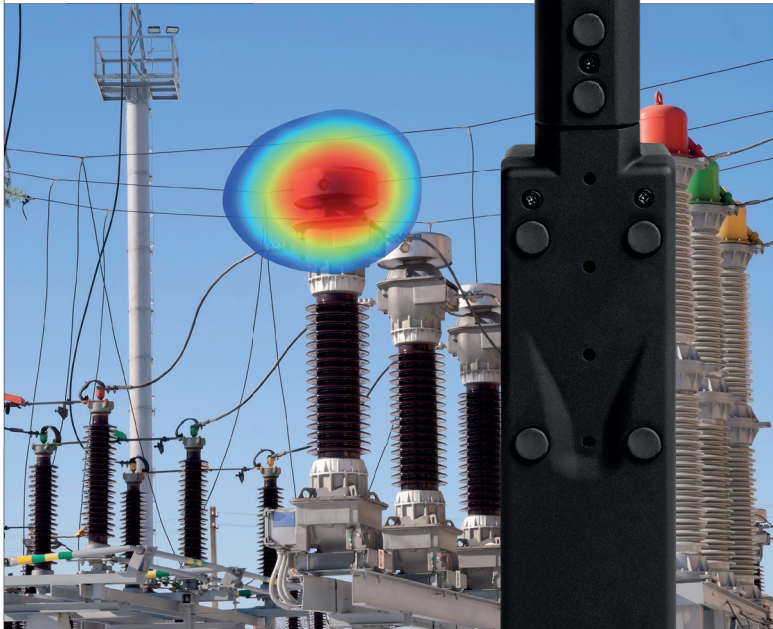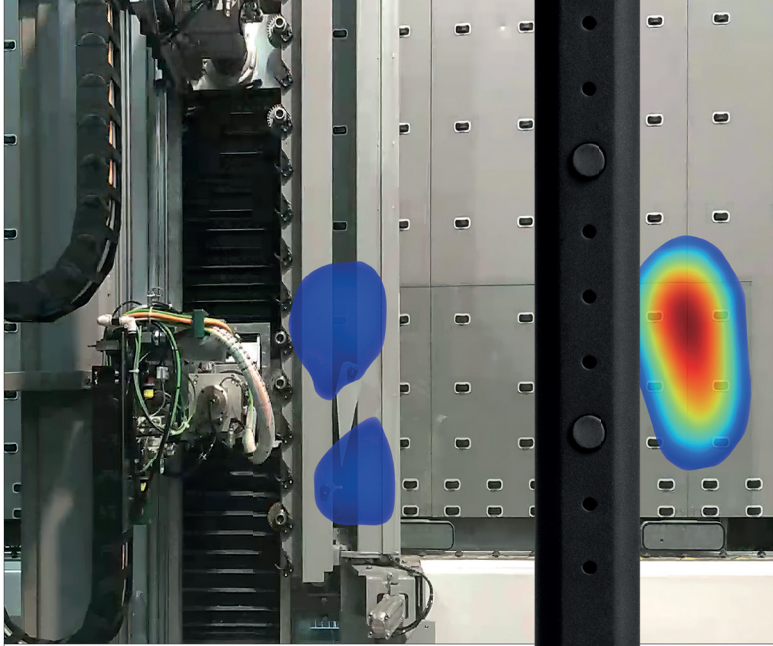# WE MAKE SOUND
VISIBLE

sevenbel
EFFECTIVE SOUND IMAGING

EFFECTIVE
SOUND IMAGING

As a product developer, manufacturing engineer, maintenance technician or consulting engineer you are used to working effectively and target-oriented. Stop losing time to a lengthy search for possible sources of acoustic problems of your products or processes. Use Seven Bel Sound Scanners and make disturbing sound sources visible. Fast, simple and effective.

1 Results in 3 minutes

No other measurement system delivers acoustic images that fast and efficiently. You can set up the measurement system in less than 3 minutes, conduct the measurement of your use case and immediately receive dependable results for further analysis.

2 Anytime – anywhere

Due to the ultra-compact and light construction you are entirely independent in terms of location. Seven Bel's high performance measurement system works with an Android mobile phone and cloud infrastructure in the background. Notebooks, power supply units or recorders that are usually required are no longer necessary.

3 Extraordinary image quality

Distributed microphones based on state-of-the-art semiconductor technology scan the acoustic field on an area of a disc and produce acoustic images with superior image quality and a high level of information. This facilitates the correct interpretation of the measured data for the user and leads to solutions that can be implemented quickly.

4 Intuitive handling

Benefit from a massively simplified workflow to measure and analyze your sound events. Share your results with your colleagues, partners or clients in the form of automatically generated reports.

State-of-the-art machine tools exhibit a wide variety of complex sound events during the machining process. Engineers working in product development trust in the visualization of sound radiation in order to take quick and effective measures to comply with noise limits.

ROOM ACOUSTICS

Detection of acoustic leaks on doors, windows and other architectural elements. Acoustic images provide assistance to acoustic experts in identifying structural weaknesses and making effective structural alterations.

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AUTOMOTIVE

Detection of surfaces with dominant sound radiation from engine/transmission components for reconciliation of simulation models.
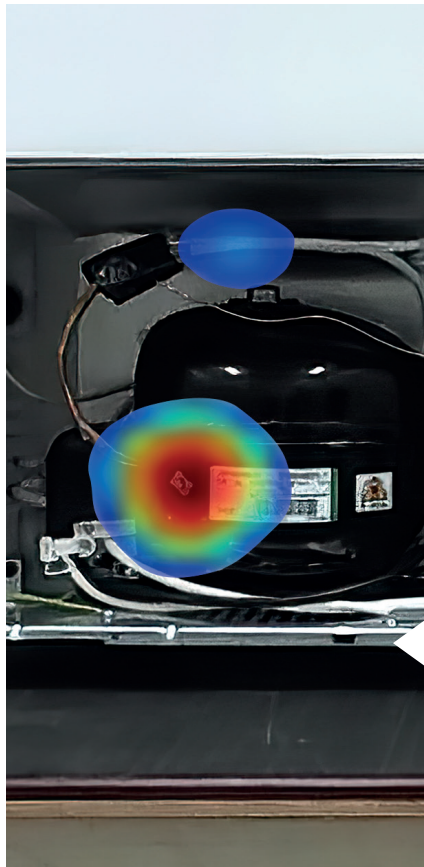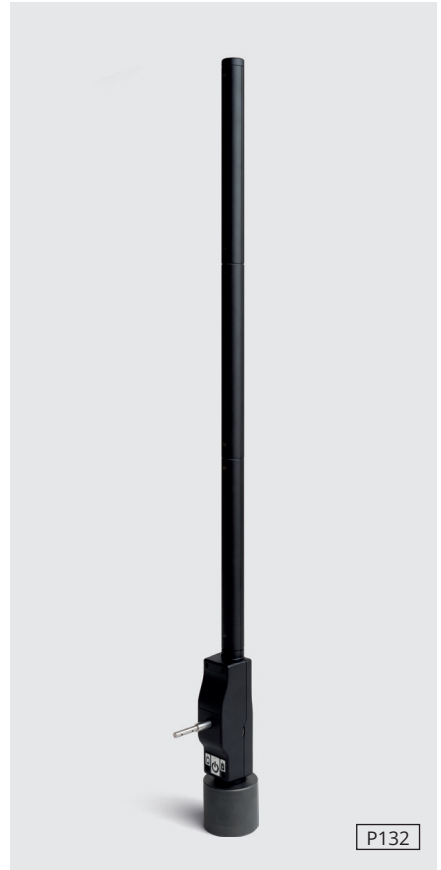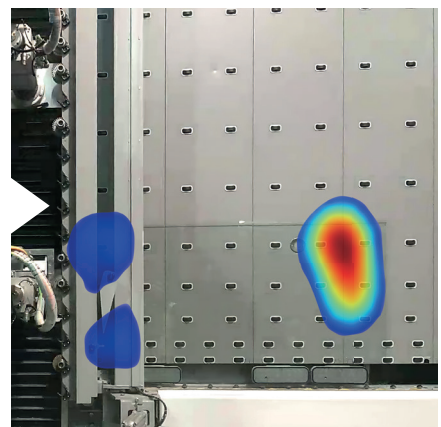
APPLICANCES

As part of quality assurance, out-of-spec products are eliminated from the assembly line. Acoustic images help to isolate the origin of unwanted sound and facilitate targeted measures.

MACHINERY

Complex machining processes, in many cases, cause complex sound events. Acoustic images support engineers in understanding the local sound radiation during a machining process, and thus allow them to build optimized machine housings.

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Further applications are in the fields of maintenance, quality assurance and environmental noise. We want to know about your individual application. Contact us for further information or request our acoustic consulting service.

SPECIFICATIONS

	P12	P50	P132	P254
SENSOR				
Diameter of scan area	12 cm	50 cm	132 cm	254 cm
Weight (excl. sensor mount and tripod)	200 g	500 g	1400 g	900 g
Rotation frequency (min/typ/max)	0.2 / 2 / 5 revs/s	0,2 / 2 / 5 revs/s	0,2 / 1 / 2 revs/s	0,2 / 0,5 / 1 revs/s
Number of microphones	8	5	5	5
ACOUSTIC IMAGE				
Frequency range	2.8kHz - 44 kHz	700 Hz - 10,5 kHz	250 Hz - 10,5 kHz	125 Hz - 4 kHz
Spatial resolution at 5 kHz (3 dB DNR)	28 °	6,7 °	2,6 °	1,4 °
Dynamic range (DNR)	> 13 dB	> 13 dB	> 13 dB	> 13 dB
Computed images per revolution	up to 6	up to 6	up to 6	up to 6
Measuring distance	0,5 m - infinity	0,5 m - infinity	0,5 m - infinity	0,5 m - infinity
MICROPHONE				
Sample frequency	89 kHz	21,5 kHz	21,5 kHz	21,5 kHz
Resolution	24 bit	24 bit	24 bit	24 bit
Frequency range	20 Hz - 160 kHz	50 Hz - 20 kHz	50 Hz - 20 kHz	50 Hz - 20 kHz
Sensitivity tolerance	+/- 1 dB	+/- 1 dB	+/- 1 dB	+/- 1 dB
Maximum measurable sound pressure level	132 dB	117 dB	117 dB	117 dB
Absolute maximum sound pressure level	N/A	160 dB	160 dB	160 dB

ANALYSIS

Audio
- Real time display of time signal, frequency spectrum and spectrogram
- Stream/pause mode
- Selection of time intervals
- Playback of filtered audio

Acoustic image/video
- Selection of frequency band
- Audio playback
- Single frame or time averaged frames
- Video playback

Data management
- Automated pdf report generation of single acoustic image or timed averaged images including meta data, time/frequency domain data
- Export and import of measurements in zip format via installed file sharing apps (e.g. Google Drive)

ENVIRONMENTAL CONDITIONS

Operating temperature	-10 °C - 60 °C
Relative humidity	45 % - 85 %

MOBILE DEVICE

Operating system	Android OS version 10.0 or higher

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