

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

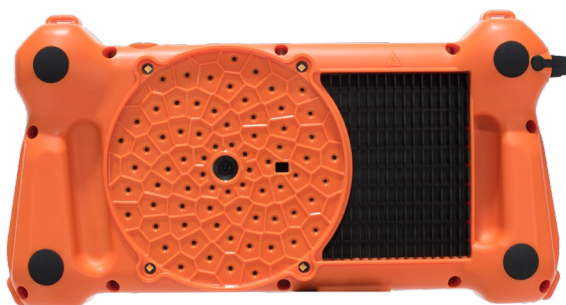


What is SoundCam?

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 |
| Optical Camera | 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 |
| Export | Save and reload |
| | 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!

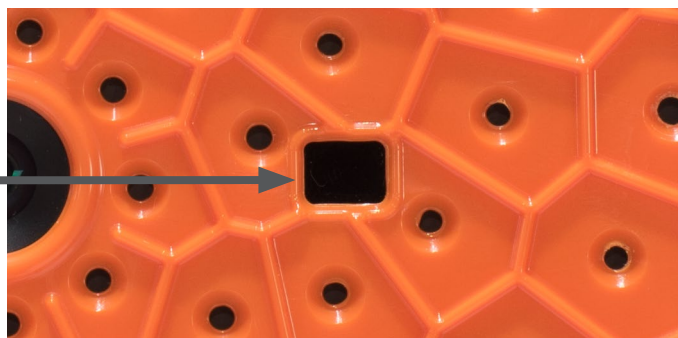
In addition to the acoustic image of the SoundCam Ultra, the integrated thermal imaging camera captures a uniform thermal image in parallel. The measured values of the absolute temperature are displayed in colour. The acoustic and thermal measured values are saved together in a measurement file.

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.

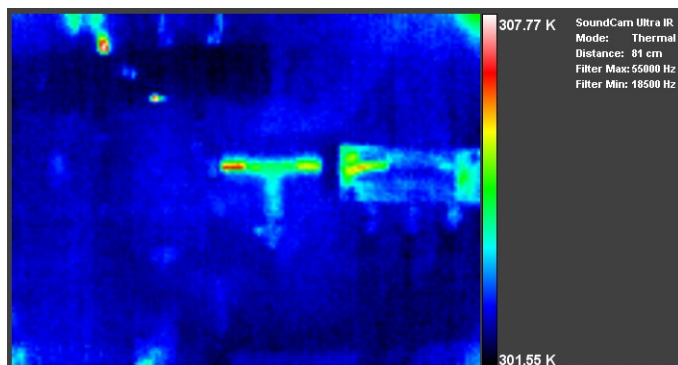
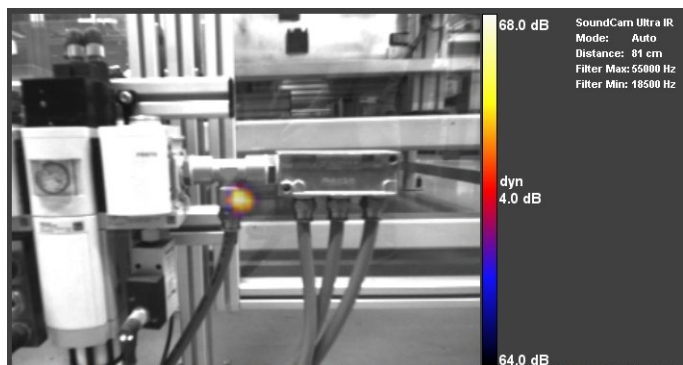
The combination of the acoustic and thermal image opens up new fields of application for the combined measurement of e.g. steam turbines, in transformer stations, on power lines, in power plants, on structures influenced by heat, and much more.



| Thermal camera module | |
|----------------------------|--|
| Sensor Technology | Uncooled VOx microbolometer |
| Thermal Spectral Range | Longwave infrared, 8 µm to 14 µm |
| Array Format | 160 x 120, progressive scan |
| Pixel Size | 12 µm |
| 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.