

TVPA-400

Handheld Acoustic Camera



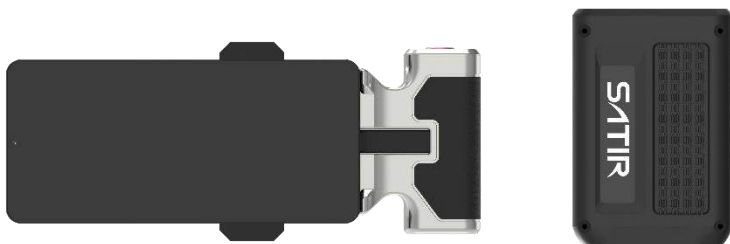
The TVPA 400 Acoustic Camera is a compact, lightweight multi-function inspection tool designed for effortless portability and long on-site operation. It combines infrared thermal imaging, transient ground voltage detection, ultrasonic partial discharge detection, and acoustic imaging in one device, eliminating the need to carry multiple instruments. Technicians can switch between detection modes instantly, enabling fast, multi-dimensional analysis of thermal defects, airborne ultrasonic anomalies, and open-point discharges.



Despite its small form factor, the TVPA 400 delivers high-definition imaging with stable accuracy—maintaining temperature measurement within $\pm 2^{\circ}\text{C}$ or $\pm 2\%$ even under fluctuating ambient conditions. Built for substations, distribution networks, and high-voltage O&M work, it provides true “one-machine full-field inspection” performance while remaining easy to carry, easy to operate, and ideal for long-duration field use.

Key Features

- Microphone array: 136
- Multi-functional
- Multidimensional detection
- Lightweight and portable
- Unified Analysis and Management Platform



TVPA-400 Specifications

Model	TVPA-400
Infrared Performance	
Sensor Type	Vanadium oxide uncooled detector
Resolution	384x288
Pixel Size	12 μm
Spectral Range	7.5~14 μm
NETD	$\leq 40\text{mK}$
Focal Length	10.5mm
FOV	25.2° x 18.9°
Spatial Resolution	1.14 mrad
Focus	Manual
Frame Rate	50Hz
Palette	Multiple palettes including iron red, white hot, and black hot
Image Enhancement	Yes
Analysis Tool	5 Spots, 5 lines, 5 area boxes
Temperature Range	-20°C to 550°C
Measurement Range	$\pm 2^\circ\text{C}$ or $\pm 2\%$ of the reading (whichever is greater)
Acoustic Performance	
Microphone	136-pin digital silicon microphone array
Sensitivity	-26dBFS@1kHz
Frequency Bandwidth	2kHz~100kHz
Acoustic Sampling Rate	200 KHz
Model	TVPA-400
Positioning Distance	0.3-130m (related to sound source signal strength)
Positioning Error	<0.05m@1m, 40kHz
Lateral Resolution	<0.20m@1m, 40kHz

Minimum Imaging Sound Pressure Level	<20dB SPL, frequency-dependent
Visible Light Resolution	5 megapixels
Visible Light Field of View	60.3°×47.1°
Non-contact Ultrasonic Partial Discharge Performance:	
Resonant Frequency	40±1kHz
Detection Dynamic Range	-8~68dBμV
Sensor Sensitivity	-65dB (0dB=1volt/ubar RMS SPL)
Detection linearity error:	≤10%
Repeatability Error	≤1%
Resolution	0.1dB
Detection spectrum	Supports 3D real-time PRPS spectrum, PRPD spectrum, continuous spectrum, flight spectrum, and pulse waveform spectrum
Transient Ground Wave PD Performance	
Detection frequency band	3 ~ 100MHz, bandwidth ≥10MHz
Detection dynamic range	0~60dBmV
Detection linearity error	≤10%
Pulse counting error	≤5%
Stability error	≤5%
Resolution	0.1dB
Detection spectrum	Supports 3D real-time PRPS spectrum, PRPD spectrum, and continuous spectrum
Model	TVPA-400
Other Specifications	
Operating Temperature	-20°C~55°C

Operating Humidity	≤95%, Non-condensing
Infrared + Acoustic Imaging Power and Data Interface	TYPE-C
Partial Discharge Data Transmission Method	WIFI
Partial Discharge Power Supply	Built-in Lithium Battery
Partial Discharge Battery Continuous Working Time	≥8 hours
Supported Systems	Android 9.0 and above
Infrared + Acoustic Imaging Product Weight	≤450g (including mobile phone)
Partial Discharge Product Weight	≤200g
Infrared + Acoustic Imaging Product Dimensions	154x87x61mm
Partial Discharge Product Dimensions	105x70x28mm