

# 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 maintenance, manufacturing, and engineering professionals identify issues up to 10 times faster than with traditional methods. Built with 124 microphones, the Si124-PD produces a precise acoustic image that visually displays ultrasonic information, even in loud industrial environments. 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 Advanced 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 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 utility repairs.

### 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 and easily review images on-screen, even in bright, outdoor 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 analytics
- View images in the cloud immediately after capture thanks to automatic upload feature
- Determine the level of threat from partial discharge with Advanced Severity Assessment software analytics

### CREATE ADVANCED REPORTS

Edit and analyze images and create extensive reports with FLIR Thermal Studio suite

- Customize templates and combine acoustic and thermal images in the same report
- Preview, open, and post-process images and make adjustments in reports; continue to work where you left off the day before
- Includes predefined report templates
- Features Rapid Report generator

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 35 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<br><br>Color: 24 bit RGB<br><br>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                                                                                                                                                                                                                                        |
| Analysis and reporting    |                                                                                                                                                                                                                                                        |
| Online                    | FLIR Acoustic Camera Viewer (cloud service)                                                                                                                                                                                                            |
| Offline                   | FLIR Thermal Studio (desktop software)                                                                                                                                                                                                                 |

| 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<br>Max input: 15 V, 2.5 A                                                                                       |
| External battery                              | LiFePO 12 V, 7 Ah, 84 Wh<br>Usage: Up to 7 hours (depends on ambient conditions)<br>Charge time: 4 to 6 hours<br>Max output: 13.8 V, 4.0 A |
| Battery charger                               | Input: 100 to 240 V AC, 50/60 Hz, 1.3 A<br>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°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                                   | 273 mm × 170 mm × 125 mm (10.7 in × 6.7 in × 4.9 in)                                                                                       |
| Camera weight                                 | Camera: 980 g (2.2 lb)                                                                                                                     |
| Battery size                                  | 90 mm × 145 mm × 65 mm (3.5 in × 5.7 in × 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)                                                                                                 |

For a complete list of specifications, go to [www.flir.com/Si124-PD](http://www.flir.com/Si124-PD)

Included in the box



This product is subject to United States export regulations and may require US authorization prior to export, reexport, or transfer to non-US persons or parties. Diversion contrary to US law is prohibited. For assistance with confirming the Jurisdiction & Classification of Teledyne FLIR, LLC products, please contact [exportquestions@flir.com](mailto:exportquestions@flir.com). ©2022 Teledyne FLIR, LLC. All rights reserved.  
  
 Revised on 02/13/22  
 Si124-PD\_Datasheet-LTR