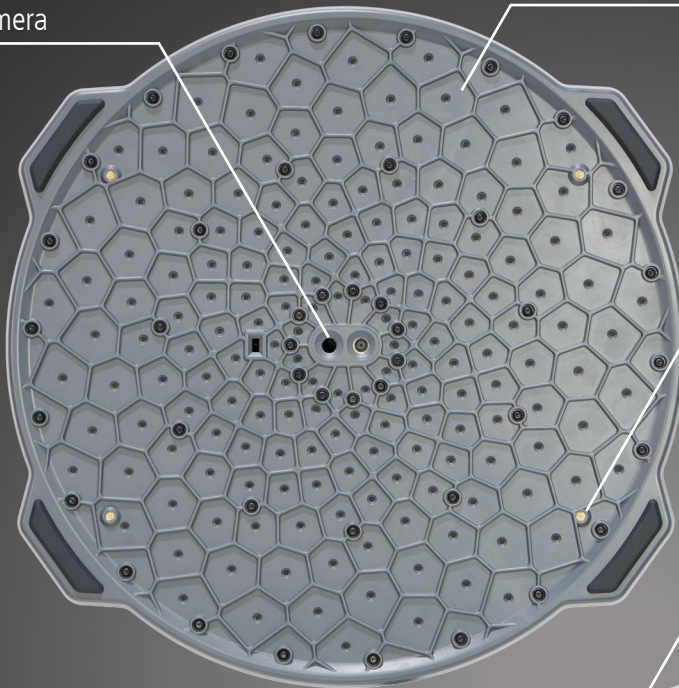Product data

SOUNDCAM 3

Acoustic camera: powerful, intuitive, versatile

Built-in thermal imaging camera

High sensitivity from 176 microphones with 200 kHz sampling rate

Built-in LEDs for illumination

Configurable hardware buttons

Ergonomic design and IP54 waterproof

Live, on-screen results at 100 acoustic fps

Easy to use thanks to intuitive software

Typical applications

- Locating NVH and BSR
- Check soundproofing
- Localizing occupational noise
- Sound emission from devices and systems
- Diagnosis of electronic devices
- Pinpointing environmental noise

Hardware High-performance

The **SoundCam 3** is an acoustic camera with outstanding performance features. The large number of microphones ensures high-resolution images with very high dynamic range. Even weak sound sources can be made visible in the presence of strong sources. The microphone data is analyzed in real time. Simultaneous data from the optical and thermal imaging cameras, as well as other sensors, ensure optimum information acquisition. In addition to the standard mode, which is very easy to operate, and the Pro mode, which is used for very demanding analyses, further operating modes are implemented for special measurement tasks. Customized operating modes can be created very easily and placed on the start screen.

The device is very robust and works even under extreme conditions. Thanks to the IP54 protection class, it can also be used in humid environments. The four integrated LEDs make it possible to work in the dark without external lighting. However, the SoundCam 3 is not only a superior measuring device, but with the help of the Windows software it is also a comprehensive tool for easily evaluating the measurement data.

» Extremely high dynamic range and accuracy thanks to the optimized array with 176 microphones and 200 kHz sampling rate at 24 bit resolution

» Wide frequency range for more sensitive detection and better noise suppression

» High frame rate of the acoustic video for the detection of transient noise

» Synchronization between acoustic and optical video for high analysis accuracy

» Global shutter and high frame rate of the optical video for fast-moving objects or fast movements

» Simultaneous acquisition and recording of the acoustic, optical and thermal image

» Optimum match of camera and display resolution through pixel-identical playback

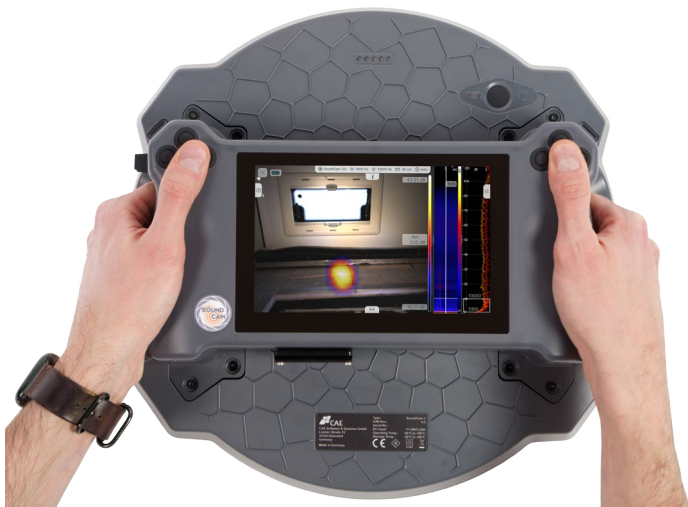» Very good readability and high color transmission of the display thanks to optical bonding, even in bright sunlight

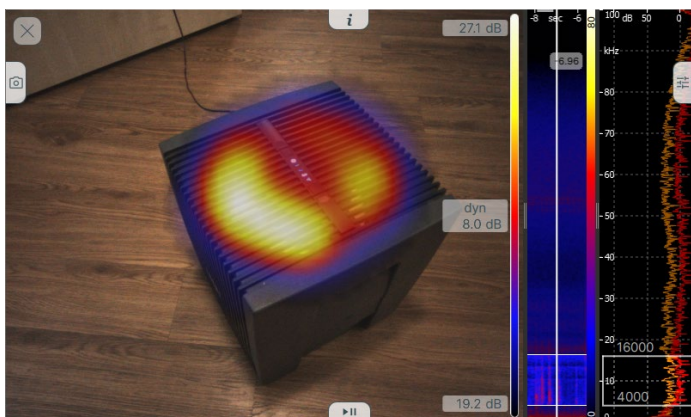| Hardware		
Microphones	Number	176 digital MEMS microphones
	Frequency range	Up to 90 kHz
	Sample rate	200 kHz
	Sound pressure	Max. 120 dB
	Resolution	24 bit
	Beamforming	100 fps
Optical Camera	Resolution	1280 x 800 px at 40 fps
	Illumination	4 LEDs
	Aperture angle	74° x 51° (FoV horizontal x vertical)
	Shutter	Global shutter
	Night vision	Yes (external IR illumination recommended)
Thermal Imaging Camera	Sensor Technology	Uncooled microbolometer
	Spectral Range	Longwave infrared, 8 µm to 14 µm
	Resolution	160 x 120 progressive scan
	Frame Rate	8,7 fps
	Sensitivity	<50 mK (0,050°C)
	T.-Compensation	Automatic
	Measuring Range and Accuracy	-10° to +140°C with +/-5°C or 5%
		-10° to +400°C with +/-10°C or 10%
		Larger value is to be applied
	Aperture angle	57° x 44° (FoV horizontal x vertical)
	Temperature unit	Kelvin, Celsius, Fahrenheit
Display	Size	7 inch
	Resolution	1280 x 800 px
	Brightness	Adjustable
	Readability	Excellent through optical bonding
	Touch	Capacitive 10-finger touch
Embedded Controller	Internal memory	1TB M.2 SSD
	OS	Linux
Interfaces	USB-A 3.0	Data export
	Ethernet	Remote control and data export
	Audio	3,5 mm port for headphones
	USB-C	Charging, remote control and data export
Physical Properties	Dimensions	34 x 34 x 10 cm / 13,4 x 13,4 x 3,9 inch
	Weight	2,6 kg / 5,7 lb
	Protection class	IP54 waterproof
	Operation	Two-, one-handed, shoulder strap, tripod
	Battery life	3,5 h
	Bat. charging time	1,5 h
	Tripod socket	1/4 inch
	Buttons	8 configurable + on/off switch
	Operating temp	-15°C to 50°C / 5°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
Power	Built-in battery	Li-ion battery (48 Wh)
	Input	20 V via USB C
	Management	Smart: use and charge at the same time

Software Comprehensive and intuitive

The **SoundCam 3** software is intuitive and very easy to use. Very useful measurement modes allow you to work quickly and efficiently. These have preset parameters so that any user can carry out the measurements without prior knowledge. The device starts the measurement at the touch of a button and finds the acoustic source very quickly. Helpful functions such as long-term measurement and the trigger function enable automated measurement. In long-term measurement mode, noise sources can be found over a defined period of time. The trigger function automatically measures sporadic events without the presence of a measurement technician. The measurement is triggered via the level or a defined trigger curve and then saved. The measurement data can be analyzed and evaluated using the identical PC software. The software package for the SoundCam 3 is extremely high-performance, user-friendly, inclusive and license-free.

- » Four modes with preset parameters: Standard, Pro, Leakage and Partial discharge

- » Live, on-screen results at 100 acoustic fps

- » Three acoustic scaling modes

    - » Smart: Suppression of background noise

    - » Auto: Dynamic scaling

    - » Manual: Comparison with a reference level

- » Creation of measurement profiles to be able to carry out recurring measurements with the same settings

- » Pinpoint listen-in including making ultrasound audible

- » Trigger function for automated recording when a level or frequency curve is exceeded

- » Create measurement series

- » Create photos and videos

Software	
Modes	**Standard:** Simplified mode for a quick start
	Pro: Expert mode with extended range of functions
	Leak: Optimized mode for the detection of leaks including **real-time display of the loss rate**
	Partial Discharge: Optimized mode for PD detection including **real-time display of the PRPD diagram**
	Network: Remote control of the device via the Windows software
Functions	**Local and global spectrum** (narrowband, 1/3rd octaves and octaves), **spectrogram**, acoustic, optical and thermal image
	Setting the distance
	Frequency filter (narrow band, 1/3rd octaves and octaves)
	3 acoustic scaling modes: Smart, Auto, Manual
	Pinpoint listen-in (broadband or frequency-filtered) incl. making ultrasound audible
	Screenshot with comment option
	Playback in real time, slow motion or frame by frame
	Marking of events
	Adjustment of window sizes
	Project-based work via measurement series
	Creation and management of **measurement profiles/modes**
	File manager for copying, moving, deleting, exporting and viewing files
Recording	**Ring buffer**: 10 s, 30 s, 60 s and additionally on Windows 120 s, 180 s and 240 s
	Trigger recording: SPL- or frequency-triggered up to 10 s with pre-run plus post-run time
	Long-term measurement: One image (average and peak hold) every 20 s to 900 s (adjustable)
Export	Photo, video, audio, measurement data
Units	Metric or imperial system
Languages	German, English, Spanish, Croatian, Italian, Japanese, Korean, Polish, Turkish, Chinese, Czech
OS	Linux (for the device), Windows (for laptop/PC)
Protection	Password protection against unauthorized access

Measurement of a humidifier: The openings for air circulation are clearly visible in the acoustic image.
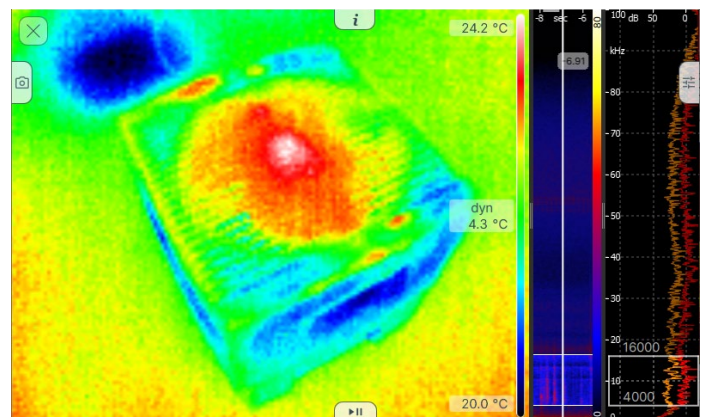

The thermal image shows warming of the control electronics in the center.

Performance Well thought out to the last detail

- » Very high sensitivity and dynamic range thanks to 176 microphones with 200 kHz sampling rate at 24 bit resolution
- » Live, on-screen results at 100 acoustic fps
- » Precise synchronization between acoustic and optical video for high analysis accuracy
- » Built-in thermal imaging camera
- » High-resolution display with 1280 x 800 px and very good readability and high color transmission thanks to optical bonding
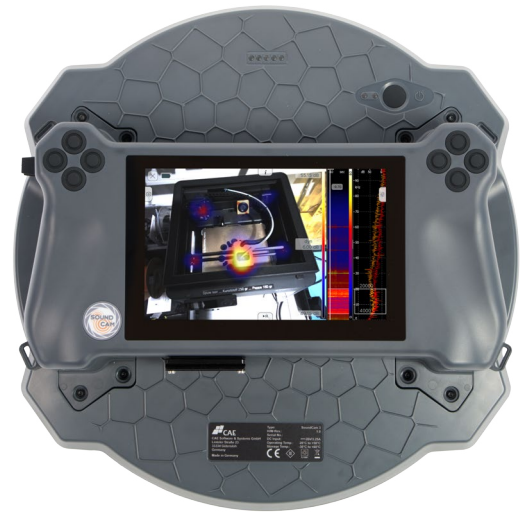
- » Ergonomic hand-held device with protection class IP54 waterproof
- » Can be used without prior knowledge thanks to intuitive software
- » Windows software for fast, detailed evaluation and reporting
- » Pinpoint listen-in, including making ultrasound audible, provides additional information
- » Optimum match of camera and display resolution through pixel-identical playback

Sensors Extremely sensitive

The large leak is clearly visible

29.1 dB

dyn 20.0 dB

9.1 dB

The large and small leaks are clearly visible

29.1 dB

dyn 20.0 dB

9.1 dB

Result of the SoundCam 2.0, the predecessor model of the SoundCam 3. This is a very good acoustic camera with 64 microphones. The large leakage is detected very well. The small leakage is not detected as it disappears in the image noise.
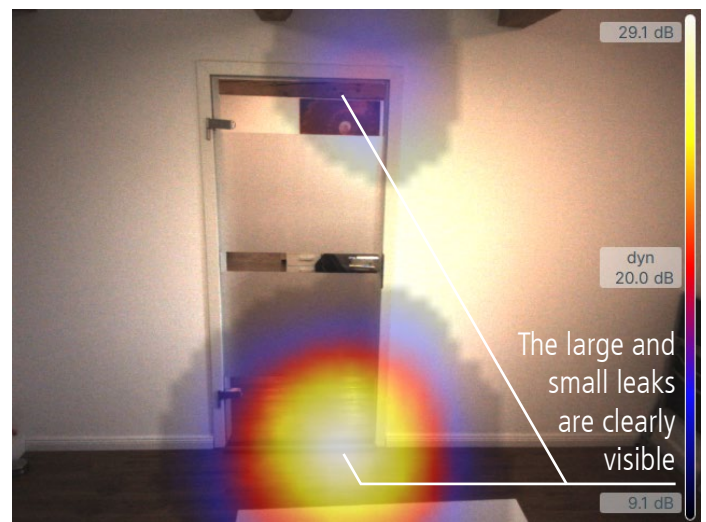
The 176 microphones and the optimized microphone array design of the SoundCam 3 increase the sensitivity and dynamic range immensely. As a result, the large and small leaks are clearly visible. Even at 20 dB dynamic range, no image noise is visiable.

More microphones, a higher sampling rate and high 24-bit resolution ensure better, more detailed and more reliable results.

Faleco

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CAE
Software & Systems

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