

## P/N: T911970

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### Document identity

Publ. No.: T911970

Commit: 76000

Language:

Modified: 2021-04-22

Formatted: 2021-06-24

### 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](mailto:exportquestions@flir.com) with any questions.



### General description

The FLIR Si124 is a system for acoustic image measurements and signal analysis.

The FLIR Si124 uses 124 microphones to form a very precise acoustic image in the desired direction. This acoustic image is transposed in real-time on top of a digital camera picture, which allows the user to accurately see from which directions sound is arriving at the camera. Interesting sound sources can then be separated and saved for deeper analysis and problem classification including severity assessment, using the FLIR Acoustic Camera Viewer cloud service.

Two examples of problems, for which the FLIR Si124 works as a great tool, are the localization and classification of high-voltage partial discharges and the localization of pressurized air leaks in factories.

With partial discharges, useful information about the criticality of the observed problem is obtained by combining the accurate information about the location of the problem with deeper analysis of the signal, which is done in the FLIR Acoustic Camera Viewer.

Even the human ear can sometimes hear an air leak in a quiet environment, but in a typical industrial environment it is generally impossible to hear even bigger leaks due to loud background noise. The FLIR Si124 can very effectively filter out the industrial noise, allowing the user to locate quiet sounds even in noisy environments.

### Features

- **Handheld:** Lightweight unit with a carrying bag for the battery and auxiliary parts.
- **Cloud service:** Upload the measurements to the FLIR Acoustic Camera Viewer for storage and analysis, like discharge classification and severity assessment.
- **Leak localization and detection** including estimated leak size and annual cost.
- **Quickly create reports** in FLIR Acoustic Camera Viewer.
- **Environment:** For outdoor and indoor industrial use.

### Acoustic specifications

Acoustic specifications	
Acoustic measurement	124 low-noise MEMS microphones, real-time sound visualization
Dynamic range, low limit	< -15 dB (frequency-dependent)
Dynamic range, high limit	over 120 dB (frequency-dependent)
Bandwidth	2 kHz to 35 kHz, adjustable range
Distance	from 0.3 m (1.0 ft) up to 130 m (430 ft)
Discharge detection	Automatic detection 50 / 60 Hz

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<b>Acoustic specifications</b>	
Discharge classification	<ul style="list-style-type: none"> <li>Negative corona</li> <li>Positive and negative corona</li> <li>Floating discharge</li> <li>Surface or internal discharge</li> </ul> PRPD pattern provided in FLIR Acoustic Camera Viewer cloud service.
Severity assessment	Automatic AI-based severity assessment including recommended actions
Leak localization and detection	Automatic leak recognition including estimated leak size and annual cost
Leak rate	In typical industrial environment: <ul style="list-style-type: none"> <li>&gt;0,032 l/min @ 3 bar from 3 m (9.8 ft)</li> <li>&gt;0,05 l/min @ 3 bar from 10 m (32.8 ft)</li> </ul> Absolute minimum detection in quiet environment: 0.016 l/min @ 1.2 bar from 0.3 m (1.0 ft)
<b>User interface</b>	
Display	Size: 5 in. 800 × 480 Color: 24 bit RGB Brightness: 1000 cd/m2 (adjustable)
Input device	Resistive touchscreen
Power On indicator	LED (red)
Video image resolution	800 × 480
Camera FOV	62° × 49°
Video frame rate	25 fps
Acoustic image frame rate	30 fps
Zoom	2x Digital zoom
Languages	Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Thai, Traditional Chinese, Turkish, Vietnamese
<b>Communication and data storage</b>	
Wireless data transfer	Wi-Fi 2.4 GHz and 5 GHz IEEE 802.11.b/g/n/ac wireless LAN
Camera software update	<ul style="list-style-type: none"> <li>Automatic over Wi-Fi</li> <li>USB via computer</li> </ul>
Storage, internal	32 GB / 2000 snapshots (typical) SD card, non-removable
Storage, external	8 GB / 500 snapshots (typical) USB mass storage, provided with device
<b>Power supply</b>	
Camera power input	Nominal input voltage 12 V Max input: 15 V 2.5 A
External battery	LiFePO 12 V 7 Ah, 84 Wh Usage: Up to 7 h (depends on ambient conditions) Charge time: 4-6 h Max output: 13.8 V, 4.0 A

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<b>Power supply</b>	
Battery charger	Input: 100-240 V AC, 50/60 Hz, 1.3 A Max output: 14.6 V, 4.0 A
Internal battery (only for camera backup use)	Li-Ion 6 Wh
<b>Environmental data</b>	
Operating temperature range	-10 to 50°C (14 to 122°F)
Storage temperature range	-20 to 70°C (-4 to 158°F)
Relative humidity	Recommended 0 to 90%
EMC	<ul style="list-style-type: none"> <li>FCC 47 CFR Part 15 Subpart B Class A</li> <li>EN 301 489-1 EMC for radio equipment</li> <li>EN 301 489-17</li> <li>ICES-003 Issue 6 Class A</li> </ul>
Radio	<ul style="list-style-type: none"> <li>EN 300 328 v2.1.1</li> <li>EN 300 893 v2.1.1</li> <li>FCC 47 CFR Part 15 Subpart C</li> <li>FCC 47 CFR Part 15 Subpart E</li> <li>Raspberry Pi RPI3P-MODBP</li> <li>FCC ID: 2ABCB-RPI3BP</li> <li>ICED: 20953-RPI3P</li> </ul>
Protection class	IP51
<b>Physical data</b>	
Camera size	273 × 170 × 125 mm (10.7 × 6.7 × 4.9 in)
Camera weight	Camera: 980 g (2.2 lb)
Battery size	90 × 145 × 65 mm (3.5 × 5.7 × 2.6 in)
Battery weight	985 g (2.2 lb)
Total weight, incl. all accessories	2.9 kg (6.4 lb)
Battery cord length	0.75 m (2.46 ft), extended 1.5 m (4.92 ft)
<b>Warranty and service</b>	
Warranty	<a href="http://www.flir.com/warranty/">http://www.flir.com/warranty/</a>
<b>Shipping information</b>	
Packaging, type	Cardboard box
Packaging, contents	<ul style="list-style-type: none"> <li>Camera</li> <li>Battery</li> <li>Battery cable</li> <li>Battery charger</li> <li>Battery pouch</li> <li>Camera hand strap</li> <li>Camera pouch</li> <li>Printed documentation</li> <li>USB memory stick</li> </ul>
Packaging, weight	4.5 kg (9.9 lb)
Packaging, size	40 × 40 × 35 cm (15.7 × 15.7 × 13.8 in)
EAN-13	7332558026281
UPC-12	845188022143
Country of origin	Finland

**Supplies & accessories:**

- T911982; Rechargeable battery
- T911984; Battery charger
- T911981; Cable from camera to battery



## FLIR Si124

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- T911980; Camera pouch
- T911987; Acoustic camera tester incl. table tripod
- T912115; Option, No radio

June 17, 2020 Täby, Sweden

AQ320396

**CE Declaration of Conformity – EU Declaration of Conformity**

Product: FLIR Si124

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 Si124.

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

**Directives:**

Directive	2011/65/EU	RoHS and 2015/830/EU (Phtalates) and EU 2017/2102
Directive	2014/53/EU	Radio Equipment Directive (RED)

**Standards:**

Emission:	ETSI EN 301489-1 v2.2.3	ERM – EMC for radio equipment
	ETSI EN 301489-17 v3.1.1	ERM – EMC Wideband data
Immunity:	EN 61000-6-2 2019	Immunity for industrial environments
Radio:	ETSI EN 300 328 v2.1.1	Harmonized EN covering essential requirements of the R&TTE Directive
	ETSI EN 301 893 v.2.1.1	5GHz WLAN
Safety:	IEC 62368-1:2014 (2nd Edition)	Video, information and communication tech
RoHS	EN 50581:2012	Technical documentation

**FLIR Systems AB**

Quality Assurance

Lea Dabiri  
Quality Manager

**SAFETY DATA SHEET**  
**LITHIUM PHOSPHATE (LiFePO<sub>4</sub>)**

**1. PRODUCT IDENTIFICATION**

Product Name: LiFePO<sub>4</sub> Rechargeable Battery  
Chemical System: LiFePO<sub>4</sub>

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

IMPORTANT NOTE: The battery cell should not be opened or exposed to heat as exposure to the following ingredients contained within could be harmful under some circumstances.

Weight %	Component	CAS No.	PEL	TLV
40	Lithium Iron Phosphate (LiFePO <sub>4</sub> )	15365-14-7	10.0 mg/m <sup>3</sup> (as iron fume)	5.0 mg/m <sup>3</sup>
30	Graphite(C)	7440-44-0	2.5mg/m <sup>3</sup> (as dust)	2.0mg/m <sup>3</sup> (as dust)
10	Organic Electrolyte	N.A	None Established	None Established
5	Aluminium	7429-90-5	None Established	None Established
5	Copper	7440-50-8	None Established	None Established

Weight % listed is based on approximate percent of the average weight of the battery

**3. HAZARDS IDENTIFICATION**

For the battery cell, chemical materials are stored in a hermetically sealed Aluminum laminated case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage.

However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery cell case will be breached and hazardous materials may be released.

Moreover, if heated strongly by the surrounding fire, hydrogen fluoride gas may be emitted.

Most important hazards and effects

Human health effects:

- Inhalation: The steam of the electrolyte has an anesthesia action and stimulates a respiratory tract.
- Skin contact: The steam of the electrolyte stimulates skin. The electrolyte skin contact causes a sore and stimulation on the skin.
- Eye contact: The steam of the electrolyte stimulates eyes. The electrolyte eye contact causes a sore and stimulation on the eye. Especially, strong inflammation of the eyes is caused.

Environmental effects: Do not throw out it into the environment.

Specific hazards:

If the electrolyte contacts with water, it will generate detrimental hydrogen fluoride.

Since the leaked electrolyte is inflammable liquid, do not bring close to fire.

**4. FIRST-AID MEASURES**

Spilled internal cell materials

Inhalation: Make the victim blow his/her nose, gargle. Seek medical attention if necessary.

Skin contact: Remove contaminated clothes and shoes immediately. Wash extraneous matter or contact region with soap and plenty of water immediately.

Eye contact: Do not rub in eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

Ingestion: Make the victim vomit. Seek medical attention.

# UN38.3 Test Summary

## UN38.3 试验概要

<b>UN38.3 Report No.</b> UN38.3 报告编号	TCT200407B017		
<b>Applicant's name</b> 委托方名称	Deben Group Industries Ltd.		
<b>Applicant's Address</b> 委托方地址	Avocet House, Wilford Bridge Road, Melton, Woodbridge, IP12 1RB United Kingdom		
<b>Manufacturer's name</b> 制造商名称			
<b>Manufacturer's Address</b> 制造商地址			
<b>Manufacturer's Contact Telephone</b> 制造商联系电话			
<b>Name of Sample</b> 样品名称	Rechargeable Li-ion Battery 可充电锂离子电池	<b>Model</b> 型号	BP2607
<b>Trade Mark</b> 商标	---	<b>Shape</b> 形状	Prismatic 棱柱形
<b>Watt-hour</b> 瓦时	89.6Wh	<b>Sample Mass</b> 样品重量	920.0g
<b>Description</b> 描述	Lithium ion Batteries 锂离子电池组	<b>Date of Test Report</b> 测试报告签发日期	2020. 04. 21

### Test Standard 检测标准:

UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS Manual of Tests and Criteria" Sixth revised edition Amendment 1 (ST/SG/AC.10/11/Rev.6/Amend.1)

联合国《关于危险货物运输的建议书 试验和标准手册》第六修订版修正 1 (ST/SG/AC.10/11/Rev.6/Amend.1)

Testing Laboratory 测试实验室:

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