Technical data

Fluke ii1030/ii1050 Acoustic Imagers





- Locate compressed air, gas, and vacuum leaks in minutes instead of hours.
- Reduce energy waste by quantifying leak severity and estimated cost impact.
- Detect partial discharge before insulation failures and arc flash incidents occur (ii1050 only).
- Detect mechanical issues such as bearing defects, friction, and turbulence early (ii1050 only).
- Verify air-tightness and sealing performance during manufacturing and maintenance activities.
- Inspect energized electrical equipment safely from distances up to 150 m (492 ft).
- Generate reports directly from the instrument to accelerate corrective action.

Find leaks, detect partial discharge and mechanical issues, and verify air tightness faster.

The Fluke ii1030 and ii1050 Acoustic Imagers help maintenance teams quickly locate compressed air leaks, vacuum leaks, gas leaks, partial discharge, mechanical faults, and air-tightness defects before they become costly failures. Using advanced acoustic imaging technology, these instruments convert ultrasonic sound into a visual image, allowing technicians to see problems from a safe distance, even in noisy industrial environments.

With 202 digital MEMS microphones, SoundSight™ acoustic imaging technology, and intelligent analysis modes, the ii1030 and ii1050 help reduce inspection time, improve maintenance efficiency, and support safer, more reliable operations.

Key features

1. SoundSight™ Acoustic Imaging Technology

See sound. SoundSight™ technology overlays ultrasonic sound sources directly onto a visible-light image, allowing technicians to pinpoint leak locations and electrical discharge activity in real time.

2. LeakQ™ Leak Quantification

Move beyond simply finding leaks. LeakQ™ Mode estimates leak rate and associated energy loss, helping maintenance teams prioritize repairs and document savings from compressed air leak programs. With the Fluke Online LeakQ™ Reporting Tool, teams can also estimate the CO2 emissions associated with identified compressed air leaks.

3. MecQ™ Mechanical Inspection (ii1050 only)

Identify mechanical issues such as bearing defects, friction, and turbulence before they can be felt or heard. MecQ™ Mode supports earlier intervention, improved asset health, and reduced risk of unplanned downtime.

4. Beacon Mode

Streamline air-tightness inspections across wide areas or complex environments. Use Beacon Mode with **the Fluke SB140 SoundBeacon™ ultrasonic transmitter** to highlight acoustic hotspots and quickly guide users to sealing defects.

5. PDQ Mode™ Partial Discharge Analysis (ii1050 only)

Detect and evaluate partial discharge activity in electrical assets. PDQ Mode™ identifies discharge sources, estimates discharge probability, and displays a real-time PRPD (Phase Resolved Partial Discharge) pattern to support faster diagnosis and decision-making.

6. Large High-Resolution Display

A 7-inch anti-glare touchscreen, combined with a 13 MP visible-light camera and 3x digital zoom, provides clear visualization of problem areas. The sunlight-readable display reduces reflections in bright indoor and outdoor environments while preserving SoundMap™ overlay detail, helping users document findings and communicate issues more effectively.





Compressed air and gas leak detection

Compressed air leaks are among the most common sources of wasted energy in industrial facilities. Even small leaks can increase compressor runtime, reduce system efficiency, and drive up operating costs.

1. Find leaks faster

The array of 202 digital MEMS microphones captures ultrasonic leak signatures and converts them into a visual acoustic image. Technicians can quickly identify leak locations without physically accessing every component or applying leak-detection sprays.

Applications

The ii1030 and ii1050 help maintenance teams rapidly scan production areas and identify leaks in:

- Compressed air systems
- Pneumatic equipment
- Vacuum systems
- Process gas systems
- Valves, fittings, regulators, and connections

2. **Quantify energy losses**

   LeakQ™ Mode estimates leak flow and energy costs, enabling maintenance teams to prioritize repairs based on financial impact and demonstrate energy savings initiatives.

3. **Inspect safely**

   Locate hazardous or difficult-to-access leaks from a safe distance, minimizing exposure to elevated equipment, confined spaces, or potentially dangerous process environments.





Air-tightness testing and quality verification

Small leaks can compromise product quality, safety, and performance. The ii1030 and ii1050 provide a fast, non-contact method for verifying sealing integrity during manufacturing, testing, and maintenance activities. For enclosed products and assemblies, the optional Fluke SB140 SoundBeacon™ ultrasonic transmitter creates a controlled acoustic source that helps reveal sealing defects with Beacon Mode.

1. **Detect small leaks with confidence**

   High acoustic sensitivity enables identification of leaks associated with low-pressure, low-density, or very small openings that may be difficult to detect using conventional methods.

2. **Support quality and reliability programs**

   Verify product sealing performance during development, production, and final inspection to reduce warranty claims and improve product reliability.

3. **Validate equipment integrity**

   Confirm the condition of pressure vessels, reactors, piping systems, and other critical assets before commissioning, startup, or return-to-service activities.

Applications

- Automotive components and assemblies
- Engines and fuel systems
- HVAC equipment
- Wind turbine components
- Pressure vessels
- Chemical processing equipment
- Piping systems and process equipment

Mechanical inspection (ii1050 only)

Mechanical faults can create high-frequency acoustic signatures before they become obvious through vibration, heat, or audible noise. MecQ™ Mode helps technicians identify early indicators of bearing defects, friction, and turbulence so maintenance teams can investigate developing issues sooner.

Applications

- Bearings and rotating equipment
- Motors, pumps, and fans
- Compressed-air-driven equipment
- Production machinery and mechanical systems

Partial discharge detection (ii1050 only)

Partial discharge is often one of the earliest indicators of insulation degradation in high-voltage equipment. Detecting discharge activity early can help prevent unplanned outages, equipment damage, and safety incidents.

Acoustic imaging technology allows technicians to scan energized equipment and immediately visualize discharge activity, reducing inspection time compared with traditional methods.

1. Intelligent discharge analysis

PDQ Mode™ uses advanced algorithms and machine-learning-assisted analysis to classify discharge activity and provide probability assessments, helping users focus on the most critical issues.

2. Real-time PRPD visualization

View PRPD patterns directly on the instrument to support more informed maintenance decisions and improve diagnostic confidence.

3. Inspect from a safe distance

With detection capability up to 150 m (492 ft)[1], technicians can evaluate energized assets while maintaining appropriate safety clearances.

4. Detect issues earlier

Operating across a 2–100 kHz frequency range, the ii1050 can identify early-stage insulation defects before they develop into failures, flashovers, or costly outages.

Applications

The ii1050 enables rapid inspection of:

- Switchgear
- Transformers
- Insulators
- Substations
- Power distribution equipment
- Overhead transmission and distribution lines
- Identify discharge sources quickly



[1] Depending on ambient conditions
[2] ii1050

Thermal imaging support

Add the Fluke TC03A iSee™ Thermal Camera Attachment to combine thermal, acoustic, and visible-light imaging in one inspection workflow. Thermal imaging can help verify acoustic findings, identify overheating components and electrical hotspots, and capture richer evidence in a single pass. The TC03A is offered as an optional accessory for both the ii1030 and ii1050. It is also available as part of a discounted bundle package with the ii1050.


Fluke TC03A iSee™ Thermal Camera Attachment

Four simple steps to faster inspections

1. **Scan**

   Quickly survey large areas and identify abnormal sound sources that are outside the range of human hearing.

2. **Capture**

   Save acoustic images and add notes, tags, and annotations directly on the instrument to document findings.

3. **Report**

   Generate reports on the instrument and share inspection results with maintenance teams for rapid action.

4. **Repair**

   Schedule repairs during planned maintenance windows and verify corrective actions through follow-up inspections.

Application	ii1030	ii1050
Compressed air and gas leak detection	✓	✓
LeakQ™ Leak Quantification	✓	✓
Air-tightness testing	✓	✓
Beacon Mode	✓	✓
Partial discharge detection		✓
PDQ Mode™ Analysis		✓
MecQ™ Mechanical Inspection		✓



Specifications





Key features		ii1030	ii1050
Sensors	MEM (microphones)	202	202
	Frequency band	2 kHz to 64 kHz	2 kHz to 100 kHz
	Detection range[3]	0.5 to > 100 meters (1.6 to > 393 feet)	0.5 to > 150 meters (1.6 to > 492 feet)
	Field of view (FOV) (typical)	64° × 48°	
	Nominal frame rate	25 FPS	
Built-in digital camera (visible light)	Field of view (FOV) (typical)	64° × 48°	
	Focus	50 cm to infinity (20 inch)	
	Zoom	3X digital zoom	
	Resolution	13 MP	
Display	Size	7” anti-glare LCD with backlight, sunlight readable	
	Resolution	1280 × 800 (1,024,000 pixels)	
	Touchscreen	Capacitive	
	Acoustic image	SoundMap™ acoustic imaging overlay	
Image storage	Storage capacity	128 GB	
	Image format	Blended visual and SoundMap™ .JPG	
	Video format	Blended visual and SoundMap™ .MP4	
	Video length	Up to 5 minutes	
	Digital export	USB-C for data transfer	
Acoustic	Measurement range (typical)	20 kHz: -10.4 ~ 122 dB SPL 25 kHz: -24.7 ~ 122 dB SPL 31.5 kHz: -13 ~ 122 dB SPL 40 kHz: -10.7 ~ 122 dB SPL 50 kHz: 8 ~ 122 dB SPL	
	Auto max/min dB gain	Auto or user selectable max dB	
	Frequency band selection	User selectable through user-made presets or manual entry	
Capture mode	Photo	Yes	Yes
	Video	Yes	Yes
	LeakQ™	Leak size scale, rate and cost estimation	Leak size scale, rate and cost estimation
	PDQ Mode™	–	Yes
	MecQ™	–	Yes
	Beacon	Yes, works with Fluke SB140 SoundBeacon™ for airtightness detection	
	Thermal	Yes, works with TC03A	
Battery	Battery	Rechargeable and field replaceable Li-ion battery	
	Battery life	> 7 hours (2 × 3.5hrs)	
	Battery charging time	< 3 hours	
	Battery charging system	Internal (USB-C)	

[3] Depending on ambient conditions





Key features			ii1030	ii1050
Software	Ease of use		Intuitive user interface	
	Acoustics	Show dB scale	On/Off	
		Min/Max dB	Max dB/Auto	
		Profiles	Preset capture profiles	
		High frequency	–	Yes
		Multiple sources	Multi source	
	Palette: Colors		3: Grayscale, Ironbow, and Blue-Red	
	Palette: Overly transparency		Yes: 1–100 %	
	Grayscale mode		Yes	
	Trend graphs		Frequency and dB scale	
	Leak values		Leak costs, Leak volume, LeakQ TM scale (1–10)	
	Annotation		Asset name; Asset ID; Asset type; Leak type; Gas type; Pressure	
	Photo notes		Up to 4 photo notes for reference	
	Asset inspection status		'As left', 'As found', 'Undetermined'	
	Asset ID		Text input and automatic QR code based asset ID identification	
	Actions annotation		Action requirement, priortity and notes	
	On-device reporting		Support (PDQ, LeakQ, PDQ+Ti, LeakQ+Ti, Ti mode)	
	Other		Operating conditions, Weather notes	
General specification	Tripod holder/connector		Yes: 1/4"-20	
	USB		2 × USB-C	
	Wireless		Wi-Fi	
	Operating temperature		-10 to 45 °C	
	Storage temperature		-20 to 70 °C	
	Operating altitude		Up to 2000 m	
	Storage altitude		Up to 12000 m	
	Relative humidity		10 to 95 % RH, non-condensing	
	Size (H × W × L)		235 × 154 × 46 mm	
	Weight (battery included)		1,2 kg (2.6 pounds)	
	Ingress protection (IP)		IP54	
	Warranty		2-year	
	Fluke Premium Care		Premium Care Standard[4]	
	Self-diagnostic notification		Array-health test to identify when microphone array needs attention	
	Supported languages		Arabic, Dutch, English, Finnish, French, German, Italian, Japanese, Korean, Polish, Portuguese, Simplified Chinese, Spanish, Swedish, Traditional Chinese	

[4] Subject to regional availability (www.fluke.com/premiumcare)





Key features		ii1030	ii1050
Safety and environmental	RoHS compliant	Yes	
	General safety	IEC 61010-1: Pollution degree 2	
	Electromagnetic Compatibility (EMC) International	IEC 61326-1: Industry Electromagnetic Environment, CISPR 11: Group 1, Class A	
	Korea (KCC)	Class A Equipment (Industrial Broadcasting and Communication)	
	USA (FCC)	47 CFR 15 subpart	
	Radio Equipment Directive (2014/53/EU) (RED)	Yes	

Included accessories:

1. 2 durable lithium-ion smart battery packs as standard
2. Adjustable wrist and neck straps
3. Yellow hard case
4. USB-C cable
5. 65W USB-C charger with connector suitable for use in specific countries



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Additional accessories:

6. Pistol/tripod
7. SB140 sound beacon



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Ordering information:











FLK-II1030	FLK-II1050	FLK-II1050/T9HZ	FLK-II1050/T50HZ	FLK-II1050/9H/SB140
6167979	6168006	6167998	6167980	6181332