Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number..... :	**DE229KYE 001** (CTC advanced: 1-4799/22-01-02)
Date of issue ..... :	2023-04-26
Total number of pages ..... :	153
Name of Testing Laboratory preparing the Report .....:	CTC advanced GmbH
Applicant's name ..... :	**FLIR Systems AB**
Address..... :	Antennvägen 6 SE-187 66 Täby Sweden
Test specification:	
Standard ..... :	IEC 62368-1:2014
Test procedure..... :	CB Scheme
Non-standard test method ..... :	N/A
TRF template used..... :	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No. ..... :	IEC62368_1D
Test Report Form(s) Originator.. :	UL(US)
Master TRF ..... :	Dated 2022-04-14

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test Item description .....:	Infrared Camera for Gas detection		
Trade Mark(s) .....:	FLIR		
Manufacturer.....:	FLIR Systems AB		
Model/Type reference .....:	FLIR-G1010		
Ratings .....:	DC-in: 12 V ⎓ 3.0 A Battery: 7.34 V, 5500mAh		
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒ **CB Testing Laboratory:**	CTC advanced GmbH		
Testing location/ address .....:	Untertürkheimer Str. 6-10 66117 Saarbrücken GERMANY		
Tested by (name, function, signature).....:	Thomas Stöhr (Testing manager)		cn=Thomas Stöhr, o=CTC advanced GmbH, ou=STÖ-220510, email=Thomas.Stoehr@ctcadvanced.com, c=DE 2023.04.26 11:52:21 +02'00'
Approved by (name, function, signature) .....:	Sebastien Scheidler (Lab manager)		Sébastien Scheidler cn=Sébastien Scheidler, o=CTC advanced GmbH, ou=SHE-211117, email=sebastien.scheidler@ctcadvanced.com, c=DE 2023.05.02 11:15:47 +02'00'
☐ **Testing procedure: CTF Stage 1:**			
Testing location/ address ..... :			
Tested by (name, function, signature).....:			
Approved by (name, function, signature) .....:			
☐ **Testing procedure: CTF Stage 2:**			
Testing location/ address .....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .....:			
Approved by (name, function, signature) .....:			
☐ **Testing procedure: CTF Stage 3 :**			
☐ **Testing procedure: CTF Stage 4:**			
Testing location/ address .....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .....:			
Approved by (name, function, signature) .....:			
Supervised by (name, function, signature).....:			

List of Attachments (including a total number of pages in each attachment):

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Summary of testing:

The sample(s) tested complies with the requirements of IEC 62368-1:2014 (2nd Edition) + Cor.1:2015 + Cor.2: 2015. Compliance with National Differences, Special National Conditions are recorded at the end of this report.

Tests performed (name of test and test clause):	**Testing location:**
All applicable tests as described in the compliance checklist were performed at CTC advanced GmbH	**CTC advanced GmbH** Untertürkheimer Str. 6-10 66117 Saarbrücken GERMANY

Summary of compliance with National Differences (List of countries addressed):

EU, IT, JP, US, CA

☒ **The product fulfils the requirements of:**

- IEC 62368-1:2014 (2nd Edition) + Cor.1: 2015 + Cor.2: 2015
- EN62368-1: 2014 + AC: 2015 + A11: 2017 + AC: 2017.
- J62368-1 (2020)
- UL 62368-1:2014
- CSA-C22.2 No. 62368-1-14
- CEI EN 62368-1:2016

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty (“simple acceptance” decision rule, previously known as “accuracy method”).

☐ Other:… (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

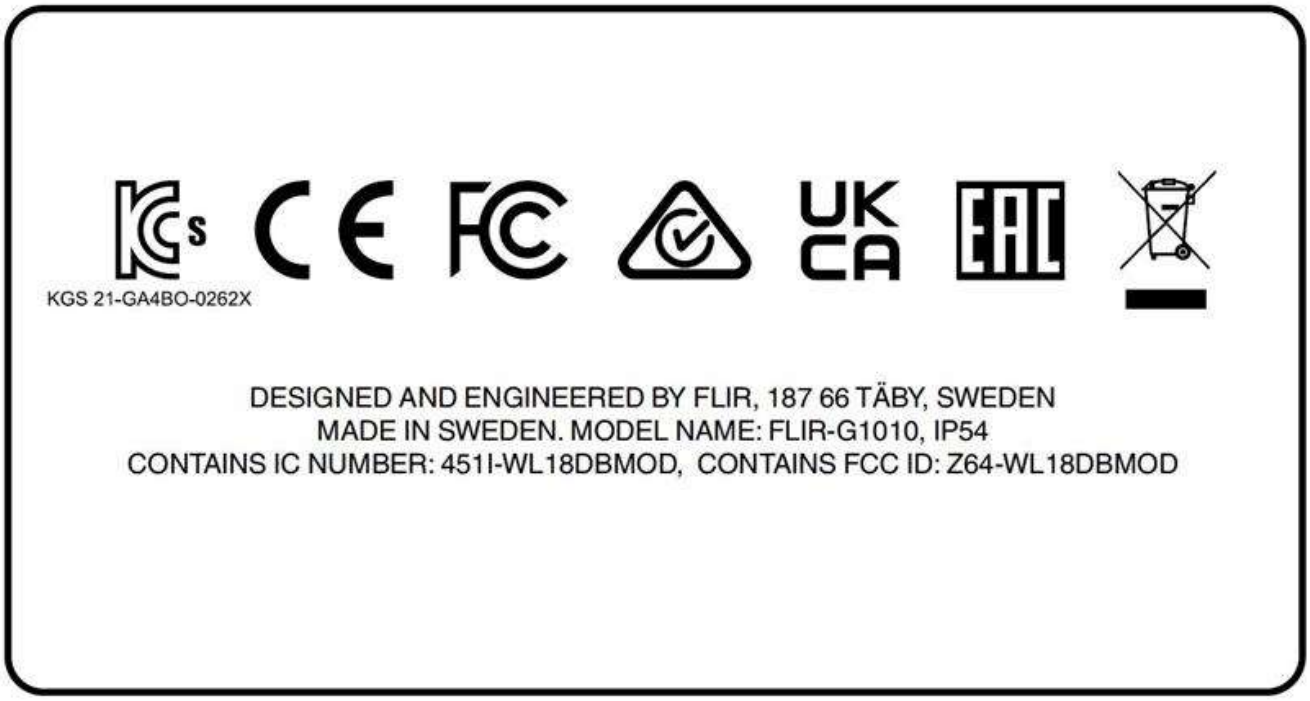
Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



TEST ITEM PARTICULARS:	
Classification of use by ..... :	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☒ Children likely to be present
Supply Connection ..... :	☐ AC Mains ☐ DC Mains ☒ External Circuit - not Mains connected - ☒ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance ..... :	☐ +10%/-10% ☐ +20%/-15% ☐ +____%/ -_____% ☒ None
Supply Connection – Type ..... :	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☒ mating connector ☐ other:_____
Considered current rating of protective device as part of building or equipment installation .....:	_____ A; Installation location: ☐ building; ☐ equipment
Equipment mobility .....:	☐ movable ☒ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) .....:	☐ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☒ other: None
Class of equipment .....:	☐ Class I ☐ Class II ☒ Class III ☐ Class II with functional earthing ☐ Not classifed
Access location .....:	☐ restricted access area ☒ N/A
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient .....:	50°C
IP protection class .....:	☐ IPX0 ☒ IP54
Power Systems .....:	☐ TN ☐ TT ☐ IT - ____ $V_{L-L;}$ ☐ dc mains ☒ N/A
Altitude during operation (m) .....:	☒ 2000 m or less ☐ _____ m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg) .....:	☒ 2.763 kg (camera only) ☒ 2.976 kg (camera with battery)

Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing ..... :	
Date of receipt of test item ..... :	2022-10-04
Date (s) of performance of tests ..... :	2022-10-04 to 2023 -02-08

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... :	Flir Systems AB Antennvägen 6 SE-187 66 Täby Sweden

General product information and other remarks:

Product Description –

The Flir-G1010 is a digital camera for Optical Gas Imaging (OGI) which means that is able to detect gas leaks of certain types of gas. The camera consists of a CCD sensor, a replaceable lens and an electronic processing unit for the data of the CCD sensor. The picture of the camera can be checked on an OLED screen (that also offer a GUI for setting up), a Viewfinder or on an external HDMI monitor. The data can be stored on a Mini SD card.

To allow a low thermic noise floor the camera is equipped with a mechanical compressor that cool down the CCD over a heatpipe to around 60K. The engine of the compressor is a brushless three-phase dc-motor (BLDC).

The camera uses GPS and can share data with WiFi networks and audio signals with Bluetooth.

The power supply of the camera is done by a detachable Li-Ion battery or an external DC voltage at 12 V.

The camera case is manufactured of die-cast aluminum which is additionally protected from mechanical influences by a rubber envelope, which at the same time ensures the sealing of the camera against water and dust (IP54).

The manufacturer only allows specific parts for the power supply: Battery T300450, Battery charger T300571, Power supply T911633.

In this test report the camera is evaluated. The battery and the external PSU that were used for the tests have already been tested (see table 4.1.2 for details).

National requirements for AS/NZS according to AS/NZS 62368.1:2018 are recorded in Annex 6.

Model Differences –
Additional application considerations – (Considerations used to test a component or sub-assembly) –