



ntek 

NOISE AND VIBRATIONS RESEARCH







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# Interview

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*Innovation is the key for the transformation and “cultivating innovation” is the driving force in our Company future trend.*

*I intend innovation as a disruptive enabler to create new projects and strategies for new Acoustics and Vibrations solutions that seemed inconceivable just a few years ago.*

*This driver allows us creating completely new product ideas and solutions that take in consideration sustainability and energy efficiency: at the end, these innovations pave the way for a transformation of our segment operating with less materials, less waste while obtaining higher performances.*

*For the near future we have a clear focus to actively re-shape the boundaries of the Acoustics and Vibrations segment.*

*Indeed, we have started thinking about industry 5.0 as our company attitude.*

*Industry 5.0 will disrupt and change most of our traditional concepts in our field and will step into the future daily business due to the velocity of further technological development and changing human process integration.*

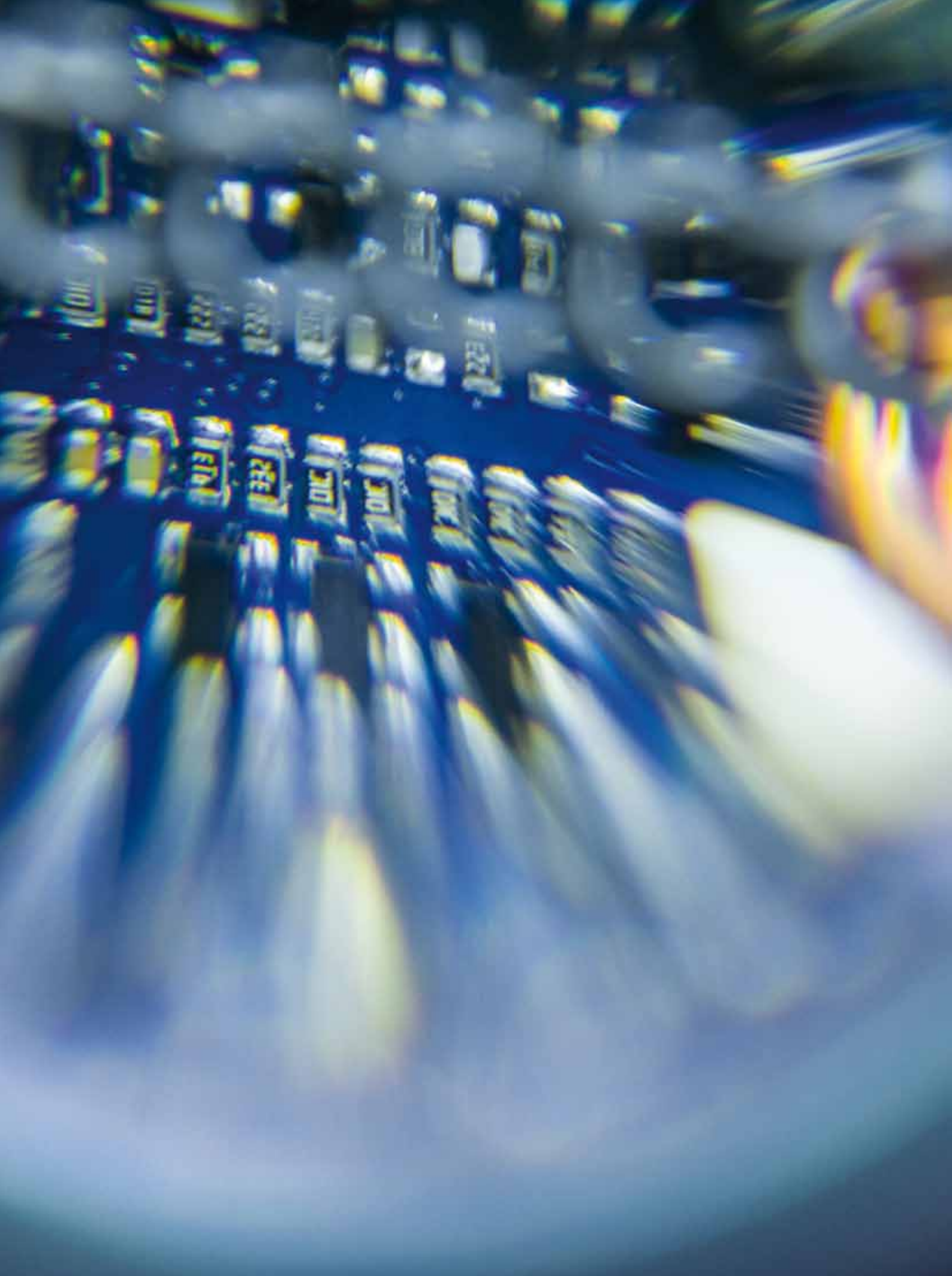
*This is the path we will follow to redesign the boundaries of our products in Acoustics and Vibrations.*

**Giancarlo Sassi**

General Manager

A handwritten signature in black ink, appearing to read 'Giancarlo Sassi', written in a cursive style.







# Company identity

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*Ntek is specialized  
in products and services  
for noise and vibration  
measurement  
and control*

The company has been able to improve in designing, developing and producing solutions that mix simplicity, portability and user-friendly products with excellent quality.

Ntek main goal is to supply a qualified service with a complete range of products delivered on time in order to guarantee its customers the chance to focus on their business.

To keep this standard we continue to invest strongly in innovative products and productive processes.

## **OUR VISION**

We believe that acoustics is the basis of wellness and improvement of life quality.

It's for this reason that we develop, innovate and produce equipment inspired to this philosophy.

## **HOW WE WORK**

Ntek can ensure a high level of service, thanks to modern processes and new laboratories, completely renewed in equipment for different operations of design, production, measurement, check and control.

## **INTERNAL LOGISTICS AND STOCK**

With its operative location of 500 m<sup>2</sup> and its internal stock, Ntek guarantees available products in a very short time if compared with a standard delivery time of 45/60 days.

The company is structured to be flexible with logistics activities and in answering efficiently to the productive needs of our customers.

## **SUSTAINABILITY**

Green company, eco-friendly, aimed to a continuous improvement of quality and safety in industrial processes.



# Sustainability

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*Sustainability and energy efficiency drive our products development. This means producing equipment that consume less energy and less raw material in manufacturing, while maintaining Ntek brand quality. Thus, we continually invest in research and development to create products that are increasingly more environmentally friendly*

## **SUSTAINABILITY**

As a result of efforts to increase sustainability in our products, and to surpass our customers' highest expectations, we have developed the 3D printed OMNI Series, made with additive production.

The new OMNI Series printed in 3D represents the real breakthrough. Production with additive technology, in addition to a greater freedom in design, guarantees with its sphericity the achievement of greater isotropy and omnidirectionality. Moreover, the filament used to print the OMNI Series in 3D can also contribute to a more sustainable environment in the future.

All our OMNI Series in 3D is made with a special PLA thermoplastic. PLA (or Poly-Lactic Acid in full) is a thermoplastic polymer which is extruded from the starch of plants, such as corn, cassava, sugarcane, cereals, or sugar beet.

By being derived from biological resources this type of thermoplastic material can be biodegradable under the right conditions (such as an active compost heap, with enough presence of oxygen) and therefore has a much less environmental impact than thermoplastics derived from fossil fuels.

## **ENERGY EFFICIENCY**

Ntek is the first company specialized in noise and vibration that implemented the amplifier AMG Mini with integrated native Hybrid Technology. Due to its hybrid technology, the Ntek AMG Mini amplifier and noise generator is able to operate either through AC power supply or in a totally independent way, thanks to its internal battery pack of rechargeable lithium batteries, thus guaranteeing an autonomy of about 60 minutes at the highest performances.

All our equipment during the first recharge of the batteries make use of renewable energy coming from solar energy.









# Acoustics

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*The main goal of environmental acoustics is to improve, every day, the quality of places in which people live, both internally and externally in order to ensure the best acoustical comfort. Acoustics works in different separate areas: environmental, building acoustics, industrial and architectural acoustics*

## **ARCHITECTURAL ACOUSTICS**

Architectural acoustics is the relationship between sound produced in a space and its listeners, of particular concern in the design of concert halls and auditoriums. Good acoustic design takes into account issues as reverberation time, sound absorption of the finish materials, echoes, acoustic shadows, sound intimacy, texture, blend and external noise.

The **reverberation time** of a room characterizes how long acoustic energy remains in a room. The reverberant sound in an auditorium dies away with time as the sound energy is absorbed by multiple interactions with the surfaces of the room. A standard reverberation time has been defined as the time for the sound to die away 60 decibels below its original level.

## **BUILDING ACOUSTICS**

Building acoustics concerns the level of acoustic comfort for the occupants of buildings. This includes the minimization of noise transmission from one space to another and the control of the characteristics of sound within spaces themselves.

Both for new buildings and for restructuring of existing buildings, planning and architectural laws should be applied to guarantee an appropriate acoustical insulation, for internal noise sources (ex. installations, services, other lodgers...) and external sources (ex. traffic and surrounding noise).

Building acoustics takes in consideration:

- **Airborne sound insulation through spaces:**  
evaluation of the insulation of two spaces adjacent and overlapping, belonging to different residential units.
- **Airborne sound insulation through façades:**  
evaluation of insulation of façades, compared to external noise.
- **Impact sound insulation by tapping:**  
evaluation of acoustic insulation by tapping noise with standard source.

## **ACOUSTICAL REQUIREMENTS VERIFICATION**

The current regulatory framework sets down the fundamental principles for “the protection of residential and outdoor environments from noise pollution”. The article 2 of the law defines ‘noise pollution’ as follows: “The introduction of noise to domestic or outdoors environments such as to cause annoyance or disturbance to repose or to human activities, danger to human health, deterioration of ecosystems,

material goods, monuments, domestic and external environment, or such as to interfere with legitimate uses of the same environments”. It is demonstrated that these harmful noises are mainly caused by the following sources and receptors:

### *Sources*

- Road, railways and airborne traffic;
- Productive activities and public exercises;
- Citizens life routine.

### *Receptors*

- Erroneous dislocation, shape and position of buildings;
- Materials and installations without adequate acoustical features;
- Weakness of outdoor acoustical insulation and between internal subdivisions.

*Applicable law focuses to reduce noise emissions from the source, and also to reduce population exposition to noise, progressively, through adaptation of more suitable passive measurements.*







NTEK S.p.A.  
Unibore - 2016 - 364512

NORMA  
EUROPEA

Acustica - Misure in opera dell'isolamento acustico in  
edifici e di elementi di edificio - Parte 2: Isolamento dal  
rumore di calpestio

UNI EN ISO  
16283-2

GENNAIO 2016

Versione italiana  
dal luglio 2016

Acoustics - Field measurement of sound insulation in buildings and  
of building elements - Part 2: Impact sound insulation

La norma descrive un metodo in opera per la misurazione  
dell'isolamento dai rumori di calpestio di soletti utilizzando il  
generatore normalizzato di calpestio. Il metodo è applicabile sia a  
soletti nuovi sia a pavimentazioni con rivestimenti.  
I risultati ottenuti possono essere utilizzati per confrontare le  
proprietà di isolamento acustico al calpestio di pavimentazioni e  
per confrontare l'isolamento acustico apparente di soletti con  
i requisiti ben definiti.  
Il metodo di prova si applica ad ambienti da 10 m<sup>3</sup> a 250 m<sup>3</sup>  
nell'intervallo di frequenza da 50 Hz a 5 000 Hz.

TESTO ITALIANO

La presente norma è la versione ufficiale in lingua italiana della  
norma europea EN ISO 16283-2 (edizione dicembre 2015).

La presente norma sostituisce la UNI 11568:2015

ICS 91.120.20; 91.080.30

UNITE ITALIANO  
DI NORMAZIONE

UNI EN ISO 16283-2:2016

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Pagina 1

ntek

Laboratory Acoustics and Vibration

Test Report

TAPPING MACHINE

NTEK

TPM-PRO

TB62-BF2

S.R.L.

Luca Gabrielli, 18

Maurizio Canavese (TO)

values are traceable to National  
and supported realizations of



# Regulations

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*Italian and international law on acoustic insulation requires more refined tools for the design and the test of buildings acoustic performances*

## **NATIONAL**

An examination of passive acoustical requirements consists on determining if a new building (or a restructured one) respects or not limits values of noise insulation defined in decree DPCM 5-12-1997 and following DM 11-01-2017 on “determination of passive acoustic requirements for buildings”. This law has been released to guarantee a life environment with a low noise level and the absence of annoyance towards neighboring life environment to avoid legal disputes.

This decree defines noise values (minimum or maximum) inside of buildings regarding:

- Noise insulation among different property units;
- External noise insulation;
- Tapping noise insulation;
- Noise insulation of continuous and discontinuous operation systems.

## **INTERNATIONAL**

Internationally, technical laws for passive acoustical requirements of buildings are represented by UNI EN ISO 16283 standard (Acoustics - Measurements of building acoustic insulation and parts of building) and, in particular, by:

- UNI EN ISO 16283-1: airborne acoustical insulation;
- UNI EN ISO 16283-2: noise insulation by tapping;
- UNI EN ISO 16283-3: acoustical insulation of façade.

Regarding **reverberation time (T)**, is defined by UNI EN ISO 3382 law.

# Certifications

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## **IMP<sup>3</sup>ROVE**

Ntek has twice cosecutively achieved the IMP<sup>3</sup>rove award (IMProving Innovation Management Performance with sustainable IMPact) according with European Technical Specification UNI CEN/ TS 16555-1 and the CWA (CEN Workshop Agreement).

The technical specification is a guide to structure and maintain a system to manage innovation, suitable for all organizations, with a close attention to the specific needs of SMEs.

The IMP<sup>3</sup>rove Certification considers innovation an important tool in order to improve the results, the value and the competitiveness of company. It is structured in 11 paragraphs that analyze the whole innovation process, from context analysis to the comprehension and application of innovation management techniques and validation of reached results.

## **ELECTROMAGNETIC COMPATIBILITY CERTIFICATION**

Ntek products are provided with compliance declaration to CEE directives:

- Directive 89/336/CEE (Electromagnetic compatibility) and 92/31/CEE and 93/68/CEE following changes;
- Directive 73/23/CEE (Low voltage) and 93/68/CEE following changes;
- Directive 92/59/CEE (General safety of products).

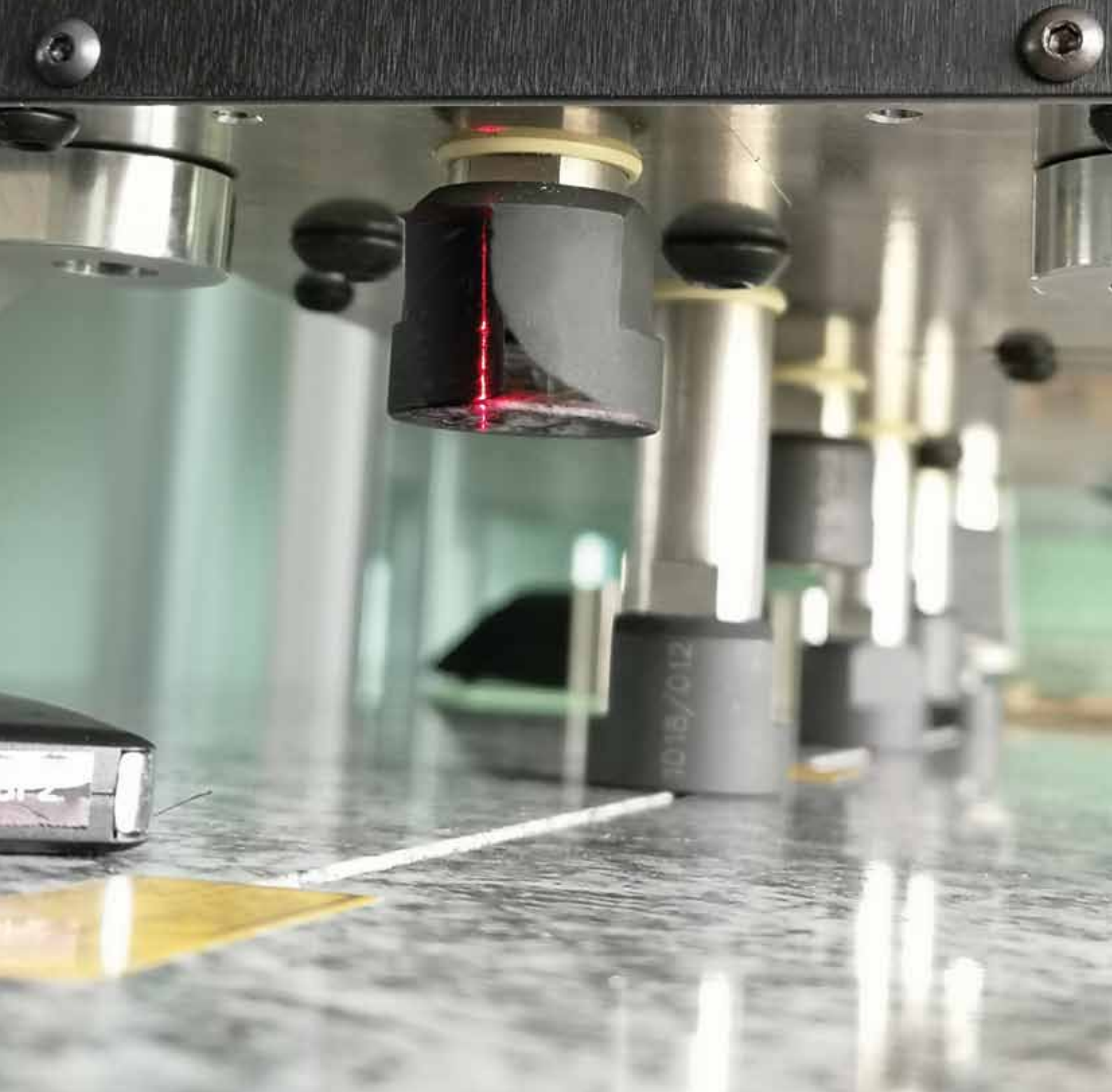
Ntek products are compliant to the UNI EN ISO sector-specific technical directives.







# TPM pro





# Metrological certifications

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Ntek periodically verifies metrological quality of its products. The reference of measurements to national and international samples is granted by calibration operated by accredited laboratories.

Ntek has obtained the following certifications:

PTB (Germany) METAS (Switzerland), MFPA (Germany), IMS certification (Slovenia) and the UKAS calibration certificate (UK) for our tapping machine.

Ntek has received the PTB (Physikalisch-Technische Bundesanstalt) certification from the German National Metrology Institute, the highest federal authority and research institute for science and technology in Germany.

This certification ensures that the products and the process of the TPM Pro are compliant with the international standards. The PTB certificate is officially recognized for the high accuracy and the worldwide expertise.

The Federal Institute of Metrology (METAS) is the Swiss national metrology institute recognized by UE and provides manufacturers of measuring instruments with the required conformity assessments to place their products on the market.

German MFPA Leipzig GmbH is a Testing, Certification and Inspection body for building products, that has certified the conformity of TPM Pro.

IMS Merilni Sistemi d.o.o. is a Calibration Laboratory in Slovenia which has tested our tapping machine according to the technical requirements UNI EN ISO of the sector.

UKAS is the national accreditation, calibration and certification Service of United Kingdom. The TPM Pro addressed to United Kingdom and Ireland are suitable to reach the UKAS calibration certificate.

# Calibration laboratory

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As an international manufacturer of building acoustic equipment Ntek has its own laboratory to calibrate tapping machines and sound sources. Ntek calibration laboratory works on all brands and models of equipment, offering a fast and accurate service. As foreseen by the ISO 16283-1/2/3 standard, it is recommended to perform the revision of sound sources (dodecahedrons, directional speakers, tapping machines) every 2 years. The calibration provides documented and traceable measurement accuracy and confirms that tested products meet the published specifications.

## **TAPPING MACHINE**

Verification of the impact velocity, impact rate and the dimensional measurements of the hammers according to UNI EN ISO 16283-2 and UNI EN ISO 10140 – Annex E – using the following instruments:

- test bench with structure in aluminum and serizzo marble surface;
- laser velocimeter
- a caliber and a precision scale interfaced with an industrial computer with specific post-processing software.

## **SOUND SOURCES**

UNI EN ISO 16283-1 standard also require bi-annual verification of the speaker systems to confirm compliance with this standard. Verification of dodecahedron loudspeaker directivity in accordance with ISO 16283-1, Annex A. Requires matched power amplifier.

Ntek calibration laboratory have developed a verification procedure to comply with these requirements: the dodecahedron speaker is assembled on a rotating engine in a semi-anechoic chamber and measured by several microphones in order to obtain the omnidirectionality. Measurements are calculated and compared with the standard specifications.









# Products

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## MAIN FEATURES:



**QUALITY**



**RELIABILITY**



**PORTABILITY**



**STOCK AVAILABILITY**



**USER-FRIENDLINESS**



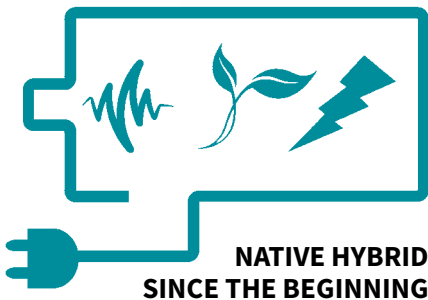
**EXCELLENT QUALITY  
PRICE RATIO**



**EASY TO CARRY  
SOLUTIONS**

# AMGMini

Amplifier and pink and white noise generator





AMG Mini amplifier has been designed to operate at maximum power with OMNI Series and DIR Slim loudspeakers.

Since the very first version, AMG Mini can count on a Native Hybrid technology.

In a single tool are integrated two power modules with high quality in order to amplify and balance in a correct way the sound energy towards the sound sources of the OMNI Series or the Directive loudspeaker.

Thanks to its hybrid technology, the Ntek AMG Mini amplifier and noise generator is able to operate either through AC power supply or in a totally independent way due to the internal battery pack of rechargeable lithium batteries. The amplifier system can work autonomously for approximately 60 minutes at full power.

AMG Mini can switch from AC power to hybrid power and vice-versa, without any change in the power output levels. In case of unforeseen battery unload during a field analysis, AMG Mini will continue to operate due to the ability to switch from one type of power supply to the other without causing power variations.

AMG Mini is also available in the traditional version that works just with the AC power supply. AMG Mini amplifier is equipped with a wireless system that allows to activate the connected sources.

#### STANDARD EQUIPMENT

- Wireless remote control 433 MHz
- Antenna
- Connector BNC/RCA
- AC power cable



Scan for data sheet

#### CONFORMITY LAWS

UNI EN ISO:

3382, 354, 140, 16283.

Conform to CE directives.

#### TECHNICAL FEATURES

- Dimensions: 140 x 200 x 330 mm
- Weight: 5 kg – without battery pack: 3 kg
- Frequency response: 40 Hz - 10 KHz
- Batteries capacity: 1 hour at full power continuously
- Noise generator: white/pink or through BNC/RCA connector with alternative external sources for particular customer needs
- Channels number: 2 out
- Maximum power for channel 4  $\Omega$ : 350 W
- SNR (Signal to Noise Ratio): > 113 dBA
- Total Harmonic Distortion THD + N: < 0.05% from 0.1 W at full power (usually < 0.01%)
- Intermodulation distortion DIM100: < 0.02% from 0.1 W at full power (usually < 0.005%)
- Power factor:  $\cos\phi > 0.85 - 4 \Omega$  at full power
- Short circuit protection

#### DSP (Digital System Processor)

- Architecture: 1702
- Equalizer: whole parametric filters per channel

#### THERMIC FEATURES

- Work range: 0° – 40° C / 32° – 104° F
- Thermic protection

#### OPTIONAL EQUIPMENT

- Semi-rigid carrying bag
- Trolley flight case
- HP remote control: 866 MHz  
Distance in free field: up to 1.000 mt

The AMG Mini can be supplied with the HP remote control (866 MHz) that can work perfectly at long distances and through different floors, stairs and among not adjacent rooms.



All information subject to change without notice

# DIRSlim

Directional loudspeaker





DIR Slim directional loudspeaker is a robust and portable sound source, able to produce a high noise level. DIR Slim it's typically used to generate noise in a free-field for the evaluation of the transmission loss index of a façade.

Due to its outstanding performances of power and directivity it's also particularly suitable for acoustical insulation and reverberation time measurements.

DIR Slim is powered by the lightweight and portable AMG Mini power amplifier and can be used as an alternative to OMNI Series sound sources. DIR Slim can be also used with other external amplified sources, respecting the acoustic specifications of the system.

DIR Slim passive façade directional loudspeaker is equipped with a stiff and ergonomic structure, that simplifies transport and protection to impacts.

#### STANDARD EQUIPMENT

- 6 mt cable
- Optional**
- Semi-rigid carrying bag
- Incline adapter
- Trolley flight case

#### CONFORMITY LAWS

UNI EN ISO:  
140-5, 16283-3, 3382, 354.  
Conform to CE directives.

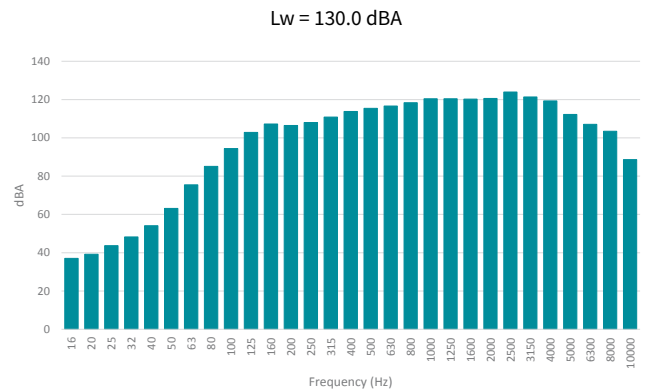
#### TECHNICAL FEATURES

- Dimensions: 260 x 210 x 320 mm
- Weight: 9 Kg
- Maximum power: 350 W
- Max sound power level: 130 dBA
- Impedance: 4 Ω
- 2 Pin Speakon: IN +1, -1 / OUT +2, -2

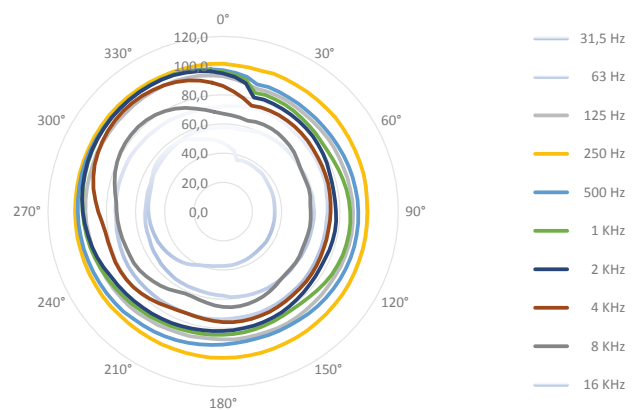


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#### SOUND POWER



#### DIRECTIVITY



All information subject to change without notice

# OMNI 5''

Dodecahedral sound source



The OMNI 5” sound source has been designed to operate continuously for several hours at full power. Compact and robust, the source provides uniform sound radiation.

The OMNI 5” is composed by 12 high-quality speakers properly designed for the building acoustics applications. The OMNI 5” is powered by the lightweight and portable AMG Mini power amplifier, which includes a pink and white noise generator with an equalized output signal.

When used with the power amplifier AMG Mini, the high sound power level ensures accurate measurements also in case of high insulation partitions and in large rooms.

**ACCESSORIES INCLUDED**

- 6 meters connecting cable

**Optional**

- Semi-rigid carrying bag
- Tripod with soft bag

**CONFORMITY LAWS**

UNI EN ISO:

140-4, 10140, 16283-1, 3382, 354;

Directivity (D) according to: 140, 16283 and 3382.

Conform to CE directives.

**TECHNICAL FEATURES**

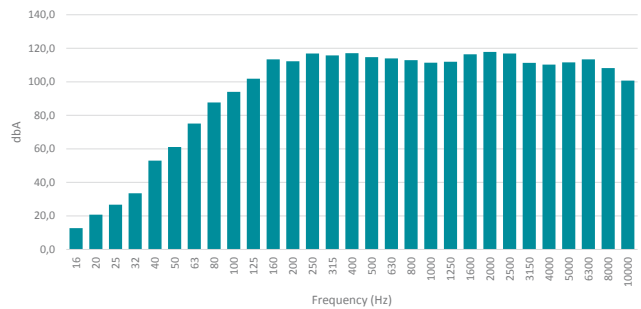
- Diameter: 350 mm
- Weight: 12,5 kg
- Max sound power level: 127 dBA
- Impedance: 3 + 3 Ω



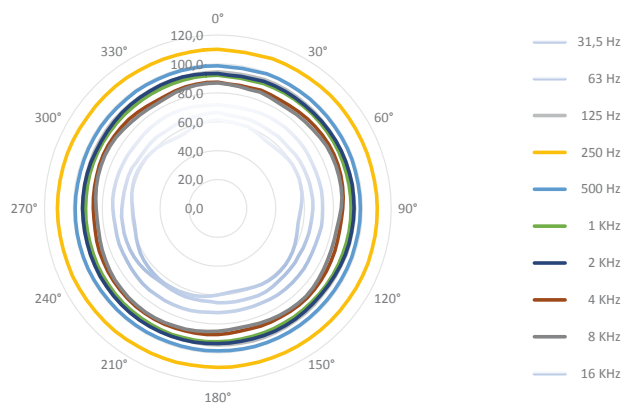
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**SOUND POWER**

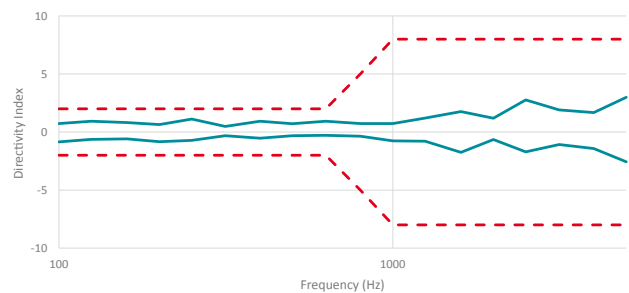
Lw = 127.0 dBA



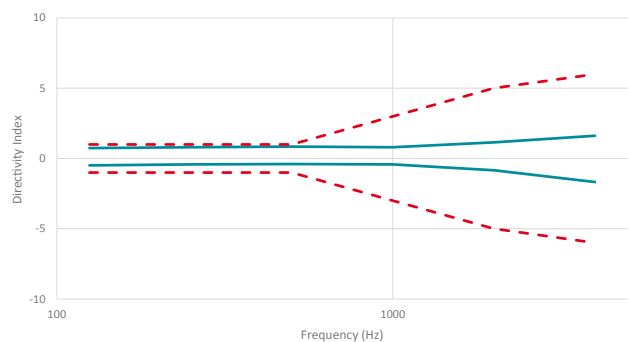
**DIRECTIVITY**



UNI EN ISO 16283



UNI EN ISO 3382



All information subject to change without notice



# OMNI 5" 3D

Omnidirectional sound source



The OMNI 5" 3D sound source has been designed to operate continuously for several hours at full power. Compact and robust, the source provides uniform sound radiation.

The 3D version is the evolution of the best-seller OMNI 5" traditional version with a lighter solution due to the additive manufacturing process.

The OMNI 5" 3D is composed by 12 high-quality speakers properly designed for the building acoustics applications. The OMNI 5" 3D is powered by the lightweight and portable AMG Mini power amplifier, which includes a pink and white noise generator with an equalized output signal.

When used with the power amplifier AMG Mini, the high sound power level ensures accurate measurements also in case of high insulation partitions and large rooms.

#### ACCESSORIES INCLUDED

- 6 meters connecting cable

#### Optional

- Semi-rigid carrying bag
- Tripod with soft bag

#### CONFORMITY LAWS

UNI EN ISO:

140-4, 10140, 16283-1, 3382, 354;

Directivity (D) according to: 140, 16283 and 3382.

Conform to CE directives.

#### TECHNICAL FEATURES

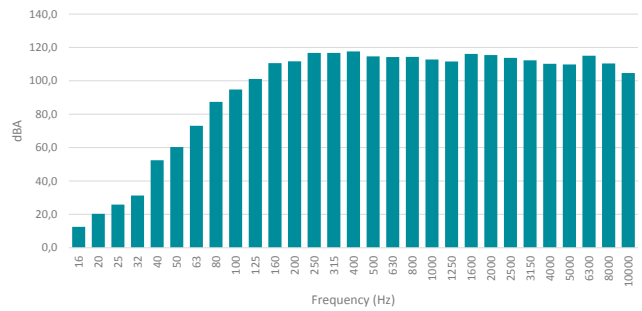
- Diameter: 340 mm
- Weight: 11 kg
- Max sound power level: 127 dBA
- Impedance:  $3 + 3 \Omega$



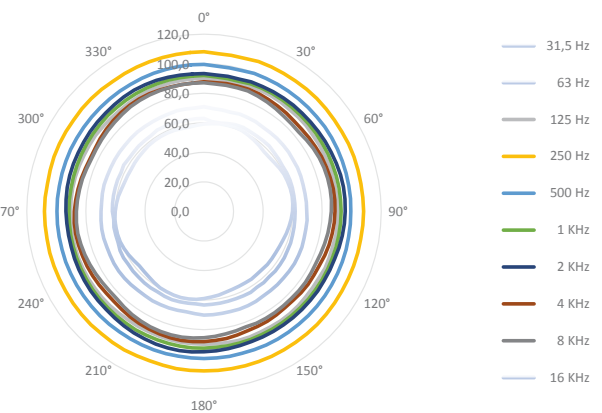
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#### SOUND POWER

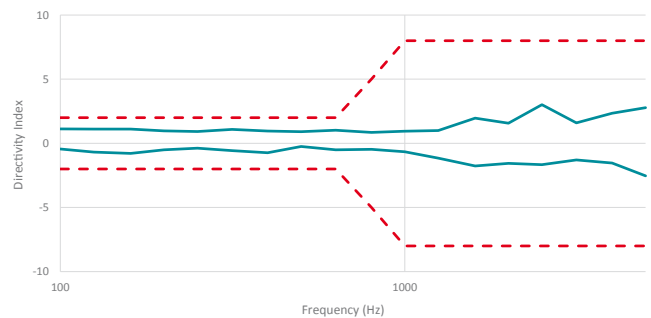
Lw = 127.0 dBA



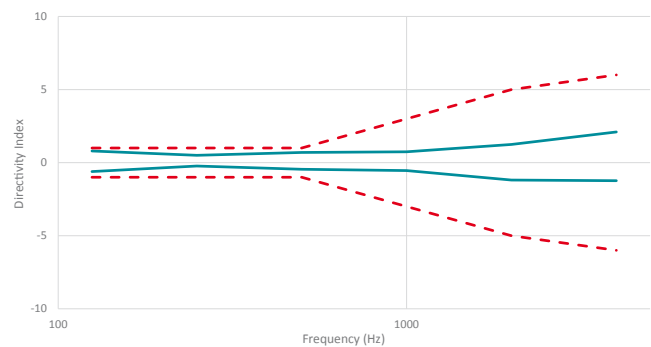
#### DIRECTIVITY



#### UNI EN ISO 16283



#### UNI EN ISO 3382



All information subject to change without notice



# SMART OMNI

Omnidirectional sound source



The SMART OMNI sound source has been created to match the high performances of OMNI 5”, the innovative 3D printing technology and the reduced size of OMNI 4”.

In just one product are included all the best technical features of OMNI Series and the high performances of the 5 inches speakers in just 9,5 Kg.

The SMART OMNI is powered by the lightweight and portable AMG Mini power amplifier, which includes a pink and white noise generator with an equalized output signal.

When used with the power amplifier AMG Mini, the high sound power level ensures accurate measurements also in case of high insulation partitions and large rooms.

With the spherical shape, all normative requirements on the source directivity are met.

**ACCESSORIES INCLUDED**

- 6 meters connecting cable

**Optional**

- Semi-rigid carrying bag
- Tripod with soft bag
- Trolley flight case

**CONFORMITY LAWS**

UNI EN ISO: 140-4, 10140, 16283-1, 3382, 354;  
 Directivity (D) according to: 140, 16283 and 3382.  
 Conform to CE directives.

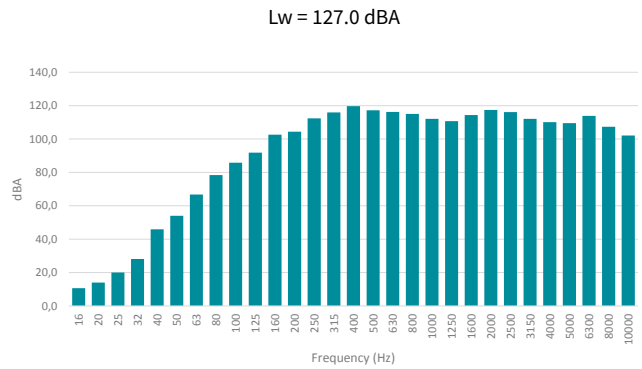
**TECHNICAL FEATURES**

- Diameter: 280 mm
- Weight: 9,5 kg
- Max sound power level: 127 dBA
- Impedance: 3 + 3 Ω

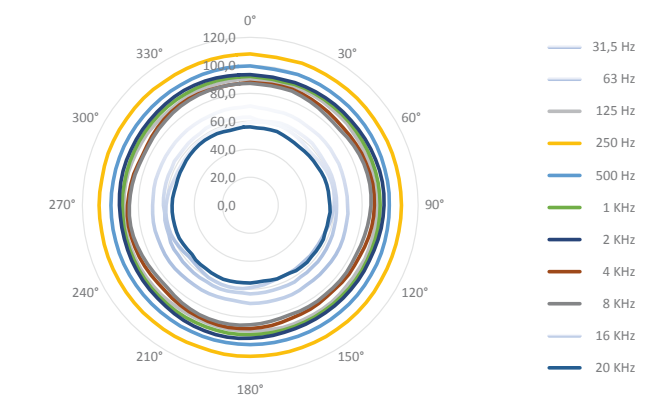


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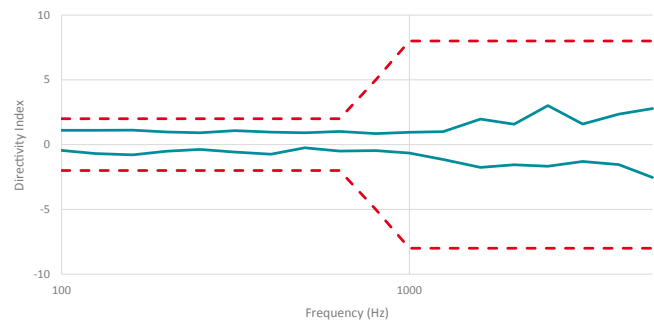
**SOUND POWER**



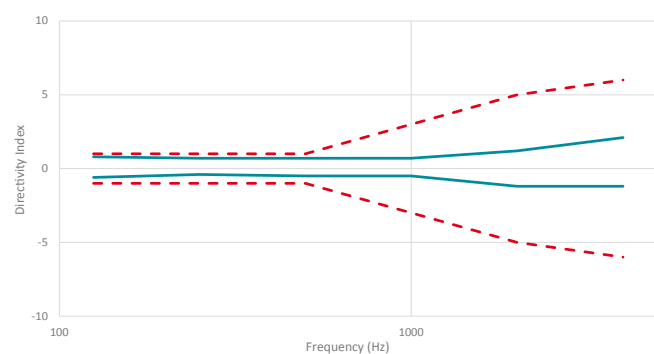
**DIRECTIVITY**



**UNI EN ISO 16283**



**UNI EN ISO 3382**



All information subject to change without notice



# OMNI 4" HP

Omnidirectional sound source



The OMNI 4" HP offers a powerful signal source for room & building acoustics measurements. Power, manageability and portability are essential requirements for acoustic technicians: OMNI 4" HP represents the best solution between weight and power.

The new spherical sound source OMNI 4" HP printed with the innovative additive manufacturing system, is specifically designed to grant an improved sound radiation and a even close to perfection isotropy.

The OMNI 4" HP omnidirectional sound source works with a cluster of 12 ferrite speakers in a round shape that radiate sound in a spherical distribution.

Powerful, 128 dBA, suitable for sound insulation measurements in large spaces and high demanding walls and floors. The reduced diameters of 280 mm allows it to be used also in limited space conditions.

With its spherical shape, all normative requirements on the source directivity are met.

**ACCESSORIES INCLUDED**

- 6 meters connecting cable

**Optional**

- Semi-rigid carrying bag
- Tripod with soft bag
- Trolley flight case

**CONFORMITY LAWS**

- UNI EN ISO:
- 140-4, 10140, 16283-1, 3382, 354;
- Directivity (D) according to: 140, 16283 and 3382.
- Conform to CE directives.

**TECHNICAL FEATURES**

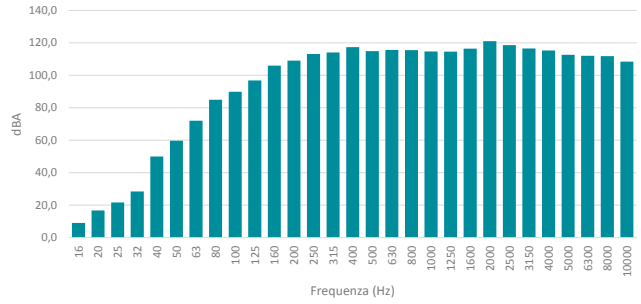
- Diameter: 280 mm
- Weight: 7,5 kg
- Max sound power level: 128 dBA
- Impedance: 3 + 3 Ω



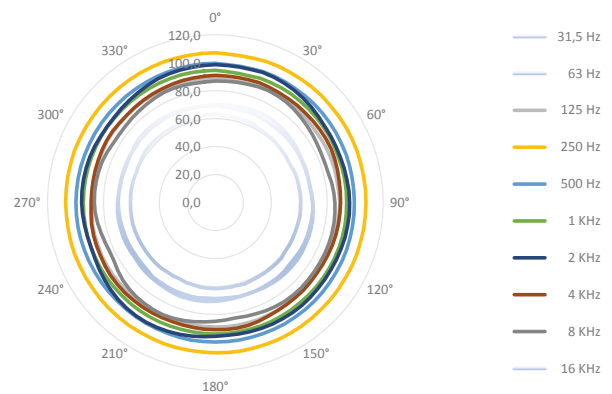
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**SOUND POWER**

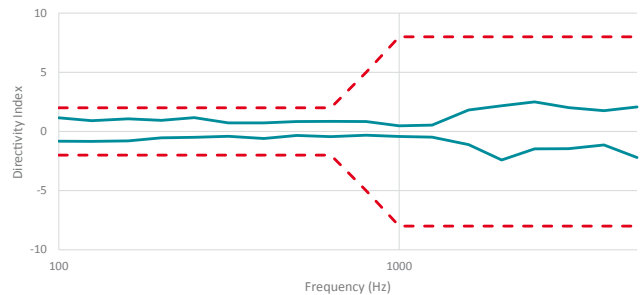
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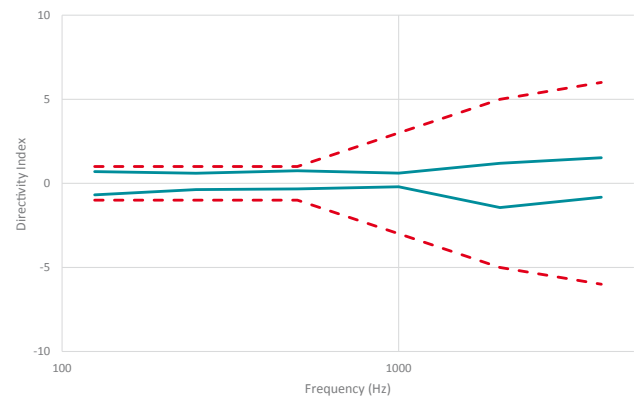
**DIRECTIVITY**



UNI EN ISO 16283



UNI EN ISO 3382



All information subject to change without notice

# OMNI 4" LT

Omnidirectional sound source





The OMNI 4” LT offers a lightweight and powerful signal source for room & building acoustics measurements. Portability is an essential requirement for acoustic technicians: OMNI 4” LT represents the best compromise between weight and performance.

The new spherical sound source OMNI 4” LT printed with the innovative additive manufacturing system, is specifically designed to grant an improved sound radiation and a even closer to perfection isotropy.

The OMNI 4” LT is composed by a cluster of 12 neodymium magnets speakers and only weight 4,5 Kg. The reduced diameter of 280 mm allows it to be used also in limited space conditions.

With its small diameter and lightweight, it is suitable when a portable and compact equipment is required, such as in case of vehicles, aircrafts, cabins and cockpits analysis.

Furthermore it is also perfect for sound insulation measurement in building and architectural acoustics.

#### ACCESSORIES INCLUDED

- 6 meters connecting cable

#### Optional

- Semi-rigid carrying bag
- Tripod with soft bag
- Trolley flight case

#### CONFORMITY LAWS

UNI EN ISO:

140-4, 10140, 16283-1, 3382, 354;

Directivity (D) according to: 140, 16283 and 3382.

Conform to CE directives.

#### TECHNICAL FEATURES

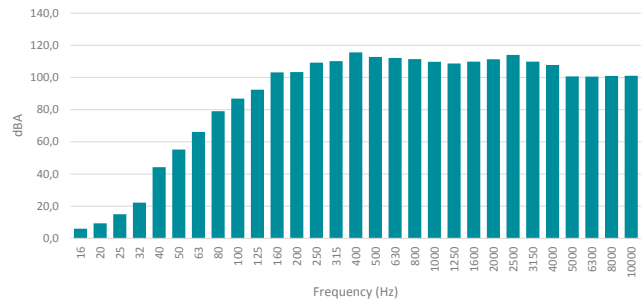
- Diameter: 280 mm
- Weight: 4,5 kg
- Max sound power level: 123 dBA
- Impedance: 3 + 3 Ω



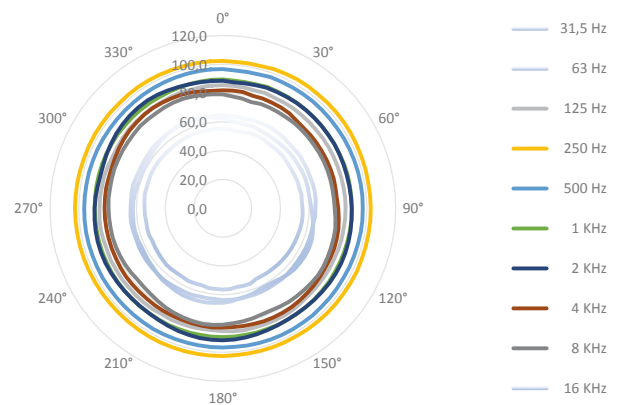
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#### SOUND POWER

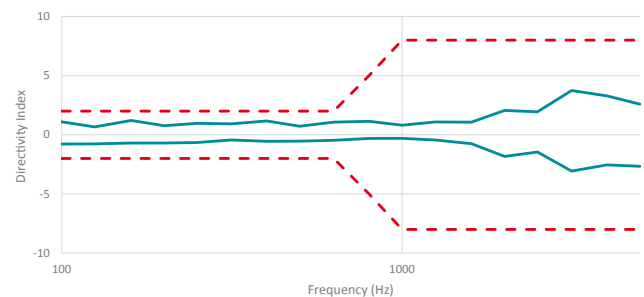
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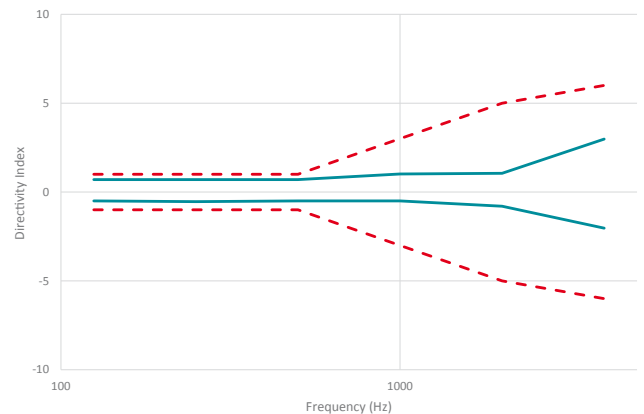
#### DIRECTIVITY



UNI EN ISO 16283



UNI EN ISO 3382



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# TPMPro

Tapping machine



The new TPM Pro tapping machine is the result of a teamwork made by Italian technicians specialized in design and manufacturing of measurement tools for acoustical impact calculation.

The rigid and solid structure has been designed specifically to guarantee a better transportability and make it one of the lightest on the market.

TPM Pro is equipped with an internal battery pack (lithium type) that can help the operator to work without any cable obstructions.

The battery is automatically charged while it is connected to the main power. The battery can assure 3 hours of autonomous operation if used continuously.

TPM Pro machine is PTB approved and the calibration of the machine height can be easily effected.

The retractable feet assure the best comfort during the placement of the TPM Pro.

The calibrator (supplied with TPM) can be adjusted in correspondence of the 3 feet in order to check the correct height of the TPM Pro. The correct alignment can be obtained screwing and/or unscrewing the anti-vibration rubber pads of the TPM Pro, then fix them screwing the locking ring up to the feet.

Wireless remote control allows the user to turn on and turn off the machine.

#### STANDARD EQUIPMENT

- Wireless remote control: 433 MHz
- Antenna
- Lithium battery pack
- Electricity supply cable 220V
- Calibrator 73 mm



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#### CONFORMITY LAWS

UNI EN ISO:

10140-3, 140-7, 16283-2.

ASTM: E492, E1007.

Conform to CE directives.

#### TECHNICAL FEATURES

- Dimensions: 160 x 290 x 520 mm
- Weight: 11 kg with batteries, antenna and remote control
- Supports: 3 retractable feet and adjustable in height
- Power: 100÷240VAC, 50/60 Hz
- Consumption: 220VA

#### Battery

- Rechargeable Lithium batteries
- Duration: 3 hours continuously
- Battery derating: <5% loss in capacity per 900 discharge/charge cycles
- Battery charging time: 3 hours

#### Hammers

- Five in line hammers
- Interaxcle spacing: 100±3 mm
- Weight: 500±6 g
- Diameter: 30±0.2mm
- Front radius: 500 mm
- Curve: ~ 500 mm
- Tapping rate: 10 impacts per second, rpm controlled by encoder feedback loop
- Sequence: 1, 3, 5, 2, 4
- Effective fall height: 40 mm adjustable ±5 mm

#### OPTIONAL EQUIPMENT



- Semi-rigid carrying bag
- Trolley flight case
- HP remote control: 866 MHz  
Distance in free field: up to 1.000 mt

The TPM Pro can be supplied with the HP remote control (866 MHz) that can work perfectly at long distances and through different floors, stairs and among not adjacent rooms.



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# MB01

Microphone boom



The MB01 microphone boom is used to obtain the spatial measurement of sound pressure levels by moving the microphone back and forth continuously.

Rotation speed, angle and arm length are adjustable.

MB01 can be use in building acoustics measurements and sound absorption test in a reverberation room.

Sustain brackets of MB01 allow to customize the trajectory angle of the rotating microphone boom.

Microphone boom can be activated at distance through a wireless remote control.

### STANDARD EQUIPMENT

- Remote control
- Manfrotto Telescopic boom
- Weight balancing
- Microphone clip
- Tripod + Soft bag for Tripod and Manfrotto boom
- 2 Allen keys for fixing
- Antenna
- Electricity supply cable 110V/220V at 24V DC

### CONFORMITY LAWS

UNI EN ISO:

140, 16283.

Conform to CE directives.

### TECHNICAL FEATURES

Main unit dimension:

- Diameter: 180 mm
- Height: 180 mm
- Weight: 3.5 kg
- Mounting: tripod allows inclined traverse plane
- Power: 24V DC 1A
- Rotating boom ray: 600 – 1800 mm
- Rotating angle: +/90° and +/180°
- Remote control: 433MHz
- Antenna: 433 MHz
- 3 sweep time: 30 sec, 60 sec, 120 sec

*Return automatically on zero when scan is over.*

### Noise emission

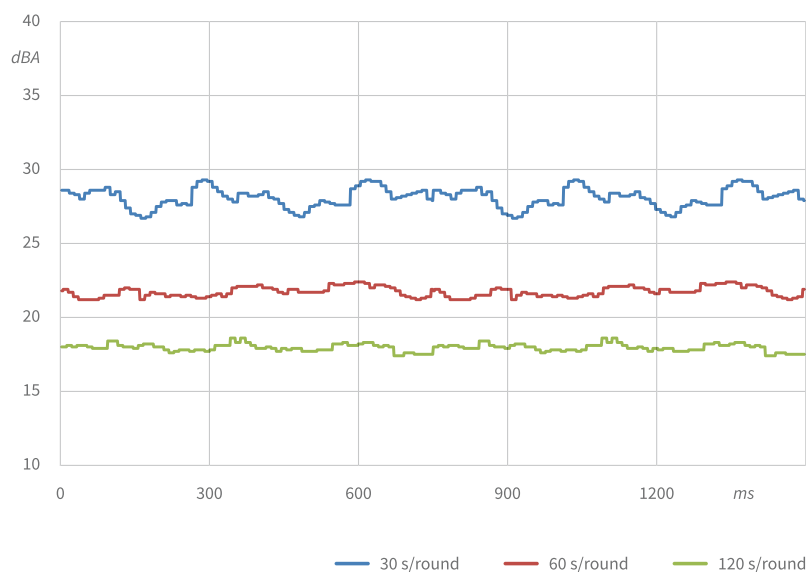
- Maximum speed: 30 dB
- Medium speed: 25 dB
- Minimum speed: 20 dB
- Resting: none

*Noise is measured into a semi-anechoic room with microphone positioned at 1.5 m from main unity.*

### Thermic features

- Temperature range: -10° – 55° C / 14° – 131° F
- Humidity: 0 – 90% RH

SPL - 1,5M



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# Contacts

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**Ntek** is placed in the northern part of Italy, close to Turin, city symbol of automotive industry and European capital of innovation, research and development.

The Company is located in San Maurizio Canavese, in a strategic industrial area, 1 Km far away from the international airport of Caselle (Turin).

Our team is composed of passionate, motivated and skilled people that can help you in your daily activities with Noise and Vibrations solutions.

## **Ntek**

Via Gabrielli 18  
10077 San Maurizio Canavese (TO)  
ITALY  
[www.ntek.it](http://www.ntek.it)  
[info@ntek.it](mailto:info@ntek.it)  
+39 011 40 53 600

Find us on:





**Ntek S.r.l.**

Via Gabrielli 18  
10077 San Maurizio Canavese (TO)

ITALY

[www.ntek.it](http://www.ntek.it)

[info@ntek.it](mailto:info@ntek.it)

+39 011 40 53 600

