

## Product Datasheet - Technical Specifications



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# FLIR Si124-PD™


Industrial Acoustic Imaging Camera for Partial Discharge Detection

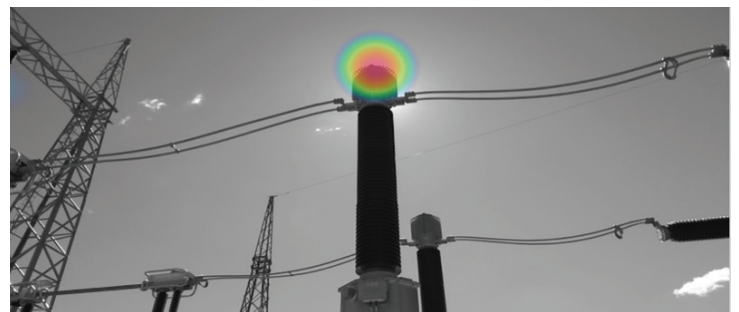


The FLIR Si124-PD is an easy-to-use, stand-alone system for detecting partial discharge problems in high-voltage electrical systems. This lightweight, one-handed solution is designed to help engineering professionals identify issues up to 10 times faster than with traditional methods. With 124 microphones, the Si124-PD produces a precise acoustic image that visually displays ultrasonic information, even in loud environments and at long distances. The acoustic image is overlaid in real time on a digital camera picture, which allows the user to accurately pinpoint the source of the sound. Users can then apply the FLIR Severity Assessment analysis to classify the severity of the issue and provide guidance on recommended actions to resolve the problem. The Si124-PD features a plugin that enables users to import acoustic images to FLIR Thermal Studio suite for offline editing, analysis, and advanced acoustic and thermography report creation. Field analysis and reporting can also be done using the FLIR Acoustic Camera Viewer cloud service. Through a regular maintenance routine, the FLIR Si124-PD can help facilities save money on repairs and increase asset reliability.



Example of Si124 PD severity assessment

Analysis parameters	Severity	Description:
Distance <input type="text" value="25"/> m		This is likely to be a very strong surface or internal discharge. Surface or internal discharges on cables, terminations, and joints will progress over time and might rapidly escalate to insulation breakdown.
Voltage <input type="text" value="69"/> kV		
Location <input type="text" value="- cable joint"/>		
		<b>Recommendation:</b> Immediate action. Visual inspection. Cleaning of polluted surfaces. Repair or replacement of the components.



## FIND PARTIAL DISCHARGE PROBLEMS FASTER

Detect partial discharge and corona up to 10 times faster with ultrasonic imaging vs. traditional methods

- Locate problems precisely, even in loud industrial environments, thanks to high-resolution acoustic images and 124 built-in microphones
- Optimize staff time, as minimal training is required to use the Si124-PD
- View visual and sound images simultaneously
- Operate the lightweight camera with one hand for safety and reduced strain
- Easily review images on the display in bright conditions

## IMPROVE RELIABILITY

Minimize equipment failures and downtime that result from partial discharge issues

- Analyze partial discharge pattern and classify problems to improve reliability of electrical systems
- Classify partial discharge type including negative corona, positive and negative corona, floating discharge, and surface or internal discharge
- Evaluate frequency to determine the type and severity of discharge, allowing maintenance to be scheduled

## INSPECT EASILY

Locate, analyze, and classify discharge easily with this convenient, smart tool

- Safely detect problems from distances up to 130 m (430 ft)
- Upload, store, and back up data; create reports; and conduct deep analysis using FLIR Acoustic Camera Viewer cloud or FLIR Thermal Studio desktop software
- View images in the cloud immediately after capture thanks to automatic upload feature
- Determine the level of threat from partial discharge with Severity Assessment software analytics

## SPECIFICATIONS

FLIR Si124-PD	
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
Distance	From 0.3 m (1 ft) up to 130 m (430 ft)
Discharge detection	Automatic detection 50 / 60 Hz
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 or FLIR Thermal Studio
Severity assessment	Automatic AI-based severity assessment including recommended actions in FLIR Acoustic Camera Viewer or FLIR Thermal Studio.

User interface	
Display	Size: 5 in, 800 × 480 pixels Color: 24 bit RGB Brightness: 1000 cd/m <sup>2</sup> (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
Analysis and reporting	
Online	FLIR Acoustic Camera Viewer (cloud service)
Offline	FLIR Thermal Studio (desktop software)

Included in the box



Communication and data storage	
Data transfer	<ul style="list-style-type: none"> <li>Wi-Fi 2.4 GHz and 5 GHz IEEE 802.11.b/g/n/ac wireless LAN</li> <li>USB memory stick</li> </ul>
Camera software update	<ul style="list-style-type: none"> <li>Automatic over Wi-Fi</li> <li>USB via computer</li> </ul>
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

Power supply	
Camera power input	Nominal input voltage 12 V Max input: 15 V, 2.5 A
Replaceable battery	Li-ion rechargeable battery pack (RRC 2040): 10.8 V, 3.35 Ah, 36.2 Wh Usage: more than 2 h (depends on ambient conditions) Charge time: 4 to 6 h Max output: 12.6 V, 4 A
Battery charger	Input: 19 to 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°C to 50°C (14°F to 122°F)
Storage temperature range	-20°C to 70°C (-4°F to 158°F)

Physical data	
Camera size	315 mm × 169 mm × 160 mm (12.4 in × 6.6 in × 6.3 in)
Camera weight	1.08 kg (2.38 lb)
Battery size	85 mm × 59 mm × 22 mm (3.34 in × 2.31 in × 0.86 in)
Battery weight	0.17 kg (0.37 lb)
Total weight (camera and battery)	1.25 kg (2.76 lb)

Specifications are subject to change without notice.

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