

Architectural Acoustics



**ALPHA**coustic-OCEANOS  
OCEAN-WAVE SOUND DIFFUSER



**ALPHA ACOUSTIKI**  
In TUNE with YOUR needs



# OCEANOS

## GENERAL INFORMATION

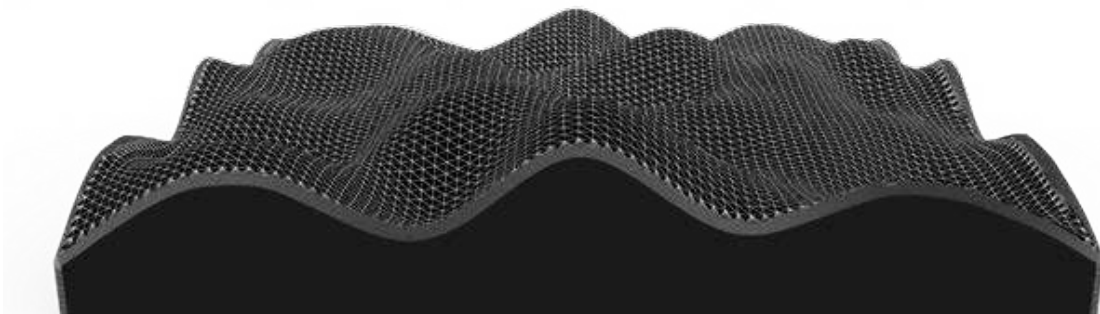
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Absorbers and diffusers are two of the main design tools for altering the acoustic conditions of a room. In small rooms it is often preferable to control interfering reflections and provide an ambient sound field using diffusion instead of absorption. Diffusion is the re-radiation of an incident sound wave over a wide area.

Using sound diffusion as a room acoustic treatment can improve the speech intelligibility and improve the overall listening environment within the room, without adding excessive amounts of sound absorption materials.

Based on our experience in acoustic studies since 1978 and in collaboration with a European team of engineers and scientists, we have created a new acoustic diffuser named **OCEANOS**.

These acoustic diffusers help in conserving sound energy, by spreading it around the room and creating a better acoustic environment.



## DESCRIPTION

**OCEANOS** is a modern innovative two-dimensional, quadratic acoustic diffuser. Its curved contoured surface resembles the wavy surface of a calm ocean.

The aperiodic modulation of asymmetric base shape, offers a more uniform sound diffusion.

Its unique artistic form has been developed using QRD array calculation in combination with graphical algorithm editor computational software. Hence, a structural optimization of its complex geometry has been achieved.

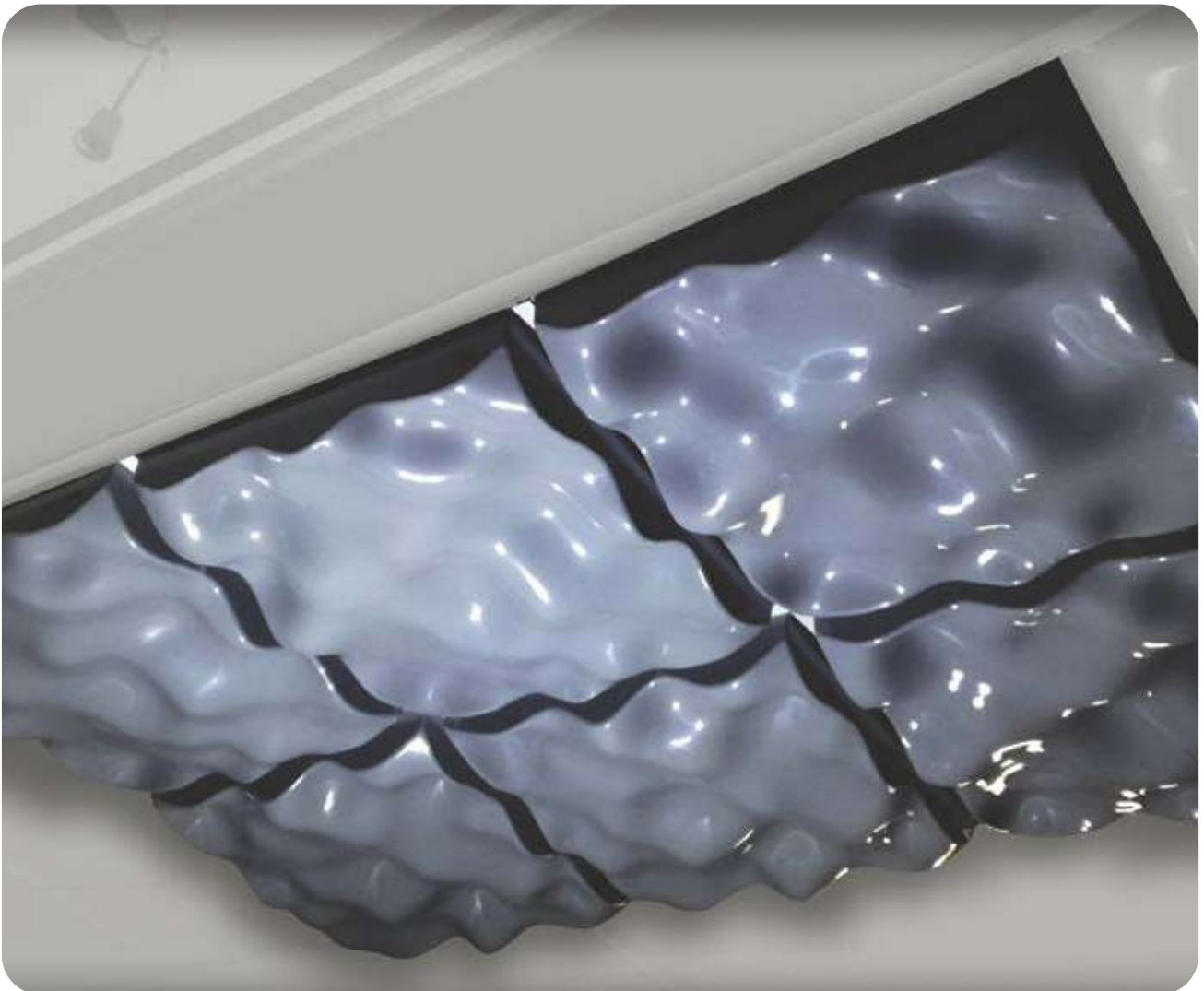
At the same time, by using ray tracing simulation software, we have optimized the uniform acoustic diffusion and diffraction on its surface.

**OCEANOS** is a thermoformed light weight panel, made of a thermoplastic polymer known as Acrylonitrile butadiene styrene (ABS) and can also be produced with fire retardant characteristics according to *UN/ECE R 118*.

**OCEANOS** can also be made of translucent light diffusing opal acrylic sheet, in order to function as both diffuser and lighting system.

### TYPICAL APPLICATIONS

- Recording & Broadcast Studios
- Control rooms
- Rehearsal Rooms
- Auditoriums
- Teleconference rooms
- Home Cinemas



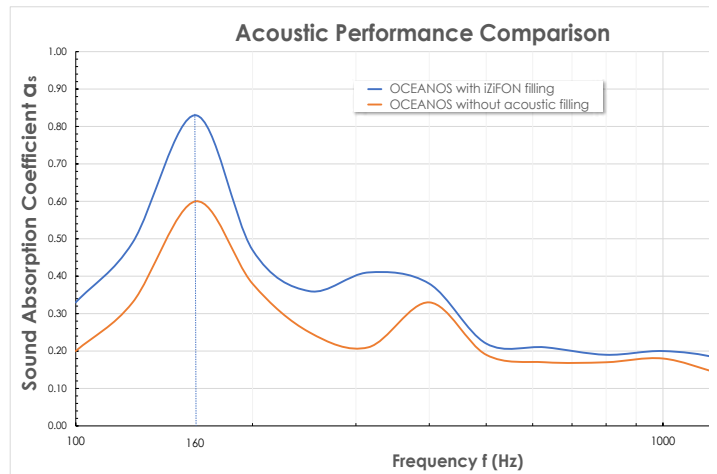
# ACOUSTIC CHARACTERISTICS

On its basic version, **OCEANOS** diffuser due to its membrane type construction can absorb low frequency sound energy.

In case low frequency sound absorption is not desirable, **OCEANOS** diffuser can be produced with an internal heavy weight overlay, without alteration of its external surface.

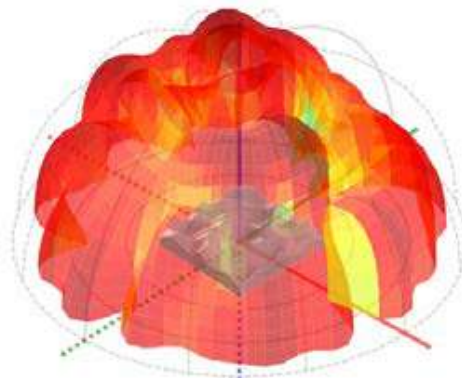
Measurements were performed in a reverberation chamber to determine the sound absorption coefficient ( $\alpha_s$ ) of the OCEANOS according to ISO 354: 2003 with and without acoustic filling (30 mm thick polyester fiber slabs iZiFON.30)

The results are presented in the following diagram:

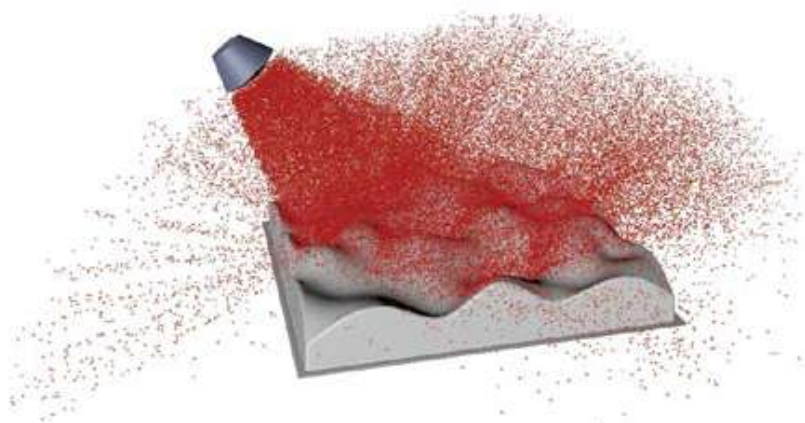


Sound absorption coefficient according to ISO 354:2003  
For the Diffusion Characteristics please refer to specific leaflet.

## Uniform Sound Diffusion



Acoustic Diffusion at 2000Hz, 2m  
(3D representation)



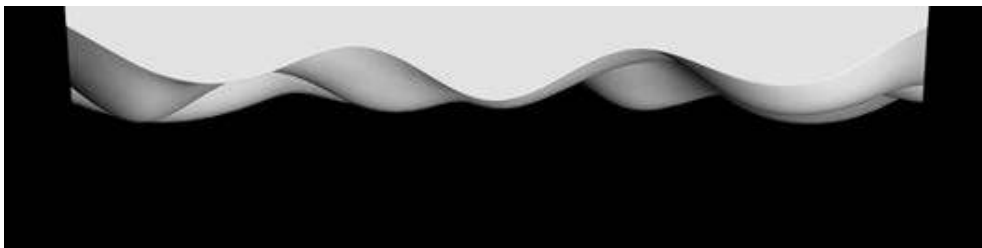
Diffusion Simulation



## SPECIFICATIONS

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- Color:** Grey color (RAL7042) as standard.  
Custom colors can be assigned to third-party painters.
- Size:** 595 x 595 x 110 mm
- Weight:** ~1.5kg
- Acoustic damping:** Polyester fiber acoustic slab, for internal use, can be provided, on request, for better acoustic damping.



## INSTALLATION

Basic version includes ceiling tiles diffuser, for easy installation in standard T-bar runner profiles 24/38 ceiling grids.

Minimum gap of 40cm over the false ceiling is required.

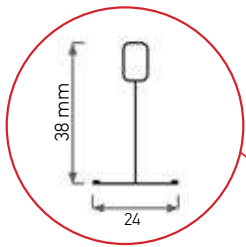
Diffusion panels can be installed in any route direction thanks to their identical form sides.

The 90 degree rotation is recommended for better sound diffusion.

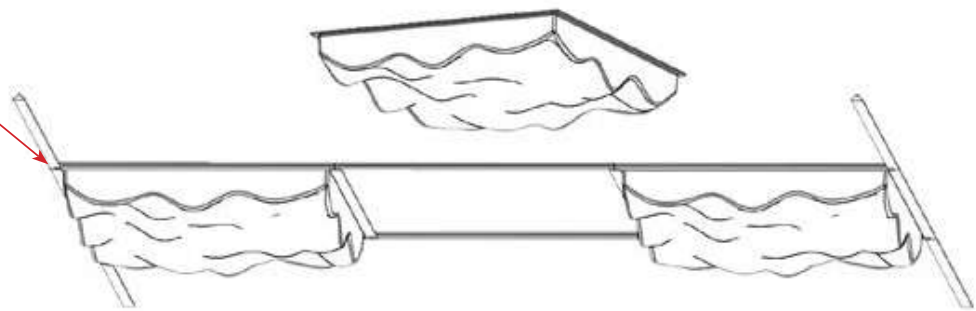
**OCEANOS** panels can be also installed on the wall, with four screws and plastic anchors.

Another option is using our easy-to-install non-visible hanging device behind the panels.

\*Please ask our technical department for more details.\*



T-bar runner profiles 24/38



## TYPICAL APPLICATIONS



**OCEANOS** in opal translucent acrylic lighting version.



In TUNE with YOUR needs

**ALPHA ACOUSTIKI** Ltd combines technical experience and scientific knowledge of its Engineers who are specialized in the field of room acoustics since 1980.

We create workplaces where people choose to work, tailored to the specific requirements of each job, with particular attention to the acoustic necessities of the employee.

### DESIGNING FOR WELL-BEING

The concept designed of ALPHAcoustic products puts in practice all fundamentals of well-being.

Focus on employee and workplace well-being, can result in improved productivity, increased confidence, offering a better staff concentration.

Our Acoustic products help to achieve the WELL Building Standard™ Certification.

Our technical department ([tech@alphacoustic.com](mailto:tech@alphacoustic.com)), would be happy to help you improve the Architectural Acoustics in your project.

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