FLIR Si124-LD

P/N: T912113

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Document identity

Website

http://www.flir.com

Customer support

http://support.flir.com

Disclaimer

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, using the FLIR Acoustic Camera Viewer cloud service.

The camera is a smart acoustic device for locating leaks in compressed-air systems. It is up to ten times faster than traditional models, and instantly shows the located leaks on the camera view combined with estimated leak size and annual cost.

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.
- 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 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)
Severity assessment	Automatic AI-based severity assessment including recommended actions

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Acoustic specifications	
Leak localization and detection	Automatic leak recognition including estimated leak size and annual cost
Leak rate	In typical industrial environment: • >0,032 l/min @ 3 bar from 3 m (9.8 ft) • >0,05 l/min @ 3 bar from 10 m (32.8 ft) Absolute minimum detection in quiet environment: 0.016 l/min @ 1.2 bar from 0.3 m (1.0 ft)

User interface	
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

Communication and data storage	
Wireless data transfer	Wi-Fi 2.4 GHz and 5 GHz IEEE 802.11.b/g/n/ac wireless LAN
Camera software update	• Automatic over Wi-Fi • USB via computer
Storage, internal	32 GB / 2000 snapshots (typical) SD card, non-removable
Storage, external	8 GB / 500 snapshots (typical) USB mass storage, provided with device

Power supply	
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
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

Environmental data	
Operating temperature range	–10 to 50°C (14 to 122°F)
Storage temperature range	–20 to 70°C (–4 to 158°F)

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Environmental data	
Relative humidity	Recommended 0 to 90%
EMC	• FCC 47 CFR Part 15 Subpart B Class A • EN 301 489-1 EMC for radio equipment • EN 301 489-17 • ICES-003 Issue 6 Class A
Radio	• EN 300 328 v2.1.1 • EN 300 893 v2.1.1 • FCC 47 CFR Part 15 Subpart C • FCC 47 CFR Part 15 Subpart E • Raspberry Pi RPI3P-MODBP • FCC ID: 2ABCB-RPI3BP • ICED: 20953-RPI3P
Protection class	IP51

Physical data	
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)

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

Shipping information	
Packaging, type	Cardboard box
Packaging, contents	• Camera • Battery • Battery cable • Battery charger • Battery pouch • Camera hand strap • Camera pouch • Printed documentation • USB memory stick
Packaging, weight	4.5 kg (9.9 lb)
Packaging, size	40 × 40 × 35 cm (15.7 × 15.7 × 13.8 in)
EAN-13	7332558028582
UPC-12	845188025557
Country of origin	Finland

Supplies & accessories:

- T911982; Rechargeable battery
- T911984; Battery charger
- T911981; Cable from camera to battery
- T911980; Camera pouch
- T911987; Acoustic camera tester incl. table tripod
- T912115; Option, No radio

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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

TRACER®

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SAFETY DATA SHEET
LITHIUM PHOSPHATE (LiFePO$_4$)

1. PRODUCT IDENTIFICATION

Product Name: LiFePO$_4$ Rechargeable Battery

Chemical System: LiFePO$_4$

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$_4$)	15365-14-7	10.0 mg/m3 (as iron fume)	5.0 mg/m3
30	Graphite(C)	7440-44-0	2.5mg/m3(as dust)	2.0mg/m3(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 fluorite 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.

TCT 通测检测
TESTING CENTRE TECHNOLOGY

UN38.3 Test Summary
UN38.3 试验概要

UN38.3 Report No. UN38.3 报告编号	TCT200407B017
Applicant's name 委托方名称	Deben Group Industries Ltd.
Applicant's Address 委托方地址	Avocet House, Wilford Bridge Road, Melton, Woodbridge, IP12 1RB United Kingdom
Manufacturer's name 制造商名称	
Manufacturer's Address 制造商地址	
Manufacturer's Contact Telephone 制造商联系电话	

Name of Sample 样品名称	Rechargeable Li-ion Battery 可充电锂离子电池	**Model** 型号	BP2607
Trade Mark 商标	-----	**Shape** 形状	Prismatic 棱柱形
Watt-hour 瓦时	89.6Wh	**Sample Mass** 样品重量	920.0g
Description 描述	Lithium ion Batteries 锂离子电池组	**Date of Test Report** 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)