



LDS Line Source System

System Description

The innovation

LDS Line Source System represents a new loudspeaker technology based on The principles of the Homogeneous Line Source. A Homogeneous Line Source produces a plane wave front whereby all frequencies reach the listener at the same time. The system is designed to give an extremely high sound quality, both for short and long distances, and for large spaces.



Planar-Magnetic for the High end

The eight Planar-Magnetic transducer for the LDS Speakers are equipped with an innovative high-tech diaphragm material called Kaladex® from Dupont. This material, combined with a new proprietary technology for etching the aluminium / Kaladex® laminate, makes it possible to overcome the usual limitations of previous generation planar-magnetic designs. Traditionally most planar drivers were built using a Mylar® diaphragm but Kaladex® has a much higher thermal limit, lower mass, better durability and mechanical stability. As a result, the driver has both higher sensitivity and power handling as well as excellent sound quality. The careful design and unique assembly technology allow for more extended high frequency output, less distortion and higher dynamic range than with few other planar drivers of similar size.



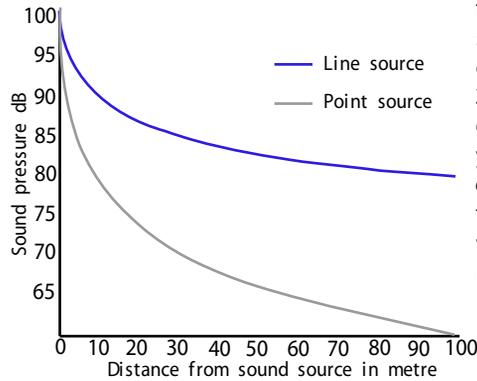
7" That takes care of the low end

The 7" drivers in the LDS100, 400, 700 and 800 have voice coil formers and cones of aluminium. The magnets are vented to optimise cooling. A special high impedance copper voice coil makes it possible to electrically connect all drivers in parallel. Parallel wiring caters for improved impulse response, especially during higher sound pressures. The use of a small speaker in a large array, is one of the best way to make the low end homogeneous with the high end of the sound spectrum. The fast response and superb sound quality combine with a large number of transducers, makes the use of subbases in many cases unnecessary. A array with five LDS800 on each side takes the frequency response down to 45Hz.



Line source compared to a point source.

With an ordinary point source the sound pressure drop-off with 6 dB / every doubling of the distance. A Line source speaker has the advantage that sound pressure drop-off with only 3 dB /every doubling distance. This means you can have a lower sound pressure from the speakers without lose too much volume for people standing far from the sound source.



Sound pressure drop-off for a linesource compared to a point source, with both sources having the same sound level one meter from the loudspeaker. Already at a distance of 10 m the sound pressure is 10 dB higher for the line source than the point source. At the distance of 100 m the difference has been raised to 20 dB.

The distant from where the near field of a sound source becomes a remote field is frequency depended. The sound will therefore start lose low end frequency when you enter the remote field, and keep deteriorate as you move away from the sound source. A higher line source gives a larger near field for all frequency and therefore a much better sound quality for a larger space. A line source with a height of 1.8m (4pcs of an ordinary line array system) only gives a near field for 1 kHz of 2 metres. A LDS800 system with 4pcs gives a line source that is 6,6m and has a near field for 1 kHz of almost 40 metres. This both gives a better economy and improved sound quality.

The all so importance of the package

The cabinet chosen is of the closed type to preserve the impulse response. Each cabinet is made of heavily braced Swedish MDF and plywood, and is constructed with no parallel walls to avoid standing waves. The cavity has separate chambers for high and low frequencies. Both chambers are optimally damped for its purpose by two kinds of damping materials.



The LDS400 & 800 are also fitted with 4 handles , and 4(x3) rigging points for connecting speakers together or to add flying points.

