DEWESoft®

ACOUSTICS

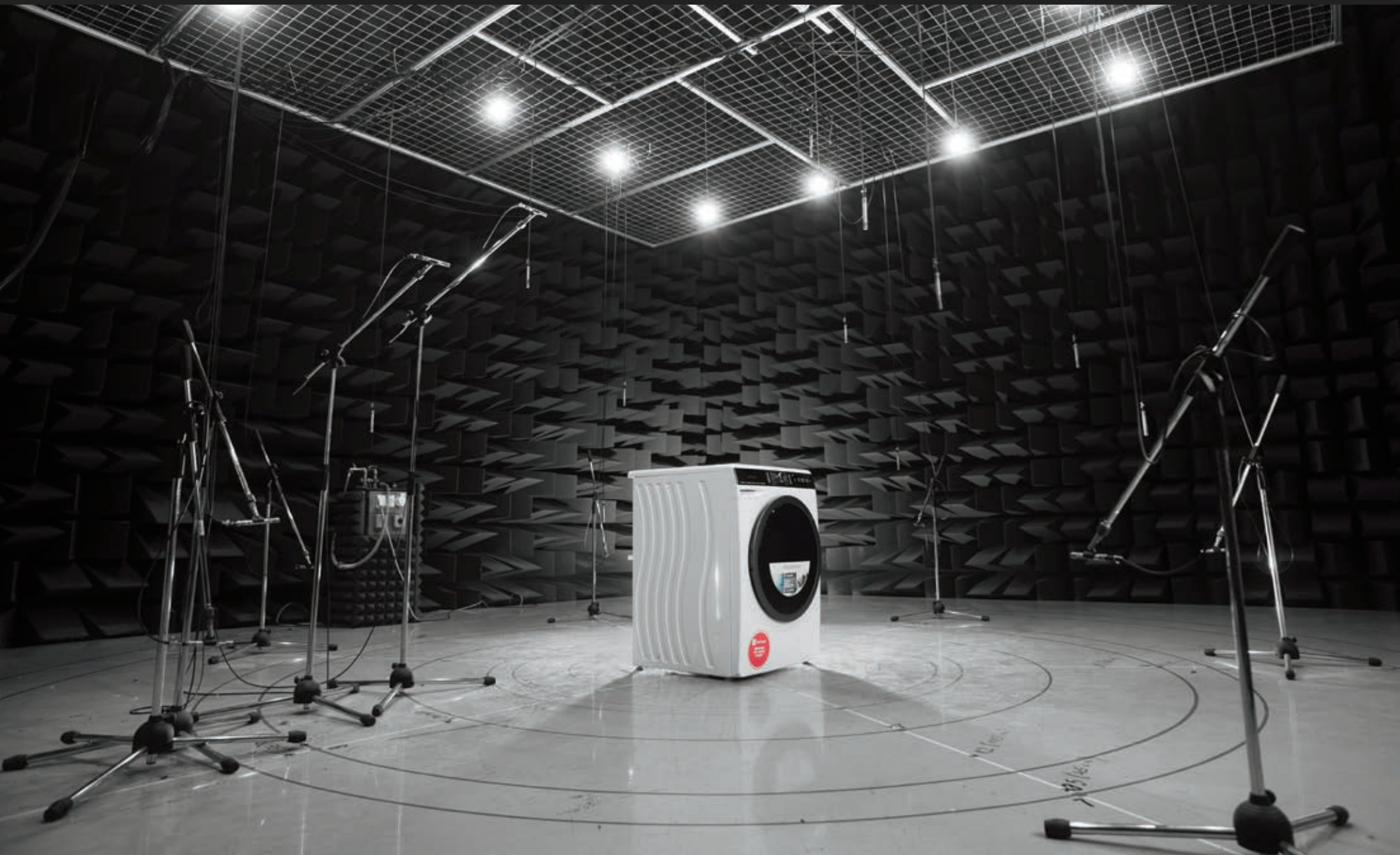
SOUND POWER

PRODUCT DATA

SP2020 - V2.1.

SOUND SOURCE RATING AND COMPARISON SOUND DESIGN. SOUND PRESSURE BASED.

Rate and compare different noise sources with ease and exactness while simultaneously monitoring any number of measured parameters.



INTRODUCTION

Producers of almost any kind of machinery or devices are required by regulations, e.g. the Noise and machinery directive of EU (2006/42/EC), to measure and declare the sound power of their products - anything from toys, printers and white goods to industrial tools and construction machinery. Sound Power is also used in engineering tasks such as product sound design.

Dewesoft Sound Power solution - data acquisition unit, microphone and PC-based software - provides sound power measurements with familiar, distinctive user interface.

APPLICATIONS

- Sound power rating and comparison in accordance with multiple ISO standards, e.g. for product noise labelling
- Production audits and high-volume testing
- Preventive and reactive sound design of products

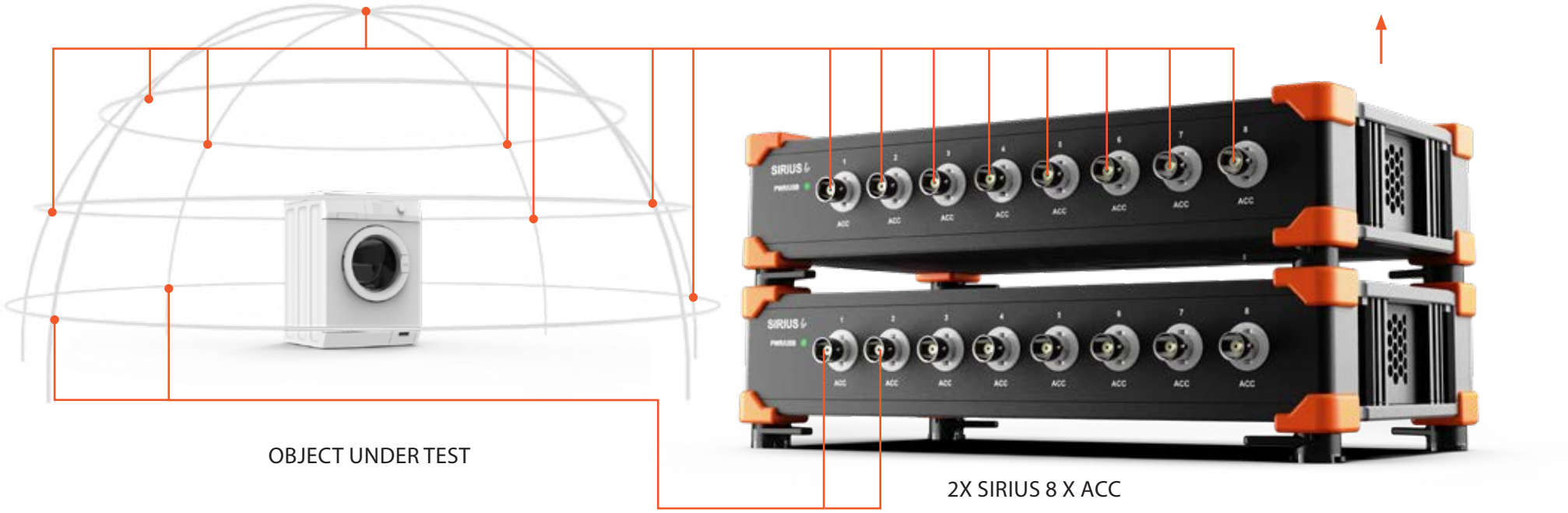
FUNCTIONALITY

Sound sources such as machinery radiates acoustic power and this creates sound pressure. Sound pressure the measurable effect, but sound power is the cause. Sound power is useful to quantify the noise of a product.

Sound Power is defined as the total sound energy radiated by a sound source per unit time - the unit of measurement is the watt. The sound power level is the preferred measurement as it is consistent, comparable, and more useful for noise control engineering – results are usually reported in dB.

10 CHANNEL HEMISPHERE WITH 10 MICROPHONES
ACCORDING TO ISO 3744:2010(E)

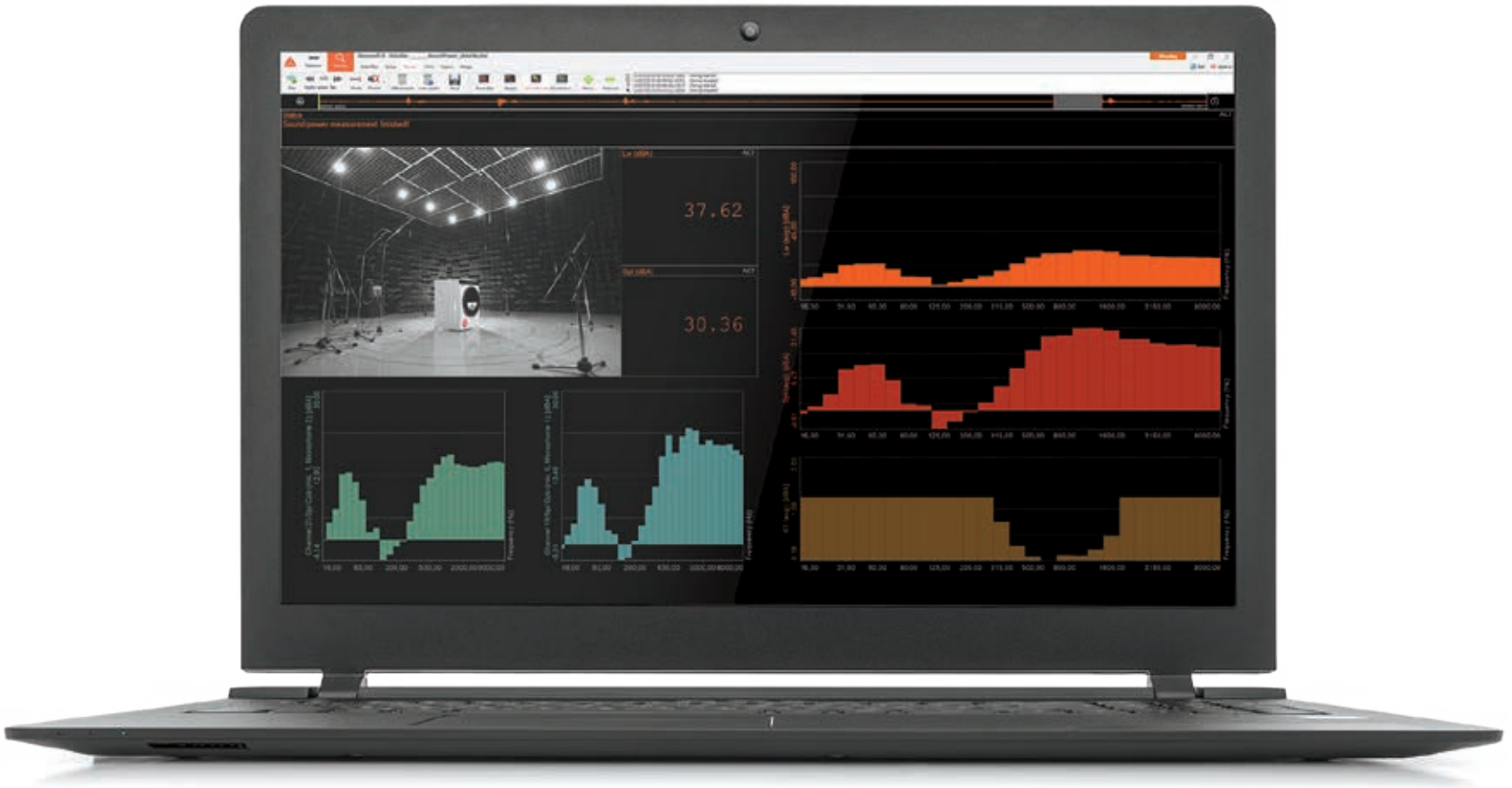
DEWESoft® X
SOFTWARE



OBJECT UNDER TEST

2X SIRIUS 8 X ACC

KEY FEATURES



MULTIPLE STANDARDS WITH A SINGLE SOLUTION

Fully compliant with relevant sound power standards ISO 3741, ISO 3743-1, ISO 3743-2, ISO 3744, ISO 3745, ISO 639-3, ISO 639-4, ISO 639-5, ISO 639-6

STEP-BY-STEP PROCEDURE

Guides you through the entire measurement procedure with the clear and comprehensive user interface of Dewesoft X software.

REPORTING TEMPLATE

After conducting the measurement, present your data in the pre-defined yet flexible report template.

HEAVY MACHINERY PROCEDURE

Designated measurement procedures for heavy machinery.

REAL TIME AND OFFLINE CALCULATION

All calculated parameters are available during measurement as well as offline; rapid calculation of correction factors K1 (background noise measurement), K2 (room correction with integrated RT60 module), C1, C2 and C3 (deviations due to meteorological reasons - temperature and barometric pressure); support for raw time domain data storing and offline sound power calculation.

SPECS

DAQ SYSTEM - SIRIUS ACC TYPE INPUT		
Inputs		
Input types	Voltage, IEPE	
ADC Type	24bit delta-sigma dual core with anti-aliasing filter	
Sampling Rate	Simultaneous 200kS/sec	
Ranges (Dual Core Low Range)	**±10V (±500mV)**	**±500mV (NA)**
Input Accuracy (Dual Core)	±0.1% of reading ±10(1)mV	±0.1 of reading ±1(NA)mV
Dynamic Range@10kS (Dual Core)	140 dB (160 dB)	135 dB (NA)
Typ. SNR@50kS (Dual Core)	107 dB (125 dB)	100 dB (NA)
Typ. CMR @ 50Hz/1kHz	140/120 dB	140/120 dB
Gain Drift	Typical 10 ppm/K, max. 30 ppm/K	
Offset Drift	Typical 0.5 µV/K + 2 ppm of range/K, max 2 µV/K + 10 ppm of range/K	
Gain Linearity	<0.02%	
Inter Channel Phase-mismatch	0.02° * fin [kHz] + 0.1° (@ 200 kS/sec)	
Channel Cross talk	>160 dB @ 1kHz	
Input Coupling	DC, AC 0.1 Hz,1Hz	
Input Impedance	1 MΩ (270kΩ for AC coupling ≥ 1Hz) in parallel with 100pF	
Overvoltage Protection	In+ to In-: 50 V continuous; 200V peak (10msec)	
IEPE mode		
Excitation	2, 4, 8, 12, 16 or 20mA	
Compliance voltage	25 Volt	
Output Impedance	>100 kΩ	
Sensor detection	Shortcut: <4Volt; Open: > 19Volt	
Counters (ACC+ type only)		
Inputs	1 digital counter input, 3 digital inputs, Fully synchronized with analog data	
Counter Modes	counting, waveform timing, encoder, tacho, gear-tooth sensor	
Additional Specifications		
Input connector BNC	BNC	
TEDS support	IEPE mode only	

SOFTWARE: DEWESoft X3	
Recommended	
Processor:	Intel Core i7 with 4 Cores (3rd generation or higher)
RAM:	8 gigabyte (GB)
Hard drive:	Solid-state drive (SSD)
Graphic card:	Compatible with DirectX 11
Display	1280x720 (HD Ready)
Operating system:	Windows 10 64-bit
*Actual requirements may be different due to specific setup configuration.	

TYPICAL CONFIGURATIONS

DEWESOFT SOUND POWER 4
- DEWESoft SP: sound power plugin
- SIRIUSm-4xACC: Sirius mini, 4 Channels
- 67HA-04: G.R.A.S. 1m 4 ch. CCP Sound Power Hemisphere
- 42AG: G.R.A.S. Multifunction Sound Calibrator, Class 1

DEWESOFT SOUND POWER 10
- DEWESoft SP: sound power plugin
- 2x SIRIUS-8xACC: Sirius, 16 Channels
- 67HA-05: G.R.A.S. 1m 10 ch. CCP Sound Power Hemisphere
- 42AG: G.R.A.S. Multifunction Sound Calibrator, Class 1

DEWESOFT SOUND POWER 20
- DEWESoft SP: sound power plugin
- 3x SIRIUS-8xACC: Sirius, 24 Channels
- 67HA-06: G.R.A.S. 1m 20 ch. CCP Sound Power Hemisphere
- 42AG: G.R.A.S. Multifunction Sound Calibrator, Class 1

OPTIONAL
- 67HB-04: G.R.A.S. 2m 4 ch. CCP Sound Power Hemisphere
- 67HB-05: G.R.A.S. 2m 10 ch. CCP Sound Power Hemisphere
- 67HB-06: G.R.A.S. 1m 20 ch. CCP Sound Power Hemisphere
- AL0006: G.R.A.S. Tripod, general purpose, high quality
- AL0008: G.R.A.S. 1/2" Microphone Holder, POM

RELATED PRODUCTS

- Sound Intensity
- Sound Quality
- RT60
- Sound Level Meter

DEWESoft®

LEARN MORE:

https://dewesoft.com/applications/acoustics/sound-power

HEADQUARTERS

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