



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx EMT 22.0006X** Page 1 of 3 [Certificate history](#):
Status: **Current** Issue No: 0
Date of Issue: 2023-06-06
Applicant: **FLIR SYSTEMS AB**
Antennvägen 6
SE-187 15 Täby
Sweden
Equipment: **Optical Gas Imaging Camera, FLIR-G1010 Series. Model Teledyne FLIR Gx320/Gx620.**
Optional accessory:
Type of Protection: **Intrinsic Safety Ex "ic", Type n Ex "nC", Optical radiation Ex "op is"**
Marking: **Ex ic nC op is IIC T4 Gc**

Approved for issue on behalf of the IECEx
Certification Body:

Simon Barrowcliff

Position:

Senior Technical Specialist

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

Element Materials Technology
Unit 1 Pendle Place
Skelmersdale
West Lancashire
United Kingdom





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Manufacturer: **FLIR SYSTEMS AB**
Antennvägen 6
SE-187 15 Täby
Sweden

Manufacturing locations: **FLIR SYSTEMS AB**
Antennvägen 6
SE-187 15 Täby
Sweden

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-15:2017 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:5.0

IEC 60079-28:2015 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

This Certificate **does not** indicate compliance with safety and performance requirements
other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

GB/EMT/ExTR22.0013/00

Quality Assessment Report:

GB/EMT/QAR16.0003/06



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Gx320 and Gx620 are part of the FLIR-G1010 series of handheld infrared cameras designed for optical gas imaging and are assessed for Zone 2 hazardous area applications. The cameras have an LCD flip-out display, OLED viewfinder, visual camera to complement the IR image, GPS module, LASER pointer and LED lighting. The equipment is powered by a rechargeable Li-ion battery pack. The equipment enclosure is mostly metallic, however it has an anti-static silicone sleeving in black colour as well as non-metallic carry straps and protective lens caps permitted to be used as optional accessories. There are three lens configurations which are changeable in the hazardous area. These are 14.5 ° or 24 ° field of view lenses with differing lens sizes but identical mechanical and electronic assemblies, and a 6 ° field of view lens which is also electrically identical but with a larger housing. Numerous buttons, switches and joysticks are also fitted to the enclosure to allow various operations of the equipment plus the release of a bayonet connector which secures the lens holder.

The camera equipment contains an internal component referred to as the IDCA (Infrared Detector Cooler Assembly) which is ITAR classified (International Traffic in Arms Regulations). This is assessed as a sealed device with its own enclosure, within which the hazardous atmosphere is excluded. The IDCA connects to the rest of the camera circuitry through external metallic pins which form part of the IDCA enclosure.

The Gx320 and Gx620 differ in the IDCA model used and the resolution in the infrared image only. All other aspects are identical.

There are external connections for use in the non-hazardous area which are protected by a door on the rear of the camera, secured with a stainless steel fixing screw. These are a USB-C port, HDMI port, SD-card and a socket for an external power inlet used to charge the main battery pack.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See Annex to this certificate.

Annex:

[Annex to IECEx EMT 22.0006X .pdf](#)



**Element Materials Technology,
Unit 1, Pendle Place,
Skelmersdale,
West Lancashire, WN8 9PN,
United Kingdom**

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Table of entity parameters

Table of maximum entity parameters

Parameter	USB C	HDMI	Power inlet
Ui	5 V	4 V	-
li	5 mA	25 µA	-
Um	-	-	15 V

“Special conditions for manufacture”

1. None

Routine Tests

1. None



“Special conditions for use”

1. Do not make any connections to the USB port, HDMI port, or power connector while the camera is in a hazardous location. The equipment must be moved to a safe area before any connections are made.
2. Do not replace the memory card while the camera is in a hazardous location. The equipment must be moved to a safe area before accessing and replacing the memory card.
3. Before entering a hazardous location, make sure the cover for the connector and battery compartment is secured; close the cover and tighten the screw. The equipment must be moved to a safe area before opening the cover.
4. Do not replace the battery while the camera is in a hazardous location. The equipment must be moved to the safe area before accessing and replacing the battery.
5. Do not charge the battery in a hazardous location. Charging of the battery must only be performed in a safe area.
6. Only use the battery charger (T300571/T300571ACC) and power supply (T911633/T911633ACC) that FLIR Systems supplies.
7. Only use the battery (T300450/T300450ACC) that FLIR Systems supplies.
8. Access or entry into the interior of the camera is strictly prohibited in any area.
9. Any external power source connected to the power connector, USB port, or HDMI port must meet one of the following requirements:
 - A SELV or PELV system, or
 - Via a safety isolating transformer complying with the requirements of IEC 61558-2-6 or technically equivalent standard, or
 - Directly connected to apparatus complying with IEC 60950 series, IEC 61010-1, or a technically equivalent standard,
 - or Fed directly from cells or batteries.
10. The table shows the maximum input parameters for each port of the camera.

	USB-C	HDMI	Power inlet
U_i	5 V	4 V	—
I_i	5 mA	25 μ A	—
U_m	—	—	15 V/ 3 A

U_i = the maximum input voltage.

I_i = the maximum input current.

U_m = the maximum r.m.s. AC or DC voltage / the maximum output current capability.



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Manufacturer's Documents			
Title:	Drawing No.:	Rev. Level:	Date:
Gx Overview (2 sheets)	T131837	E	2023-05-23
Varta 2S2P/LIC18650-M29B PCM PC-SOC30 (2 sheets)	T300450/T300450ACC	B	2023-01-23
Camera Body G/Gx assy (9 sheets)	T300469	C	2023-05-12
Cover Right Assy	T300470	C	2022-12-21
Cover Left Assembly	T300471	C	2022-12-06
Display Unit Assy	T300475	C	2022-11-16
Holder Front Assy	T300514	B	2023-05-10
Printed Battery Label	T131820	A	-
Label S/N G/Gx	T131618	B	2023-04-17
Gx320 Label Legal	T640052	A	2023-05-23
Gx620 Label Legal	T640053	A	2023-05-24
Label read manual	T640031	C	2023-03-10
Safety Information FLIR Gx Series (16 sheets)	T810606	AG	2023-05-24
Eowyn P20-Family Power Block Diagram	d2015928	5.0	2023-04-10
Eowyn-P20-Family_Block_Diagram_ATEX	d2015936	2.0	2023-04-10
PCB-drawing (including specification) EOPOA (4 sheets)	T131428	C	2022-05-11
Circuit Diagram EOPOA (4 sheets)	T131429	D	2022-08-19
PCB-drawing (including specification) EOPOA	T300454	C	2022-05-11
Engineering BOM, CB EOPOA (23 sheets)	T300454	05	2023-03-16
Conformal Coating Specification EOPOA	T842347	C	2023-04-17
EOPOA Ex Rating (8 sheets)	T842388	A	2023-03-09
PCB-drawing (including specification) EOBB	T131434	D	2022-10-19
Circuit Diagram EOBB	T131435	E	2023-04-06
CB-drawing EOBB (2 sheets)	T300457	D	2022-10-19



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Engineering BOM, CB EOBB (5 sheets)	T300457	07	2023-02-06
Conformal Coating Specification EOBB (2 sheets)	T842350	B	2023-04-17
EOBB Ex Rating (10 sheets)	T842389	A	2023-04-26
PCB-drawing (including specification) EOWI (4 sheets, rev A)	T131436	A	2021-08-26
Engineering BOM, CB EOWI (5 sheets)	T300458	04	2023-02-13
Circuit Diagram EOWI (2 sheets, rev A)	T131437	A	2021-08-26
CB-drawing EOWI (rev A)	T300458	A	2021-08-26
EOWI Ex Rating (10 sheets, rev A)	T842390	A	2023-02-23
PCB-drawing (including specification) EOWI (4 sheets, rev B)	T131436	B	2023-01-31
Engineering BOM, CB EOWI (6 sheets)	T300458	05	2023-02-21
Circuit Diagram EOWI (2 sheets, rev B)	T131437	B	2023-02-21
CB-drawing EOWI (rev B)	T300458	B	2023-01-31
EOWI Ex Rating (10 sheets, rev B)	T842390	B	2023-02-23
Conformal Coating Specification EOWI	T842352	C	2023-04-17
PCB-drawing (including specification) EOLP	T131438	A	2021-11-22
Circuit Diagram EOLP	T131439	B	2023-02-13
CB-drawing EOLP	T300459	A	2021-11-22
Engineering BOM, CB EOLP (2 sheets)	T300459	02	2023-02-13
PCB-drawing (including specification) EOXI	T131440	A	2021-09-20
Circuit Diagram EOXI	T131441	A	2021-09-20
CB-drawing EOXI	T300460	A	2021-09-20
Engineering BOM, CB EOXI (2 sheets)	T300460	03	2023-02-13
Conformal Coating Specification EOXI	T842354	B	2023-04-17
EOXI Ex Rating (10 sheets)	T842400	A	2023-03-08

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PCB-drawing (including specification) EOPC (4 sheets)	T131442	C	2022-10-21
Circuit Diagram EOPC (7 sheets)	T131443	D	2023-02-22
CB-drawing EOPC (2 sheets)	T300461	C	2022-10-21
Engineering BOM, CB EOPC (33 sheets)	T300461	06	2023-02-22
Conformal Coating Specification EOPC (3 sheets)	T842355	B	2023-04-17
EOPC Ex Rating (10 sheets)	T842391	A	2023-04-26
PCB-drawing (including specification) EOCO (6 sheets, rev D)	T131444	D	2022-10-28
Circuit Diagram EOCO (18 sheets, rev G)	T131445	G	2023-03-30
CB-drawing EOCO (rev D)	T300462	D	2022-10-28
Engineering BOM, CB EOCO (61 sheets, rev 09)	T300462	09	2023-03-28
EOCO Ex Rating (10 sheets, rev A)	T842392	A	2023-04-20
PCB-drawing (including specification) EOCO (6 sheets, rev E)	T131444	E	2023-03-30
Circuit Diagram EOCO (18 sheets, rev H)	T131445	H	2023-03-30
CB-drawing EOCO (rev E)	T300462	E	2023-03-30
Engineering BOM, CB EOCO (61 sheets, rev 10)	T300462	10	2023-04-13
EOCO Ex Rating (10 sheets, rev B)	T842392	B	2023-04-20
Conformal Coating Specification EOCO (3 sheets)	T842356	D	2023-04-17
PCB-drawing (including specification) EOPA64	T131446	A	2022-03-16
Circuit Diagram EOPA64 (4 sheets)	T131447	B	2022-12-14
CB-drawing EOPA64	T300463	A	2022-03-16



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Engineering BOM, CB EOPA64 (18 sheets)	T300463	03	2023-02-10
Conformal Coating Specification EOPA64	T842357	B	2023-04-17
EOPA64 Ex Rating (6 sheets)	T842393	A	2023-03-05
PCB-drawing (including specification) EODP	T131448	A	2021-08-27
Circuit Diagram EODP	T131449	B	2022-08-22
CB-drawing EODP	T300464	A	2021-08-27
Engineering BOM, CB EODP (3 sheets)	T300464	03	2023-02-13
Conformal Coating Specification EODP	T842358	B	2023-04-17
EODP Ex Rating (10 sheets)	T842394	A	2023-02-23
PCB-drawing (including specification) EODC (rev A)	T131450	A	2021-09-30
Circuit Diagram EODC (2 sheets, rev C)	T131451	C	2022-12-21
Engineering BOM, CB EODC (7 sheets, rev 05)	T300465	05	2023-03-16
PCB-drawing (including specification) EODC (rev B)	T131450	B	2022-12-21
Circuit Diagram EODC (2 sheets, rev D)	T131451	D	2023-02-22
Engineering BOM, CB EODC (7 sheets, rev 06)	T300465	06	2023-03-18
CB-drawing EODC	T300465	B	2022-12-21
Conformal Coating Specification EODC	T842359	C	2023-04-17
EODC Ex Rating (10 sheets)	T842395	A	2023-02-24
Engineering BOM, Cable assy EOMTR	T300521	03	2023-04-18
Conformal Coating Specification EOMTR	T842419	A	2023-04-18
PCB-drawing (including specification) EOBU	T131578	C	2022-11-08
Circuit Diagram EOBU	T131579	B	2022-11-11
CB-drawing EOBU	T300522	C	2022-11-08
Engineering BOM, CB EOBU	T300522	03	2022-11-22

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PCB-drawing (including specification) BAHP3	T130749	B	2019-09-13
Circuit Diagram EOHP	T131750	A	2022-03-16
CB-drawing EOHP	T300588	A	2022-03-15
Engineering BOM, CB EOHP (5 sheets)	T300588	01	2022-04-14
PCB-drawing (including specification) GOVP	T128942	A	2015-11-12
Circuit Diagram EOVP	T132015	A	2023-03-30
CB-drawing EOVP	T300806	A	2023-04-04
Engineering BOM, CB EOVP (6 sheets)	T300806	02	2023-04-18
Conformal Coating Specification EOVP	T842420	A	2023-04-18
EOVP Ex Rating (8 sheets)	T842413	A	2023-03-31
PCB-drawing (including specification) EOWIF	T131576	B	2023-03-22
Circuit Diagram EOWIF	T131577	B	2022-05-05
Circuit Diagram P20 Display (3 sheets)	T131993	A	2023-03-28
Conformal Coating Specification P20 Display Flex (2 sheets)	T842348	A	2022-04-17
P20 Display Ex Rating (10 sheets)	T842386	A	2023-03-08
Varta Battery Schematic (2 sheets)	T131818	A	2022-03-02
Coating of PCM in P20 Battery	T842417	A	2023-04-27
Battery Pack Ex Rating and BOM	T842387	B	2023-03-08
1P-0063-0A (Laser Schematic and BOM)	0063 (FLIR number d2007822)	A	2011-02-21
635nm, Red Laser Model (4 sheets)	EG-QS-T-PM-ST-0093 (FLIR number d2007823)	-	2014-08-21
Gx320/620 Laser Module Ex Rating (2 sheets)	T842404	A	2023-03-24
GPS Module Compliance Statement	T842397	A	2023-03-10
GPS Module Rating Document (3 sheets)	T842396	A	2023-03-10
GFx320 Visual Camera Bill of Materials	d2013703	0.2	2019-08-22

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Gx320/620 Visual Camera Module Ex Rating (3 sheets)	T842401	A	2023-03-24
SVGA+ Carrier BOM	D07-500107-02 (FLIR number d2008115)	-	2014-04-29
Gx320/620 Viewfinder Module Ex Rating (3 sheets)	T842402	A	2023-05-09
Gx320/620 Memory Card Ex Rating (3 sheets)	T842403	A	2023-03-24
Instruction for Conformal Coating of Printed Circuit Board Assemblies (PCBAs)	T842418	A	2023-04-17
Cable Assy HRS DF36A 45p 70mm	T129267	A	2023-02-23
Cable Assy HRS DF36 25-pol	T129819	B	2019-12-05
Habia Cable H-UT 2807	T842416	A	2023-04-14
Battery Rechargeable Li-Metal Cell 3.0V	T951207	C	2021-02-16
Filter EMI CM 5V, 0.14A	T951027	C	2022-12-22



Attention is drawn to the operating and installation instructions which may contain useful information in relation to conditions of use.