FLIR A35 FOV 45 (60 Hz, ver. 2017)

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Website

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 • 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)	45° × 35°
Minimum focus distance	2.5 cm (0.98 in.)
Focal length	7.5 mm (0.30 in.)
Spatial resolution (IFOV)	2.267 mrad
F-number	1.4
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	17 µm
Detector time constant	Typical 12 ms

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Measurement	
Object temperature range	• –25 to +100°C (–13 to 212°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 +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	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	• Infrared camera with lens • Base support • Focus adjustment tool • Printed documentation
EAN-13	7332558013120
UPC-12	845188014865
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)

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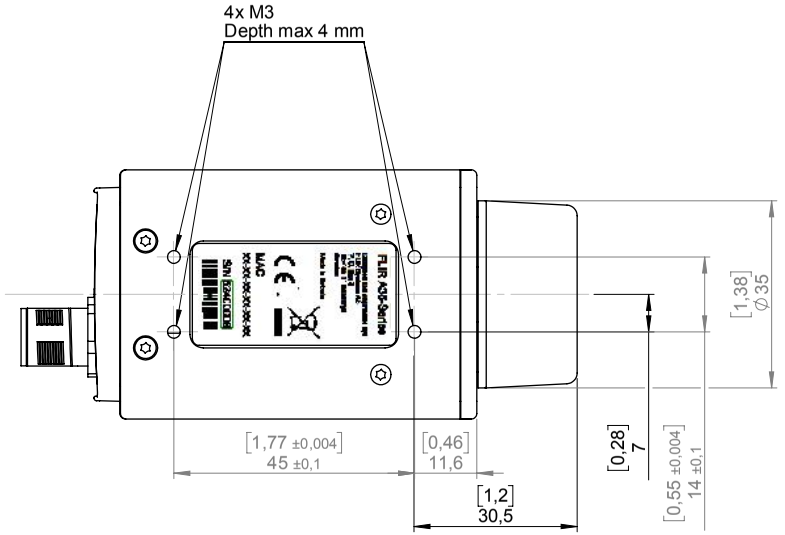
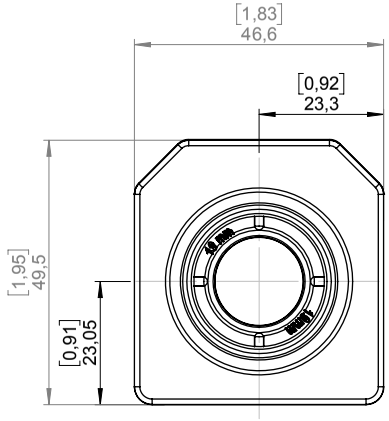
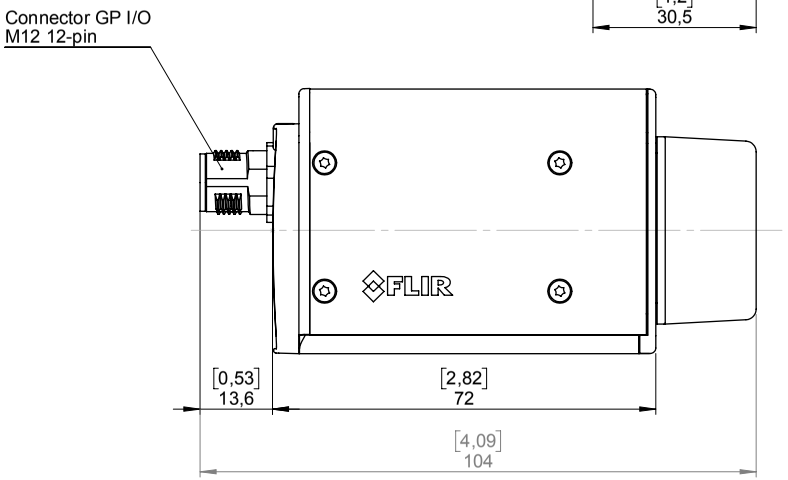
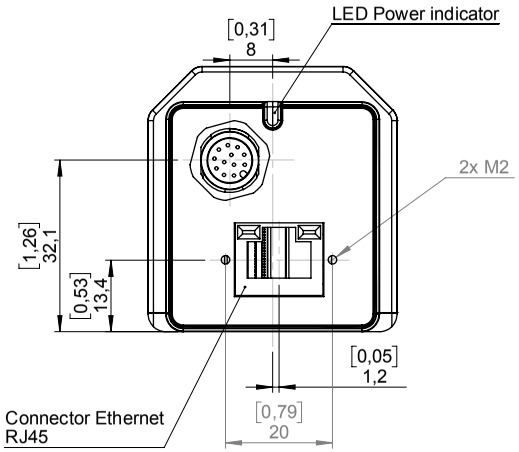
- T127605ACC; Cable M12 Pigtail
- T127606ACC; Cable M12 Sync
- T199698; Environmental housing for Ax5
- T199356; FLIR Ax5 accessory starter kit
- T198342ACC; Focus adjustment tool
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T198392; Table stand kit
- T198594ACC; Transport case Ax5
- T199722; ThermoVision EFD, max. 2 cameras
- T199724; ThermoVision EFD, max. 4 cameras
- T300243; FLIR Thermal Studio Pro, 1 Year Subscription
- T300083; FLIR Thermal Studio Pro, Perpetual license
- T300258; FLIR Thermal Studio, Perpetual license
- T198584; FLIR Tools
- T198583; FLIR Tools+ (download card incl. license key)
- T199233; FLIR Atlas SDK for .NET
- T199234; FLIR Atlas SDK for MATLAB
- 4220499; FLIR Research Studio - 1 Year Subscription (online activation)
- 4220500; FLIR Research Studio - Perpetual License (online activation)
- 4220646; FLIR Research Studio - Perpetual License (USB dongle)
- INST-EW-0135; Extended Warranty 1 Year for A35, A65
- INST-EWGM-0135; Premium Service Package for A35, A65, E53, E75, E85, E95
- INST-GM-0125; General Maintenance Package for A35, A65, Exx, Kxx

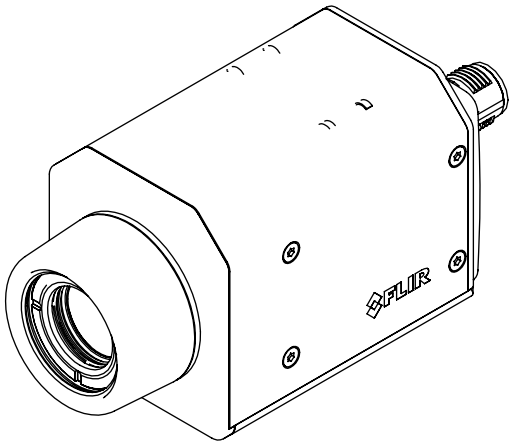
# Basic dimensions for cameras with focal length:
f= 7,5 mm
f= 9 mm
f=13 mm
f=19 mm







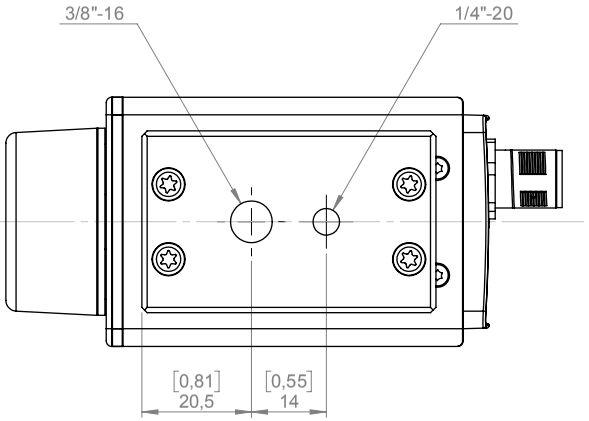


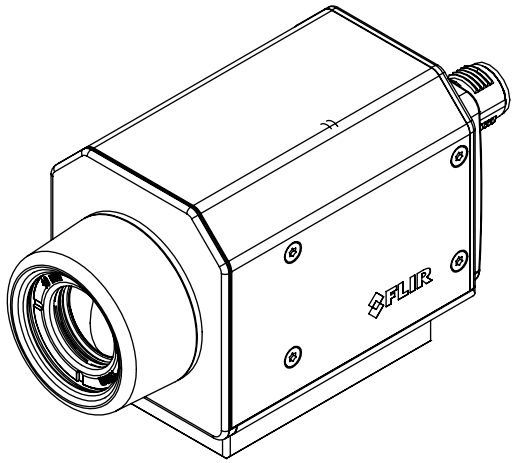


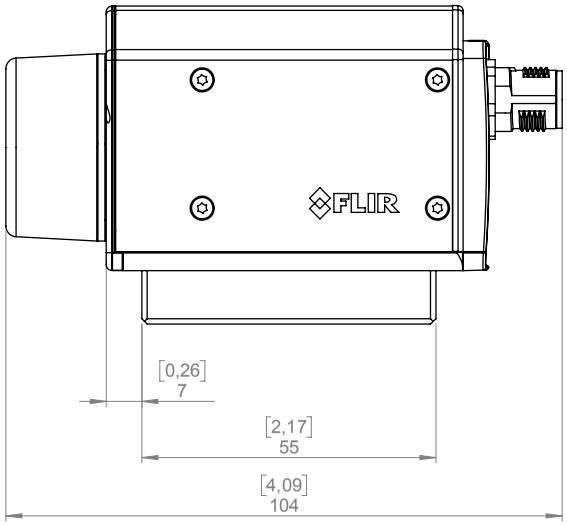
Konstr/Drawn: P. MARCUS	Datum/Date: 2015-12-14	Kontr/Check:	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2016-10-18	Ytjämnhet/Roughness: Ra µm	Ytbehandling/Surface treatment
Där ej annat anges/Unless otherwise stated Gen tol ISO 2768-mK Utdrag ur/Excerpt from ISO 2768-m	Benämning/Denomination: Basic dimensions Ax5 w. flag shutter f=7,5 mm to f=100 mm		Skala/Scale 1:1 · Blad/Sheet 1(7) · ArtNo. · Size A3 · Ritn nr/Drawing No T129297 · Rev -.002

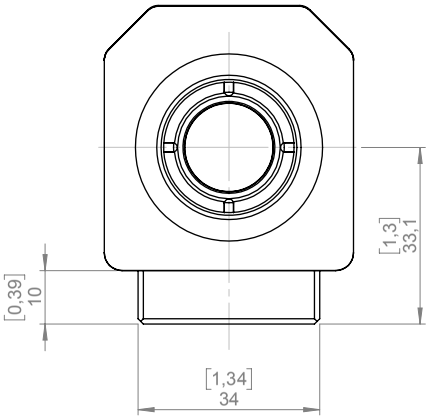
0,5-6	±0,1	Hålkälsradier
(6)-30	±0,2	Fillet radii
(30)-120	±0,3	
(120)-400	±0,5	Kanter brutna
(400)-1000	±0,8	Edges broken

Basic dimensions for add-on base support









Konstr/Drawn: P. MARCUS	Datum/Date: 2015-12-14	Kontr/Check:	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2016-10-18	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

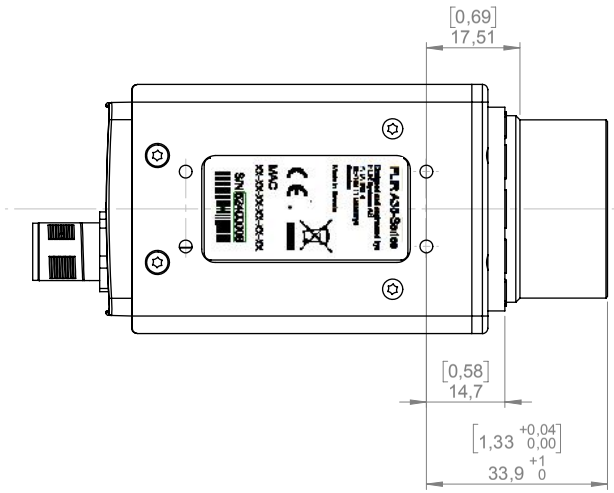
0,5-6	±0,1	Hålkälsradier
(6)-30	±0,2	Fillet radii
(30)-120	±0,3	
(120)-400	±0,5	Kanter brutna
(400)-1000	±0,8	Edges broken

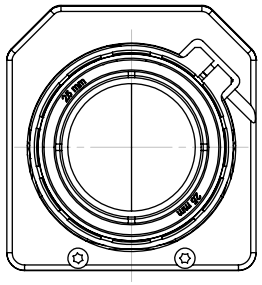
Benämning/Denomination

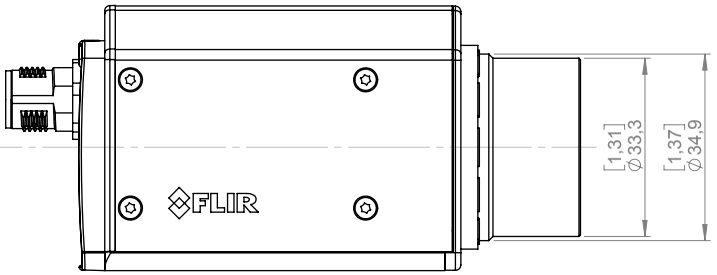
Basic dimensions Ax5 w. flag shutter
f=7,5 mm to f=100 mm

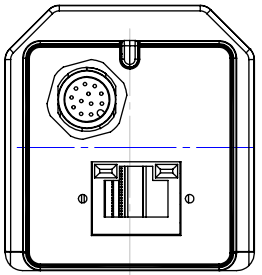
Skala/Scale 1:1	Blad/Sheet 2(7)
ArtNo.	Size A3
Ritn nr/Drawing No T129297	Rev -.002

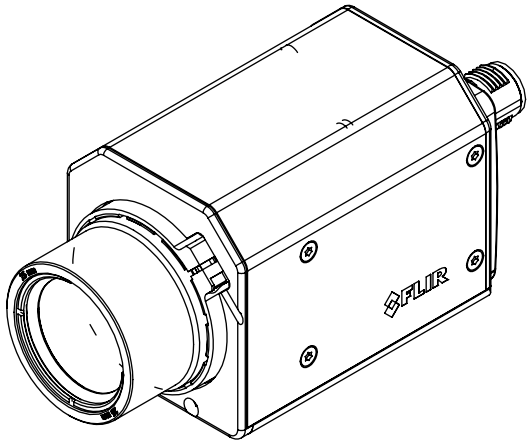
Basic dimensions:
Camera with focal length
f=25 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.











Konstr/Drawn: P. MARCUS	Datum/Date: 2015-12-14	Kontr/Check:	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2016-10-18	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

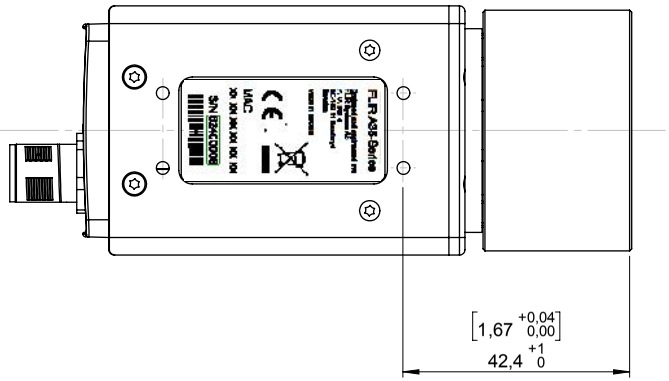
0,5-6	±0,1	Hålkälsradier
(6)-30	±0,2	Fillet radii
(30)-120	±0,3	
(120)-400	±0,5	Kanter brutna
(400)-1000	±0,8	Edges broken

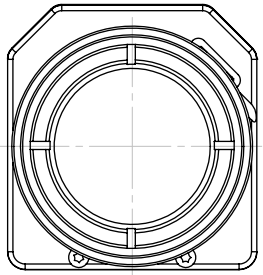
Benämning/Denomination

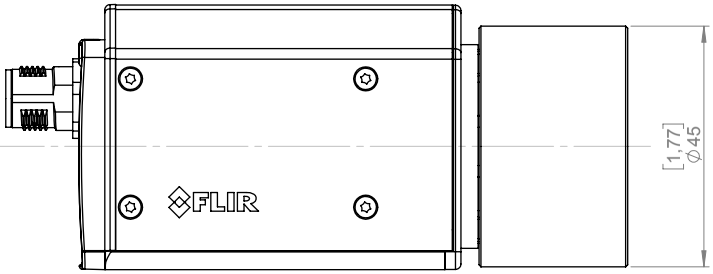
Basic dimensions Ax5 w. flag shutter
f=7,5 mm to f=100 mm

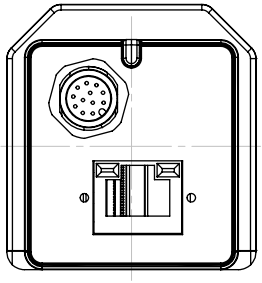
Skala/Scale 1:1	Blad/Sheet 3(7)
ArtNo.	Size A3
Ritn nr/Drawing No T129297	Rev -.002

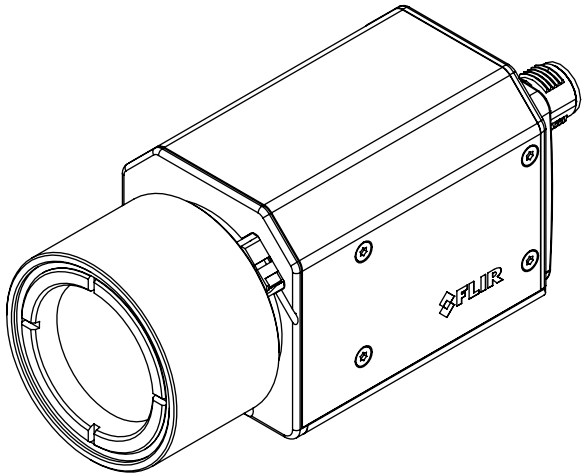
Basic dimensions:
Camera with focal length f=35 mm IR lens.
Only dimensions valid for this IR lens.
For all other dimensions see pages 1 and 2.











Konstr/Drawn: P. MARCUS	Datum/Date: 2015-12-14	Kontr/Check:	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2016-10-18	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

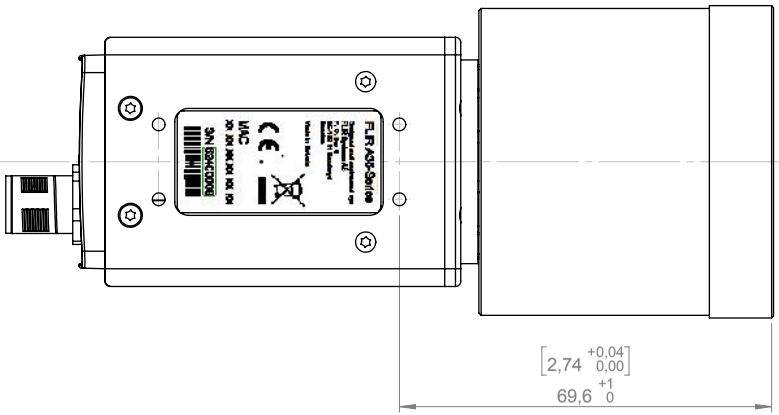
0,5-6	±0,1	Hålkälsradier
(6)-30	±0,2	Fillet radii
(30)-120	±0,3	
(120)-400	±0,5	Kanter brutna
(400)-1000	±0,8	Edges broken

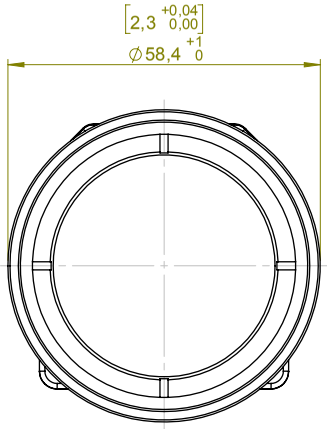
Benämning/Denomination

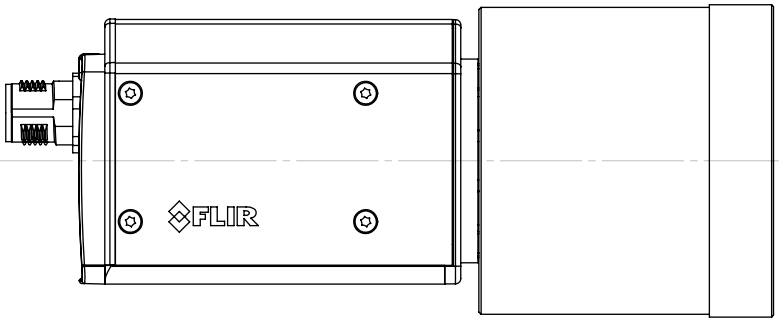
Basic dimensions Ax5 w. flag shutter
f=7,5 mm to f=100 mm

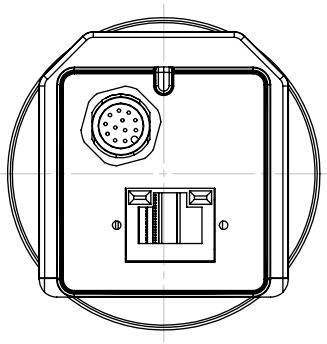
Skala/Scale 1:1	Blad/Sheet 4(7)
ArtNo.	Size A3
Ritn nr/Drawing No T129297	Rev -.002

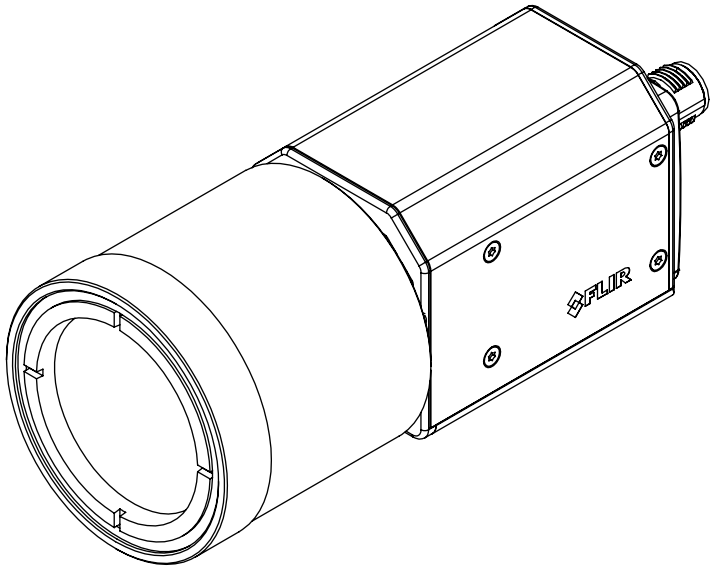
Basic dimensions:
Camera with focal length
f=50 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.











Konstr/Drawn: P. MARCUS	Datum/Date: 2015-12-14	Kontr/Check:	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2016-10-18	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

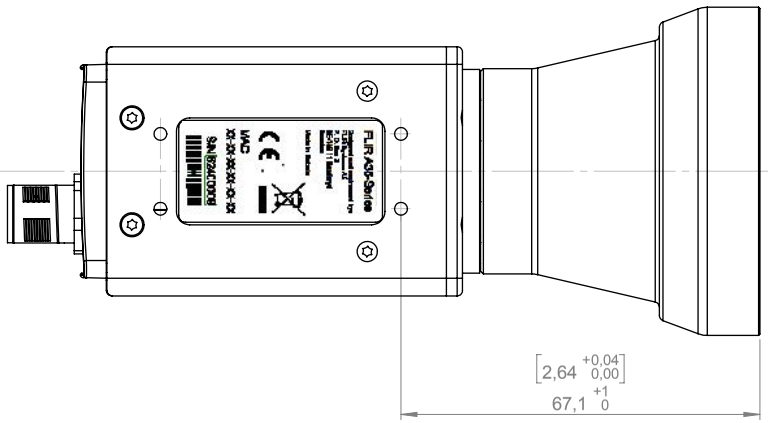
0,5-6	±0,1	Hålkälsradier
(6)-30	±0,2	Fillet radii
(30)-120	±0,3	
(120)-400	±0,5	Kanter brutna
(400)-1000	±0,8	Edges broken

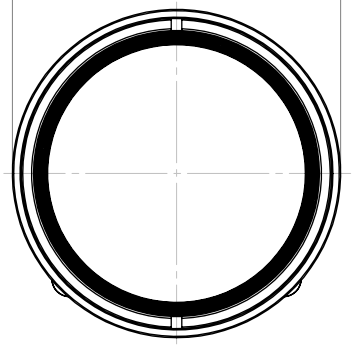
Benämning/Denomination

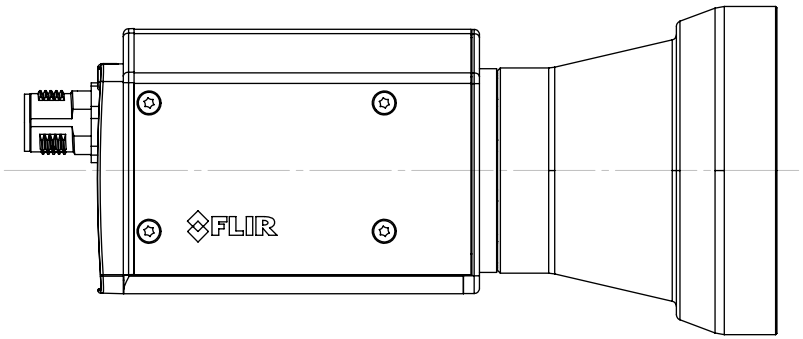
Basic dimensions Ax5 w. flag shutter
f=7,5 mm to f=100 mm

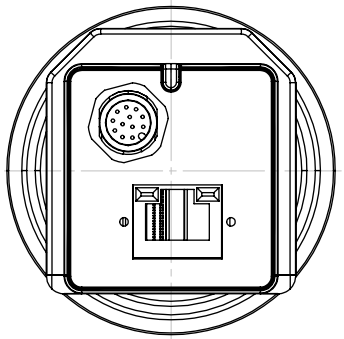
Skala/Scale 1:1	Blad/Sheet 5(7)
ArtNo.	Size A3
Ritn nr/Drawing No T129297	Rev -.002

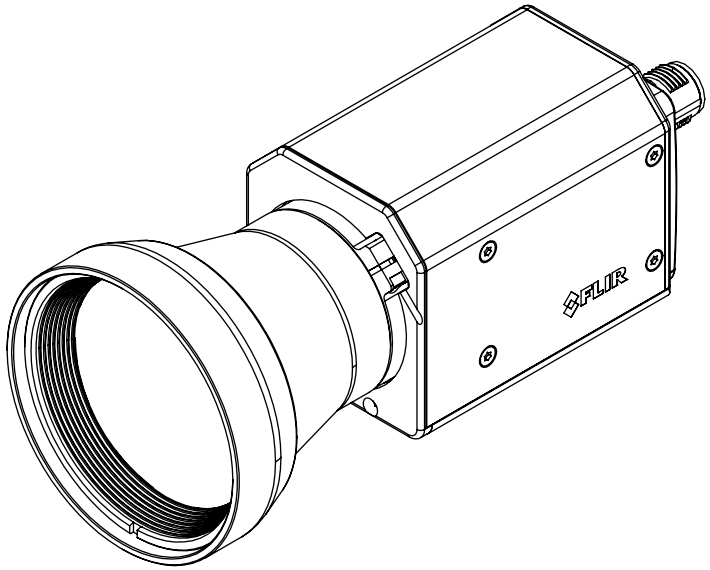
Basic dimensions:
Camera with focal length
f=60 mm IR lens.
Only dimensions valid for
this IR lens.
For all other dimensions see pages
1 and 2.











Konstr/Drawn: P. MARCUS	Datum/Date: 2015-12-14	Kontr/Check:	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2016-10-18	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

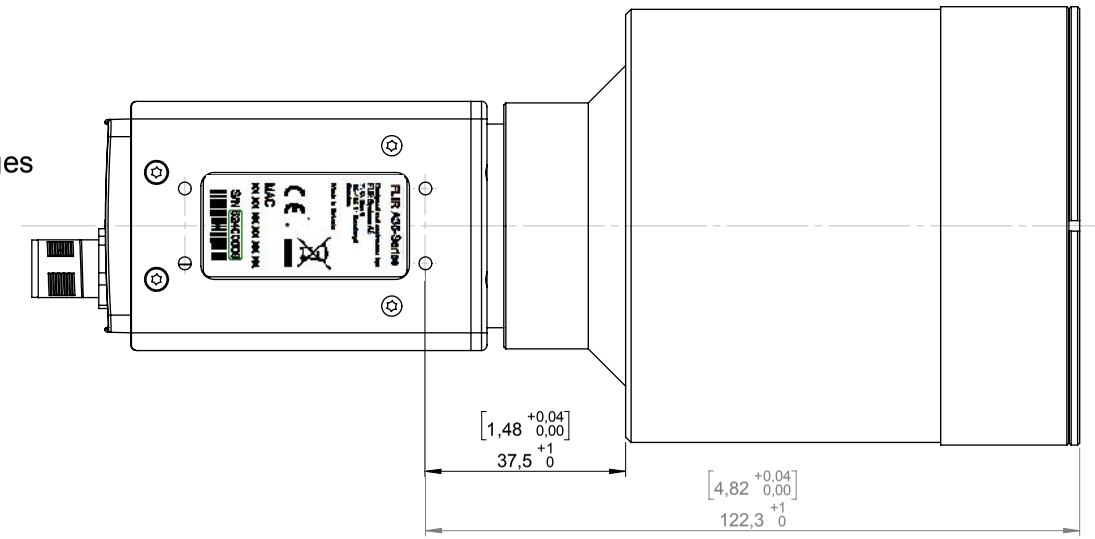
0,5-6	±0,1	Hålkälsradier
(6)-30	±0,2	Fillet radii
(30)-120	±0,3	
(120)-400	±0,5	Kanter brutna
(400)-1000	±0,8	Edges broken

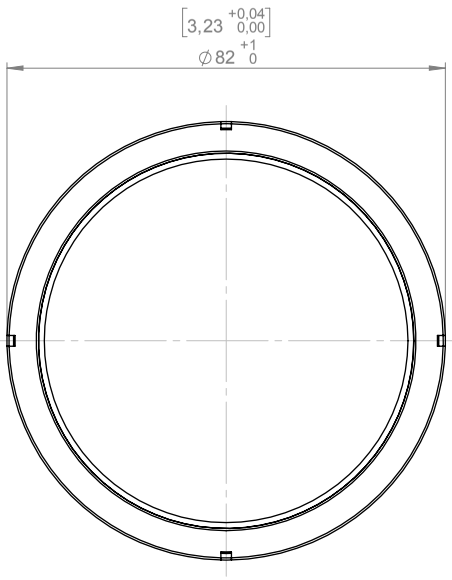
Benämning/Denomination

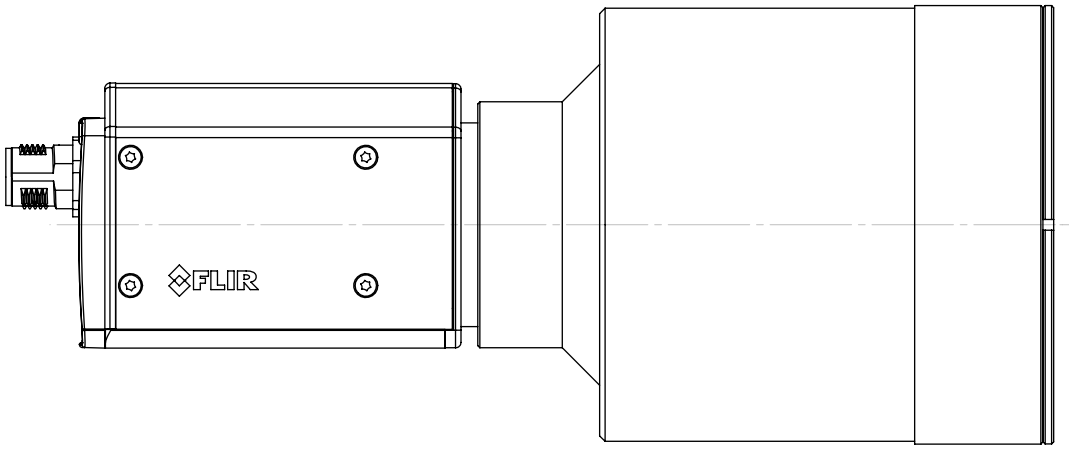
Basic dimensions Ax5 w. flag shutter
f=7,5 mm to f=100 mm

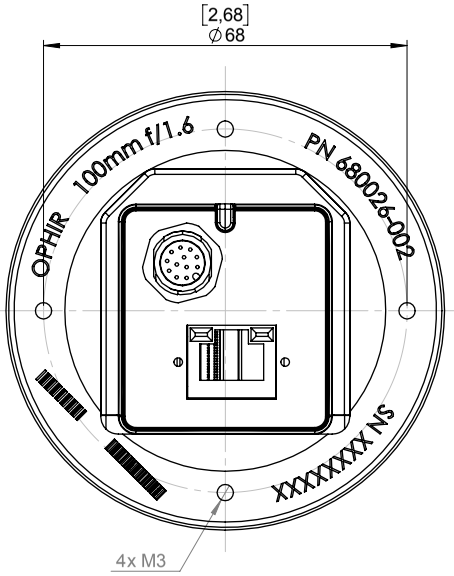
Skala/Scale 1:1	Blad/Sheet 6(7)
ArtNo.	Size A3
Ritn nr/Drawing No T129297	Rev -.002

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.

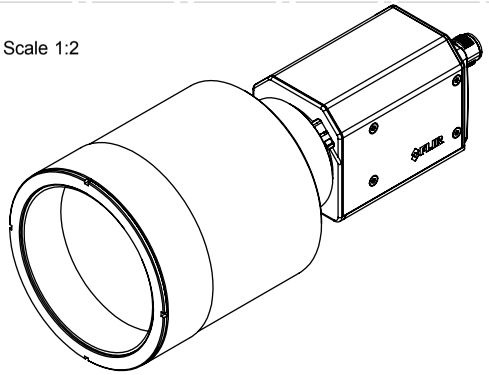








Scale 1:2



Konstr/Drawn: P. MARCUS	Datum/Date: 2015-12-14	Kontr/Check:	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2016-10-18	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 w. flag shutter
f=7,5 mm to f=100 mm

Skala/Scale 1:1	Blad/Sheet 7(7)
ArtNo.	Size A3
Ritn nr/Drawing No T129297	Rev -.002

FLIR | The World's Sixth Sense™

May 25, 2018 Täby, Sweden AQ320295

CE Declaration of Conformity – EU Declaration of Conformity

Product: FLIR Ax5 -series

Name and address of the manufacturer:
FLIR Systems AB
PO Box 7376
SE-187 15 Täby, Sweden

This declaration of conformity is issued under the sole responsibility of the manufacturer.
The object of the declaration: FLIR Ax5 -series.
The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

Directives:

Directive:	2011/65/EU	RoHS
Directive	2014/30/EU	Electromagnetic Compability

Standards:

Emission:	EN 61000-6-3:2007	EMC Emission residential, commercial, light-industrial
Immunity:	EN 61000-6-2:2005	EMC Immunity for industrial environments

FLIR Systems AB
Quality Assurance

Lea Dabiri
Quality Manager