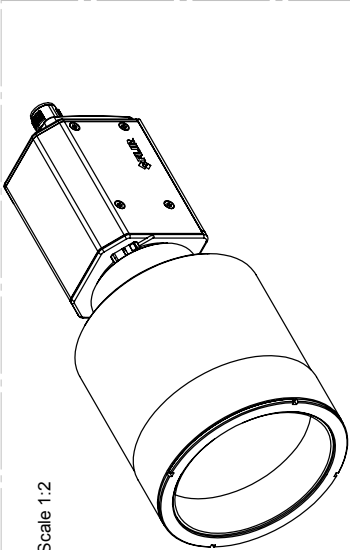
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Konstruktör P. MARCUS		Datum/Date 2015-12-14	Kontroll/Check -	Material -
Ändrad av/Modified by P. MARCUS		Ändrad/Modified 2016-10-18	Ytjämnhet/Roughness Ra	Ytbehandling/Surface treatment
Där ej annat anges/Unless otherwise stated Genför ISO 2768-mK Utmått ut/Except from ISO 2768-m		Benämning/Denomination		
0,5-3 (30)-120 40-1 Hållfasthet Fillet cast		1:1		
40-1 (30)-120 40-1 Hållfasthet Fillet cast		6(7)		
40-1 (30)-120 40-1 Hållfasthet Fillet cast		A3		
40-1 (30)-120 40-1 Hållfasthet Fillet cast		T129297		
40-1 (30)-120 40-1 Hållfasthet Fillet cast		-002		

Basic dimensions Ax5 w. flag shutter
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.



Scale 1:2

FLIR		Blad/Sheet 7(7)		Size A3		Rev -002	
Konstr/Drawn P. MARCUS		Datum/Date 2015-12-14		Material -		Ritm mDrawing No T129297	
Ändrad av/Modified by P. MARCUS		Ändrad/Modified 2016-10-18		Ytbehandling/Surface treatment -		Rev -	
Ditt ej annat angavs/Unless otherwise stated Gen för ISO 2768-mK Ultragraf ut/Except from ISO 2768-m		Kontroll/Check Ytjämnhet/Roughness Ra		Skala/Scale 1:1		Artno. -	
0.53 0.50 (30)-120 (120)-400 (400)-1600		Hållfasthet Fluor cash Kontroll Edges broken		Basic dimensions Ax5 w. flag shutter f=7,5 mm to f=100 mm		-	

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