



Flir Si2a-Pro

Industrial Fixed Acoustic Imaging Camera for Leak and Partial Discharge Detection

Key Features:

- 24/7 monitoring of both partial discharge and pressurized gas leaks for early fault detection, improved safety, and reduced downtime.
- Accurately detects, locates, and assesses PD activity while also identifying and quantifying compressed air and gas leaks and associated cost impact.
- Rugged IP66 design with flexible mounting for reliable operation in harsh industrial and utility environments.
- Real-time AI-driven analysis with minimal manual input, seamless enterprise integration, and Flir Assetlink compatibility for centralized monitoring and asset management.

Main Applications:

- Continuous monitoring of transmission, distribution, and substation assets to detect insulation faults and prevent outages.
- Detection of compressed air and industrial gas leaks across pipelines, valves, and connections to reduce energy loss and emissions.
- Condition monitoring of switchgear and gas-insulated equipment to identify both electrical and gas-related issues early.
- Plant-wide reliability improvement by combining electrical and leak detection in a single monitoring solution.

Specifications

Acoustic Specifications	
Acoustic measurements	124 low-noise MEMS microphones, real-time sound visualization
Detection threshold	20 kHz: -19.5 dB 35 kHz: -11.2 dB 50 kHz: -9.8 dB 80 kHz: 12.2 dB 100 kHz: 22.8 dB
Bandwidth	2–130 kHz
Directional resolution	From 1° up to 0.125°
Operating distance	From 0.3 m (1.0 ft) up to 200 m (656 ft)
Leak localization and detection	Automatic leak recognition including estimated leak size and annual cost
Leak rate detection threshold	0.0032 l/min from 2.5 m, 0.0044 l/min from 6 m
Gases detected	Detects all gases provided they are under sufficient pressure. Quantifies leak rate costs for compressed air, ammonia, argon, carbon dioxide, helium, hydrogen, methane, natural gas, and nitrogen.
PD type recognition	Surface or Internal Discharge, Positive and Negative Corona, Negative Corona, Floating Discharge
PRPD pattern recognition	Automatic
Severity assessment	Automatic AI-based severity assessment including recommended actions

Imaging and Optical	
Digital camera	12 MP Color
Camera field of view	75° diagonal
Video frame rate	Streaming: 15 fps Snapshots: 30 fps
Video image resolution	960 × 540 streaming
Aspect ratio	16:9
Communication and Connectivity	
Network interfaces	M12 x-code 8-pin Ethernet, PoE IEEE 802.3at
Wireless connectivity	Wi-Fi 2.4 GHz / 5 GHz, IEEE 802.11 b/g/n/ac
Supported protocols	TCP/IP, RTSP MQTT, SMTP, FTP
Data transfer	Video streaming bandwidth: 7.5 Mbps (typical)
Firmware updates	Via configurator tool web interface
Digital I/O	2-pin output / 2-pin input
Current loop output	4–20 mA, 8 discrete levels (2 mA resolution)
System Integration and Event Handling	
API	HTTP, REST (documentation in the acoustic configurator tool)
Event Triggering	Leak detection and minimum leak size / Leak detection and cost estimation / dB SPL Threshold

Specifications subject to change. For the most up-to-date specifications, please visit flir.com.

For technical or sales support, please visit:

flir.custhelp.com

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Flir Si2a-Pro Datasheet (en-US LTR) 26-0183-INS



Specifications, continued

Data Formats	
Export file	.nlz (compatible with Flir Thermal Studio)
Data messages	.json
Analysis and Reporting	
Offline	Flir Thermal Studio (desktop software)
Web Interface	Acoustic configurator tool
Power	
Primary power source	PoE+ Type 2 (30 W)
Power consumption	18 W typical, 25.5 W maximum
DC voltage range	42.5–57 V DC
Environmental Data	
Operating temperature range	–20°C to 50°C (–4°F to 122°F)
Storage temperature range	–20°C to 50°C (–4°F to 122°F)
Relative humidity	0–90% recommended
EMC	FCC CFR 47 Part 15 Subpart B Class B, FCC CFR47 Part 15 Subpart C/E, FCC Rule §15.207, §15.247(d), §15.407(b) EN 55032, EN 55035, EN 301 489-1/-17, EN 300 328, EN 301 893
Ingress protection	IP66

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Shipping Information	
Packaging, type	Cardboard box
Packaging, contents	Camera Wi-Fi Antenna (Included with models that support Wi-Fi) Printed documentation including the username and password for log in to the web interface of the camera License card: Flir Si-series Plugin for Flir Thermal Studio, Perpetual license
Packaging, weight	1.8 kg (4 lb)
Packaging, size	362 × 230 × 109 mm (14.2 × 9.1 × 4.3 in)
EAN-13	Si2a-Pro: 7332558037522 Si2a-Pro No Wi-Fi: 7332558037539
UPC-12	Si2a-Pro: 845188035556 Si2a-Pro No Wi-Fi: 845188035563
Part number	Si2a-Pro: T912770 Si2a-Pro No Wi-Fi: T912798

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