

# Castle ULTIMUS Vibration Meter

## (GA2007) Human Vibration Meter

### The Concept

The measurement of Hand Arm Vibration has seen rapid developments since the first ground-breaking product from Castle (The famous GA2001 HARM Meter). The ULTIMUS is the latest in this long line of world-beating human vibration measurement products.

### Flexibility and Power

The SV 106 is a new six-channel human vibration meter and analyser. Instrument meets ISO 8041:2005 standard and it is an ideal choice for measurements according to ISO 2631-1,2&5 and ISO 5349.

This revolutionary, pocket-size instrument enables simultaneous measurements with two triaxial accelerometers (e.g. both-hands vibration or triaxial SEAT transmission measurements are possible).

The Whole-Body vibration measurement is easier thanks to SV 38V seat-accelerometer which can be placed directly on the seat-cushion, floor or fixed to the back of the seat.

The SV 50 set with triaxial accelerometer enables Hand-Arm vibration measurements regardless of the type of evaluated tool.

Additionally, for measurements of very high impulse vibration the special adapter with low pass mechanical filter protecting accelerometer from DC shift effect, is available. Evaluation of the grip force will be accessible with dedicated "integrated adapter" SV 105 (under development stage).



## POCKET POWER

### Technology to the max!

Using computational power of its digital signal processor, the SV 106 can perform real-time 1/1 or 1/3 octave analysis simultaneously to the meter mode.

Advanced time-history logging and time-domain signal recording (according to the ISO 2631-5) to built-in Micro SD flash card give almost unlimited capabilities of data storage. Results can be easily downloaded to PC using USB interface and SvanPC+\_VR software. SvanPC+\_VR software also provides the setup-editor function which manages the instrument's settings.

The RMS, Peak, Peak-Peak, VDV, MTVV, A(8) or Dose results with all required weighting filters for the HVM measurements including band-limiting filters are available with this instrument.

### Ultimus (GA2007) - Human Vibration Meter

- Tri-axial Hand Arm vibration Measurements
- New 'Grip-to-measure' Sensor
- Low Cost Seat Vibration solution
- 2 independent tri-axial measurements
- Large Dynamic Range
- Fully compliant with ISO 8041 : 2005
- Large Colour Display
- Large 'Flash' memory
- 'Simple' Mode for quick measurements

### Applications

- Hand Arm Vibration to ISO 5349 : 2001
- Whole Body Vibration to ISO 2631 :



# ULTIMUS (GA2007) Specification

## VIBRATION LEVEL METER & ANALYSER

Standards	ISO 8041:2005, ISO 2631-1,2&5, ISO 5349
Meter Mode	RMS, VDV, MTVV or Max, Peak, Peak-Peak, Vector, A(8), Dose, ELV, EAV Simultaneous measurement in six channels with independent set of filters and detector constants
Filters	W <sub>d</sub> , W <sub>k</sub> , W <sub>m</sub> , W <sub>b</sub> , W <sub>c</sub> , W <sub>j</sub> , W <sub>g</sub> , W <sub>f</sub> (ISO 2631), W <sub>h</sub> (ISO 5349) and Band Limiting filters
RMS & RMQ Detectors	Digital true RMS & RMQ detectors with Peak detection, resolution 0.1 dB Time constants from 100 ms to 10 s
Measurement Range	Transducer dependent: 0.01 ms <sup>-2</sup> RMS ÷ 50 ms <sup>-2</sup> Peak (with SV 38V and W <sub>d</sub> filter) 0.1 ms <sup>-2</sup> RMS ÷ 5000 ms <sup>-2</sup> Peak (with SV 50 and W <sub>h</sub> filter)
Frequency Range	0.1 Hz ÷ 2828 Hz (transducer dependent)
Data Logger*	Time-history data including meter mode results and spectra
Time-Domain Recording*	Simultaneous x, y, z time-domain signal recording, sampling frequency selectable: 375 Hz, 3 kHz or 6 kHz (option)
Analyser*	1/1 octave real-time analysis with centre frequencies from 0.5 Hz to 2000 Hz (option) 1/3 octave real-time analysis with centre frequencies from 0.4 Hz to 2500 Hz (option)
Accelerometer (option)	SV 38V low cost and low power triaxial accelerometer for Whole-Body measurements SV 50 set for Hand-Arm measurement (Dytran accelerometer 3023M2; adapters SA 50, SA 51, SA 52) ** SV 105 integrated triaxial Hand-Arm adapter with grip force sensor (under development)

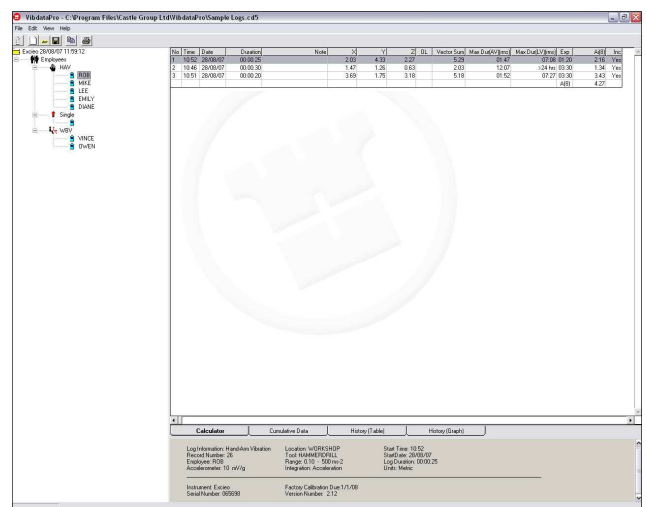
\*function parallel to the meter mode

\*\*SC 118 integrated connector required

## GENERAL INFORMATION

Input	2 x LEMO 5-pin: six channels Direct or IEPE type and two channels for force transducers
Dynamic Range	90 dB
Force Range	0.2 N ÷ 100 N (dedicated channels for force transducers)
Sampling Rate	6 kHz
Memory Internal	16 MB non-volatile memory Micro SD flash card slot (supports 8 GB ÷ 16 GB cards)
Display	Colour OLED 2.4", 320 x 240 pixels Super contrast 10000 : 1
Interfaces	USB 1.1 Client, Extended I/O - AC output (1 V Peak) or Digital Input/Output (Trigger - Pulse)
Power Supply	Four AA batteries (alkaline) operation time > 12 h (6.0 V / 1.6 Ah) *** Four AA rechargeable batteries (not included) operation time > 16 h (4.8 V / 2.6 Ah) *** USB interface 500 mA HUB
Environmental Conditions	Temperature from -10 oC to 50 oC Humidity up to 90 % RH, non-condensed
Dimensions	140 x 83 x 33 mm (without accelerometer)
Weight	Approx. 390 grams including batteries (without accelerometer)

\*\*\* with one SV 38V triaxial accelerometer in meter mode



Continuous product development and innovation are the policy of our company. Therefore, we reserve the right to change the specifications without prior notice.

Image shows the software VibdataPro with hand Arm Vibration Screen.



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.