FLIR Si124 (2022)

P/N: T912182

Website

http://www.flir.com

Customer support

http://support.flir.com

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. Analysis can be done using:

- FLIR Acoustic Camera Viewer (cloud service)
- FLIR Thermal Studio (desktop software).

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

- 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 or FLIR Thermal Studio.
- 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	> 120 dB (frequency-dependent)
Bandwidth	2 kHz to 65 kHz, adjustable range
MEMS Sampling Frequency	130 kHz

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Acoustic specifications	
Distance	From 0.3 m (1.0 ft) up to 130 m (430 ft)
Discharge detection	Automatic detection 50 / 60 Hz
Discharge classification	• Negative corona • Positive and negative corona • Floating discharge • Surface or internal discharge PRPD pattern provided in FLIR Acoustic Camera Viewer or FLIR Thermal Studio.
Severity assessment	Automatic AI-based severity assessment including recommended actions in FLIR Acoustic Camera Viewer or FLIR Thermal Studio.
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, Indonesian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Thai, Traditional Chinese, Turkish, Vietnamese

Analysis and reporting	
Online	FLIR Acoustic Camera Viewer (cloud service)
Offline	FLIR Thermal Studio (desktop software)

Communication and data storage	
Data transfer	• Wi-Fi 2.4 GHz and 5 GHz IEEE 802.11.b/g/n/ac wireless LAN • USB memory stick
Camera software update	• Automatic over Wi-Fi • USB via computer

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Communication and data storage	
Still images	Yes
Video recording	Yes, up to 5 minutes.
Storage, internal	32 GB / 1000 snapshots (typical) SD card
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
Battery	Li-Ion rechargeable battery pack (RRC 2040): 10.8 V, 3.35 Ah, 36.2 Wh Usage: Up to 2.5 h (depends on ambient conditions) Charge time: 2 h Max output: 12.6 V, 4 A
Battery charger	Input: 19-26 VDC, 2.8 A Max output: 17.4 VDC, 4.8 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)
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 7 Class A
Radio	• EN 300 328 v2.1.1 • EN 300 893 v2.1.1 • FCC Part 15 C / E • Raspberry Pi RPI3P-MODBP • FCC ID: 2ABCB-RPI3BP • ICED: 20953-RPI3P
Protection class	IP51
Declaration of conformity	See: https://support.flir.com/resources/DoC

Physical data	
Camera size	315 × 170 × 160 mm (12.4 × 6.7 × 6.3 in)
Camera weight	0.98 kg (2.16 lb)
Battery size	85 × 59 × 22 mm (3.34 × 2.31 × 0.86 in)
Battery weight	0.17 kg (0.37 lb)
Total weight (camera + battery)	1.23 kg (2.71 lb)

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

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#T912182; r. 90064;

Shipping information	
Packaging, type	Cardboard box
Packaging, contents	• Camera • Battery (2 ea) • Battery charger • Neck strap • Hard transport case • License card: FLIR Si-series Plugin for FLIR Thermal Studio, Perpetual license • Printed documentation • USB memory stick
Packaging, weight	6 kg (13 lb)
Packaging, size	490 × 365 × 190 mm (19.3 × 14.4× 7.5 in)
EAN-13	7332558029664
UPC-12	845188026738
Country of origin	Finland

Supplies & accessories:

• T912185; Battery RRC 2040
• T912186; Battery charger incl. power supply

Safety Data Sheet

RRC Batteries

Revision status

Revision	Valid from	Changes	Author
A	25Apr2017	First released version	DF
B	27jun2017	Change emergency phone numbers	DF
C	24oct2018	Template updated	HB
D	01jan2019	Regulation updated	TN
E	01oct2019	Added new products	TN
F	07oct2019	Updated template & Hazardous components	TN
G	04feb2020	New products, hazardous components and regulations	TN
H	29jan2021	Updated product list	TN

Declaration of Conformance (DoC)
UN38.3 Test Summary

Dok-Typ: Formblatt   Dok-Nr.: FO_Q_068   Rev.: B

Q RRC
SETTING STANDARDS
IN POWER SOLUTIONS

1. Product information / Battery physical Description

Model name:	RRC2040
Product classification:	Li-Ion rechargeable battery pack
Nominal voltage:	10.8V
Rated capacity:	3350mAh
Capacity:	36.2Wh
Weight of product:	170g

2. Manufacturer information

RRC power solutions GmbH
Technologiepark 1
D-66424 Homburg
Germany
Telephone +49 6841 9809-0
sales@rrc-ps.de
www.rrc-ps.de

3. Conformance information

The product in section 1 complies with
UN Manual of Tests and Criteria, Part III, Subsection 38.3: 2009, 6th Revision.

4. UN38.3 Test Summary

UN38.3 Test Lab:	AnTeK Certification Inc. 7F., No. 351, Yangguang St., Neihu District, Taipei City, Taiwan atc@atclab.com.tw Phone number: 02-87523779 E-Mail: atc@atclab.com.tw Website: http://www.atclab.com.tw/	
Test Report No:	TW2003011-001	
Date:	**2020-may-25**	
UN38.3 Tests Performed and Successfully passed:	**T1.** Altitude simulation	**T5.** External short circuit
	T2. Thermal Test	**T6.** Impact
	T3. Vibration	**T7.** Overcharge
	T4. Shock	**T8.** Forced Discharge
Edition of UN Manual of Tests and Criteria used:	ST/SG/AC.10/11/Rev.6/Amend.1	

38.3.3 (f): n/a
38.3.3 (g): n/a

Ort und Datum der Ausstellung [Place and date of issue]	Homburg, 28.July 2020
Unterzeichnet für und im Namen von: [Signed for and on behalf of:]	RRC power solutions GmbH
Name [Name] Funktion [Function]	Thomas Neumann Regulatory Affairs Manager

PONY
Pony Testing International Group

锂电池或锂电池组 UN38.3 试验概要
Lithium Cell or Battery UN38.3 Test Summary

单位信息 Company information

委托单位 Applicant:		湖南华慧新能源股份有限公司 Hunan Huahui New Energy Co.,Ltd	
生 产 商 Manufacturer	名称 Name	湖南华慧新能源股份有限公司 Hunan Huahui New Energy Co.,Ltd	
	地址 Address	湖南省益阳市金秀路桐子坝巷 7 号 No.7, Tongziba Lane, Jinxiu Road, Yiyang, Hunan	
	电话 Tel.	0769-81601938	
	邮箱 E-mail	cqq@huahuienergy.com	
	网址 Website	www.huahuienergy.com	
测试单位 Test Lab.	名称 Name	谱尼测试集团深圳有限公司 Pony Testing Group Shenzhen Co., Ltd.	
	地址 Address	深圳市宝安区福海街道和平社区骏丰中城智造创新园 A2 栋一层 1/F., Building A2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Road, Bao'an District, Shenzhen, Guangdong, China	
	电话 Tel.	86-755-26050909	
	邮箱 E-mail	cst@ponytest.com	
	网址 Website	www.ponytest.com	

样品信息 Sample information：

样品名称 Sample name	锂离子电池 Lithium ion battery	样品型号 Sample model	HTC1865
原始测试型号 Original tested type	/	产品参数 Sample parameter	2.4V 1300mAh
样品质量 Sample mass	38.2g	额定瓦时 Watt-hour rating	3.12Wh
电池或电池组类型 cell or battery type	锂离子电池芯 Lithium ion cell	物理形状 Physical description：	黄色圆柱形 Yellow Cylindrical
原报告编号 Original test report No.	MDIVQM0U25132721	测试报告日期 Date of test report	2016-09-23

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