

# SOUNDCAM ULTRA

Product data



## Highlights

- Real-time results at 100 fps
- Handheld device with IP54 protection
- Integrated object lighting
- 8 configurable buttons for fast control
- Analysis up to 100 kHz
- Low weight

## Applications

- Compressed air/gas leak localization
- Partial discharge localization
- Condition based monitoring
- Animal studies
- Non destructive testing



# SOUNDCAM ULTRA

The Smallest Handheld Sound Camera for Everyone



# What is SoundCam?

SoundCam Ultra is the first camera that images audible sound and ultrasound. The device locates sound sources in realtime and immediately displays the results on the screen. It is as easy to use as a smartphone.

Its light weight and ergonomic design makes a convenient fit for every maintenance and service tool-kit. The SoundCam Ultra can be used in a broad frequency range up to 100 kHz, which makes it suitable for a wide range of applications e.g. for compressed air leaks and partial discharge localization.

The SoundCam Ultra visualizes complex acoustic information. Analyzing and understanding sounds has never been easier!



## Hardware

Physical Properties	Dimensions	31 x 16 x 5.5 cm (12.2 x 6.3 x 2.2 inch)
	Weight	1.5 kg (3.3 lb)
	Waterproof	IP54
	Operation	Two or one-handed
	Battery	Life ~ 3.5 h; fully charged in 1.5 h
	Tripod socket	1/4 inch
	Buttons	8 configurable + power on/off
	Operating temp	-20°C to 50°C (-4°F to 122°F)
	Charging temp	0°C to 45°C (32°F to 113°F)
	Storage temp	-30°C to 60°C (-22°F to 140°F)
Display	Size	7 inch / 15.5 x 8.6 cm
	Resolution	800 x 480 px
	Touch	10 finger capacitive touch
Embedded Controller	Processor	ARM A53 4x1.2 GHz with 1 GB RAM
	Internal storage	32 GB or 512 GB
	OS	Linux for ARM
Interfaces	USB	For data export
	Ethernet	LAN (for running software on laptop/PC)
	Audio	3.5 mm for headphones
Sensors	Microphones	72 digital MEMS
	Frequency range	Up to 100 kHz
	Sample rate	200 kHz
	Sound pressure	Max. 120 dB
	Resolution	24 bit
Optical Camera	Type	Digital
	Resolution	320x240 (50fps) or 640x480 (16fps)
	Lighting	4 LEDs
	Aperture angle	70° (FoV horizontal)
	Shutter	Global shutter
Power	Battery	Li-ion rechargeable battery (48 Wh)
	Input	19V with power adapter
	Management	Smart: work and charge simultaneously

## Software features

OS	Linux (on SoundCam), Windows (for Laptop/PC)
HMI	Touchscreen, headphones, buttons
Protection	Password (unauthorized access protection)
Online Performance	Up to 100 acoustic fps, up to 50 optical fps
	Acoustic pictures, optical pictures, FFT and spectrogram
	Listen to local sound (broadband or frequency filtered)
	Place marker while measuring
	Buffer recording, trigger recording (SPL or frequency)
Offline Features	Long term measurements (average and peak-hold)
	Time weighting: fast, slow, impulse
	View acoustic results frame by frame
	Save and reload
Export	Replay in real-time or slow motion
	Listen to local sound
Intuitive Usability	Screenshots, video, sound
	Distance settings
	Frequency filters (narrow band, 1/3-octave and octave)
	Dynamic filter and low cut-off
	3 scaling modes: off, auto, smart (crest factor)



# Optionally with thermal imaging camera!

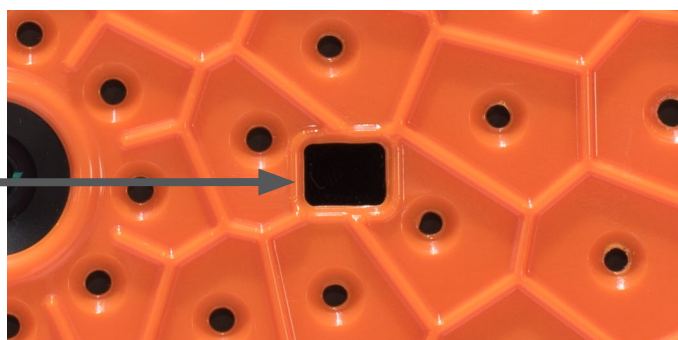
In addition to the acoustic image of the SoundCam Ultra, the integrated thermal imaging camera captures a uniform thermal image in parallel. The measured values of the absolute temperature are displayed in colour. The acoustic and thermal measured values are saved together in a measurement file.

With the integrated thermal imaging camera, applications can be measured or checked in which the heat has an influence on the acoustic behaviour. By simultaneously recording the acoustic and thermal data, the results can be compared very quickly on the device or on a Windows PC.

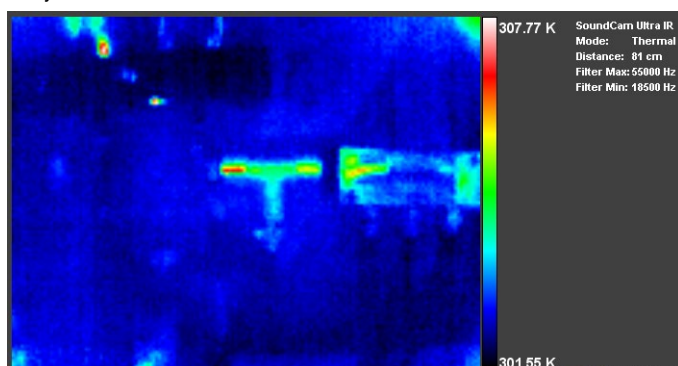
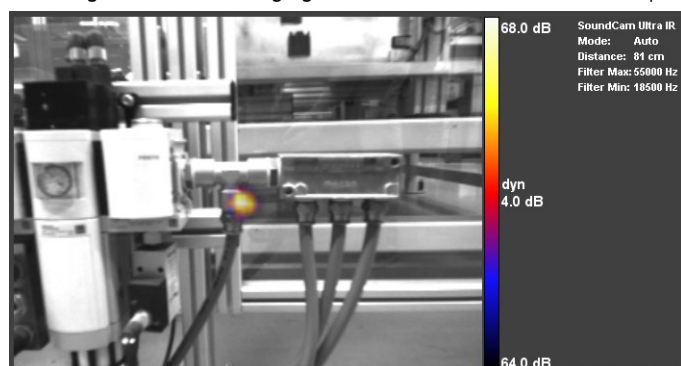
The combination of the acoustic and thermal image opens up new fields of application for the combined measurement of e.g. steam turbines, in transformer stations, on power lines, in power plants, on structures influenced by heat, and much more.



Thermal camera module	
Sensor Technology	Uncooled VOx microbolometer
Thermal Spectral Range	Longwave infrared, 8 $\mu\text{m}$ to 14 $\mu\text{m}$
Array Format	160 x 120, progressive scan
Pixel Size	12 $\mu\text{m}$
Frame Rate	8.7 Hz
Thermal Sensitivity	<50 mK (0.050°C)
Temperature Compensation	Automatic. Output image independent of camera temperature.
Radiometric Accuracy	High gain Mode:
	Greater of +/-5°C or 5% (typical)
Non-uniformity Corrections	Low Gain Mode:
	Greater of +/-10°C or 10% (typical)
Scene Dynamic Range	Integral Shutter
	High Gain Mode: -10° to +140°C
	Low Gain Mode: -10° to +400°C (at room temperature)
Image Optimization	-10° to +450°C (typical)
FOV - Horizontal	Factory configured and fully automated
FOV - Diagonal	57° (nominal)
Lens Type	71°
	f/1.1



The integrated thermal imaging camera is located inside the microphone array.



Measurement of a compressed air leak. On the left is the acoustic image. On the right is the thermal image.