REVOLUTION

Gradient Revolution is a unique combination of advantages of a big panel loudspeaker and a mini monitor.

Turnable and open dipole bass section with coaxial upper unit differs dramatically from ordinary loud-speaker designs. Music reproduced by Revolution is directed straight towards listener and thus disturbing room reflections are not affecting the sound quality.

With these unique principles Revolution was designed to be extremely room independent. It's been no surprise that Gradient Revolution has continuously been referred as one of the very best by the leading publications of the industry.

Gradient

DIPOLE BASS

The bass part of the Gradient Revolution loudspeaker consists of two 30cm custom made long throw woofers. They are assembled on an open baffle giving the low frequencies a "figure eight" or dipole radiation pattern similar to most panel loudspeakers. These two woofers operate from below 30Hz up to 200Hz.

An ordinary box speaker radiates in all directions at low frequencies. This has the unfortunate effect of generating standing waves in all dimensions. In a typical listening room, standing waves distort the sound at frequencies below 200Hz. The Gradient Revolution does not excite standing waves between the floor and the ceiling, it can only generate them in the direction of the radiation pattern.

The woofer section of the Revolution can be rotated and directed in three different ways, to minimize undesirable standing waves in the listening area. This ability to "tune" out standing waves in the bass is quite unique. The result is a smooth articulate bass response which has correct musical pitch and dynamics.

ONE POINT SOURCE

Frequencies over 200Hz are reproduced by a coincident driver assembly. A 18cm fiberglass cone handles frequencies up to 2800Hz. High frequencies from 2800Hz to over 20kHz are reproduced by a 25mm aluminum dome tweeter placed at the apex of the midrange cone. A point source is generally accepted as an ideal sound source for its excellent phase and amplitude response. This results in an extremely accurate, stable and three dimensional sound stage.

COAXIAL CARDIOID

The midrange driver is mounted in an acoustic resistance enclosure giving the system a cardioid (heart shape) radiation pattern. The dome tweeter uses the cone of the midrange driver as a wave guide thereby providing the same cardioid pattern.

From 200Hz up, the speaker radiates sound mainly in the forward direction. The rear radiation is effectively damped by having a power ratio of 100 to 1. This minimizes any early reflections when the speaker is placed against the back wall. Special attention has also been taken that the radiation patterns are consistent at all frequencies.

The design of the speaker also minimizes sound reflections from the cabinet itself and nearby boundaries, thus negating the effects of diffraction. The room influence to the sound remains very small, especially at mid and high frequencies giving the Revolution a very similar sound characteristic in different rooms.

FLAT ENERGY RESPONSE

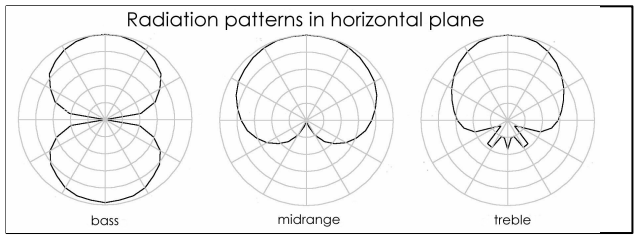
The frequency response of the Revolution at the listening position is extremely flat; but this alone is not sufficient for Gradient. Every speaker radiates at least some sound in all directions. If the energy response of a loudspeaker has peaks and dips, the reverberant sound field will be uneven, colouring the music. Frequency response measured in all directions must be linear - as with the Revolution - in order to ensure linear energy response.

MANY POSSIBILITIES FOR ROOM POSITIONING

The Gradient Revolution can be positioned in the room like a panel (dipole) speaker. In this case one or two metres from the rear wall is beneficial. Unlike panel speakers, the bass section of the Revolution can be directed in three different ways allowing for unique control over unwanted standing waves.

If a panel speaker is positioned near the rear wall the bass output will be attenuated strongly and the midrange will be colored by early reflections. The Gradient Revolution overcomes both of these problems. When positioned against the wall the bass section will be faced toward the adjacent wall. The bass can be attenuated by increasing the distance from the rear wall and fine tuned by rotating the speaker a few degrees.

Due to the radiation pattern at middle and high frequencies, unwanted early reflections are not created. The music remains smooth and open with correct timbre as with conventional panel speaker positioning.



TERMINALS AT THE BOTTOM

Rotating the bass section of the speaker for different positioning in the room has no influence as to the appearance of the speaker. Terminals are on the bottom of the speaker so the cable(s) can be positioned in any direction. There are four terminals for bi-wiring or bi-amping.

TECHNICAL SPECIFICATIONS

Radiation patterns:	Bass: dipole Midrange & treble: cardioid
Frequency response:	50...20000Hz +/- 2dB, -6dB @ 30Hz High frequency limit above 50kHz
Impedance:	6 Ohms, minimum 5 Ohms
Sensitivity:	87dB/2.83V/1m
Recommended amplifier power:	50...250W
Drivers:	2 x 300mm long throw woofer, 176mm fibreglass midrange, coaxial aluminium dome 25mm
Crossover frequencies:	200 and 2800Hz
Connections:	Two pairs of binding posts.
Finish:	Ash, Black coloured ash, White coloured ash
Cloth:	Black, White or Light Gray
Dimensions (WxHxD):	41 x 102 x 36cm
Weight:	24kg

Made in Finland by Gradient Labs Ltd

www.gradient.fi