

1037C

Data Sheet
Genelec 1037C
Tri-amplified Monitoring System

GENELEC®





1037C Tri-amplified Monitoring System

System

The Genelec 1037C is a three-way active monitoring system including loudspeaker drivers, speaker enclosure, multiple power amplifiers and low level active crossovers. Designed for moderate sized control rooms this system is ideal for audio recording studios, general purpose broadcasting and television studios, post-production facilities and mastering suites.

The 1037C is designed to perform well both as a free-standing monitor and flush mounted into the control room wall.

The unique Directivity Control Waveguide™ (DCW™) Technology developed by Genelec provides excellent stereo imaging and frequency balance even in difficult acoustic environments. The fast, low distortion amplifiers are capable of driving a stereo system to peak output levels in excess of 126 dB SPL at 1.7 m with program signals. Versatile crossover controls allow for precise matching of the speaker system to different acoustic conditions. The system can be used in both vertical and horizontal orientations by simply rotating the DCW unit.

Integrated construction

The Genelec 1037C active monitoring system is very easy to use as only mains

power and a balanced input signal are needed. The performance is optimized because loudspeakers and amplifiers are built as a single integrated, matched and calibrated package. The rugged amplifier unit is mounted into the enclosure with vibration isolators which also act as quick release hinges making maintenance operations very easy and straightforward. The speaker cabinet is constructed of painted or veneered MDF, which is heavily braced to eliminate structural resonances.

Amplifiers

The bass, midrange and treble amplifiers each produce 180 W, 120 W and 120 W, respectively of short term power with very low THD and IM distortion. Special attention is paid to the electronic design to achieve the best subjective sound quality currently possible. To improve the acoustic transient response the output impedance of the woofer amplifier is made negative. The system incorporates special circuitry to protect the drivers from overload. Thermal protection is included for the amplifiers.

Drivers

The bass frequencies are reproduced by a 305 mm (12") bass driver loaded with a 65 liters vented box. The -3 dB point is 35 Hz

Applications

- Audio Recording
- Pre Production & Composing Studios
- Broadcast Control Rooms
- Drama Studios
- TV Control Rooms
- Post Production
- Mastering Suites

and the low frequency response extends down to 33 Hz.

The midrange frequencies are reproduced by a proprietary 130 mm (5") direct radiating cone driver loaded with the DCW. The high frequency driver is a 25 mm (1") metal dome also loaded by the DCW. All drivers are magnetically shielded as standard to minimize stray magnetic field.

DCW technology

The revolutionary Directivity Control Waveguide Technology is a means of improving the performance of a direct radiating multi-way loudspeaker in normal listening conditions. The basic idea is to match the different drive units precisely, both in terms of frequency response and directivity. This will result in a smoother and a virtually uncoloured off-axis response. Due to improved control of the directivity, especially in the midrange frequencies, more direct sound and less early boundary reflections are received at the listening position. This results in more accurate stereo imaging and makes the system less sensitive to differing control room acoustics than any conventional direct radiator design. The DCW Technology improves drive unit sensitivity from +2 to +6 dB thus increasing the maximum sound pressure level produced by the system.

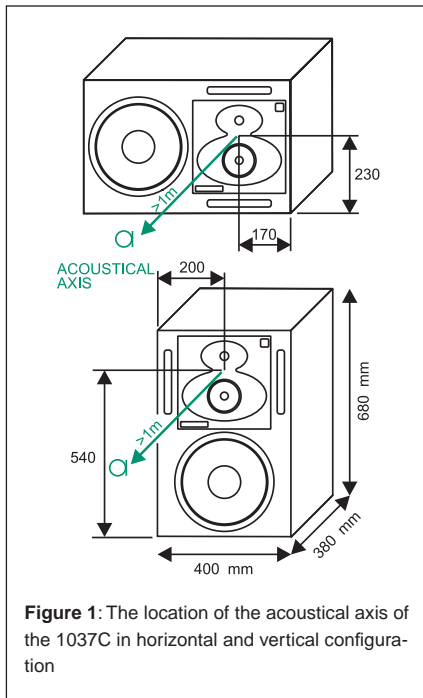


Figure 1: The location of the acoustical axis of the 1037C in horizontal and vertical configuration

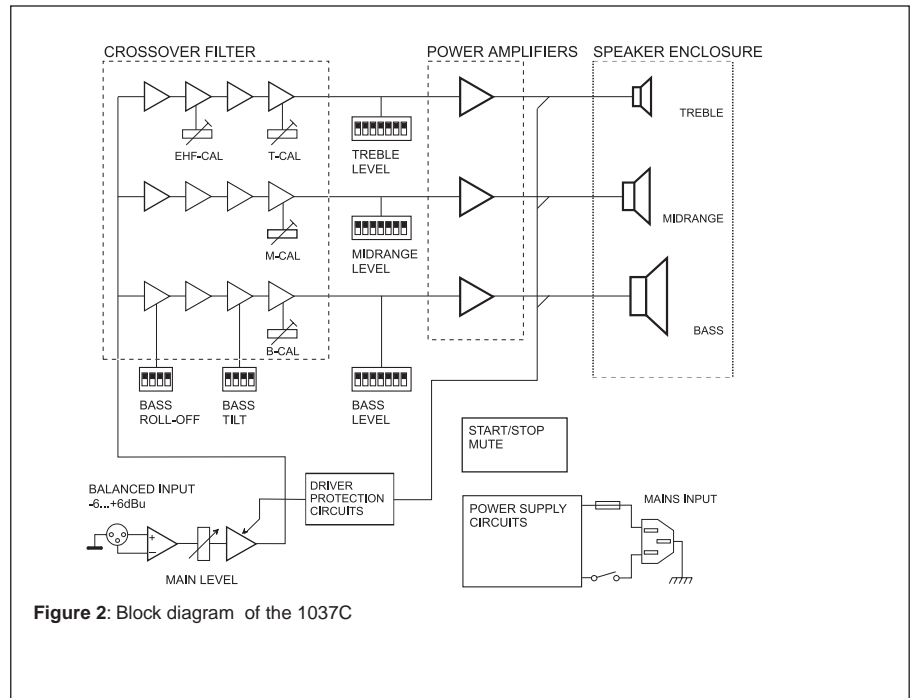


Figure 2: Block diagram of the 1037C

Crossover filters

The crossover frequencies of the active crossover network are 420 Hz and 3.2 kHz. In order to obtain uniform frequency balance in different acoustic conditions, special calibrated controls are included in the crossover. The Bass, Midrange and Treble level controls operate in 1 dB steps. Moreover, the low frequency Tilt and Roll-off controls both have four 2 dB steps to allow refined LF response tailoring. A high-pass filter is included in the LF channel to protect the woofer from subsonic signals. The crossover network is driven by an active balanced input stage. Variable input sensitivity allows for accurate level matching to the mixing console.

Options

	Order code
Opt-01 Flight case	1037-401
Opt-05 Floor stand	1037-405-V
Opt-06 Carrying handles	1037-406
Opt-09 Grille	1037-409
Opt-11 Rack adapter kit	1037-411

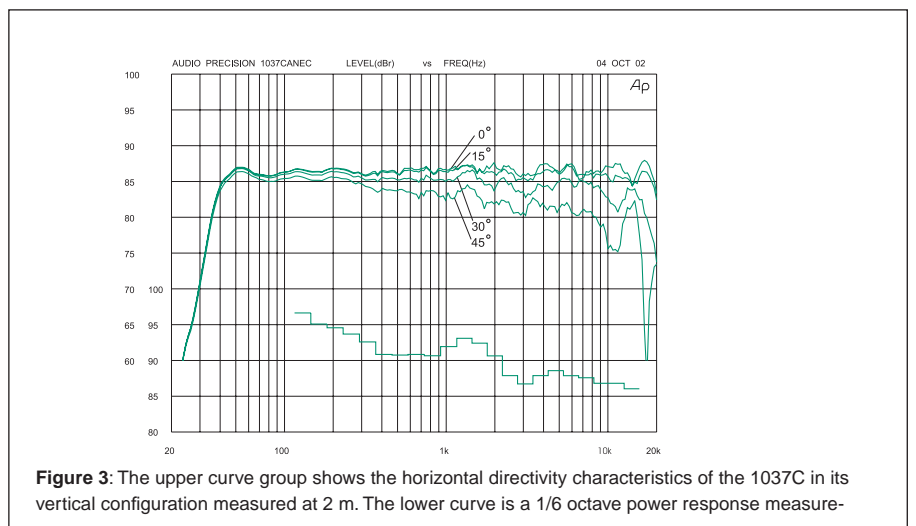


Figure 3: The upper curve group shows the horizontal directivity characteristics of the 1037C in its vertical configuration measured at 2 m. The lower curve is a 1/6 octave power response measure-

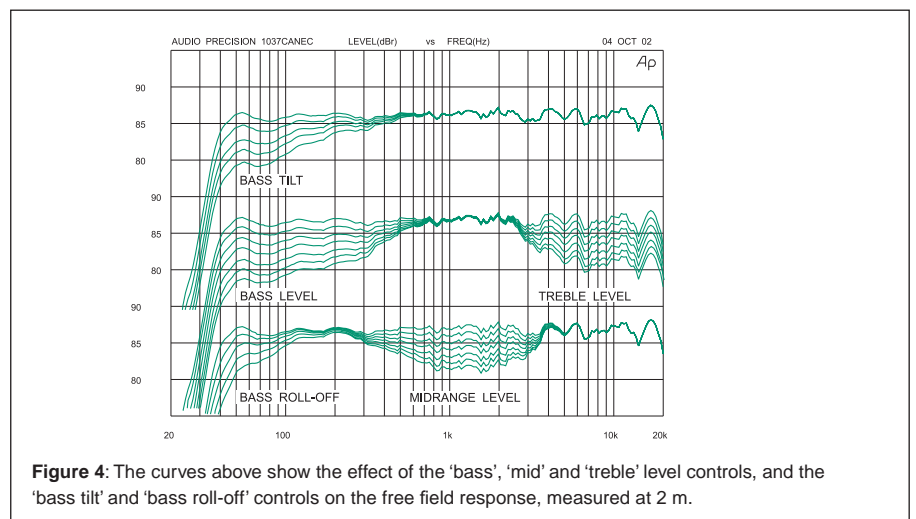


Figure 4: The curves above show the effect of the 'bass', 'mid' and 'treble' level controls, and the 'bass tilt' and 'bass roll-off' controls on the free field response, measured at 2 m.

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SYSTEM SPECIFICATIONS

	1037C
Lower cut-off frequency, -3 dB Upper cut-off frequency, -3 dB Free field frequency response	≤ 35 Hz ≥ 22 kHz 37 Hz - 21 kHz (±2.5 dB)
Maximum short term sine wave acoustic output on axis in half space, averaged from 100 Hz to 3 kHz	@ 1 m ≥116 dB SPL
Maximum long term RMS acoustic output in same conditions with IEC-weighted noise (limited by driver unit protection circuit)	@ 1 m ≥107 dB SPL
Maximum peak acoustic output per pair @ 1.7 m from the engineer with music material	≥ 126 dB
Self generated noise level in free field @ 2 m on axis	≤ 15 dBA
Harmonic distortion at 95 dB SPL @ 1 m on axis	Freq: ≤ 100 Hz < 3% > 100 Hz < 0.5
Drivers	Bass 305 mm (12") Mid 130 mm (5") Treble 25 mm (1") metal dome All drivers are magnetically shielded
Weight	37 kg (83 lb)
Speaker dimensions	Height 680 mm (26 3/4") Width 400 mm (15 3/4") Depth 380 mm (15") * Note that the cable connectors require additional 100 mm (4") of space behind the speaker cabinet.

AMPLIFIER SECTION

	1037C
Bass amplifier output power with an 4 Ohm load	Short term 180 W
Mid amplifier output power with an 8 Ohm load	Short term 120 W
Treble amplifier output power with an 8 Ohm load	Short term 120 W Long term output power is limited by driver unit protection circuitry.
Slew rate	80 V/μs
Amplifier system distortion at nominal output	THD ≤0.05% SMPTE-IM ≤0.05% CCIF-IM ≤0.05% DIM 100 ≤0.05%
Signal to Noise ratio, referred to full output	Bass ≥100 dB Mid ≥100 dB Treble ≥100 dB
Mains voltage:	100/200 or 115/230V
Voltage operating range at 230 V setting 115 V setting	207 - 244 V (-10/+6 %) 104 - 122 V (-10/+6 %)
Power consumption	Idle 50 W Full output 300 W

CROSSOVER SECTION

	1037C
Input connector: XLR female	pin 1 gnd pin 2 + pin 3 -
Input impedance	10 kOhm balanced
Input level for 100 dB SPL output @ 1 m	variable from +6 to -6 dBu
Input level for maximum short term output of 116 dB SPL @ 1m	variable from +22 to +10 dBu
Subsonic filter below 32 Hz Ultrasonic filter above 25 kHz	18 dB/octave 12 dB/octave
Crossover frequencies	Bass/Mid 420 Hz Mid/Treble 3.2 kHz
Crossover acoustical slopes	18 - 24 dB/octave
Level control operating range in 1 dB steps	Bass from 0 to -6 dB & MUTE Mid from 0 to -6 dB & MUTE Treble from 0 to -6 dB & MUTE
Bass roll-off control in 2 dB steps Bass tilt control in 2 dB steps	from 0 to -8 dB @ 35 Hz from 0 to -8 dB @ 80 Hz
	The 'CAL' position is with all tone controls set to 'off' and input sensitivity control to maximum and corresponds to a maximally flat free field response.

GENELEC®

International enquiries:
Genelec, Olvitie 5
FIN-74100, Iisalmi, Finland
Phone +358 17 83881
Fax +358 17 812 267
Email genelec@genelec.com

In the U.S. please contact
Genelec, Inc., 7 Tech Circle
Natick, MA 01760, USA
Phone +1 508 652 0900
Fax +1 508 652 0909
Email genelec.usa@genelec.com

In China please contact:
Genelec China Representative Office
Soho New Town, 88 Jianguo Road
D-1504, Chaoyang District, Beijing 100022, China
Phone +86 10 8580 2180
Fax +86 10 8580 2181