

► **PROBLEMS/THE CHALLENGE** Medium sized rooms like recording studios or your dedicated rooms for listening, for recorded or live played music, needs a most efficient surface to diffuse all kind of interfering wall reflections and provide a highly homogeneous diffuse sound field. As known, the smaller the room is the most difficult is to correctly treat it acoustically. Then, the practical challenge is to have really good simultaneous results: aesthetically, acoustically and... not expensive !

► **THE UNIQUE SOLUTION** To solve this problem, learning from our experience and using almost all published international bibliography, at the ESR in Athens, we decided to try to design and produce a new kind of acoustical materials using mainly psychoacoustic knowledge. The result is the most powerful and aesthetic diffusing surface in the acoustic industry :



**ROUNDFFUSOR 1**

BENEFITS	PERFORMANCE SPECIFICATIONS	SPECS COMPARISON
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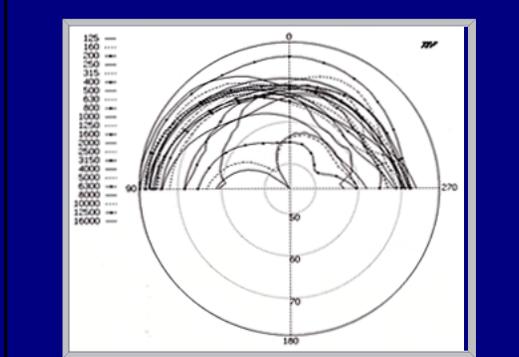
► The new design of the Roundffusor1® offers the industry's highest diffusion quality providing a natural sounding ambiance and the most effective diffusive control of interfering reflections



■ Theoretical Ideal diffusion curves for 0°, 45° and 60° signal incidence angles

► **Absorption.** Regarding the R1, there is no absorption on mid and high frequencies. The only absorption is the unique R1's self adaptive one for low and very low frequencies, the eigenfrequencies or, otherwise named, standing waves.

► The diffusing Roundffusor1's 3D lobe may be easily sensed at more than 12 meters and hearing it is like reconstructing the initial "aura" envelope from the room's recording session.



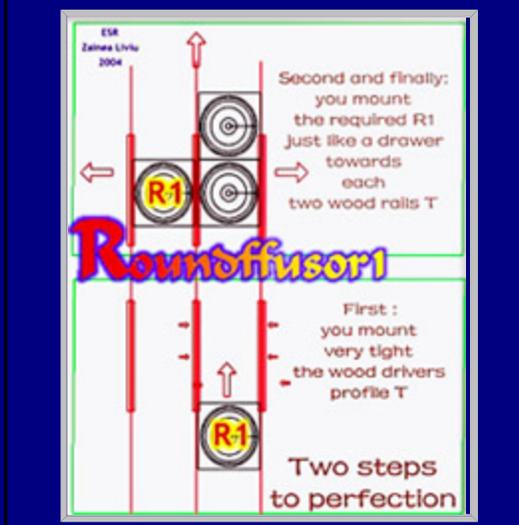
■ The R1's 0°-180° near to ideal polar plots diagram

► **Diffusion** The uniformity of diffusion is characterized by the standard deviation of the 1/3-octave polar response, for a given angle of incidence. For each of the 37 angles of incidence, the 37 backscattering impulse response measurements are made at 5° increments between 0° and 180°. The Diffusion Coefficient is the mean standard deviation for all angles of incidence normalized to the standard deviation of a delta function where 1 equals ideal diffusion – a semicircle, for 0°, 45° and 60° incidence angles (see upper left fig.).

► For this reason, music halls bigger than 500 m3, will be helped by the use of R1's as acoustical treatment. WHY? There are few halls with ceilings higher than 7-9 meters. In such a halls or better in auditoriums, because the powerful diffused 3D's field lobe assured by the bigger grouped R1's surfaces may be sensed at more than 12 meters in any direction, our diffusers will shows their full potential. Don't forget that all this is from only an 11 cm deep and empty material, produced in any custom color or even artistically painted on demand.

► From the Roundffusor1's page and also from the left figure, we may see the exceptional R1's uniformity of diffusion for the preferred frequencies indicated by ISO and beyond that.

► The lightweight and unique design of Roundffusor1®, providing two lateral supports, permits mounting on a wall, ceiling or portable partitions using the wood T-bar rails on a very steady configuration. The R1's complex functioning allows compartmented self controlled low frequency absorption. Thus, small edit and control rooms treated with our Roundffusors are from now on historically homogenous optimized regarding their energy balance in all low mid and high frequency bands. The Sweet Spot becomes obsolete ! This means that almost every person in the room senses the same sound mix.



► It is obvious that many of the tile polar plots obtained as spatial response from our diffuser are similar with the ideal ones.

► The self adaptive bass absorption offered by the Roundffusor removes the harmful dynamic masking effects induced

■ R1's working frequencies: 10-20.000 Hz, from 10-181 Hz as a complex large aperture Helmholtz resonator and active/clear diffuser for the rest of the audio band. R1's room field phase response:

► It's very hard to compare the price & sound quality differences between our complex diffuser and the concurrency. The R1 is unique and the most advanced technologically product on the market. Of course, don't forget that for what is offering is the less expensive from all other products.

► Choose the R1 when you need to obtain sure / standard / repeatable results without sophisticated acoustical studies! For some people, all this may sound exaggerate, but don't forget that in this life and universe, the good luck or

<p>by the low and very low frequencies toward the right of the audio scale. This is enough for the R1 to be named revolutionary.</p>	<p>linear. The R1's accepted sound levels: any</p>	<p>randomness plays a constructive role, name it evolution, sometimes, as in the Roundffusor1's case were a design progression of interrelated phenomena evolved in this patent. Or, if you prefer, stay put in the past... The Useful Challenge!</p>
<p><b>APPLICATIONS</b></p>	<p><b>INSTALLATION..</b></p>	<p><b>IT'S EASY</b></p>
<p>➤ Generally, all that is necessary as a room treatment are 9 Roundffusors® ( or more, from case to case) and your audio system or your musical instruments It is supposed that will be a carpet on the whole floor surface. Don't forget that all 9 Roundffusors occupies only a total area of 176x176 cm from one wall. No other room changes are required. May be used in all critical listening rooms including recording&amp; TV studios, home theatres, quality control rooms, film mix and dubbing stages, CD mastering, music practice or normal residential rooms and also rooms for professional reviewers. The live or recorded music will have a sound beautifully similar from room to room. The acoustic repeatability and audio material interchangeability will be a relative easy task in all situations for any equipment.</p>	<p>➤ Example for mounting 9 diffusers on a wall or ceiling, on a clean and enough plane surface. For best results the grouped Roundffusors must be mounted symmetrically towards the common loudspeakers axis plane either behind the speakers, either on the opposite wall, and on the ceiling if necessary.</p> <p>➤ Mounted on both ceiling and one wall, a more powerful and homogenous 3D lobe will result. So, we have 4 parallel wood supports/rails for 3 rows of Roundffusors. An entire wood support is 58 x 3=174cm long. Each diffuser is mounted upon two lateral supports ( we need one or two screws per each 58 cm wood support provided ) , and all diffusers are mounted in parallel rows, vertically or horizontally relative to the floor.</p>	<p>➤ Each second support is common for three neighbor R1's in a row or column. Because the diffusers are mounted in rows, in fact, the 3 Roundffusors in a row needs only 6 screws, 6 diffusers needs 9 screws and all 9 needs, you guess, only 12 screws. If you want to be more secure you put more. If mounted on a wood surface, nails are enough. Maybe you think "big" but each wood rail is a section of 30x30mm and some 174cm long for rows of 3 R1.</p> <p>➤ All 9 Roundffusors weights only 9x2=18 Kg, so need to worry about. The way they are mounted makes them to behave like very heavy plastic box, so no audible resonance will result and , if you are afraid of it,</p>
<p><b>SPECIFICATIONS</b></p>	<p><b>COMPANY ADDRESS</b></p>	<p><b>NO SOUND COLORATION YOUR DREAMED SOUND SOLUTION</b></p>
<p>➤ Material: high impact polystyrene ➤ Dimensions: 58 x 58 x 11 cm ➤Unit weight: 2 Kg (one R1+ 2 wood rails). Packaged in hard carton boxes, 3 R1's units per box, each box about 9 Kg. Carton box external dimensions: 60 x 60 x 34 cm ➤Flammability rating: Standard ISO UL94/HB , 1,6 mm. Standard finish is massif white</p>	<p>☐ Phone /Fax: + 30 210 20 27 191</p> <p>☐ Email: <a href="mailto:liviu@zainea.com">liviu@zainea.com</a></p> <p>☐ Mr. Zainea Liviu / ESR, Peresiadou 14, Athens, TK 11141, Greece</p> <p><b>The Roundffusor1 is now an US PATENT NR.7261182</b></p>	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center;"><a href="http://www.zainea.com">www.zainea.com</a></p>