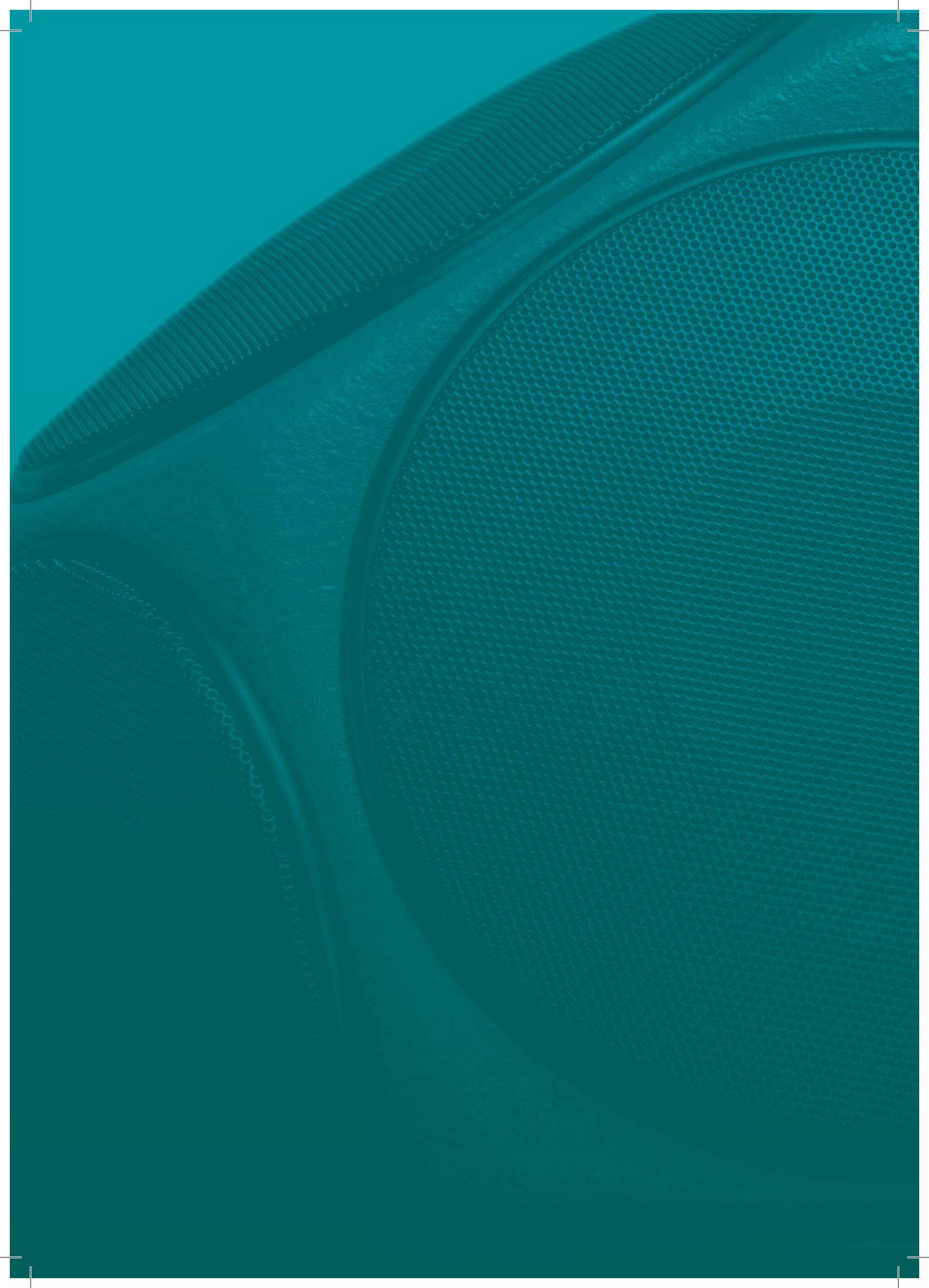




CATALOGUE







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*“Technological know-how is essential and business competitiveness depends on how to manage and promote innovation. We have highly invested in research and innovation because we truly believe that these investments can help us to compete in the global market in a more suitable way, without losing our “made in Italy” identity.*

*This is the reason why we have accepted the Industry 4.0 plan challenge, because we can combine innovative and creative skills of Italian entrepreneurship with our experience in the field. Innovation means evolve, improving and converting the existing potentiality of the product. Innovation is the perfect mix between risk appetite and strategical vision.”*

**Giancarlo Sassi**  
General Manager

A handwritten signature in black ink, appearing to read 'G. Sassi', written over a light blue background.











# Company identity

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*Ntek is specialized in products and services for noise and vibration measurement and control, in all applicable acoustic fields.*

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 promise we have strongly invested in innovation and production process with monitoring procedures certified by independent primary authority.

## **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 equipped for different operations of design, production, measurement, check and control.

## **INTERNAL LOGISTICS AND STOCK**

With its new operative location of 500 m<sup>2</sup> and its internal stock, Ntek guarantees available products in a short time according to customers' needs. Today we can handle an order in 48 hours compared with a standard delivery of 45/60 days.

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

## **SUSTAINABILITY**

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



# Acoustic

---

*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 develops in two main areas: building acoustics 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 such issues as reverberation time; sound absorption of the finish materials; echoes; acoustic shadows; sound intimacy, texture, and 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 to a level 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

Law 447 of October 26th 1995 introduced the regulatory framework by setting 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:

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.*

# 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 achieved 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 technical specification 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.

## **EQUIPMENTS 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 emission directives according to the following standards UNI EN ISO: 140, 16283, 3382 and 354.







# Products

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## **THE COMPLETE CHOICE OF INNOVATIVE PRODUCTS**

Main features:

- User friendly
- Portability
- Reduction of weight and dimensions
- Quality



# AMGMini

Amplifier and white  
and pink noise generator





AMG Mini amplifier has been designed to operate at full power with OMNI and DIR series loudspeakers. 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 dodecahedron or the directive loudspeaker. In order to use just DIR loudspeaker it is used one of the two internal power modules to send back to the second channel another directional loudspeaker (optional, as supplement).

AMG Mini system can work autonomously for approx. 60 minutes due to its kit of rechargeable Lithium batteries.

AMG Mini amplifier is equipped with a wireless system that allows to activate the connected sources.

#### **STANDARD EQUIPMENT**

- Wireless remote control
- Antenna
- Connector BNC/RCA
- Soft cross body bag for transport

#### **CONFORMITY LAWS**

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

#### **TECHNICAL FEATURES**

- Dimensions: 140 x 200 x 330 mm
- Weight: 3 kg – with batteries kit: 5 kg
- Frequency response: 40 Hz – 10 KHz
- Batteries capacity: 1 hour full power
- 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:  $\cos\varphi > 0.85 - 4 \Omega$  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



# DIRSlim

Directional loudspeaker





DIR SLIM - directional loudspeaker is a great instrument, solid and portable, able to produce a high noise level. For this reason and for his outstanding power and directivity is particularly suitable for sound insulation measurement and reverberation time. DIR Slim is perfect for AMG Mini systems as an alternative to OMNI dodecahedrons loudspeakers. DIR SLIM can be also used with other external amplifier sources, according with the system acoustic specifications.

DIR passive façade directional loudspeaker is equipped with a stiff and ergonomic structure, that simplifies transport and protection to impacts. Lower support is equipped with a small base that sustain the loudspeaker on the floor, avoiding overturning.

#### STANDARD EQUIPMENT

- Standard equipment is supplied with incline adapter.

*Optional*

- Flight case (rigid)

#### CONFORMITY LAWS

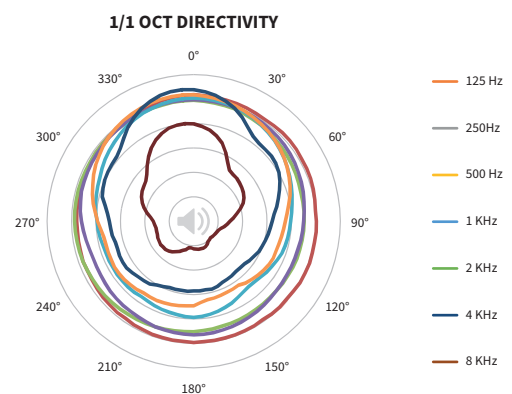
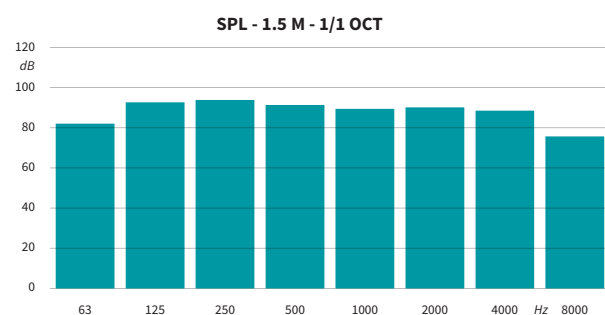
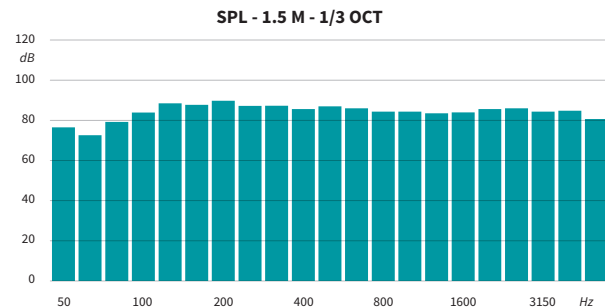
UNI EN ISO:

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: 122 dB
- Impedance: 4  $\Omega$
- 2 Pin Speakon: IN +1, -1 / OUT +2, -2





# OMNI 5''

Dodecahedral source





Dodecahedron is a sound source used to radiate uniformly a sound in all directions, allowing a correct insulation measurement and reverberation time both in building and architectural acoustics.

Manageability, assembling simplicity and portability are essential requirements for acoustic technicians: OMNI dodecahedron represents the best compromise between weight and portability.

The two versions OMNI 4" and OMNI 5" are designed according to different needs of logistics and power. OMNI 5" dodecahedron is supplied with a 6 meters connector cable for the amplifier, in order to be moved easily inside the measurement field.

#### STANDARD EQUIPMENT

- 6 meters connecting cable
- Soft carry bag with shoulder strap

#### Optional

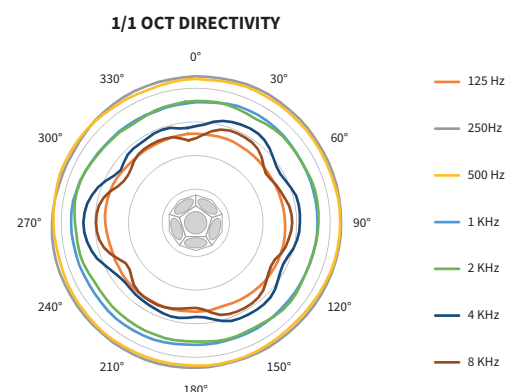
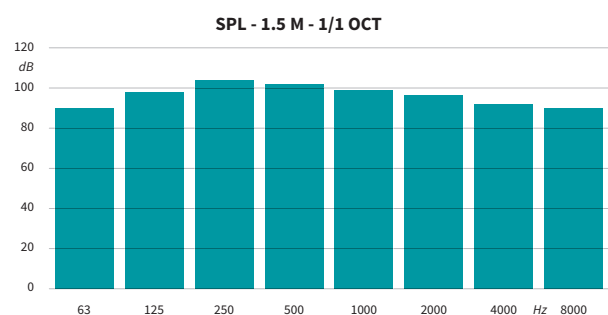
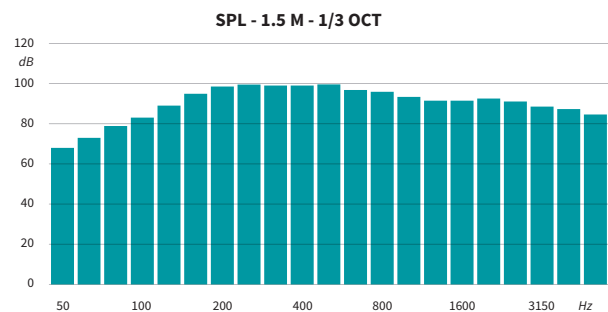
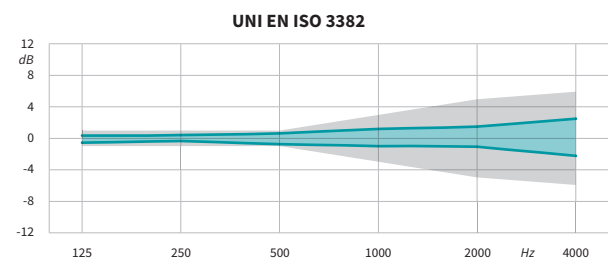
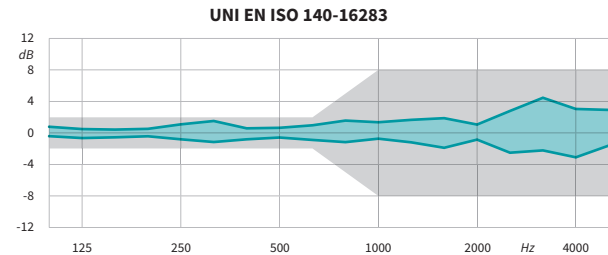
- Flight case (rigid)
- Support tripod with carry bag (soft) with shoulder strap

#### CONFORMITY LAWS

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

#### TECHNICAL FEATURES

- Diameter: 350 mm
- Weight: 12.5 kg
- Max sound power level: 123 dB
- Maximum power: 350 + 350 W
- Impedance: 3 + 3  $\Omega$





# OMNI 4'' HP

Dodecahedral source





Dodecahedron is a sound source used to radiate uniformly a sound in all directions, allowing a correct insulation measurement and reverberation time both in building and architectural acoustics.

Manageability, assembling simplicity and portability are essential requirements for acoustic technicians: OMNI dodecahedron represents the best compromise between weight and portability.

OMNI 4" HP is used for passive acoustics requirements measurement due to the integration of the most updated technical features required for this kind of equipment.

In order to fulfill all the technical requirements set by recent standards, OMNI 4" HP is a unique combination of small dimensions, low weight, high portability to be suitable for all kind of measurements.

OMNI 4" HP is supplied with a 6 meters connector cable for the amplifier, in order to be moved easily inside the measurement field.

#### STANDARD EQUIPMENT

- 6 meters connecting cable
- Soft carry bag with shoulder strap

#### Optional

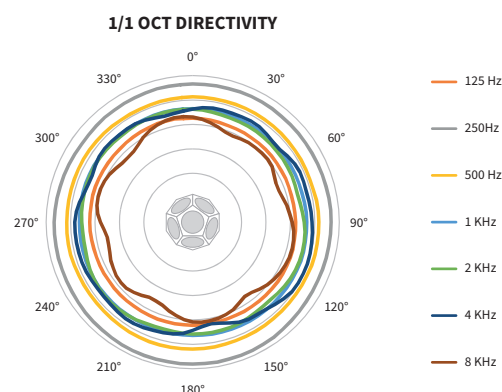
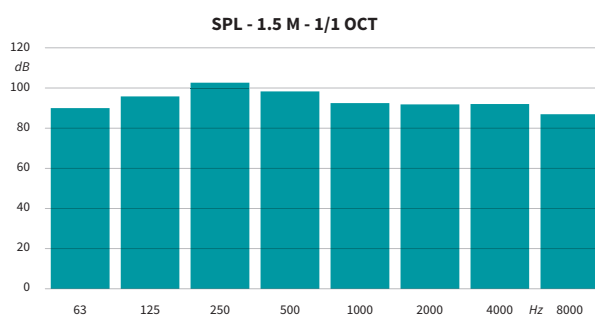
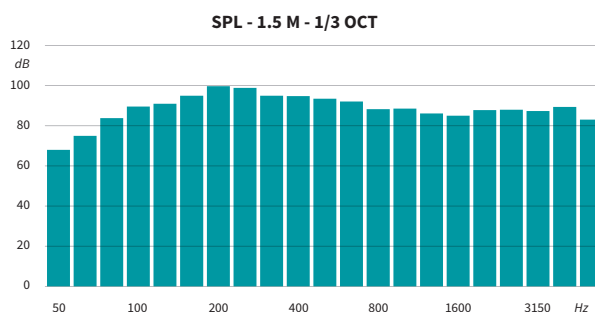
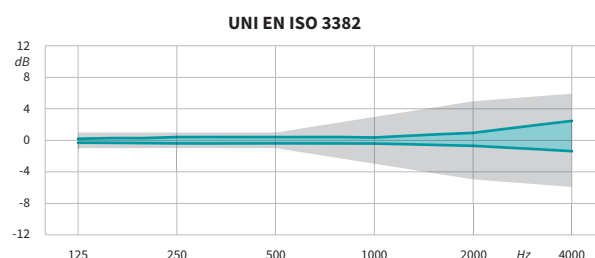
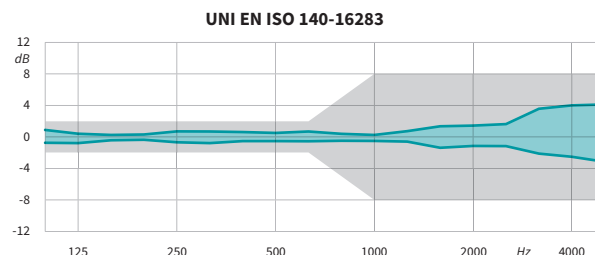
- Flight case (rigid)
- Support tripod with carry bag (soft) with shoulder strap

#### CONFORMITY LAWS

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

#### TECHNICAL FEATURES

- Diameter: 300 mm
- Weight: 8.5 kg
- Max sound power level: 120 dB
- Maximum power: 350 + 350 W
- Impedance: 3 + 3  $\Omega$





# OMNI 4'' LT

Dodecahedral source





Dodecahedron is a sound source used to radiate uniformly a sound in all directions, allowing a correct insulation measurement and reverberation time both in building and architectural acoustics.

Manageability, assembling simplicity and portability are essential requirements for acoustic technicians: OMNI dodecahedron represents the best compromise between weight and portability.

OMNI 4" LT is suitable for the portability and the logistic of some measurements. Small dimensions, low weight but very strong and robust is very manageable in all fields.

OMNI 4" HP is supplied with a 6 meters connector cable for the amplifier, in order to be moved easily inside the measurement field.

#### STANDARD EQUIPMENT

- 6 meters connecting cable
- Soft carry bag with shoulder strap

#### Optional

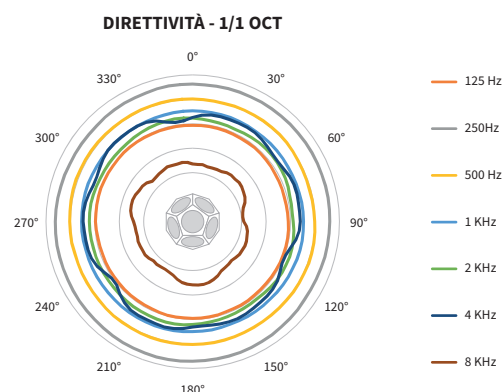
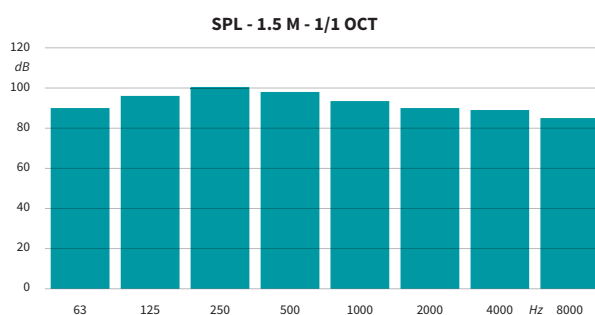
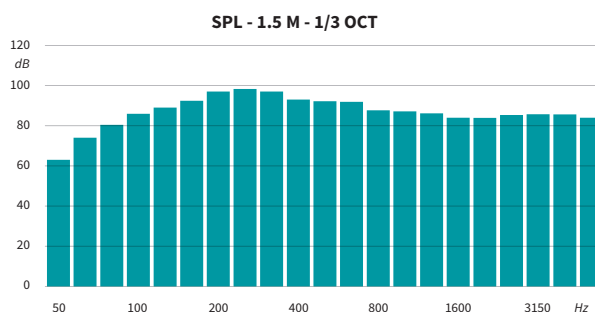
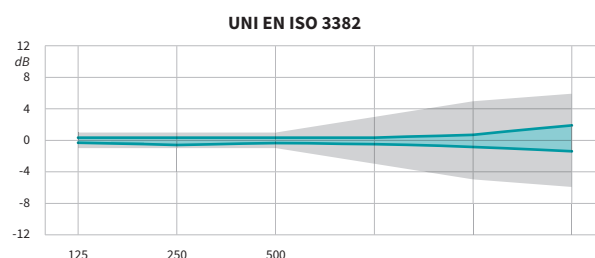
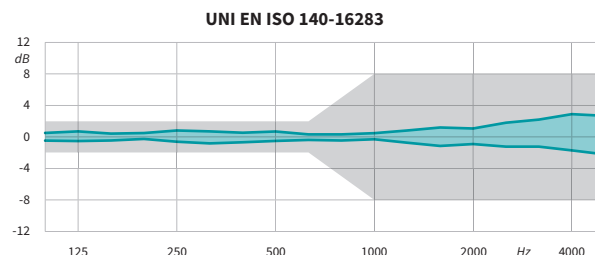
- Flight case (rigid)
- Support tripod with carry bag (soft) with shoulder strap

#### CONFORMITY LAWS

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

#### TECHNICAL FEATURES

- Diameter: 300 mm
- Weight: 5.5 kg
- Max sound power level: 116 dB
- Maximum power: 350 + 350 W
- Impedance: 3 + 3  $\Omega$





# TPMPro

Tapping machine





New TPM Pro tapping machine is the result of a team work of Italian technicians, specialized in design and realization of measurement tools for acoustical impact calculation.

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

Soft bag and retractable pins guarantee an easy transportability and assure the best comfort during measurements.

Lithium batteries has operative capacity of 3 hours. Wireless remote control permit the user to turn on and turn off machine in remote: transmission ray is 80 meters in open field.

#### **STANDARD EQUIPMENT**

- Wireless remote control
- Soft carry bag with shoulder strap
- Antenna
- Lithium batteries
- Electricity supply cable 220V
- Calibrator 73 mm

#### **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 pins retractable and adjustable in height
- Power: 100÷240VAC, 50/60 Hz
- Consumption: 220VA
- Antenna: 433 MHz

#### **Battery**

- Rechargeable Lithium batteries
- Duration: 3 hours
- Battery derating: <5% loss in capacity per 900 discharge/charge cycles
- Battery charging time: 2 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

#### **Remote control**

- Wireless: 433 MHz
- Transmission ray: 80 m in open field



# MB01

Microphone boom





MB 01 microphone boom allows to allocate a microphone with mechanical movement in order to measure sound pressure level.

Boom is composed of an arm that makes the phone turning in space. Rotation frequency, angle and length arm are adjustable.

Mechanical part of rotating boom is designed to allow measurement in particularly silent places.

Microphone boom can be activated at distance though remote control.

Sustain brackets of MB 01 rotating boom allow to incline the machine.

#### STANDARD EQUIPMENT

- Remote control
- Manfrotto Telescopic beam
- Weight balancing
- Microphone clip
- Tripod + soft bag
- 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:  $\pm 90^\circ$  and  $\pm 180^\circ$
- Remote control: 433MHz
- Antenna: 433 MHz
- 3 scan speeds: minimum, medium, maximum

*Return automatically on zero when scan is over*

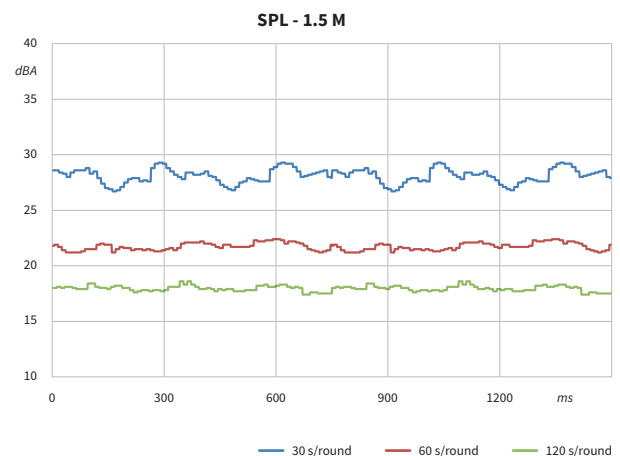
#### Noise emission

- 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:  $-10^\circ - 55^\circ \text{C}$  /  $14^\circ - 131^\circ \text{F}$
- Humidity: 0 – 90% RH





# EKOS

Previsional software



EKOS is a scientific software, designed by Hextra society and internationally distributed, that improves UNI EN 12354-1/2/3 laws for prevision calculation of passive acoustical requirements according with DPCM 05/12/1997. The software also use avant-garde analytic methodologies to simulate acoustics performances simulation of complex stratigraphy. EKOS allows to perform calculations for building acoustic test and to create calculation reports with only one click.

### **HOW DOES IT WORKS**

#### *1) Stratigraphies design*

Carry out acoustic simulation of multi-layered walls. The intuitive interface allows to determine the soundproofing power of simple walls, double layer walls, walls with insulation layers and ceilings with counter ceilings.

#### *2) UNI EN 12354 building design*

Carry out 12354-1/2/3 compliant building acoustic design, with DPCM 05/12/1997 passive acoustic requirements calculation. Integration with the stratigraphies design module allows for generation of a complete technical report with just one click, drastically reducing time spent to carry out the designing phase.

#### *3) DCPM 05/12/1997 building testing*

Carry out acoustic testing of buildings, starting from phonometric data from passive acoustic requirements compliant to DPCM 05/12/1997. Thanks to integrated Excel copy & paste functionality, and the possibility to import data from the building design module, the conformity verification lasts but a few moments.

### **Building acoustic performance prevision**

- UNI EN 12354-1/2
- SEA Methodology
- PIM (Progressive Impedance Method)
- PEIM (Equivalence Progressive Impedance Method)

### **Passive acoustic requirements verification of buildings**

- UNI EN 12354-1/2/3
- UNI EN ISO 717-1/2

### **Building acoustics test**

- ISO 140-4/5/7

### **Building acoustics classification**

- UNI 11367:2010

### **Report generation**

- Report generation in RTF format
- Acoustics report generation for passive acoustics requirements verification for building
- Acoustics report generation for acoustics test of buildings







# Contacts

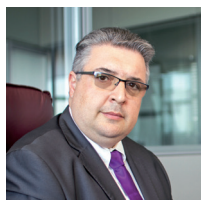
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Ntek is in Italy and specifically in the north of Turin, city symbol of automobile and European capital of innovation, research and development.

The company is located in San Maurizio Canavese, in a strategic industrial area distant 1 km from international airport of Caselle (Turin), served by great international air companies

## **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 01 60 255



**Giancarlo Sassi**  
*General Manager*  
[giancarlo.sassi@ntek.it](mailto:giancarlo.sassi@ntek.it)



**Angelo Canella**  
*Technical Manager*  
[angelo.canella@ntek.it](mailto:angelo.canella@ntek.it)



**Tiziana Bechaz**  
*Marketing Manager*  
[marketing@ntek.it](mailto:marketing@ntek.it)



**Francesca Leva**  
*Customer Relations*  
[commerciale@ntek.it](mailto:commerciale@ntek.it)



**Paolo Sassi**  
*Warehouse Manager*  
[paolo.sassi@ntek.it](mailto:paolo.sassi@ntek.it)



**Gianpiero Leva**  
*Safety Manager*  
[safety@ntek.it](mailto:safety@ntek.it)



