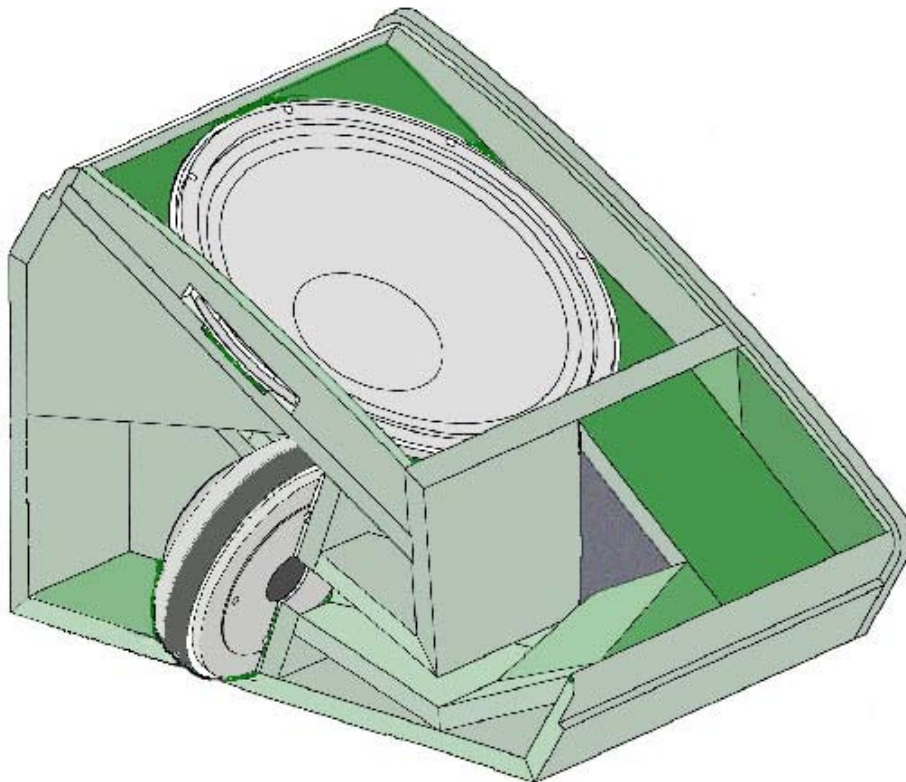
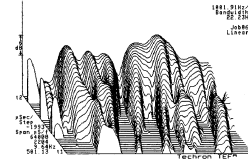


Outline H.A.R.D. 212

HIGH PERFORMANCE STAGE MONITOR

IBTS 2001 (Milan)
Press presentation
by Marcello Croce,
Audio Reinforcement Concepts





Introduction

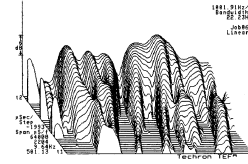
What we're about to present here isn't just simply the usual "new product" or something that purports to be such, put on to the market and added to a company catalog in a more or less orthodox manner by a manufacturer who's definitely not a new name to you, and which, although it's not one of the most "talked about" or one of the "usual big names", we're all familiar with and for many years has always avoided imitating other firms' functional choices, passing fads, or "acclaimed" products, but has pursued with the means it considers opportune and necessary, the achievement of the technical aims it has set itself on each occasion, in an attempt to come up with concrete satisfactory replies to precise application demands – it's up to you and the market to judge how successfully.

What we're presenting today is the result of a great deal of lengthy work – saying this may sound rather trite – lasting several years, in which the company's internal resources were exploited to the utmost, not only in terms of research capacity but carefully gathering the largest possible amount of experience built up on the field, as well as involving numerous external collaborators, who gave a valuable contribution, and whose ideas and suggestions were included in the product which its the subject of this presentation.

So we're not here to unveil the discovery of a "secret", because there are no secrets in our world, but with the much more modest intent of giving you some advance in-depth information on what Outline regards as the "definitive" product in the stage monitor field, which have always been very much a burden and no delight for artists, vocalists, musicians, actors and MCs, as well as sound engineers, set designers, show directors, "stage hands", loaders and all the other who have always hated rather than loved those bulky, ugly, heavy, "noisy" boxes on the stage; but which are nevertheless so essential to a show's success, to the point that, along with all the necessary corollary of complementary equipment, they're an important item from a business point of view, and relatively recently even created a new profession in the pro audio world: the monitor engineer.

Here at IBTS, we've great pleasure in allowing the press and specialist trade visitors to be the first to see a product which Outline intends making a strategic part of the development plans of the company, which as some people will have noticed, for the last few years has been particularly attentive to those areas of the industry involving rental firms and those working in the technical aspects of shows. Nowadays this seem to us to be an area of the market among those capable of most growth in the electro-acoustic sector, thanks to the multiplicity and variety of the requirements they can easily handle with the certainty of achieving excellent results.

A key product for Outline, because it fills an important gap and fits perfectly into a series of units based on "great ideas", as our favourite slogan says, which includes others such as the Spectra, Tripla, Doppia, Micra and Kanguro professional loudspeaker systems, the last of which received an important award for technical innovation at the recent Plasa expo in London - the first time in many years of Awards that one has gone to an Italian professional audio and speaker manufacturer.



The "great idea" at the basis of this product and which enabled it to be built is a horn loudspeaker for mid/high frequencies, with a completely new conception compared with the past, whose shape enabled the physical construction of the system, which would otherwise have been unobtainable with conventional solutions. In short, its forms the hub of the entire unit and, as we're sure you'll understand looking at the product, represents a definite "break" with the past, which has caused and still causes, even for the "same old names", the manufacture of units which always finish up being too bulky and too heavy for all those working with them on a day to day basis.

Thanking you for coming along, we'd like your attention while we try to show you in the best possible way this new product, which we're very satisfied with and I'd say rightly proud of - we're sure you'll appreciate its tangible innovative features.

H.A.R.D 212

First of all, these are the key characteristics of the H.A.R.D. 212 project

Very high acoustic output capacity = 134dB SPL

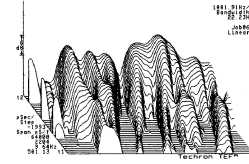
Because it contains three loudspeakers, two are 12" direct radiation woofers and a compression driver with a 3" diaphragm and 1.4" throat, built with top-end characteristics in terms of sensitivity and applicable electrical power, and intended for bi-amping, for no-nonsense audio quality.

In concrete facts, it gives peak sound pressure of 140dB SPL at 1metre (a great deal more than actual practical needs) when used with the dedicated rack containing a Genius 6 processor and two T4.5 amplifiers, able to drive up to four H.A.R.D. 212 monitors simultaneously - a state of the art control and amplification system with unbeatable weight: power ratio.

Ultra compact and "low profile" = 33cm.

Because it contains a mid-high frequency horn which for the first time for this range is folded, applying the principles of diffraction, reflection and absorption simultaneously for its acoustic operation, an application which has enabled the design and construction of the first very high performance stage monitor, which is no higher than 33cm., when used in the "classic" position, i.e. in front of standing artists.

This horn, invented by Guido Noselli, is patent pending, uses some well-known principles of applied acoustics and features characteristics indicated as desirable in work by other researchers too, such as for example the constant directivity in the operating range. Thanks to a "disarming" construction idea, in the case of H.A.R.D. 212, the "horn" is actually made from parts of the monitor cabinet, in order to avoid losing even a centimetre with mechanical components that are useless as far as acoustic results are concerned. Even if innovating products and concepts, Noselli continues to follow the "High Density" philosophy that has been at the basis of all Outline products during the last ten years.



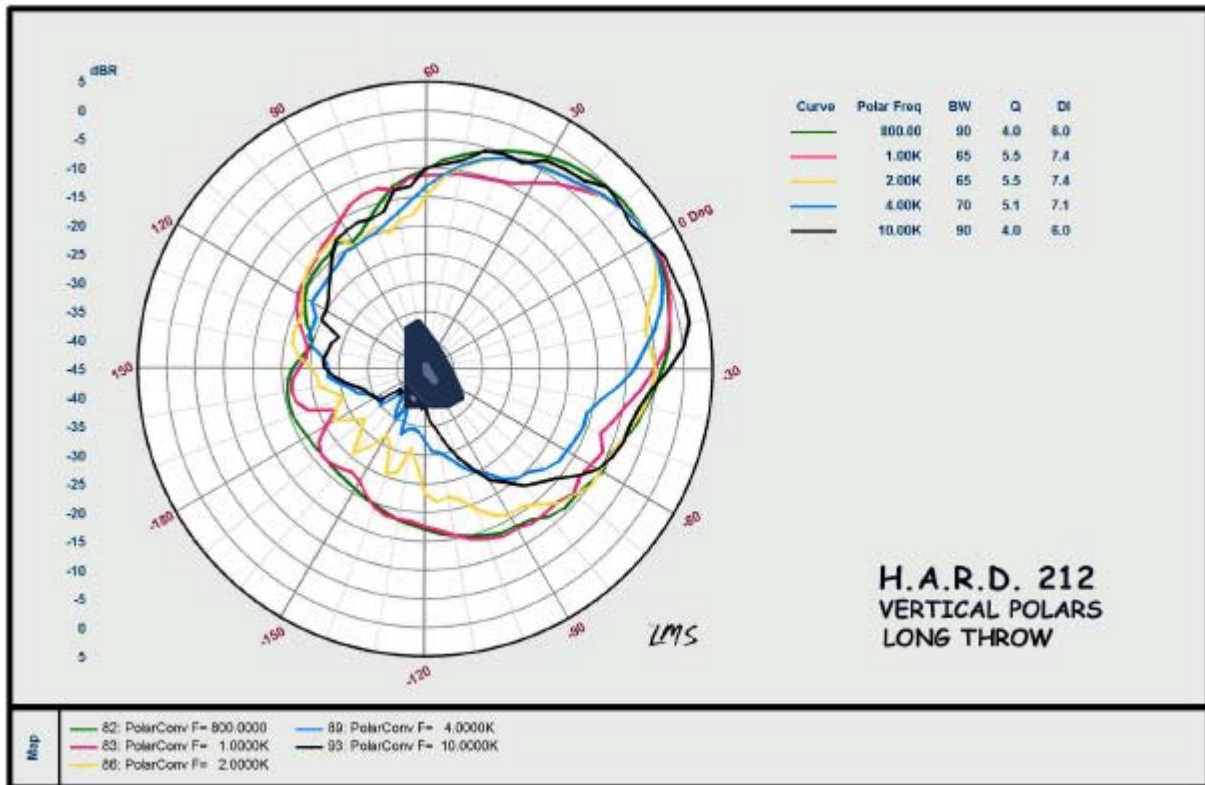
Very light-weight = 26 kgs

Because the three loudspeakers' magnets are in Neodymium instead of ferrite: this ensures a reduction in the speakers' weight of approximately 50% and a consequent cut in the system's net weight: 26kgs, with no compromises are far as the cabinet's sturdiness and strain resistance are concerned.

This means that should the need arise, anybody (even one of the dancers) can easily move the monitor on stage.

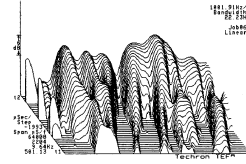
Optimised positioning according to whether the artist is standing or sitting

Because the cabinet has been built to enable it to be positioned horizontally or vertically, obtaining different front panel inclinations, optimising its use when artists are standing (vocalists, MCs etc.) or sitting (keyboard players, drummers etc.).



Artist sitting or relatively far away.

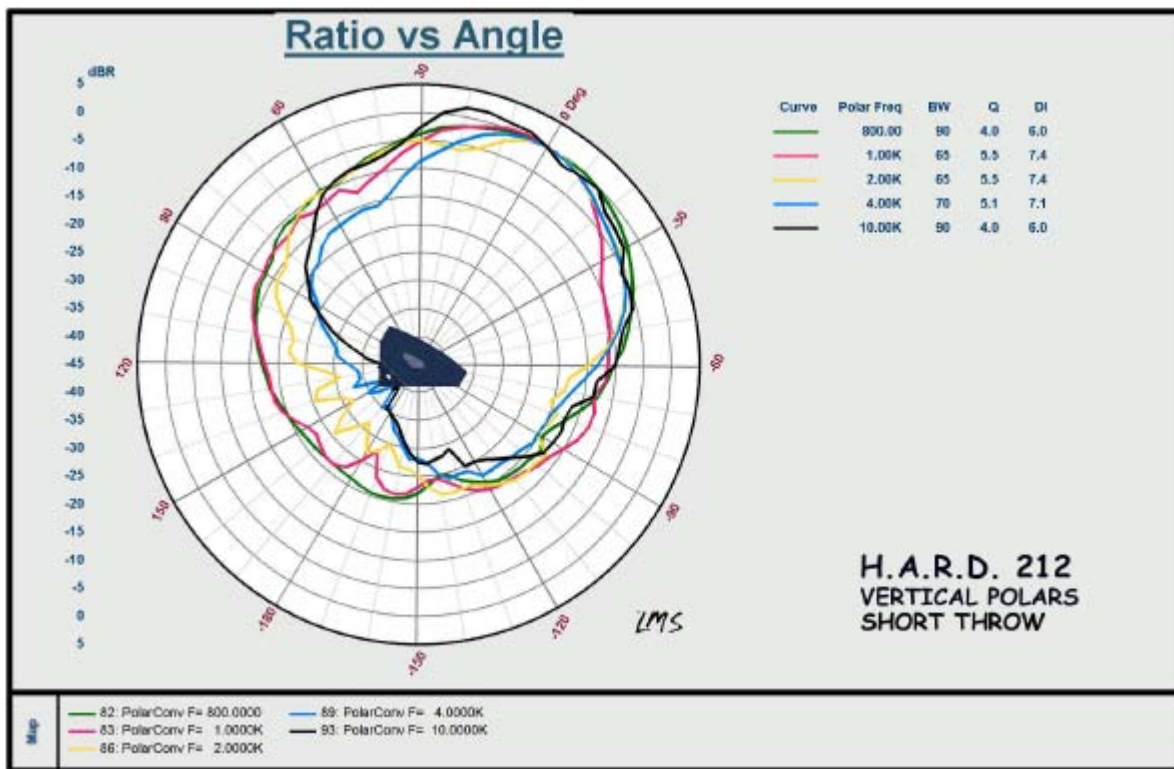
In this second case, illustrated above, it can be seen how, since the emission is mainly aimed at the body of the seated artist, adequate monitoring is possible while keeping overall on-stage volume lower than usual, reducing sound spilling into other artists' microphones.



Constant sound emission over varying listening distance

Because the vertical dispersion of the horn, (modelled using the principle of reflection) has been studied to compensate artists' movement away from the monitor front, and avoid a abrupt drop in volume, thus maintaining the response for listening distances of between 0 and approximately 3 metres almost constant when it's positioned for use by an artist standing up, compensating the drop caused by the increase in distance.

This allows artists great freedom of movement, particularly useful on deep stages such as those typical of TV studio sets, where sightlines must be kept free.

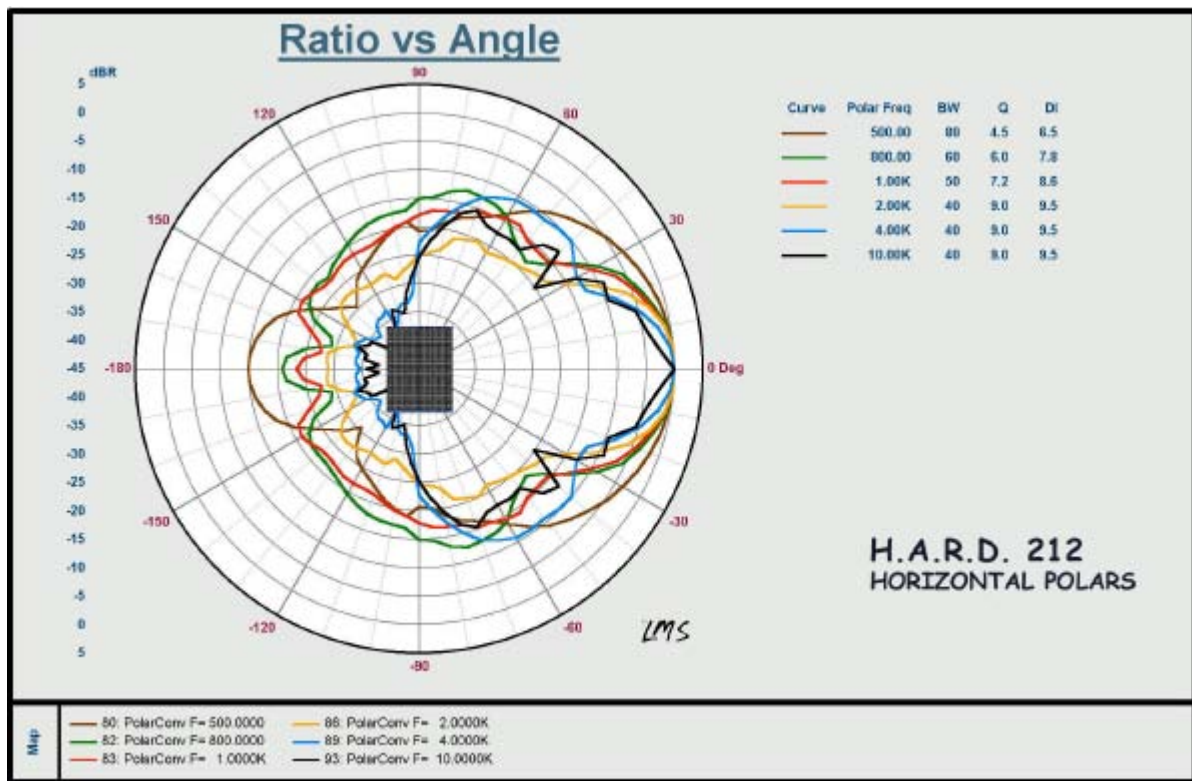
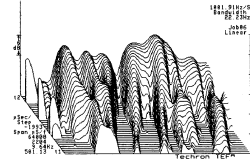


Artist standing or relatively near.

Anti-spill sound emission

Because the horn's horizontal dispersion is intentionally kept at approximately 40° for the frequencies involved, with considerable reduction of secondary emission lobes at high frequencies, by means of the acoustic principle of absorption.

This is in order to avoid sound spilling into microphones alongside the monitor and therefore to improve to the utmost the amount of acoustic isolation between various artists lined up along the front of the stage. This considerably emphasizes the possibility the monitor engineer has of optimising the mixes fed to individual monitors, which benefits what each individual artist hears, without the risk of "jumbled" sound which might occur on stage (often without the engineer being aware) in the event of traditional monitors being positioned alongside each other, sound from backline amps or monitors' sound spilling into adjacent microphones.



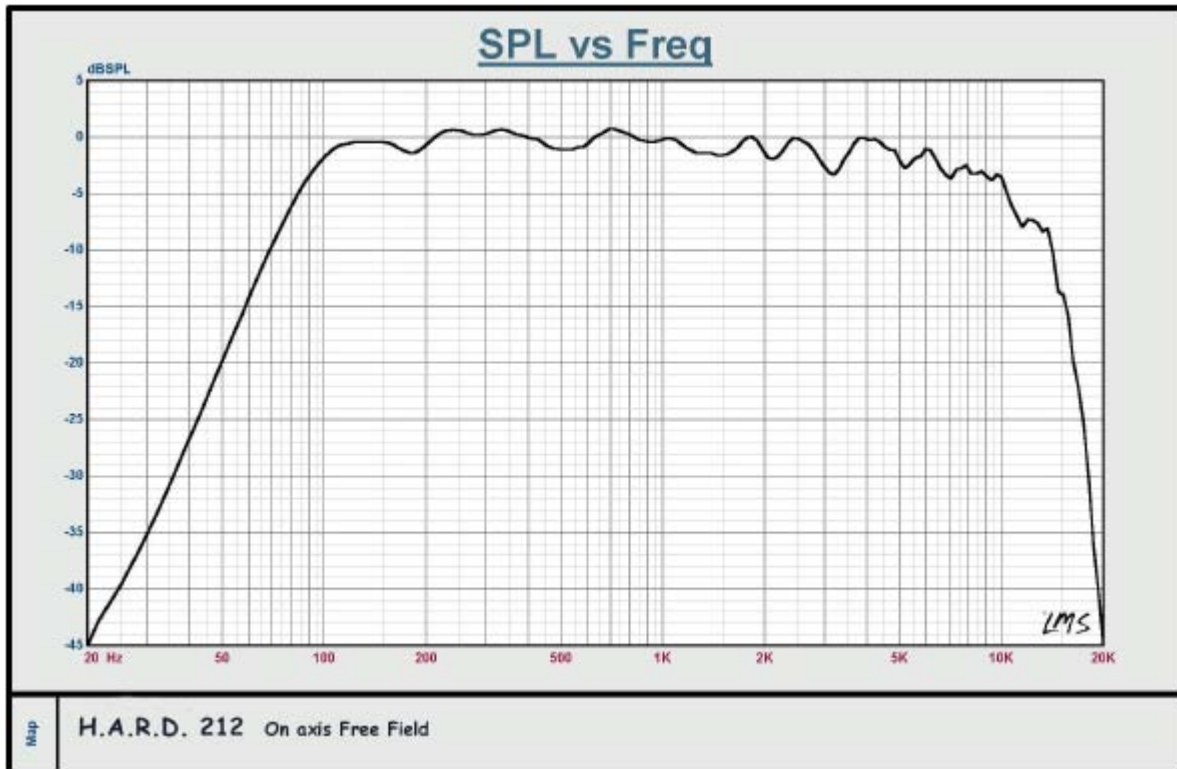
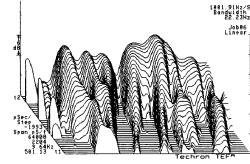
Feedback-resistant sound emission

Because the frequency response, set by means of the Genius 6 processor and optimised for extremely true sound reproduction in the mid range, has also been freed from peaks which, as we know, can very quickly trigger feedback even at not particularly high volumes.

Timbre characteristics can be set as required

Because, by means of the **Genius 6** processor and bi-amplification, it's possible to quickly match monitors' timbre to the various musicians' requirements.

It's thus possible to personalize the monitoring timbre for each individual artist according to his or her needs, as guitarists or keyboard players presumably want a personalized timbre, with the added advantage of perfect repeatability, not normally possible when using external EQ units.



[Smooth response of the cabinet/amplification system.](#)

Easy to connect

Because there are no less than four 4-pin Neutrik connectors in parallel and fitted near the four bottom "corners" of the cabinet, two on the front and two on the rear.

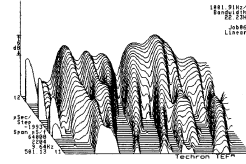
This ensures very practical connection no matter what direction the cable arrives from, as well as the possibility of linking two monitors in parallel.

Easily transported

Because the each of the cabinet's two vertical sides has a recessed carrying handle which ensures numerous handling possibilities, thanks also to an extremely ergonomic shape. Along with the unit's very light weight, this means that two monitors can be carried by one person without any excessive physical effort.

Vast range of uses

Because, thanks to the features described, the H.A.R.D. 212 is suited to no-nonsense use by bands, but its compact lines and portability make it ideal for TV studios, and it's also available in a semi-finished version, ready to be given any paint job necessary by users. Lastly, we mustn't forget that for each of the two foreseen inclinations the cabinet has 4 all-purpose mounting points, able to be used for fitting either 4 flying rings (eyebolts) according to the necessary angle or 4 wheels, almost hidden as they pivot inside the area covered by the cabinet's base - sturdy, small and ensuring "priceless" rapid movement of



the cabinet when required, such as in TV studios, without having to fit ugly "appendices" later, such as trolleys or wheels screwed on to the outside of the cabinet.

In conclusion

With its new H.A.R.D. 212 high-performance stage monitor, Outline has concentrated a large number of devices worthy of interest in a single product. We hope that these particular features, exclusive to this product, will be evaluated and appreciated by pro audio industry members, as they're useful for reducing the work of all those dealing with stage monitors on a day to day basis. If this happens, a small but effective step towards improving the quality of life will have been made and sincerely, for a manufacturer of "work" equipment (apart from acoustic quality and performance) this is the most coveted result that can be achieved.

Preliminary technical specifications

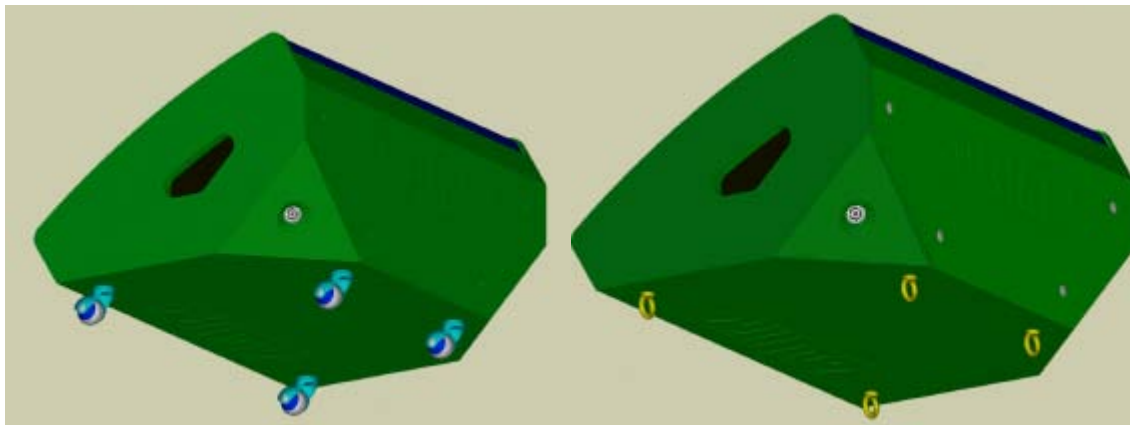
Frequency response (-10dB): 64 Hz ÷ 15.5 kHz
Phase Response: +/- 45° from 500 Hz to 16kHz

Power (AES): 850W
Peak power: 3400W
Maximum SPL (AES): 134 dB
Peak SPL: 140 dB

Minimum impedance low frequencies: 3.9 Ohms at 75 Hz
Minimum impedance high frequencies: 11 Ohms at 7 kHz

Dimensions:
width 68 cm.
height - position for standing artist: 33 cm.
height - position for seated artist: 48.5 cm.

Net weight: 26kg



[Side/rear connections and eye-bolt/wheel interchangeability diagram.](#)