PRODUCTION PARTNER
Fachmagazin für Veranstaltungstechnik

Review
from issue 10/2016

Versatile compact PA

Nexo ID series

The Nexo ID24 and the sub ID S110 are super compact touring and installation loudspeakers, which were optimised for maximum adaptability – mechanically and acoustically

» ... A lot is different here than one would have expected and nothing really the way it has always been done. ... «

Copy and measurements: Anselm Goertz | Images: Dieter Stork, Anselm Goertz

A loudspeaker should be compact, it should be powerful and one should be able to position it in an upright position, hang it up or mount it easily and flexibly in all possible and impossible positions. These are the three most important characteristics of small universal loudspeakers. The acoustic characteristics are not always taken into consideration so that adaptability is demanded in the reverse direction – thus from the loudspeaker. There is a demand for compact and powerful loudspeakers for nearly all kinds of sound reinforcement tasks. From the mini PA for small stages to fill systems at the front or side of larger stages, under balconies, as stage monitors or as surround systems in one of the currently very sought-after versions. These were also the requirements during the development of the Nexo ID series, as Francois Deffarges, R&D director at Nexo, explained during his visit to the magazine's test lab. For R&D, the chassis manufacturers' progress especially in regards to small subwoofers and broadbands was helpful, as their specification has significantly improved over the last years, making the compact loudspeaker category even more interesting.

The core of the new ID series is the slim ID24 top. This is supplemented by the S110 and S210 subwoofers – the latter being an exact double S110 – as well as the complying amping and controllers from the Nexo product range. So just a top and a subwoofer? Correct, however the ID24 top is available in three basic versions – touring, install and "à la carte", where the user can choose between different colour, mounting and connection options. Additionally, four horn-loaded versions with opening angles of 120 × 40, 90 × 40, 60 × 60 and 120 × 60 are available; these being additionally rotatable.

Maximum adaptability – mechanically and acoustically

The ID24's enclosure measures 132 × 309 × 233 mm (h × w × d) and can be operated both in a horizontal and upright position. The horn's desired radiation angle can be brought into the desired position using the control knob's handle – located on the loudspeaker's rear side – and can thus be adjusted to fit the respective task at hand. Driver and horn are combined in a screwed unit with a circular cross section, which is connected to the rear control knob. The knob locks into different alternatives such as 120 × 40 and 40 × 120. The horn is then safely located in this position. If one has a look at the enclosure in a horizontal position, the two small 4" subs are located to the horn's left and right side in a v-shape. The packing intensity is very high and could only be realised in this way using a structurally compact neodym chassis. The sub chassis and also the small compression driver with a 1" coil and a 1/2" opening were both developed by a renowned manufacturer in cooperation with Nexo.

Super compact *Size comparison for the top*

The ID24's enclosure consists of two plastic enclosures, which are reinforced using metal sheets on the back and sides as well as partly also on the top and bottom. These take on all supporting functions. To allow its mounting, the touring version offers six quick rigging points, a Nexo-specific quick lock. A truss clamp adapter can for example be hung horizontally or vertically with one simple hand grip. For its operation as a front fill at the edge of the stage, a small base with an adjustable angle is available. This is inserted into the two quick rigging points on the rear side. A simple mounting on a stand or tripod for an upright operation can be realised with the help of a stand sleeve, which is screwed into a M10

thread on the enclosure's bottom. The electric connection is realised – as usual – via an NL4 Speakon connector. If used as a mini stage monitor, the loudspeaker can also be positioned as a wedge in its vertical position.

Instead of the quick rigging points, the ID24's installation version features M6 threads on all surfaces and a fixed connection cable. Additionally to the standard black colour, the touring and installation models are also available in white. The ID24 installation version meets the IP54 requirements, which concern penetrating water and dust. A special EN54 certified version is currently under development. For the "à la carte" version, users can select all options in the desired combination and – if needed – can also freely select the colour from the RAL catalogue.

ID24 Rear *with recessed Speakon connectors and control knob for the tweeter's rotation. Two further Nexo Quick Release mounting openings are located on the rear*

Compact measurements but still powerful?

With a 2 × 4" sub and a 1/2" tweeter, Nexo was successful in modelling the ID24 in a extremely compact form. The question inevitably arises: How powerful is such a small loudspeaker? Let us start with the electronic side. The ID24 is built according to the known concept of a passive filter with an exclusive crossover section and active distortion for the loudspeaker as a whole in the respective controller. Figure 1 shows the respective impedance curves with a typical progression for a 2-way bass reflex system. The bass reflex enclosure's tuning frequency lays at 114 Hz. The transition to the tweeter takes place at 2 kHz. If the loudspeaker would be equalised passively, the impedance would strongly increase, as the significantly louder tweeter's level would be lowered via the series resistor. The ID24 is defined as a 16 Ohm system, which – with an impedance minimum of 10.3 Ohm – is strictly speaking not fully adhered to.

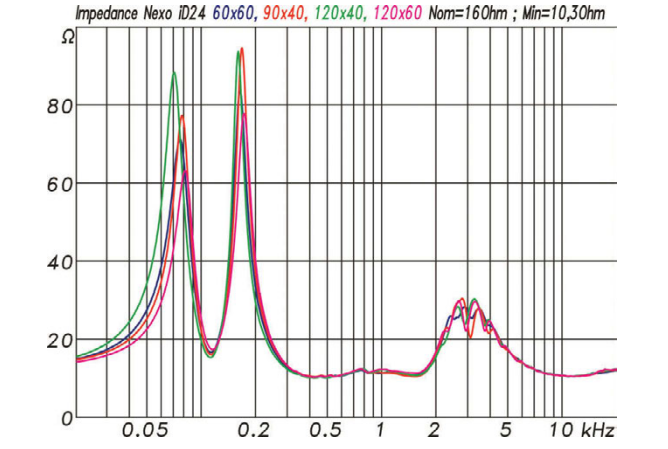
The concept of a passive separation with active equalisation is even clearer in the ID24's frequency responses. The two subwoofers offer a sensitivity of around 90 dB 1 W / 1 m and increase to 2 kHz for nearly 100 dB. This is followed by the tweeter, which – as a horn-loaded compression driver – is clearly higher and lets the curve increase to 110 dB. The reverse is the case for the loads. In each case, this is 100 W for the subs in an AES-2 hour test and 10 W for the tweeters. One could now adapt the tweeter with a resistor divider at the subwoofers or – as done here – compensate the progression as a whole in the controller. Both approaches have their advantages and disadvantages. This way, a loudspeaker can of course not be used without a controller, which on the other hand ensures that it is always used with a controller and is in the correct and secure condition. Dispensing with the passive equalisation also offers the advantage that no unnecessary electronic power needs to be changed into warmth due to the passive divider inside the loudspeaker. The long-proven method of a passive separation with active equalisation – which as been used in Nexo's PS series (and by many other manufacturers) – offers a good compromise between secure controller operation and the necessary effort regarding amplifiers and cabling.

When one has a look at the curves in Figure 2, defining an average sensitivity is difficult. The data sheet states 100 dB 1 W / 1 m, which is as correct as it is false. One could interpret

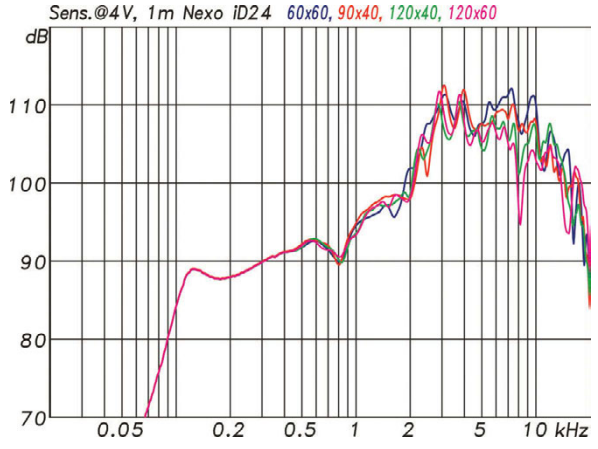
Truss clamp *with Nexo Quick Release mount on the enclosure's upper side*

Foot fastened *on the rear with Nexo Quick Release*

the 100 dB as a "dB mean value over the logarithmic frequency axis", which would be mathematically correct, however would have little meaning. Along with the load capacity of 200 W, the value could suggest that the ID24 can reach broadband level values of 123 dB, which is too high. If one has a look at the subwoofers separately with 90 dB sensitivity and 200 W load, one reaches 113 dB; 120 dB for the tweeter with nearly 110 dB sensitivity and 10 W load – which comes closer to reality: similar values were also measured during our maximum level measurement.



The ID24's impedance curve *in four versions. The different horns can also be slightly identified in the impedance curve. The deviations in the subs could be caused by the chassis dispersion, which occurs particularly in completely new drivers. Nominally, the ID24 is a 16 Ohm loudspeaker; the minimum is a relatively low 10.3 Ohm (Fig. 1)*



The ID24's frequency *response in four versions. The internal passive filter only acts as crossover at 2 kHz; the two ways' different sensitivities can therefore be clearly seen (Fig. 2)*

The ID24 *without front grille*

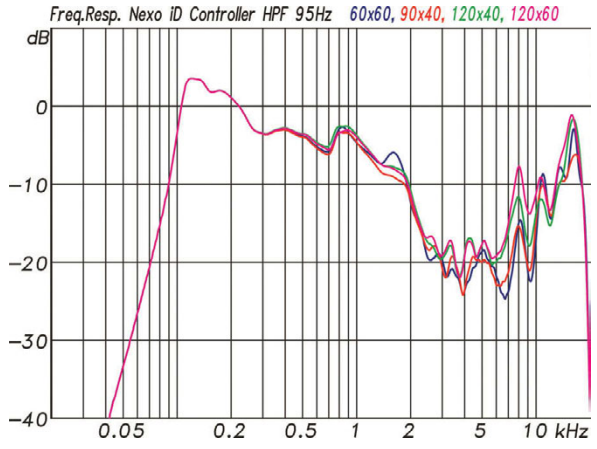
The ID24's 4" bass/mid-range *unit with neodym magnet; after releasing the adjustment knob, the tweeter can be completely pulled out towards the front. The small neodym driver operates with a 1" coil over the horn's 1/2" opening*

System amplifier and controller

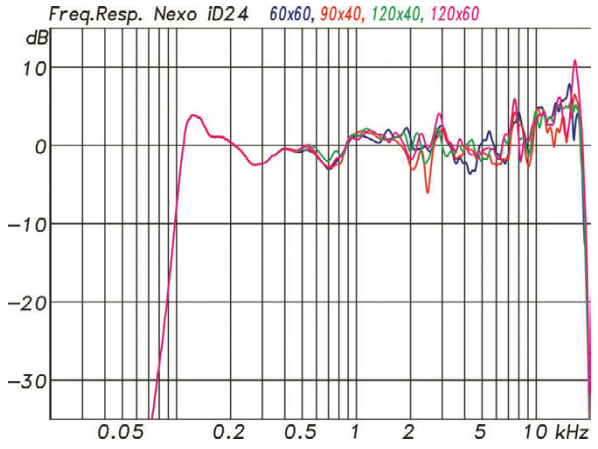
Nexo offers two possibilities for the ID series' operation: On the one side there is the DTD controller, which is also deployed for the PS series; on the other side there are the NXAMP series' controller amps. The DTD offers two inputs and three outputs and can thus operate a stereo set with a mono subwoofer. In the case of the DTD, the amp's output signal is lead through the controller to the loudspeakers. On the rear, the DTD offers two Speakon connectors for the signal transmission from the amp. Two further Speakon connectors on the front serve as connections for the loudspeakers. This approach not only offers a practical connector panel on the front but also allows users to read the sense signal from the amp's output. The controller is thus constantly informed about the amp's condition, increase and possible clipping. If an amp needs to be replaced or is heavily loaded with many loudspeakers connected in parallel, the user does not need to worry about the parameter adjustment inside the controller. With a continuous freedom of amp choice, one can nevertheless use the advantages of controller amps, where the controller is always well informed regarding amp condition. Additionally to the DTD controller, the demo rack supplied for this test was additionally equipped with a Nexo DTD 4x1.3 4-channel amplifier. The 1 RU amplifier is available from Nexo in a 4 × 700 W and a 4 × 1.3 kW version with 4 Ohm respectively. The Nexo ID and PS series amplifiers are recommended. The DTD controller operated with a small but pragmatic and efficient Dory software: Dory offers input patching, 8-fold parametric input EQs as well as delays and compressors for each output. Dory operates via USB on Windows, OS X and Android. The DTD controller includes the setups for the previous and current PS series, the GEO M6 and the ID series including bass speakers.

The four-channel Nexo NXAMP4X1 from the cooperation with Yamaha lends itself to applications where a larger number of loudspeakers is needed. The amp also delivers 4 × 1.3 kW at 2 Ohm and is equipped with a DSP system. Audio network cards for EtherSound or Dante can be optionally integrated.

Figure 3 shows the DTD controllers filter functions for the ID24 with the four horn types in a full-range modus. According to the setting, the high-pass filtering is 95 Hz. Alternatively, a subwoofer modus is available, which carries out a division at 120 Hz. The user can select one of the two settings (WB or



Controller's filter functions *for the ID24 in a 95 Hz full-range modus (Fig. 3)*



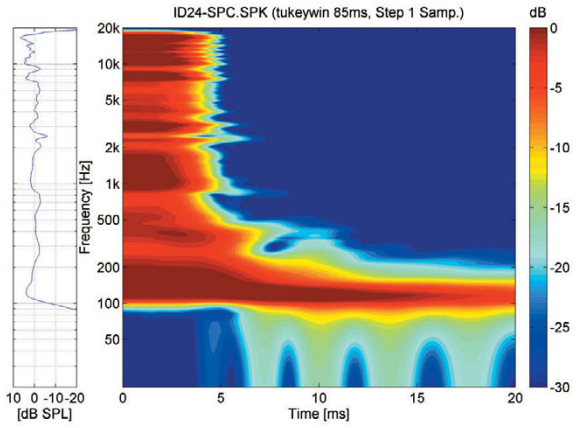
The ID24's frequency responses *for a full-range modus; the loudspeaker is well applicable from 100 Hz to 20 kHz. The slight "bathtub" helps a little, when it comes to a slightly more powerful sound (Fig. 4)*

XO) using a simple switch on the controller's front side. Additionally, the level for the subs and tops can be adjusted in a range of ±6 dB using two potentiometers. A third switcher position in the "user" position allows access via the Nexo Dory software via a USB port. As a practical feature, the USB port can also be used for an audio signal feed. Additionally to the analogue inputs, the DTD also features an AES/EBU input and an optional Dante Ultimo interface. The latter will probably be important for larger installations, mobile or fixed. Figure 4 shows the ID24 and controller in a full-range modus. Across everything, the frequency response presents itself as a slight "bathtub" with an around 3 dB rise in the highs and lows. Especially smaller loudspeakers can thus receive a little more volume. The useable frequency range stretches from just under 100 Hz to around 20 kHz. This is ideal for a fill system or for a small stage monitor. If one would like to use the ID24 as a mini PA, a subwoofer's support is of course necessary depending on the application type.

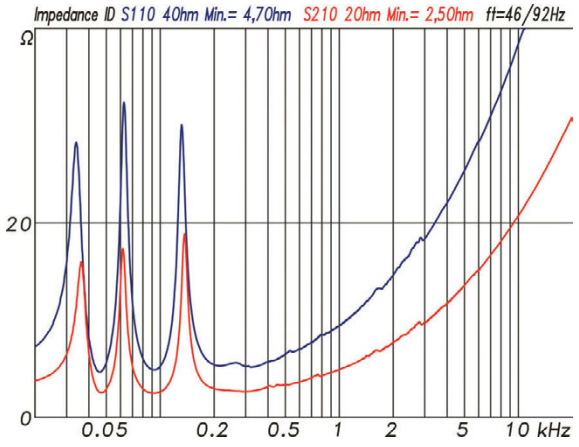
The waves in the frequency responses fine structure should be uncritical. Narrow tips and progression breaks can be slightly rectified with the help of a digital controller, however one should ask oneself, whether these actually occur at all. If the ripples only occur in a certain measurement direction, a correction could become simple lab cosmetics, which overall could even lead to a deterioration. If the filter setting is based for example on the averaging of a certain angle range around the centre axis, it could well be that the progression measured exactly on axis is not necessarily perfectly balanced.

Subwoofer support

The ID series' S110 and S210 lend themselves for the already mentioned subwoofer support. The S110 is constructed with a low profile enclosure. The 10'' driver is located in a two-chamber band-pass enclosure with a height of only 285 mm, a depth of 550 mm and a width of 525 mm. The band-pass chamber's openings are located on the front's outer left and right sides. The driver itself can be found inside; it is not visible and thus optimally protected. A speaker with twice the width (1.050 mm), two 10" drivers and 2 instead of 4 Ohm nominal impedance is available in the form of the S210. As both of the S210's drivers are connected internally in parallel, a 2 Ohm stable amplifier is absolutely necessary. The DTD amp unfortunately excludes itself and one will have to fall back on the larger NXAMP model.



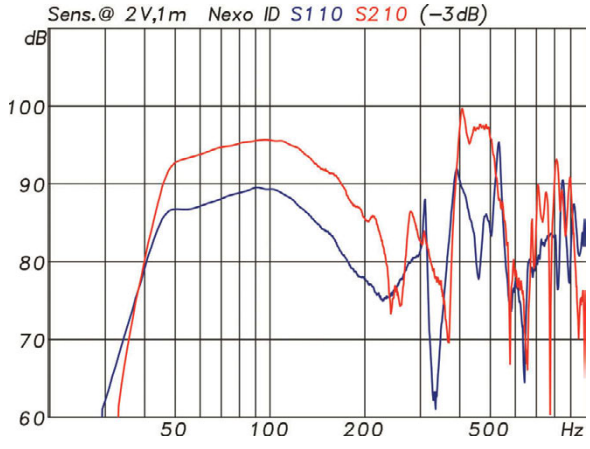
The ID24's spectrogram *exemplary for the 90 × 40 version. Despite one or another ripple in the frequency response, no significant resonances can be identified (Abb. 5)*



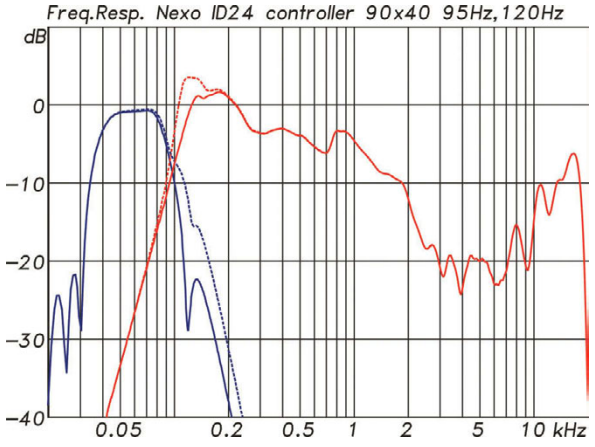
Impedance curves *for the S110 subwoofer version with a 1 × 10" mounting and the S210 with a 2 × 10" mounting. The band-pass enclosure is recognisable by the characteristic impedance curve with three maximums (Fig. 6)*

The two subwoofers' impedance curves from Figure 6 indicate the band-pass resonators' tuning frequencies at 46 and 92 Hz. The impedance minimums are good-natured in both cases with 4.7 and 2.5 Ohm and standard for 2 and 4 Ohm nominal impedance systems respectively.

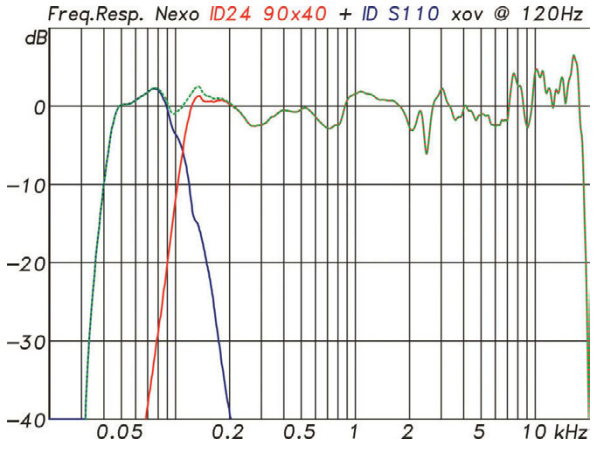
The data sheet specifies the frequency response with 43 to 130 Hz. Both values can also be found in Figure 7. The curve sensitivity in Figure 7 relates to a 2 V voltage and a 1m distance under full-space conditions. Converted to 1 W / 1 m, the curve remains the same for the 4 Ohm S110; for the 2 Ohm



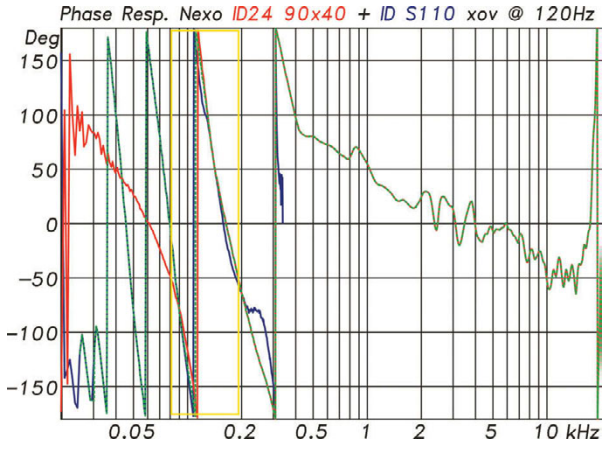
The S110 and S210 *subwoofers' frequency responses. Both curves refer to 2 V / 1 m for a nominal 4 Ohm system. For a 1 W / 1 m value, 3 dB must be deducted from the S210 curve (Fig. 7)*



Controller functions *for the ID24 (red) in a 95 Hz and a 120 Hz high-pass modus. The 120 Hz modus is used together with an ID subwoofer (Fig. 8)*



ID24 with subwoofer *at 120 Hz separating frequency), subwoofer (blue), top (rot) and the sum curve (green) (Fig. 9)*



The phase responses *for Figure 9's diagram. The ID24's and subs' phase responses are frequently congruent in the transition area (yellow frame) at 120 Hz (Fig. 10)*

S210 3 dB should be deducted. Strictly speaking, the S110 with an impedance minimum of 4.7 Ohm would be a nominal 5.9 Ohm system whereby the 1 W / 1 m sensitivity would increase by 1.7 dB in contrast to the 2 V / 1 m measurement. If one additionally relates this to a half space instead of a full space, 6 dB are added and – lo and behold – the data sheet's 97 dB suddenly match again. For the subwoofer, which is typically positioned on the floor, the half-space approach is by no means opportune, however this should be noted in the data sheet. The S210's sensitivity increases with regard to 1 W / 1 m by further 3 dB due to the acoustic coupling and due to the increase of the radiation resistance. If one remains with a constant terminal voltage for the sensitivity, the performance also doubles and the S210 gains 6 dB compared to the S110.

Band-pass enclosures generally offer two advantages. On the one side, the secure mounting of the driver inside the speaker and – an optimised set-up provided – the band-pass enclosure allows for gain in sensitivity and peak level in the aspired frequency range. However, above a certain frequency, where half the wavelengths fit into the enclosure chambers, pronounced feedback can occur.

Here, if not before – or better still significantly below – the envisaged band-pass's operational range should end. Thanks to their compact enclosure, the two ID series subwoofers' first resonances occur at around 300 Hz, thus making an adequately early separation possible.

Interaction

If the ID24 is operated in a full-range modus (WB = wide band), a high-pass filter is set at 95 Hz. Together with a subwoofer in a XO modus (= X-over), the filter starts at 120 Hz. Figure 8 shows the corresponding controller functions as well as the subwoofer's filter functions. If one adds the loudspeakers' frequency responses, an image such as Figure 9 arises. In the transition area, the sum function shows a small dip, as the top – additionally to the electric filter – shows clear high-pass behaviour and the two curves no longer perfectly align. The corresponding phase responses are uncritical. The curves progress around the separating frequency spaciously congruent so that there is no erasure. This was the case for a set-up with the same distance of the listener to the top and subwoofer. Depending on the set-up, deviations can occur, which should be compensated with delays as required.

One touch: flexible directivity

A loudspeaker's directivity is one if its most important characteristics. The exact alignment of the sound radiation towards the listener is one of the prerequisites for a successful

Amp rack *with Nexo's DTD 4x1.3 amp and DTD controller*

sound system. If the radiation angle is too narrow, the audience's periphery will be poorly supplied especially with high frequencies. If the angle is too wide, a room's reverberation will be unnecessarily stimulated or unwanted reflections on reverberative walls or ceilings occur. A loudspeaker's directivity can thus not be assessed as good or bad but rather as suitable or not suitable for an application. When evaluating the distribution evenness, an evaluation according to good or bad can be made in a second step. A loudspeaker's directivity should be constant across a frequency range, which is as wide as possible. Directivity is also particularly important, as it – apart from few exceptions – cannot be altered or only in narrow limits. Suitable loudspeakers should therefore be selected from the beginning.

To characterise directivity, the horizontal and vertical opening angles are generally specified. Depending on the loudspeaker, these values are achieved above a certain frequency. Large loudspeakers usually have an advantage here and reach their nominal values already at lower frequencies.

For the ID24, flexibility is important in all areas and therefore also when it comes to directivity. Due to the extension of the radiating area, the basic structure with the two 4" drivers naturally causes an increase in the level in which the membranes are located. As the terms "vertical" and "horizontal" level are not always clear for a loudspeaker such as the ID24, we here consistently refer to the upright standing loudspeaker position – in accordance with the image. For the frequency range up to around 2 kHz, the directivity can simply be influenced by the horizontal or vertical positioning of the loudspeaker. The horn additionally determines the loudspeaker's behaviour. With the four different versions – 60 × 60, 90 × 40, 120 × 40 and 120 × 60 – the ID24 already offers a large choice. Additionally, users can rotate the horn so that they always achieve the desired result, no matter whether the loudspeaker is hung or standing horizontally or vertically. As experience shows, a horn is really only rotated if this is really possible. Nexo has optimised this function to the maximum. No tools are needed, no grille needs to be removed and not even a screw needs to be loosened. A simple twist of the control knob on the enclosure's rear is enough and the horn is moved into the desired position.

If the rotation possibilities are taken into account, the ID24 offers a total of seven directivity versions. To evaluate all of these would mean illustrating and discussing 14 isobar diagrams. This would lead to an excessive report, so that we will limit ourselves to a total of four isobar diagrams.

The S110 subwoofer *with protective cover*

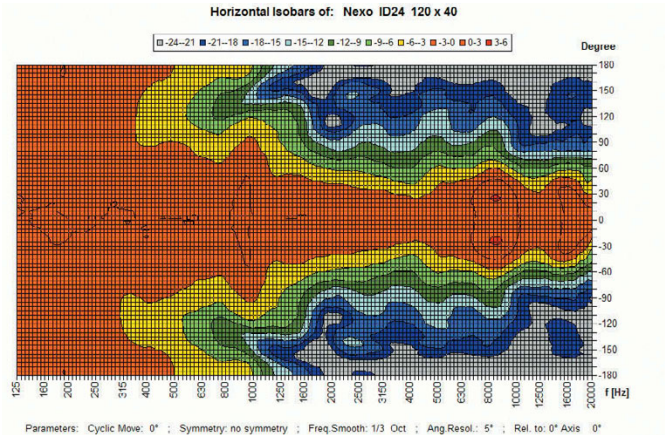
Measurement plane *this is what we subsequently called the ID24's coverage measurements*

The most commonly ordered and used ID24 versions are the 120 × 40 and 90 × 40. Figures 11 and 12 show the corresponding horizontal and vertical isobars. For the horizontal 120 × 40 degree diagram, the loudspeaker is positioned upright with the two subwoofers on top of each other and the horn radiating with 120° in the horizontal level. Due to its small membrane, each individual woofer radiates with ±90° and more until 1.2 kHz. From there onwards, a slightly increasing bundling begins, which is noticeable until 4 kHz. While the horn already comes into play from 2 kHz onwards, it only dominates the radiation with its ±60° from 4 kHz onwards. In total, the 120° are thereby well fulfilled. The same is the case for the 90 × 40 version in the horizontal level – only with a final 90°.

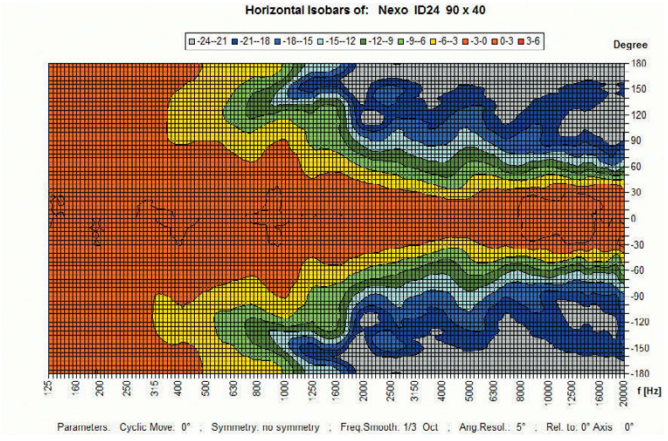
In the vertical position (Figure 13), the significantly larger radiator extension has a larger effect as the two subwoofers already bundle to around 90° from 1 kHz onwards. In the further course, the isobars tie up to around 60°. Additionally, the horn with its 40° comes into play. Due to the horn's compact size, these degrees are however only really reached above 4 kHz. Accordingly, another small dent is created in the isobars above 2 kHz. The 90 × 40 version's vertical isobars only differ insignificantly compared to those of the 120 × 40. A diagram is therefore not illustrated. Interesting however is the question how the loudspeaker will behave when the 120 × 40 is required in a horizontal position – for example if the loudspeaker is used as a horizontal front fill at the edge of a stage and should radiate as widely as possible (Figure 14). This is the bundled level for the subwoofers, which are now positioned next to each other, and the widely radiating level for the horn – which to some extent causes a contradiction. The corresponding isobars however are far more even than one might initially expect. The -6 dB isobars only fluctuate between ±40 and ±60 between 1 kHz and 20 kHz. In total, the ID24 presents itself here as a true all-round genius, which is capable of meaningful results and not shaky compromises even under rather extreme conditions.

Sensitivity and maximum level

For compact loudspeakers such as the ID24, the question quickly arises: What is possible and which level can be expected? The corresponding data sheets often only offer rather blurry information. A common measurement method involves providing a pink noise signal with a 6 dB crest factor with maximum activation up to the loudspeaker electronics' clipping limit and then using a level meter to measure the peak hold function for a certain time period. Of course, the



The 120 × 40 version *with a horizontal isobar presentation. With the exception of a small pinch at 4 kHz, the ±60° are well adhered to from 1.6 kHz upwards)*



The 90 × 40 version *with a horizontal isobar presentation. The horn operates here even more evenly than in the 120° version. The small pinch at 4 kHz is also present here, however should not be too disturbing in practice (Fig. 12)*

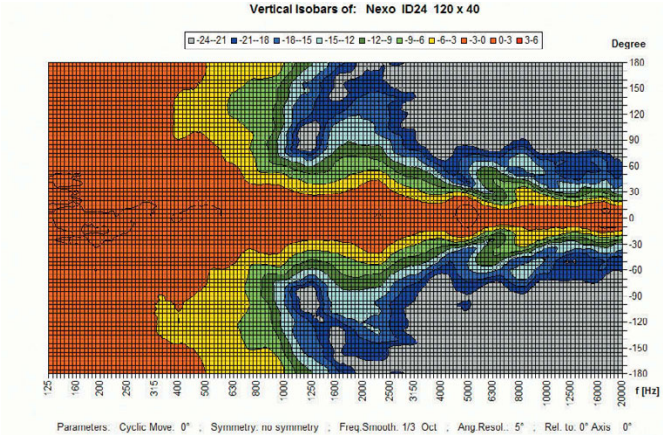
amount of distortion cannot be considered using this type of measurement. The value measured using this approach can thus only be an indication of the possible maximum peak level.

In our lab, we use two measurement methods to determine the peak level. On the one hand, the well-known peak level measurement with 185 ms long sinus bursts as excitation signals. A sinus burst of a certain length allows for the direct interpretation of the harmonic distortions. For the measurement procedure, a distortion limit of for example 10% is determined and – as required – so is a limit for the peak performance or input power at the measurement object. In steps of 1/12 octaves, the measurement algorithm then runs from the lowest to the highest measured frequency. For each frequency step, the measurement begins with a low initial value and increases the level until the distortion limit or another termination criterion is reached.

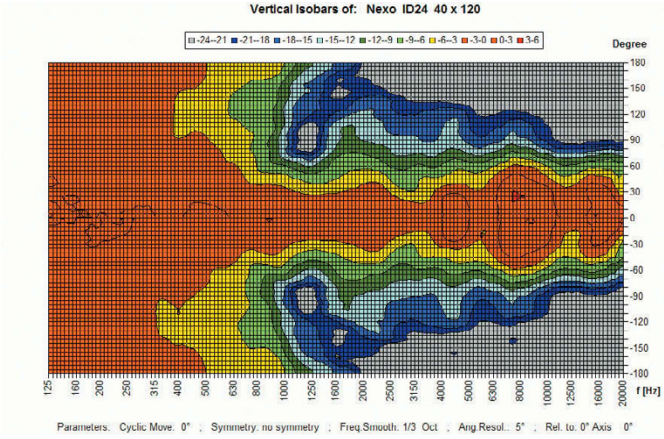
The result is a frequency curve, which shows, which level a loudspeaker with these sinus bursts is capable of reaching with the highest x % distortion factor. With this kind of measurement, weak areas can be identified very well or the comparative performance of the individual ways can be assessed.

For the ID24, the curve for a maximum of 10% distortions runs steadily around and slightly above the 110 dB line from around 150 Hz upwards. As soon as the tweeter comes into play, the values increase by around 6-8 dB and nearly reach the 120 dB mark. If one places these peak level curves in relation to the sensitivity and the load, the connection quickly becomes clear. If one assumes a peak performance of 200 W, the sensitivity curve will be shifted upwards by 23 dB. If one compares this with the mathematical peak value in the measured curve, then these are in part nearly congruent. Where the measured value falls behind, the distortion limit was either already reached or the limiter set in, not allowing a further increase. This is very clear for the tweeter, which – with a load of 10 W – needs to be protected by the limiter and additionally creates a relatively large number of distortions as a compression driver with the horn. Thanks to the much higher sensitivity, the peak level values in the end fit those of the subwoofer – resulting in an overall balanced picture The S110 subwoofer also fits in will, continuing the curve until slightly under 50 Hz with its 6 dB reserve. The S110 would therefore be a sufficient addition for two or four ID24.

For a day-to-day operation with a music or speech signal, it is however sometimes difficult to draw direct conclusions on the achievable level values from this type of measurement,



The 120 × 40 version's *vertical isobars and in a very similar form also for the 90 × 40 version (Fig. 13)*



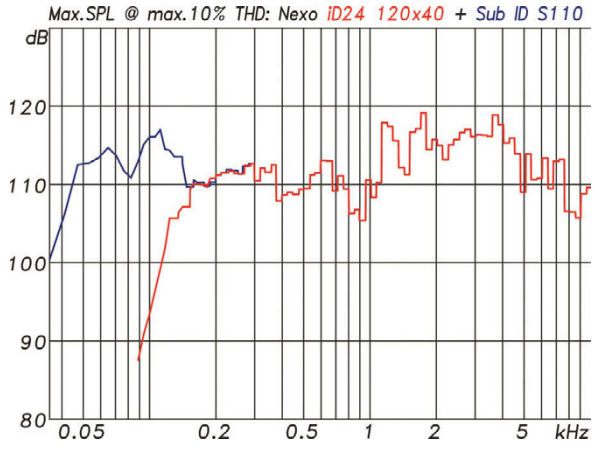
The 40 × 120 version's *vertical isobars. The transition from the narrowly distributing subwoofers to the broadly distributing horn is realised unexpectedly even (Fig. 14)*

as the peak value and not the mean value is the limiting factor for signals with crest factors of 10 to 20 dB. More meaningful in practice is therefore the measurement with a multitone signal. The excitation signal's foundation consists of 60 sinus signals with different phases for which the spectral weighting can be freely set. For the following measurements, a weighting corresponding with a mean music signal (green curve) was selected. This synthetic measurement signal's crest factor, which describes with relation of peak value to effective value, lays at a practice-oriented 12 dB. In contrast to the initially mentioned measurement with a pink noise signal, this measurement method also allows an analysis of the distortion share inside the measurement signal.

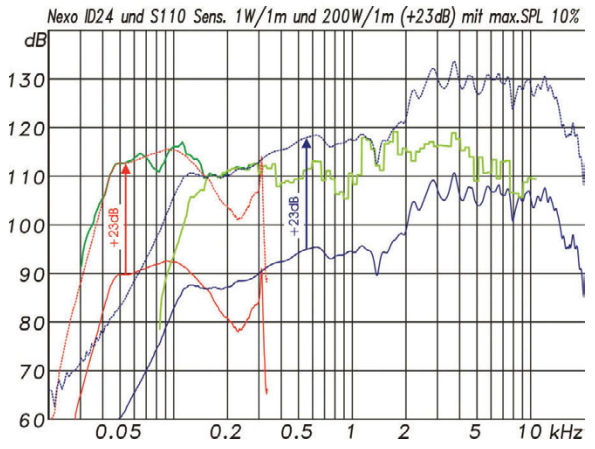
For the distortion share, all spectral lines that are not present in the excitation signal – which means they were added as harmonic distortions or as intermodulation distortions – are added together. Particular care should be taken that the excitation signal's frequencies are generated in such a way, that they do not coincide with the harmonic distortion share, as they could otherwise no longer be analysed.

During this kind of measurement, the level is increased until the total distortion share reaches a certain limit, which was also determined here as 10%. Under these conditions and in the full-range modus, the ID24 reaches a typical music spectrum with a peak level of 119 dB according to EIA-426B with regard to a 1 m distance in free field under full-space conditions. The mean level was 107 dB. Together with the subwoofer S110, an increase of 3 dB is possible. The distortion share during this measurement amounted to -25 dB corresponding to 5.6%. A further level increase was not possible, not even at the expense of the distortion share as the limiter operated strictly to prevent an overload of the components.

Now the question arises, what would be possible with the ID24 in practice. Let us for example take a 10 × 10 dance floor with a DJ. An ID24 with an S110 subwoofer is positioned in each corner. If one were to stand right in the middle, one would be 7 m away from the loudspeakers. In contrast to 1 m for the direct sound, this corresponds to a level decrease of 17 dB. Each individual loudspeaker would thus achieve a mean level of 93 dB. If one assumes a non-coherent addition of the sound shares, the loudspeakers would achieve +6 dB. With an estimated further 3 dB addition due to the diffuse field share, we would reach a linear 102 dB. A-rated, one would loose around 3 dB for the spectrum according to EIA-426, resulting in a mean level of 99 dBA – quite an acceptable value for this type of application.



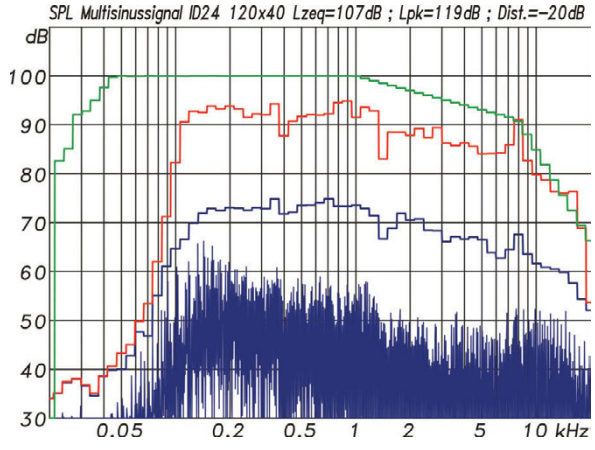
Peak level *for the ID24's highest 10% distortion in the full-range modus (red) and together with the S110 subwoofer (Fig. 15)*



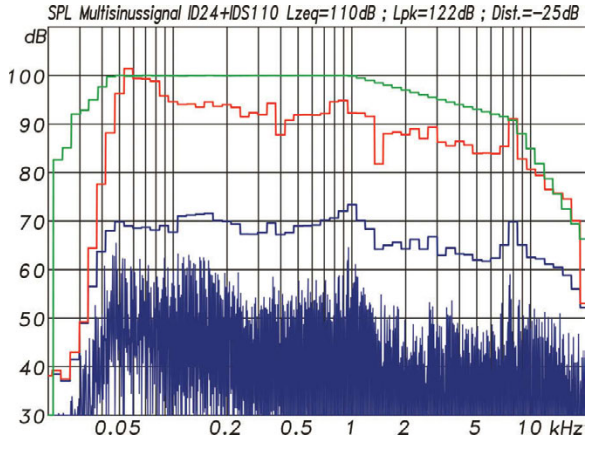
Sensitivity and peak level *in connection. The red and blue curves for the sensitivity for 1 W / 1 m and the mathematically determined peak level for 200 W (+23 dB). The tweeter's performance is limited by the limiter to 10 W (+10 db) above 2 kHz (Fig. 16)*

Hearing test

As is often the case, the hearing test took place in a low-reflection room, which offers a neutral environment as far as possible. Even if the room is not necessarily practice-oriented: Due to its neutral behaviour it is well suited for hearing comparisons especially with larger time intervals. A stereo set with two ID24 and two S110 subwoofers along with the DTD controller and the 4-channel DTD 4x1.3 amplifier were set up and heard. The hearing impression can best be described as "tonally well balanced with a good tendency towards hifi characteristic." The higher mids and highs were



The ID24's multi-tone measurement *for a full-range modus. A mean level of 107 dB and a peak level of 119 dB is reached for a total of max. 10% distortion share with regard to a 1 m distance in the free field (Fig 17)*



ID24's multi-tone measurement *with S110 subwoofer. The frequency range increases by one octave downwards, the attainable sound pressure rises by a total of around 3 dB (Fig. 18)*

Top in *monitor position*

resolved very well, vocals were clearly reproduced without at all tending towards a sharpness. In the stereo set, a source location is most successful. If one increases the level up to the system's limits, the small 4" subwoofers in the tops are the first to rereach their limits.

Prices

D24-T (touring version) about 750 €
DS110-T (touring version) about 1.359 €
DS210-T (touring version) about 1.913 €
DTD-TU controller about 793 €
DTD-TN controller with Dante about 989 €
DTD AMP 4x1.3 about 2.587 €
All prices excluding VAT

Summary

"With the ID series the French manufacturer Nexo presents a new compact PA system, which …" – a loudspeaker test summary usually starts in this or a similar way. Not so for Nexo ID: A lot is different here than one would have expected and nothing really the way it has always been done. Francois Deffarges explains that the ID system was "consultant driven" in its development. When you have the ID24 in front of yourself and look at the details, it becomes clear: This loudspeaker was developed from scratch without definite specifications or ideas. The most important development guide were the desires of customers in the touring and installation business. The result is an extremely flexible and compact loudspeaker with a lot of new features, which actually really deserve the term innovative. From the unusual equipping with 4" subwoofers and a 1/2" tweeter, the twin-wall plastic enclosure – which cuts a good figure no matter if standing, mounted or used as a monitor – over the few accessories and the corresponding provisions on the loudspeaker to the unmatched easily rotatable high frequency horn – everything about this loudspeaker is pleasingly and elegantly solved. As expected, the good measurement values and the hearing impressions complement the picture. A final look at the prices proves that a large manufacturer's innovative product does not inevitably lead to the same prices.

FOCUSSED DISPERSION

PRECISION SOUND

RIGHT WHERE IT'S NEEDED

System designers love the focussed dispersion of NEXO speakers. It gives them the tools they need to achieve perfect coverage in any space.

The new ID24 achieves smooth, full-frequency sound and high output from a cabinet measuring just 309mm wide, with a unique, user-rotatable horn providing unprecedented control over HF directivity.

With an 'a la carte' selection of colours, grilles, directivity and connectivity, and compatibility with a wide range of mobile and fixed-installation hardware, ID Series delivers precision sound, right where it's needed.

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