FLIR GF77a 25° CH4 (7–8.5 µm)

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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
The FLIR GF77a allows oil and gas operators and other industrial markets a low-cost optical gas imaging solution for continuous and autonomous leak detection. With visual confirmation of a gas leak and the ability to identify a leaking component more effectively, the new uncooled fixed optical gas imaging camera from FLIR provides the operators in this industry the ability to better maintain valuable capital equipment while ensuring safer practices and meeting emission reduction metrics.

Imaging and optical data	
Infrared resolution	320 × 240 pixels
Thermal sensitivity (NETD)	< 25 mK at 30°C (86°F)
Gas sensitivity (NECL)	• CH_4: < 100 ppm x m • N_2O: < 75 ppm x m • C_3H_8: < 400 ppm x m • SO_2: < 30 ppm x m • R-134a: < 20 ppm x m • R-152a: < 100 ppm x m (ΔT = 10°C, Distance = 1 m)
Field of view (FOV)	25° × 19°
Minimum focus distance	0.3 m (0.98 ft), 25°
Minimum focus distance with MSX	0.65 m (2.1 ft)
Focal length	18 mm (0.71 in), 25°
Spatial resolution (IFOV)	1.4 mrad/pixel, 25°
Lens identification	Automatic
f-number	1.04
Image frequency	30 Hz
Focus	• One-shot contrast • Motorized • Manual

Detector data	
Focal plane array/spectral range	Uncooled microbolometer/7.0–8.5 µm
Detector pitch	25 µm

Visual imaging and optical data	
Still image resolution	• Web UI: 640 × 480 pixels • REST API: 640 × 480 pixels, 1280 × 960 pixels
Image stream resolution and formats	See Video/Radiometric streaming RTSP and GVSP tables.

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Visual imaging and optical data	
Focus	Fixed
Field of view (FOV)	• 640 × 480 pixels; according to IR FOV • 1280 × 960 pixels; 67.2° (diagonal)
LED lamp	Built-in LED light

Measurement	
Object temperature range	–20 to 70°C (–4 to 158°F)
Accuracy	±5°C (±9°F) for ambient temperature 15–35°C (59–95°F) and object temperature above 0°C (32° F).

Measurement analysis	
Atmospheric transmission correction	Based on inputs of distance, atmospheric temperature, and relative humidity
Lens transmission correction	Automatic, based on signals from internal sensors
Emissivity correction	Variable from 0.01 to 1.0
Reflected apparent temperature correction	Based on input of reflected temperature
External optics/windows correction	Based on input of optics/window transmission and temperature
Measurement corrections	Global object parameters

Configuration of camera	
Web interface	Yes

Video/Radiometric streaming RTSP	
Protocol	RTSP
Unicast	Yes
Multicast	Yes
Multiple image streams	Yes
Video streaming	
Image quality	Bit rate set through Camera web
Video streaming, Image source 0:	
Resolution	640 × 480 pixels
Contrast enhancement	FSX / Histogram equalization (IR only)
Overlay	With / Without
Image source	Visual / IR / MSX
Pixel format	YUV411
Encoding	H.264 / MPEG4 / MJPEG
Video streaming, Image source 1:	
Resolution	1280 × 960 pixels
Overlay	No
Image source	Visual
Pixel format	YUV411
Encoding	H.264 / MPEG4 / MJPEG
Radiometric streaming	
Resolution	320 × 240 pixels
Source	IR

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Video/Radiometric streaming RTSP	
Pixel format	MONO 16
Encoding	• Compressed JPEG-LS • FLIR Radiometric

Video/Radiometric streaming GVSP (GigE Vision)	
Protocol	GVSP
Unicast	Yes
Multicast	Yes
Multiple image streams	No, 1 stream only
Video streaming	
Video streaming, Image source 0:	
Resolution	640 × 480 pixels
Contrast enhancement	FSX / Histogram equalization (IR only)
Overlay	With / Without
Image source	Visual / IR / MSX
Pixel format	YUV422 or MONO 8
Encoding	Un-compressed
Radiometric streaming	
Resolution	320 × 240 pixels
Source	IR
Pixel format	MONO 16
Encoding	• Compressed JPEG-LS • Temperature linear • FLIR Radiometric

Ethernet	
Interface	• Wired • Wi-Fi
Connector type	• M12 8-pin X-coded, Female • RP-SMA, Female
Ethernet, purpose	Control, result, video, radiometric image, and power
Ethernet, type	1000 Mbps
Ethernet, standard	IEEE 802.3
Ethernet, communication	• GigE Vision ver. 1.2 • Client API GenICam compliant • TCP/IP socket-based FLIR proprietary
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 3
Ethernet, protocols	• IEEE 1588 • ONVIF-S • SNMP • TCP, UDP, SNTP, RTSP, RTP, HTTP, HTTPS, ICMP, IGMP, sftp (server), FTP (client), SMTP, DHCP, MDNS (Bonjour), uPnP

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Digital Input/output	
Connector type	M12 12-pin A-coded, Male (shared with external power)
Digital input	2x opto-isolated Vin(low)= 0–1.5 V, Vin(high)= 3–25 V
Digital input, purpose	• NUC • NUC disable • Image tag (Start, Stop, General) • Image flow control (acc. SFNC 2.3) ◦ Single frame (on trigg) ◦ Multi-frame (on trigg) ◦ Continuous ◦ Frame rate ◦ ROI
Digital output	• 3x opto-isolated, 0–48 VDC, max. 350 mA (derated to 200 mA at 60°C) • Solid state relay • 1x dedicated as Fault output (NC)
Digital output, purpose	• Programmatically set • Fault (NC)
Digital I/O, isolation voltage	500 VRMS

Power system	
Connector type	M12 12-pin A-coded, Male (shared with Digital I/O)
Power consumption	• 6.8 W at 24 V DC typical • 7.0 W at 48 V DC typical • 7.3 W at 48 V PoE typical
External power operation	24/48 V DC 8 W max
External voltage	Allowed range 18–56 V DC

RS-232/485 serial interface	
Connector type	M8 A-coded, Male
Prerequisite for use	ONVIF must be enabled
Serial communication, purpose	Pan & Tilt control
Serial communication, standard	Pelco D
Serial communication, HW interface	RS232 and RS485 exclusively
Scanlist support	Yes

Wi-Fi	
Connector type	RP-SMA, Female
Standard	IEEE802.11a/b/g/n
Antenna	Dipole antenna 2.4/5 GHz (gain: maximum 2 dBi)
Connection type	Peer to peer (ad hoc) or infrastructure (network)

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Environmental data	
Operating temperature range	–20 to 50°C (–4 to 122°F): • –20 to –10°C (–4 to 14°F), mounted with heating accessory is recommended • –10°C to 40°C (14 to 104°F), in free air • 40 to 50°C (104 to 122°F), mounted with cooling accessory is recommended Maximum camera case temperature: 65°C (149° F)
Storage temperature range	IEC 68-2-1 and IEC 68-2-2, –40 to 70°C (–40 to 158°F) for 16 hours
Humidity (operating and storage)	IEC 60068-2-30/24 hours, 95% relative humidity, 25–40°C (77–104°F)/2 cycles
EMC	• ETSI EN 301 489-1 (radio) • ETSI EN 301 489-17 (radio) • EN 61000-4-8 (magnetic field) • FCC 47 CFR Part 15 Class B (emission US) • EN ISO 14982 (EMC - Agricultural and forestry machinery)
Radio spectrum	• FCC 47 CFR Part 15 Class C (2.4 GHz band US) • FCC 47 CFR Part 15 Class E (5 GHz band US) • RSS-247 (2.4 GHz and 5 GHz band Canada) • ETSI EN 300 328 V2.1.1 (2.4 GHz band EU) • ETSI EN 301 893 V2.1.1 (5 GHz band EU)
Encapsulation	IEC 60529, IP 54, IP66 with accessory
Shock	IEC 60068-2-27, 25 g
Vibration	• IEC 60068-2-6, 0.15 mm at 10–58 Hz and 2 g at 58–500 Hz, sinusoidal • IEC 61373 Cat 1 (Railway)
Safety	IEC 62368-1 (IT equipment audio-visual products)
Corrosion	• ISO 12944 C4 G or H • EN60068-2-11

Physical data	
Weight	0.82 kg (1.8 lb)
Size (L × W × H)	123 × 77 × 77 mm (4.84 × 3.03 × 3.03 in)
Base mount	4× M4 on 4 sides
Tripod mounting	UNC ¼″-20 on 2 sides
Housing material	Aluminium
Color	Black

Warranty and service	
Warranty	http://www.flir.com/warranty/

Shipping information	
Packaging, type	Cardboard box
Packaging, contents	• Infrared camera with lens • Ethernet cable M12 to RJ45F (0.3 m) • Antenna for WLAN 2.4/5 GHz
Packaging, weight	1.14 kg (2.51 lb.)
Packaging, size	207 × 142 × 129 mm (8.1 × 5.6 × 5.1 in.)
EAN-13	7332558026380

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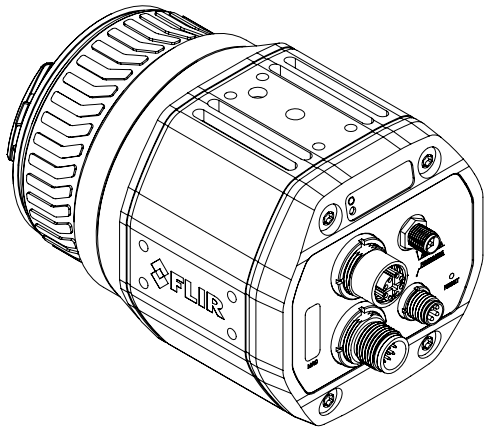
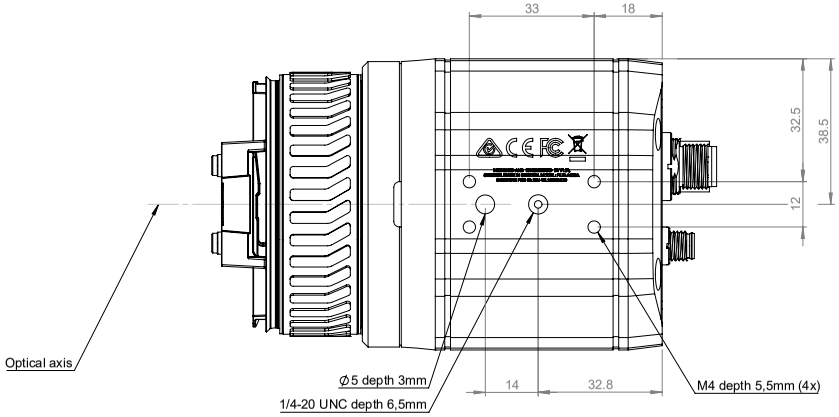
Shipping information	
UPC-12	845188022235
Country of origin	Sweden

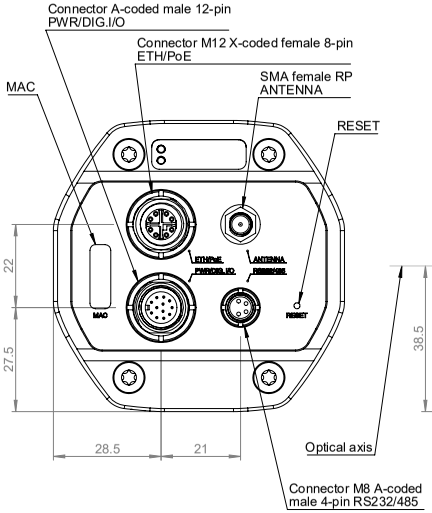
Supplies & accessories:

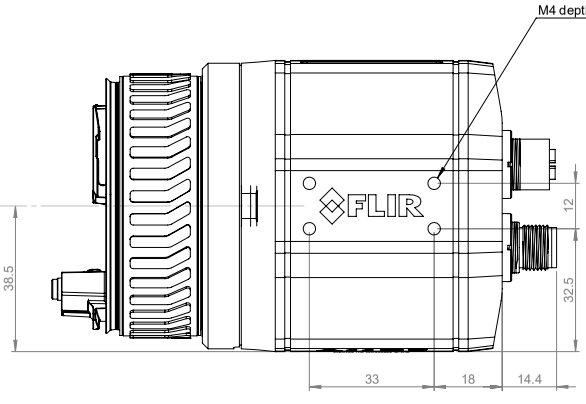
- T911850ACC; Antenna for WLAN 2.4/5 GHz
- T300268ACC; A-series connection board
- T911853ACC; Cable M12 to pigtail, 10 m
- T911852ACC; Cable M12 to pigtail, 2 m
- T300202; Connector cap kit
- T911855ACC; Ethernet cable M12 to RJ45, 10 m
- T911854ACC; Ethernet cable M12 to RJ45, 2 m
- T911869ACC; Ethernet cable M12 to RJ45F, 0.3 m
- T300163; Hard case for FLIR Axxx series and FLIR GF7xa
- T300075ACC; IP hood for lens
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T199507; Accessory kit, Gigabit PoE injector 15 W

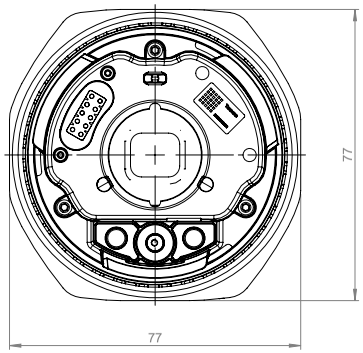
Default

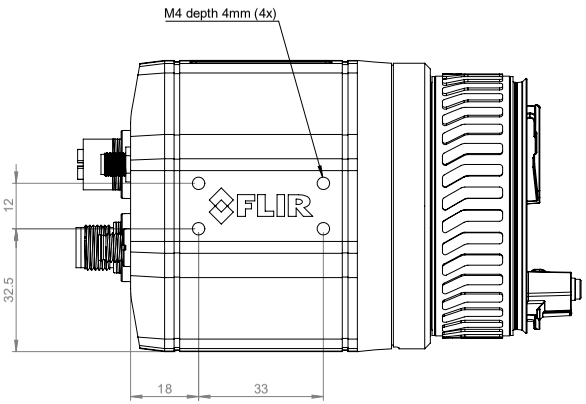


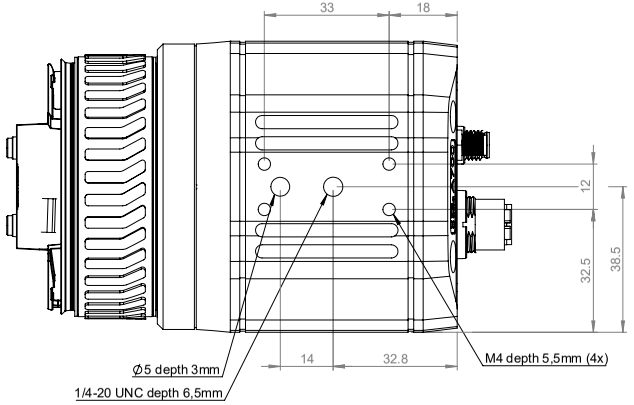






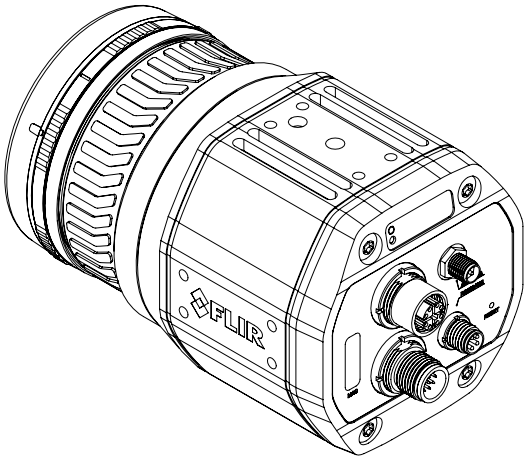


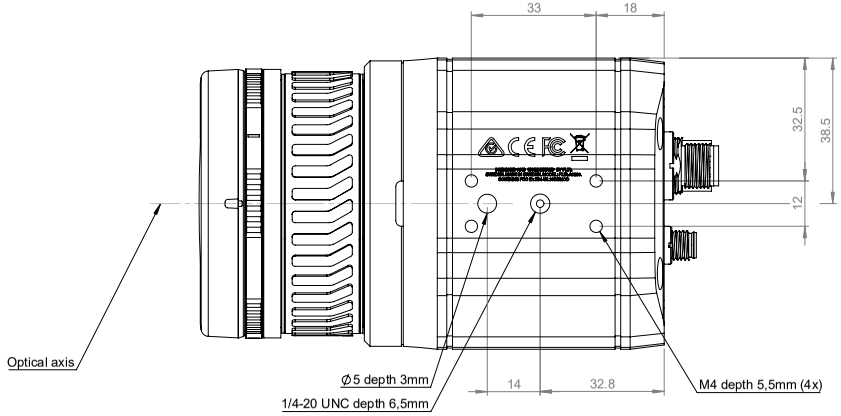


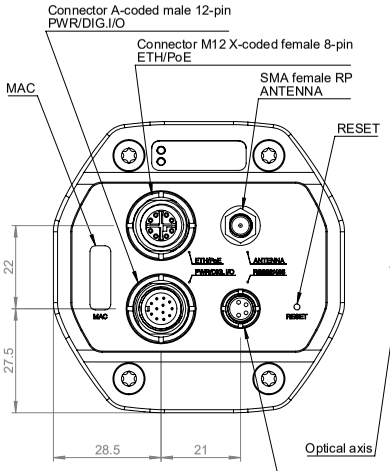


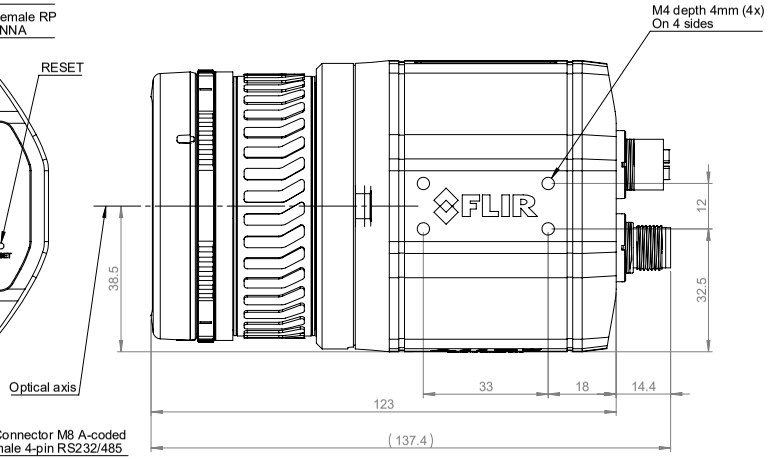
Modified: 2020-01-10	Check: -	Drawn by: R&D Instruments	FLIR
Denomination: Basic dimension Axxx/GF7xa		Size: A2	
		Scale: 1:1	Sheet: 1(3)
		Drawing No.: T130771	Rev: A

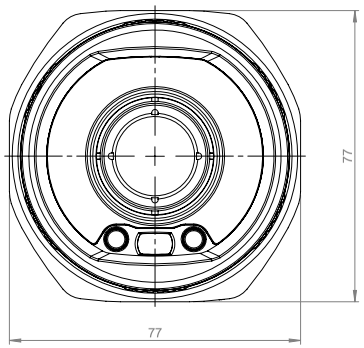
Incl. STD Lenses & Macro

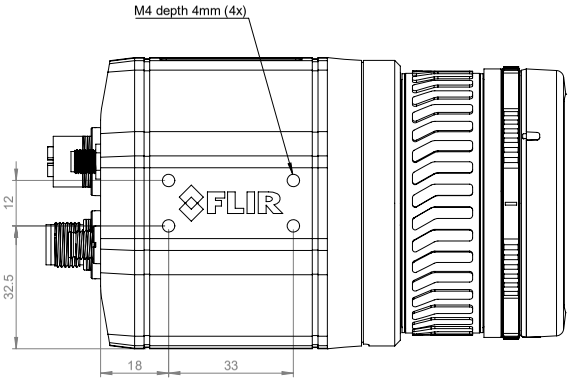


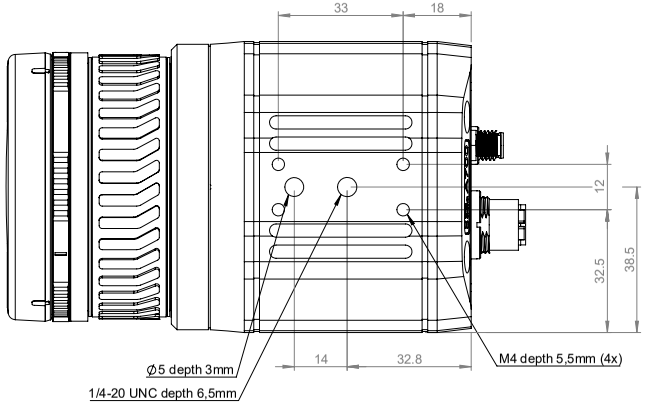












Basic dimensions for cameras with focal length:
f= 10mm
f= 17mm
f= 29mm

Macro WD=18mm

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2020-01-10	-	R&D Instruments

Denomination

Basic dimension Axxx/GF7xa

Size A2 | Scale 1:1 | Sheet 2(3)

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