

## HD2050 - Dodecahedron Loudspeaker

To test buildings acoustic insulation, it's necessary to use sound sources that meet the demands of specific technical ISO standards.

Delta Ohm has developed a system for the measurement of passive acoustic performances of buildings that integrates the most advanced features required for this type of equipment.

The need for high noise excitation levels, necessary to deal with increasing insulation values of modern buildings, has been made co-exist with portability and versatility among the best on the market today.

**HD2050** is a sound source composed of 12 speakers arranged in a dodecahedral chassis, capable of radiating high power sound energy in all directions with a directionality in accordance with ISO3382.

The sound source can be integrated with the digital amplification system **HD2050.20**, which offers high power as well as providing an equalizer that adapts the system's response to any more specific measurement needs.

### Features:

- According to ISO 140-3, ISO 3382, UNI 11367 (D.p.c.m. 5/12/97).
- Customizable user setup with user defined equalization when used with **HD2050.20** power amplifier.
- **High Power Level**

With more than **120 dB** (LIN) re 1pW sound power level, the HD2050 can also be used for sound insulation measures where the signal/noise ratio in the receiving room becomes critical. The linear frequency range from **80 Hz** to **10 kHz** (1/3 oct) can easily cover the requirements of technical standards for the measurement of acoustic insulation of buildings. In addition the spectrum extension over canonical range 100 Hz ÷ 3150 Hz makes the system HD2050 a perfect tool also for room acoustics measurements. The optional subwoofer HD2050.40 further improves power and response extension at lower frequency to cover specific applications in large volume rooms.

### • Versatility of use with digital amplification

Power amplifier HD2050.20 incorporates a parametric equalizer that allows to change the emission spectrum of HD2050. With this tool, specific measurement needs can be easily satisfied, such as the need to concentrate more sound power in specific areas of the acoustic frequency spectrum. The software supplied with the power amplifier, allows to customize the frequency response and then store it, in order to be loaded and activated in the dodecahedron-amplifier system when needed.

### • Lightness and portability

With a weight of only 9 kg and an outer diameter of 38.5 cm, the HD2050 is one of the lightest dodecahedron speakers on the market. HD2050.20 digital amplifier provides an output of more than 1000 W @ 12 ohm, and comes with an extremely rugged and lightweight flight case. The HD2050 system is designed for in situ portability: the dodecahedron has a robust and ergonomic T shaped carrying handle.

### Accessories

The system can be supplied with all the accessories useful for transport and correct in situ positioning: extendable tripod with steering wheels **HD2050.1** (minimum height 1300 mm, maximum height 2050 mm), wireless remote control, flight case for loudspeaker **HD2050-V**. For best performances, HD2050 should be driven with **HD2050.20** power amplifier (including wireless remote control **HD2050.20R**) and **HD2050.40** subwoofer to extend the frequency response down to 20Hz.

### Applications:

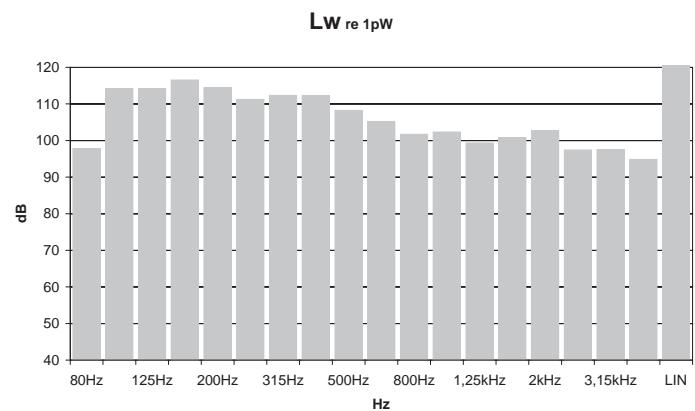
- Sound insulation
- Sound absorption
- Reverberation time measurements
- Architectural acoustics
- Impulse response of rooms

### Technical specifications:

Reference Standards	ISO 140-3: 2006 ISO 3382: 2001
Nominal impedance	12 + 12 ohm
Power	Peak 540 + 540 W Nom. 180 + 180 W
Loudspeakers	12 x 5"
Operating frequency range	80 Hz ÷ 16 kHz (1/3 oct. bands)
Connectors	Neutrik® NL4FC speakON
Sound Power Level	120 dB re 1pW ( $10^{-12}$ W) or better
Dimensions	Diameter 38.5 cm
Weight	9 kg
Handling	T shaped handle Flight-case

Note: Neutrik® is a registered trademark of Neutrik AG.

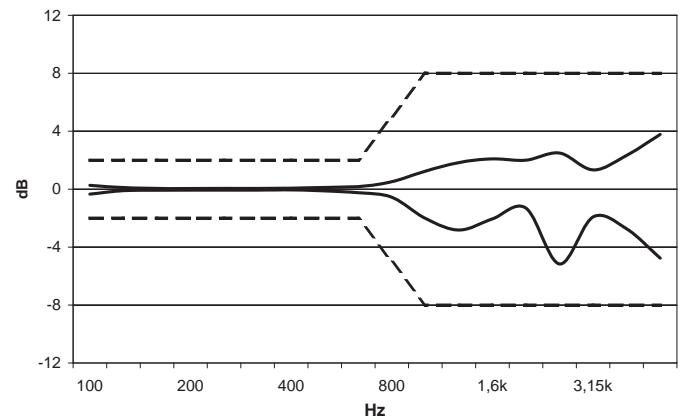
### Typical Sound Power Level spectrum



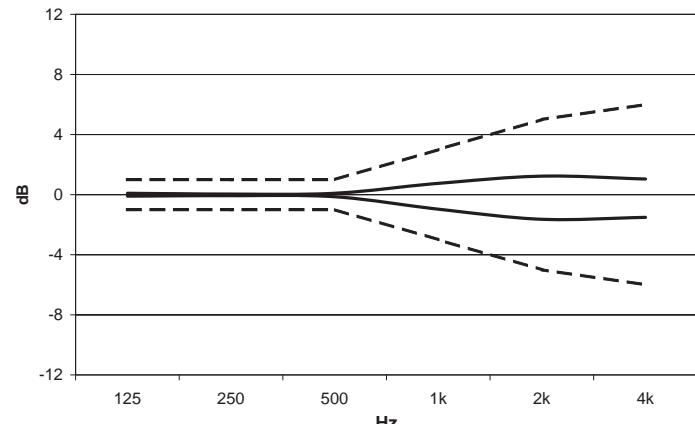
### Directivity:

**HD2050** meets the requirements of ISO 140-3 and ISO 3382. The diagrams of directional response measured in the horizontal plane in octave bands, show the ideally isotropic behaviour of HD2050. Below 1000 Hz the speaker has no significant directivity.

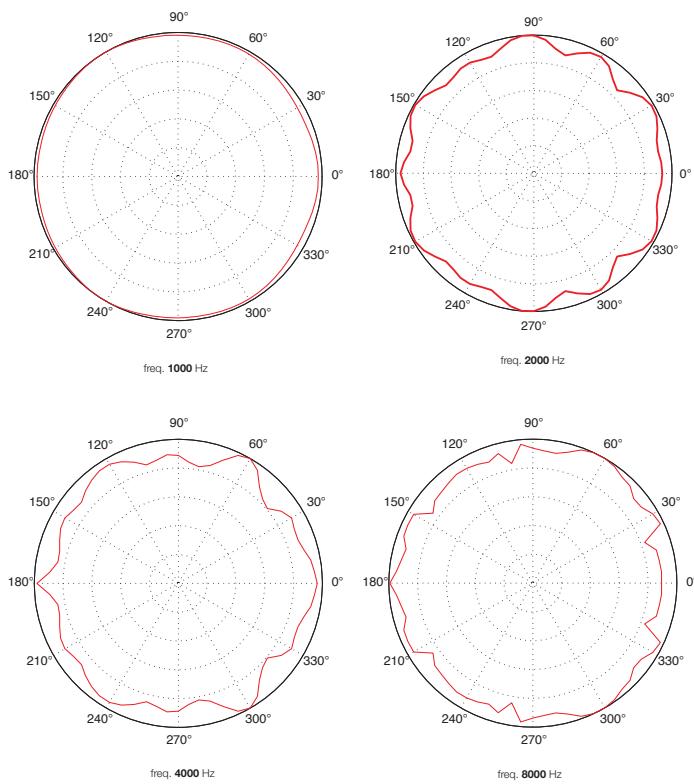
### Directivity ISO 140



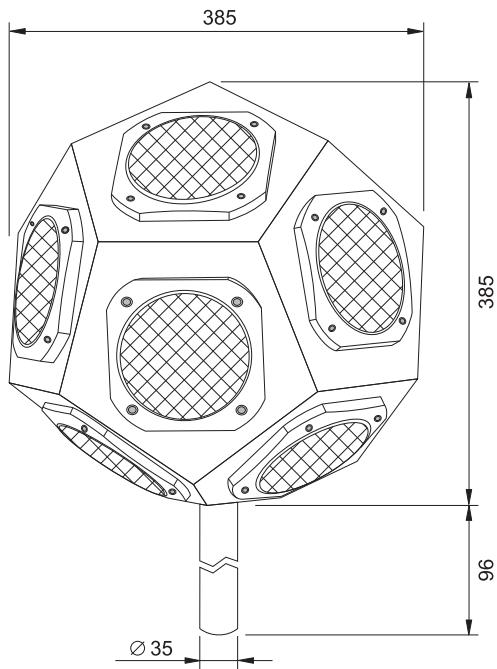
### Directivity ISO 3382



## Polar diagrams: 10 dB / div. – sectors 30°



## DIMENSIONS (mm)



## ORDERING CODES

**HD2050:** Dodecahedral loudspeaker according to ISO 140-3 and ISO 3382 standards. Including signal cable HD2050.1.5, cable HD2050.1.L. User manual. Carrying case.

## Accessories

**HD2050.1:** Stand for dodecahedron HD2050, with steering wheels, extensible and retractile. Minimum height 1300mm, maximum height 2050mm. Damping of the extensible rod.

**HD2050.1.5:** Signal cable, length 5 m.

**HD2050.1.L:** Signal cable adapter.

**HD2050V:** Carrying case for HD2050 dodecahedron.

**HD2050.20:** Digital power amplifier with integrated parametric equaliser. Includes flight case, Podware software, power supply cable HD2050.2, integrated wireless remote control HD2050.20R, user manual.

**HD2050.20R:** Wireless remote control Kit to control the internal noise generator of HD2050.20. Composed of receiver, transmitter with activation switch. Range use up to 100 m.

