

See what you
can hear.



AVL DiTEST ACAM ACOUSTIC CAMERA

Tool for locating the sources of airborne sounds



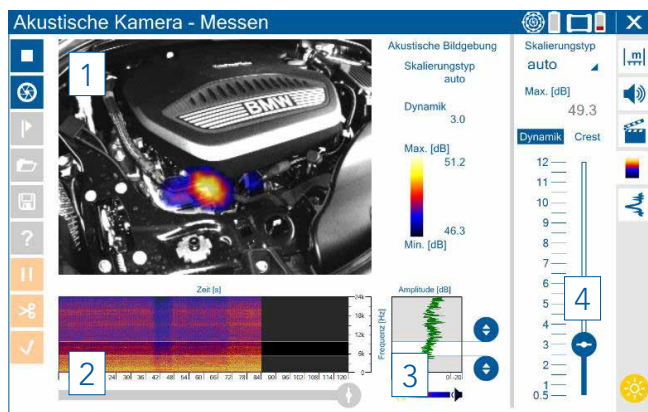
Quickly and reliably
pinpoint disturbing noises.

NOISE DIAGNOSTICS

The AVL DiTEST ACAM makes the sources of noise visible by combining many microphones with a digital camera. The sound levels appear in the live camera image in colours indicating the intensity, and are overlaid on the optical image. Thanks to the simple, user-friendly software and the image-based results, the source of the disturbance can quickly be pinpointed without the user needing any special expertise. The compact design provides a high level of flexibility and allows for use while the vehicle is in operation.

ACOUSTIC CAMERA – PRINCIPLE OF OPERATION

It is possible to locate the sources of noise by integrating many microphones and an optical camera in the vehicle. The sources of noise are located by analysing the differences in propagation time of the sound waves relative to the different microphones. At the same time, both the intensity and the position are shown on the display. By adjusting the measurement parameters, background noise interference can be blocked out.



1. Overlaying the optical and acoustic image
2. Progress of the frequency spectrum over time
3. Current frequency spectrum
4. System settings

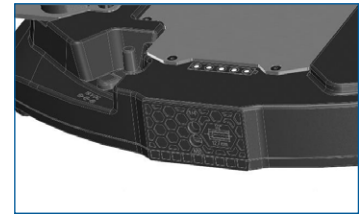
PRACTICAL EXAMPLES:

- Locating noises in the interior (rattling, squeaking)
- Seal testing (door seals)
- Engine compartment: increased noise levels from bearings, drive belt and drive chain

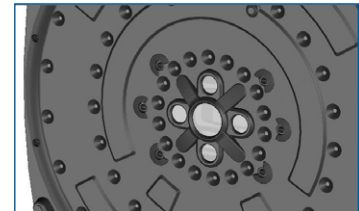
PRODUCT BENEFITS:

- Lower troubleshooting times and simple documentation of unidentified disturbing noises
- "Right first time" – a greater chance of success and prevention of unnecessary parts replacement and repeated repairs
- Documentation of effectiveness of measures taken – recording before and after repair
- Dampening of background noises
- Refined operating concept allows for standalone use with a docked tablet, but also allows connection to a tablet or a standard PC using a USB cable
- Guaranteed long service life of the equipment due to robust, dust-proof and splash-proof casing
- High flexibility due to integrated rechargeable battery for mobile measurement operations

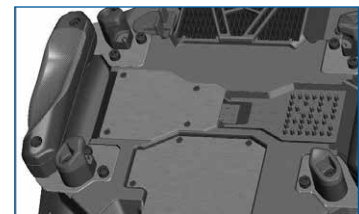
DESIGN DETAILS



Tripod mount (1/4" and M6 thread)



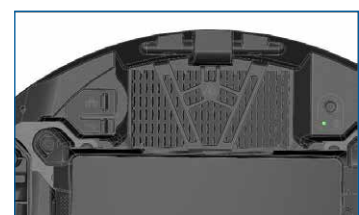
Dust-proof and splash-proof front



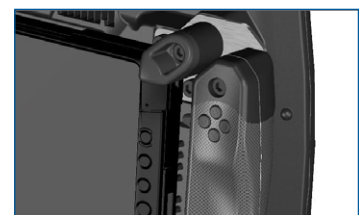
Optional holder for tablets (e.g. Getac T800)



Very robust casing design



Low demands on display unit due to passively cooled computing unit in the equipment



Ergonomic handles with control buttons

HARDWARE

Physical Properties	Dimensions	34 x 34 x 9.5 cm (13.4 x 13.4 x 3.8 inch)
	Weight	2.5 kg (without Tablet)
	Waterproof	IP54
	Anti-theft system	Kensington lock
	Battery life	min 2.5 h
	Tripod socket	1/4 Zoll and M6
	Buttons	4 + power on/off
	Temperature range	-5°C to 45°C.
Interfaces	USB	for data export or keyboard/mouse
	Ethernet	LAN (for running software on laptop/PC)
	Audio	via USB
Sensors	Microphones	64 digital MEMS
	Frequency range	10 Hz - 24 kHz
	Sound pressure	max. 120 dB
	Sample rate	48 kHz
	Resolution	24 bit
Optical Camera	Type	digital
	Resolution	320x240 (50fps), 640x480 (16fps) or 1280x960 (5fps)
	Lighting	4 LEDs
	Aperture	angle $\pm 38^\circ$
	Shutter	global shutter
Power	Supply	power adapter
	Battery	Li-ion battery
	Power Path Management	work and charge simultaneously (charger + PPM is integrated; no external charger unit necessary)

SOFTWARE FEATURES

OS	Linux (Windows 10 software also available)
HMI	Touchscreen or mouse and keyboard
Online Performance	Up to 100 acoustic fps, up to 50 optical fps
	Acoustic pictures, optical pictures, sonogram and spectrum
	Listen to local sound
	Place marker while measuring
	Recording 20 to 120s. buffer or manual
Offline Features	Offline mode for analysis
	View acoustic results picture by picture
	Save and reload
	Replay
	Listen to local sound
Export	wav or flac (sound)
Intuitive Usability	Distance settings
	Frequency filter
	Dynamic filter
	Different scaling modes (off, auto and smart)
	Preset measurements

SYSTEM PROPERTIES & ACCESSORIES

- Acoustics: 64 microphones
- Optics: digital camera (grey scales) with integrated LED lighting
- Display: integrated tablet (ruggedised, 8.1" HD display)
- Performance: 50 fps (for pulsed noises)
- Interfaces: USB, LAN
- Battery life: >5 hours
- Casing: very robust (1 m drop height), dust-proof and splash-proof (IP54)
- Accessories: Tripod, external USB trigger (time stamp on measured data), 12 V charger, case, headphones (directional microphone mode)

Publisher:

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COMPONENTS:

1. Display unit (tablet or PC via USB)
2. Ergonomic handles incl. control buttons
3. Internal rechargeable battery with capacity indicator
4. Optical camera with lighting LEDs
5. Splash-proof acoustic microphones
6. Rubber protectors for safely storing the camera

