

P/N: T911970

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Website

<http://www.flir.com>

Customer support

<http://support.flir.com>

Disclaimer

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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

- 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 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 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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Acoustic specifications	
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, 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
Still images	Yes
Video recording	Yes, up to 5 minutes.
Storage, internal	32 GB / 2000 snapshots (typical) SD card, non-removable
Storage, external	8 GB / 500 snapshots (typical) USB mass storage, provided with device

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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
Battery documents	For documents like MSDS and UN38.3 test reports/summaries, see: https://support.flir.com/resources/msds
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 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
Declaration of conformity	See: https://support.flir.com/resources/DoC
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/



FLIR Si124

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Shipping information	
Packaging, type	Cardboard box
Packaging, contents	• Camera • Battery • Battery cable • Battery charger • Battery pouch • Camera hand strap • Camera pouch • License card: FLIR Si-series Plugin for FLIR Thermal Studio, Perpetual license • 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	7332558026281
UPC-12	845188022143
Country of origin	Finland

Supplies & accessories:

- T911980; Camera pouch
- T911981; Cable from camera to battery
- T911982; Rechargeable battery
- T911984; Battery charger
- T911987; Acoustic camera tester incl. table tripod
- T912115; Option, No radio
- T300642; Integrated battery kit
- T300527; FLIR Si-series Plugin for FLIR Thermal Studio, Perpetual license
- T300243; FLIR Thermal Studio Pro, 1 Year Subscription
- T300083; FLIR Thermal Studio Pro, Perpetual license
- T300341; FLIR Thermal Studio Standard, 1 Year Subscription
- T300258; FLIR Thermal Studio Standard, Perpetual license