



Advanced Test Equipment Corp.  
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**FOTRIC**

CONNECTING THE DIGITAL FUTURE



## Open up the world of **ULTRASONIC VISION**

Rapid detection of leaks in pressurized gas pipelines, containers, valves, etc.; Detects defects such as partial discharges and mechanical vibrations in electrical equipment.

**FOTRIC TD3 series**

Handheld Acoustic Imaging Cameras





The FOTRIC TD3 series are a simple and practical acoustic imagers, primarily utilized for detecting gas leaks under pressure in factories, partial discharges from electrical equipment, and mechanical vibrations from industrial equipment among other anomalies.

This product is lightweight, and its handheld design adheres to ergonomic standards, making operation straightforward and user-friendly, requiring no training! It's an invaluable tool for engineers to swiftly pinpoint gas leak sources.

The FOTRIC TD3 cameras are equipped with 96 built-in MEMS digital microphones, capable of visually displaying ultrasonic information with precision, even within noisy industrial environments, generating accurate acoustic images. The acoustic image overlays in real time onto a visible digital image, enabling users to accurately identify the source of defects. This ensures a consistent supply of pressurized gas, reduces unnecessary gas loss, enhances product quality and operational efficiency, all while ensuring safety in production.



**Increase Efficiency**

**Lower Energy Consumption**

**Easy to Use**

**Improve Safety**

**96**

MEMS Digital  
Microphone Channel

**192KHz**

Sampling rate

**2kHz-96kHz**

Maximum bandwidth range

**5 Inches**

Touchscreen display

**All-in-one  
Portable**

All-in-one design for  
easy portability

**Display  
Mode**

Mono, Multi,  
Holographic modes

**Robust  
Sustainability**

Powered by 3 replaceable  
batteries

**Remote  
Detection**

Detection distance  
0.3m-130m

## Gas Leak Detection

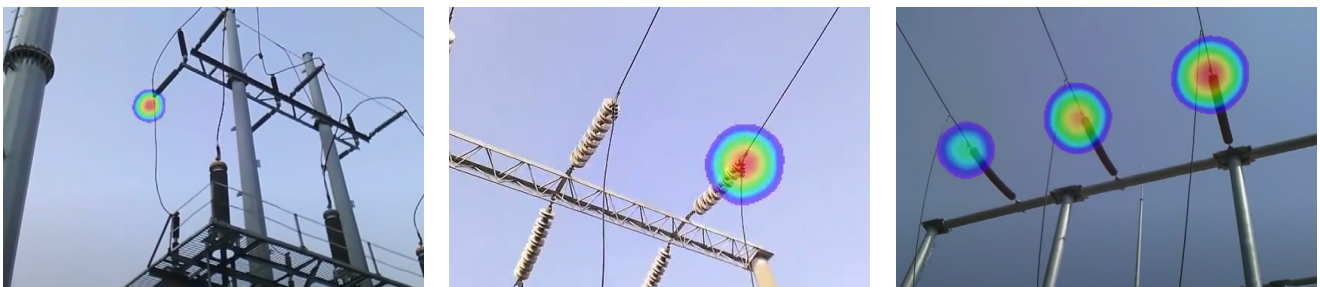
Gas leaks represent a common challenge faced by various factories, including leaks of compressed gas, flammable gas, toxic gas, corrosive gas, and inert gas among others. Leaks of compressed gas can lead to substantial energy waste and may even cause equipment downtime, increasing factory production costs and risks. Leaks of flammable or toxic gases can create safety hazards, potentially leading to fires and posing threats to personal health, while also causing negative environmental impacts.

FOTRIC's acoustic imagers can assist users in efficiently, intuitively, and accurately locating leak sources, quickly estimate the financial loss due to the loss, alerting users to take timely measures to prevent further losses.



## Electrical Partial Discharge Detection

FOTRIC's acoustic imagers identify and locate discharge sources by detecting sound wave signals produced by partial discharges from high-voltage equipment, power cables, insulators, and other devices. This assists maintenance personnel in promptly discovering and handling potential electrical faults, thereby ensuring the consistent and safe operation of power equipment.



# Simulation Experiment

To see the product in action

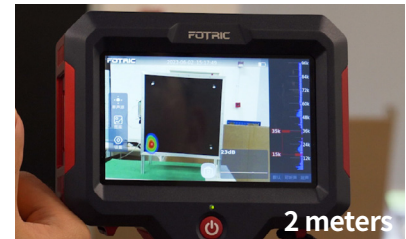
## Gas Leakage Simulation Experiment

Detection conditions:

- Leakage aperture: 0.1mm
- Leakage flow: 175ml/min
- Testing distance: 1m, 2m, 4m, 6m
- Test environment:

25°C ambient temperature at a product packaging area

The experiment verified the detection effectiveness of the FOTRIC acoustic camera at different distances by simulating a small aperture gas leak in a bustle environment.



**FOTRIC acoustic cameras prove to be capable of quickly locating small gas leaks, helping users to minimize wasted energy and save production costs.**

## Acoustic Frequency Verification

In order to verify the detectability of FOTRIC acoustic cameras under different acoustic frequencies, we have done a series of verification and comparison experiments with the help of a professional acoustic laboratory.

Note: The acoustic generator used in this experiment supports a maximum frequency of 50kHz.



**FOTRIC stands out from other products in its class. At the same frequency FOTRIC can detect sound waves generated by smaller voltages, indicating its superior performance.**

## Specifications

FOTRIC TD3-LD	
<b>Acoustic parameters</b>	
Microphone channels	96 MEMS digital microphones
Acoustic image field of view	45°
Positioning frequency range	2kHz ~ 96kHz
Sound pressure sensitivity	>0.03 L/min (0.3 MPa, 3m), >0.05 L/min (0.3 MPa, 10 m)
Measured sound pressure range	6 dB SPL to 120 dB SPL $\pm$ 1 dB SPL 5 kHz, -10 dB SPL to 120 dB SPL $\pm$ 2 dB SPL 20 kHz, -5 dB SPL to 120 dB SPL $\pm$ 1 dB SPL 35 kHz, 5 dB SPL to 120 dB SPL $\pm$ 3 dB SPL 50 kHz, 20 dB SPL to 120 dB SPL $\pm$ 1 dB SPL 65 kHz, 25 dB SPL to 120 dB SPL $\pm$ 1 dB SPL 80 kHz
Operating Modes	Single, Multi, Hologram
Auto enhancement	Highlight source intensity and location
Threshold adjustment	Filtering background noise
Frequency range selection	Touch screen selection
Sound Pressure Display	Show maximum sound pressure on screen
Sound Sampling Rate	192kHz
Acoustic Refresh Rate	25FPS
Working distance	0.3m ~ 130m
Detection Mode	Leakage Mode + Partial Discharge Mode (PRPD graph is available in partial discharge mode)
<b>Analysis and Reporting</b>	
Analysis Software	SonicLab
<b>Image Display</b>	
Display	size 5", 800*480, LCD capacitive touch screen
Display Brightness	500nits
<b>Capture Functions</b>	
Visible light camera	5 megapixels
<b>Data Storage</b>	
Storage Capacity	32GB
Image Format	JPG
Video Format	MP4
Video Duration	7 minutes
<b>Data Connection</b>	
WiFi connection	Support
USB port	Support
<b>Accessibility</b>	
Software and firmware upgrades	Support free upgrade
Headphones	3.5mm 3-part headphone jack (monitor audible sound only supported)

## Specifications

Power System	
Battery type	7.4V, 3500mAh lithium battery, field replaceable, rechargeable
Battery operating time	single battery continuous operating time $\geq$ 2.5 hours (actual use time depends on the environment and use at the time)
Charging method	Charging dock
Charging time	2.5 hours to 90% of the battery power
Reliability and Certification	
Safety Standard	SELV (Safety Extra Low Voltage Circuit) (GB 4943.1-2011/IEC60950-1:2005)
Electromagnetic compatibility	GB/T17626.2/IEC 61000-4-2
Explosion-proof grade	None
Protection class	IP51
Physical parameters	
Operating temperature	-20° C to 50° C
Storage temperature	-40° C to 70° C without battery
Operating Humidity	<95%RH
Dimension	276*150*59mm(H*W*L)
Weight	1.2kg
Housing material	Hard rubber: PC+ABS, Soft rubber: TPE, Aluminum alloy
Warranty	2 years
Language	English, Chinese
Standard Configurations	Main unit, charging dock, power adapter, Li-ion battery*3, portable hard case, wrist strap, user manual, packing list, USB flash drive, TypeC-USB adapter cable

# Innovation Excellence Integrity

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