

# Vibration Meter



## Applications

Addressing the issue of individual exposure to vibration: Vibrometer CEL-960 and software dB98... Light, robust and compact, CEL-960 is a suitable instrument for the measurement of 'hand-arm' and 'whole-body' vibrations, according to the requirements of European Directive 2002/44/EC.

### Whole-body and hand-arm vibrometer: CEL-960

The vibrometer consists of a portable, ergonomic and miniaturised housing, hosting the acquisition unit, signal processing, data storage and data transfer.

- X, Y and Z vibration levels, daily exposure A(8)
- Signal and 1/3 octave spectrum recording
- Presence detector and warning light
- 20-hour operating life

### Wireless remote control: dB96

The Pocket PC, along with dB96, its control software, is the interface between the operator and vibrometer CEL-960.

- Simultaneous control of up to 5 instruments
- Management of measurement configurations
- Collection of measurement files
- Real-time display of measured data on a colour screen

### Processing software: dB98

dB98 is used to transfer, process, publish and archive data.

- Compliant with standards ISO 5349 and ISO 2631
- Data transfer via USB2.0
- Automatic reports

## Standards

ISO 8041 (2005), ISO 5349 (2001), ISO 2631 (1997)

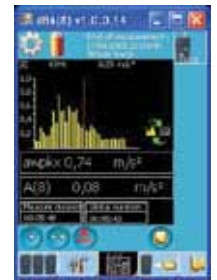
## Metrology

Channels	From 1 to 4 (depending on configuration and option)
Display resolution	0,01
Conditioning	IEPE : 12V-4mA or 24V-4mA
Voltage (input)	5V AC peak
Filtering	<ul style="list-style-type: none"> <li>• Wd, Wk, Wh (digital, according to ISO 8041)</li> <li>• Programmable filter: 0.4 - 4000 Hz</li> <li>• 1/1 octave: 1Hz - 2kHz / 1/3 octave: 0.8Hz - 2.5kHz (Optional on 1 channel)</li> </ul>
Measured magnitudes	<ul style="list-style-type: none"> <li>• Simple vibrometer: acceleration, peak, peak - peak, peak factor, rms (x, y, z)</li> <li>• Hand-arm: acceleration, peak, peak - peak, RMS (x, y, z), ahv, A(8)</li> <li>• Whole-body: acceleration, peak, peak - peak, peak factor, rms (x, y, z), av, Aeq, A(8), A(8)v, VDV, MTVV, SEAT</li> <li>• Signal recording: manual or on trigger (<math>f_{s_{max}} = 8192\text{Hz}</math> (Optional on 1 channel))</li> <li>• Parallel measurement and time history of all indicators</li> </ul>
Calibration	With a calibrator, by input of sensitivity or by gravity
Temperature	-10°C / +50°C (0-95% HR)
Dimension / Weight	105 x 60 x 25 mm / 135 g

Memory Module	<ul style="list-style-type: none"> <li>• Integrated 1GB flash memory, type Micro SD</li> <li>• Storage of measurement files (minimum rate: 1s)</li> <li>• Signal storage (programmable sampling)</li> </ul>
General Performances	<ul style="list-style-type: none"> <li>• Typical battery life: 20 hours (stand-alone mode) / 10 hours (remote controlled mode)</li> <li>• 3.7 V - 2.3 A battery - Charging time: 6h30 (USB or charger)</li> </ul>

Specification	Triaxial Hand-Arm accelerometer	Triaxial Whole Body seatpad	Monoaxial accelerometer for SEAT (option)
Sensitivity	10 mV/g	10 mV/g	10 mV/g
Dynamic range	500 g	18 g	500 g
Bandwidth	From 1 to 12,000 Hz ( $\pm 1$ dB)	From 0 to 2,000 Hz (-3 dB)	From 0.1 to 1,000 Hz
Resonance frequency	> 36 kHz	5.5 kHz	> 28 kHz
Weight	13 g	270 g	18 g
Temperature range	-40°C / +125°C	-20°C / +70°C	-50°C / +125°C
Material / Characteristics	Titanium	Seatpad with presence detector	Stainless steel
Accessories	Adapters for handle, steering wheel & finger	Removable retractable reel cable	Floor mounting using an isolated magnetic base

Control software dB96	<ul style="list-style-type: none"> <li>• Control using a Pocket PC/Tablet PC: configuration management / real-time display / data collection</li> <li>• Wireless Bluetooth communication</li> <li>• Programmable start modes: immediate / delayed / by periods / on detection of presence</li> <li>• Visual display and coding of data on colour screen of remote control</li> <li>• Pre-programmed configurations (whole body, hand-arm, free)</li> <li>• Storage of signal: manual or automatic on trigger</li> <li>• Written and oral comments (synchronised with measurement file)</li> <li>• PC-compatible software</li> <li>• Languages: English, French</li> </ul>
Processing software dB98	<ul style="list-style-type: none"> <li>• Transfer of measurement files generated by CEL-960 through USB2.0</li> <li>• Calculation of A(8) and peak factor according to Directive 2002/44/EC, calculation of dose on coded events</li> <li>• Whole body (health, comfort or perception, seated, standing, lying), Hand-arm</li> <li>• Time history plots for all indicators</li> <li>• Calculation of average values between cursors</li> <li>• Automatic reports</li> </ul>
Standard package	<ul style="list-style-type: none"> <li>• CEL-960 - Transducer – Desktop charger – dB96</li> <li>• dB98 – Carrying case / CD / Documentation</li> </ul>
Options	<ul style="list-style-type: none"> <li>• Vibration calibrator / Pocket PC / Tablet PC</li> <li>• Floor mounting system / Shock-proof protecting cover</li> </ul>



Distributed by

