



Hazardous Location Acoustic Imaging Camera
for Partial Discharge, Leak, and Bearing Fault Detection



Key Features:

- Detects, locates, and measures compressed gas leaks and mechanical issues in explosive atmospheres quickly and easily
- Offers mechanical issue condition assessment with three measurement metrics for early identification of bearing problems to prevent costly downtime
- Quantifies leak rate and cost of industrial gas and compressed air leaks, to prioritize repair and calculate savings
- Includes on-camera and in-software severity assessment and type classification of partial discharge (PD) issues
- Features automatic frequency tuning, 8x zoom, 12 MP digital camera, and a QR code reader
- Offers fleet management functionality for efficient tool usage and maintenance across large-scale operations

Main Applications:

- Early leak detection for enhancing safety and for “pre-turnaround” tightness inspections, with minimal training
- Quickly inspect Zone 2 rated hazardous locations for partial discharge issues, mechanical faults or potential leaks
- Detect faulty bearings quickly to help plan repairs and avoid downtime

SPECIFICATIONS

FLIR Si2x-Pro	
Acoustic measurement	124 low-noise MEMS microphones, real-time sound visualization
Detection threshold	20 kHz: -8 dB SPL 35 kHz: 4 dB SPL 50 kHz: 13 dB SPL 80 kHz: 42 dB SPL 100 kHz: 58 dB SPL
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)
PD Severity assessment	Automatic AI-based severity assessment including recommended actions on-board camera
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
Supported gases	Compressed air, hydrogen, carbon dioxide, methane, natural gas, helium, argon, ammonia, nitrogen
Other acoustic analysis modes	Mechanical fault detection, condition assessment, and fault measurement
Analysis and Reporting	
On-line	FLIR Acoustic Camera Viewer (cloud service)* acousticviewer.flir.com
Off-line	FLIR Thermal Studio (desktop software)*
Imaging & Optical	
Digital camera	12 MP color

Camera field of view	75° diagonal
Video frame rate	Camera: 60 fps / Acoustic image: 30 fps / Screen: 70 fps
Zoom	8x Digital zoom
Video image resolution	1280 × 720
User Interface	
Display	Size: 5 in. 1280 × 720 Resistive touch screen, TFT LCD, MIPI DSI
Integrated flashlight	LEDs, two modes: ON / OFF
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 The Air (OTA) wireless update or via USB connection
Still image format	.nlz and .jpg
Video recording and format	Up to 5 minutes (.nlz format)
Storage, internal	128 GB (SD card)
Storage, external	USB 8 GB, Cloud storage capacity is unlimited
Image annotations	Image tags, comments, QR Code data
Battery	Li-Ion rechargeable battery pack Usage: Up to 2.5 h Charge time: approx. 2 h
Battery charger	Input: 19-26 V DC, 2.8 A Max output: 17.4 V DC, 4.8 A

*See reverse for comparison



FLIR Si2x-Pro™

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SPECIFICATIONS, CONT.

Environmental Data	
Operating temperature range	-10°C to 50°C (14°F to 122°F)
Ingress protection	IP54
Physical Data	
Camera size	184 × 276 × 167 mm (7.2 × 10.8 × 6.5 in)
Camera weight	~1.2 kg
Battery weight	~0.25 kg
Total weight (camera + battery)	~1.45 kg
Warranty and Service	
Warranty	support.flir.com/Si2
Shipping Information	
Packaging, weight	6 kg (13 lb)
Packaging, size	490 mm × 365 mm × 190 mm (19.3 in × 14.4 in × 7.5 in)
Hazardous Location Ratings	
3rd Party Certification for Zone 2 Gas & Dust. Certifications available at support.flir.com/Si2	

ANALYSIS SOFTWARE COMPARISON

Feature	FLIR Acoustic Viewer	FLIR Thermal Studio Plug-in
Highlight	Enables enterprise customer scaling	Enables custom reporting for thermal and acoustic imaging
Workspace	On-line	Off-line
Snapshot editing and annotation	Yes	Yes
Video playback	Yes	Yes
IR imaging support	No	Yes
Organizational module	Yes	No
API for integration	Yes	No
Export (.xls) summary of snapshots	Yes	No
Storage location	FLIR Acoustic Cloud	Local
Cost	Free	Free and paid options
Optimal user	<ul style="list-style-type: none">• Owns multiple cameras• Requires tool fleet management, data sharing and organization• Requires unlimited data storage	<ul style="list-style-type: none">• Requires thermal and acoustic images in the same reporting software• Requires highly customized reports• Requires off-line analysis and reporting