Research & Development

Flat Panel Speaker Specifications

This new technology brings you a lightweight, flat compact speaker system, which sounds wonderful, works with all existing amplification without breaking your back or your budget. With the same dimensions as a medium picture frame, you can print your own artwork on the front to promote yourself or a product, with little affect on the sound.

- Thin, lightweight panels
- Pole mounts for speaker stands
- Compact panels will easily fit into any car
- Attractive padded protective carrying case available as an optional accessory

Sound Quality

NlightN Flat Panel Speakers produce sound in a totally different way from conventional speakers. The panel's wider dispersion pattern fills the listening area with an expansive "sound field," eliminating the "beaming" of conventional speakers and immersing the listener in a wider audio "sweet spot." There is less volume drop off over distance than with standard speakers. The NlightN speaker panel has twice the bandwidth of a traditional speaker unit. One panel will replace both the mid-range unit and the tweeter in a conventional system. NlightN speakers deliver extremely high vocal intelligibility, essential for good quality PA. A conventional bass speaker or subwoofer handles the very low frequencies.

Sensitivity	90 dB
Impedance	8 ohms
Frequency	80 Hz - 20 kHz (+/- 6 dB)
Power Handling	100 Watts Maximum
Protection	Built-in 100 Hz High Pass Filter. Internal self-resetting fuse and chassis mounted cartridge fuse.
Dimensions	W 22" x H 30" x D 3 3/8" 17.6 lb
Material	Frame: Medium Density Fibreboard Chassis: 2.5 mm Aluminium, 1.2 mm Zintec Steel Panel: 10 mm Phenolic Paper Membrane on Honeycomb Composite
Fittings	1 3/8" pole mount sleeve, 1/4" Jack socket Input, 1/4" Jack socket Output

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Revolutionary Flat Panel Speaker Technology

Audio "Excitement" for the Digital Age!

NlightN (pronounced "en-light-en") Flat Panel Speakers produce sound in a totally different way from conventional speakers - warm, clear, and balanced with excellent vocal intelligibility. The panels "excite" the surrounding air molecules and fill the listening area with an expansive "sound field," eliminating the "beaming" of conventional speakers and immersing the listeners in a wider audio "sweet spot." [Photo shows a panel without the optional protective metal grille.]

NlightN is a new class of speaker, the Distributed Mode Loudspeaker or "DML," in which the resonant modes of a light-weight, stiff panel (membrane) are actuated by a transducer (exciter) to deliver a truly remarkable diffuse "sound field" over a wide audio frequency bandwidth. Six custom designed transducers (similar to a Voice Coil & Suspension) are used in place of the electromagnetic driver of conventional speakers to produce sound on a flat surface.

The flat panels have a very wide dispersion pattern of nearly 360°. Sound is emitted from both the front and rear of the speaker, making NlightN the first quasi-omnidirectional speaker designed for mobile use. No need for a monitor. There is no change in clarity, irrespective of the listening angle. Unlike a conventional speaker, a listener situated several feet from the NlightN speaker can still hear the sound without the person standing next to it being deafened. There is less volume drop off over distance, so the sound level will be nearly the same throughout the listening area, whether you're close to the speaker or at the back of the room.

NlightN Flat Panel Speakers have twice the bandwidth of a traditional speaker and nearly eliminate feedback when working with a microphone, making them ideal for karaoke and live events. Each panel is extremely efficient and only requires 100 watts of amplification. These speakers have a built-in protection circuit to help prevent damage from excessive amplification. Due to the fact that there is no crossover, there are no phase cancellations associated with passive crossovers (as in conventional speakers). Room interaction is minimized, which enhances the clarity and presence of the audio.

The panels are fitted with front metal grills that can be removed, so you can paint them or apply your own artwork (80/100 gsm maximum weight) to them with little effect to the sound. Attractive padded protective carrying cases and heavy duty road cases are available as optional accessories.

The unique sound dispersion characteristics combined with lightweight construction and flexible design mean NlightN Flat Panel Speakers represent a real alternative to conventional technology in the commercial audio marketplace. Anything else . . . and you're simply buying obsolescence!

Bass Speaker Reinforcement

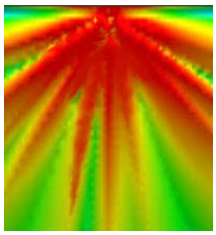
Very low frequencies for dance music are best handled by a conventional subwoofer. As a rule of thumb, frequencies below 180 Hz are rolled off and routed to the subwoofer. The bottom end of the sound spectrum does not carry much directional information and a low frequency drive unit is needed to maximize the overall effectiveness of an NlightN Flat Panel sound system.

Speaker Stands

Use tripod speaker stands that have a pole diameter of 1 3/8" (35 mm), such as QuikLok Model S - 171. Older Ultimate Support Speaker Stands with 1 1/2" poles may require an Adapter Stud (Part # TAD -138). Note: A stand with a 1 3/8" pole will fit into the entire 8" length of the pole mount sleeve on the speaker cabinet and provide more stability than a 1 1/2"pole with a short adapter stud.

Multimedia Applications

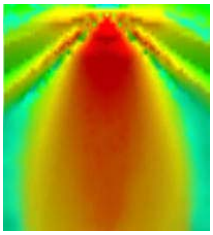
Sound Radiation



NlightN

The NlightN Flat Panel Speaker is the most revolutionary advance in speaker technology, since the advent of the moving coil speaker. It produces sound in a totally different way from conventional speakers: warm, clear, and balanced with excellent vocal intelligibility. The panels “excite” the surrounding air molecules and fill the listening area with an expansive “sound field,” eliminating the “beaming” of conventional speakers and immersing listeners in a wider audio “sweet spot."

Sound Radiation



Conventional

NlightN provides superior stereo imaging. Conventional cone speakers produce a large, blurred stereo image, rather than a precise, tightly-defined sound stage. NlightN panels maintain a wide radiation pattern with a diffuse output that reduces destructive room interactions. Stereo imaging, in typical home environments, is at least as well-defined and stable, as with conventional directional loudspeakers listened to from the stereo “sweet spot.” Outside this small area of optimum stereo, the NlightN panel is much superior due to its superior off-axis performance.

With conventional cone speakers, you tend to “hear” much more of the room. Standing wave resonances are more pronounced, so the tonal balance varies significantly as you change listening position, and interaction with room boundaries is worsened, too, making speaker placement more critical. NlightN panels behave quite differently, because of the diffuse nature of their radiation. Their sound does not emanate from a fixed, well-defined point in space. As a result, the distribution of sound within a room is actually much more even with an NlightN panel than with a conventional cone speaker.

The unique ability of NlightN panels to fill a room with a sound field that alters very little as the listener changes position is further enhanced by the reduced fall-off in sound pressure level with distance compared with a conventional loudspeaker.

The NlightN Flat Panel Speaker also does away with the audible consequences of crossover networks. Its wide, essentially frequency independent directivity removes a pervasive source of coloration. Cabinet resonance is no longer an issue, because there is no need for a cabinet.

These attributes serve to make NlightN an exciting proposition in any conventional two-channel music system, and in a multi-channel home theatre set-up, the benefits are even greater. The inherently diffuse nature of the NlightN sound radiation assures surround channel diffusion. Listeners aren't conscious of the rear speakers as distinct entities.

NlightN panels are very thin and can either be used in free space or hung on a wall, so their footprint and visual impact are reduced. Installation is as easy as hanging a picture, with no cutting or in-wall mounting required. The NlightN can be painted to match the room décor. Artwork or photographs (80/100 gsm maximum weight) can be affixed to the speaker panel, with little effect on the sound.

Generally speaking, because of its dispersive sound qualities, the NlightN Flat Panel Speaker is able to offer much better performance at any given price point than traditional speakers, and therefore establishes a new standard in performance in multimedia speakers.

Bass Speaker Reinforcement

Very low frequencies are best handled by a conventional subwoofer. As a rule of thumb, frequencies below 200 Hz are rolled off and routed to the subwoofer. The at the bottom end of the sound spectrum does not carry much directional information. A low frequency drive unit is needed to maximize the overall effectiveness of the NlightN Flat Panel sound system.