

1038BC

Data Sheet
Genelec 1038BC
Tri-amplified Monitoring System

GENELEC®





Applications

- Multichannel Recording
- Video/Film Post Production Studios
- DVD Mastering Suites
- Broadcast Main Monitoring
- TV Production Rooms

1038BC Tri-amplified Monitoring System

System

The Genelec 1038BC is a dedicated center channel for three channels (LCR) and multichannel surround systems. Its slim and compact cabinet has been designed for optimum placement in the limited space above or below video monitors or screens.

As its name suggests, the Genelec 1038BC is best suited for use as a center channel speaker with a pair of Genelec 1038B active monitors. The 1038BC employs the same midrange, treble drivers and Directivity Control Waveguide™ (DCW™) as a standard 1038B, as well as the same amplifier unit to ensure complete tonal compatibility.

Genelec 1038BC is a three-way active monitoring system including magnetically shielded loudspeaker drivers, speaker enclosure, multiple power amplifiers and low level active crossovers. Designed for medium sized control rooms this system is ideal for video and film post-production studios, multichannel music recording and broadcast main monitoring. DVD mastering is also well tailored for where broad bandwidth, high SPLs and extended low frequency response are essential.

The separate amplifier unit is built into a rack mount chassis for easy fitting into a standard 19" equipment rack. A standard 10 meter connecting cable is provided to go between the amplifier unit and the speaker enclosure. It is recommended to flush mount

the 1038BC monitor into the control room wall, but it can also be used as a free-standing in-room monitor.

The unique Directivity Control Waveguide 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 124 dB SPL at 2 m with program signals. Versatile crossover controls allow for precise matching of the speaker system to different acoustic conditions. The system can be used both in vertical and horizontal orientations by simply rotating the DCW unit.

Integrated construction

Uniform performance is obtained through the integration of loudspeakers and amplifiers as a complete matched and calibrated package. The rugged amplifier unit is mounted into a rack mount chassis with vibration isolators which also act as quick release hinges making maintenance operations easy and straightforward. The speaker cabinet is constructed of veneered MDF which is heavily braced to eliminate structural resonances.

Amplifiers

The bass, midrange and treble amplifiers each produce 400W, 120W and 120W, respectively of short term power with very low THD and IM distortion. Special attention

has been paid to electronic design to ensure the highest 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 for drivers overload protection. Thermal protection is included for the amplifiers.

Drivers

The bass frequencies are reproduced by two 250 mm (10") bass drivers loaded with a 110 liters vented box. The -3dB point is 33 Hz and the low frequency response extends down to 29 Hz (-6 dB). 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 of the 1038BC are magnetically shielded in order to minimize interference with video monitors and 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 of the system. Due to improved control of the directivity, especially

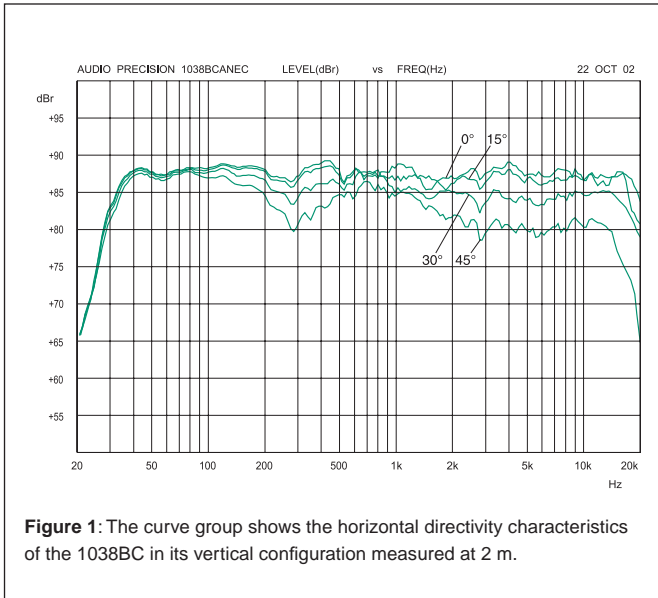


Figure 1: The curve group shows the horizontal directivity characteristics of the 1038BC in its vertical configuration measured at 2 m.

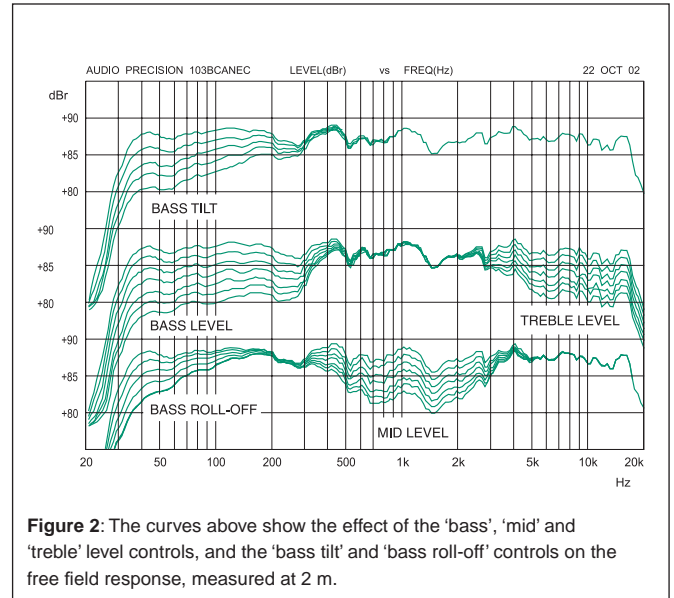


Figure 2: The curves above show the effect of the 'bass', 'mid' and 'treble' level controls, and the 'bass tilt' and 'bass roll-off' controls on the free field response, measured at 2 m.

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 system maximum sound pressure level.

Crossover filters

The crossover frequencies of the active crossover network are 410 Hz and 3.0 kHz. In order to obtain uniform frequency balance under different acoustic conditions, special calibrated controls are included in the crossover. The Bass, Midrange and Treble level controls operate in 1 dB steps. Furthermore, 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, fed by a 3 pin XLR. Variable input sensitivity allows for accurate level matching to the mixing console.

Options

Opt-09 Grille

Order code
1038-409BC

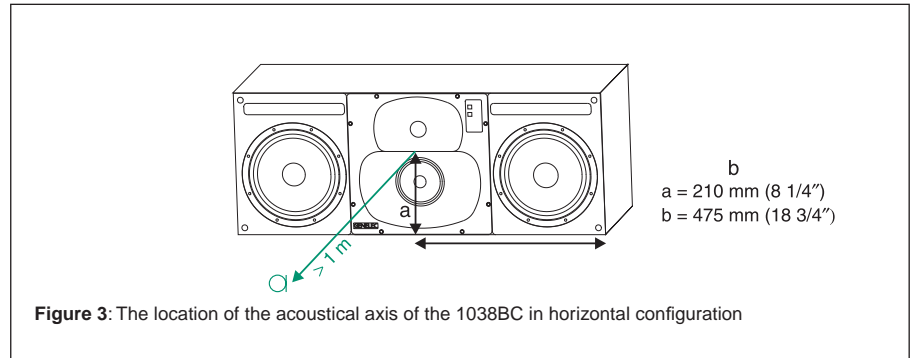


Figure 3: The location of the acoustical axis of the 1038BC in horizontal configuration

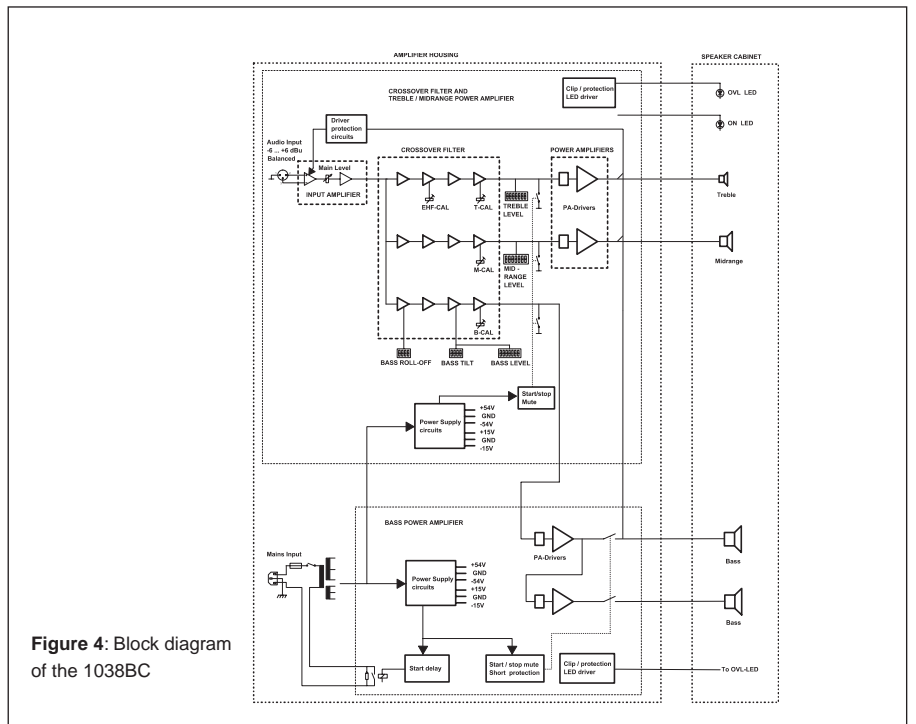


Figure 4: Block diagram of the 1038BC

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SYSTEM SPECIFICATIONS

	1038BC
Lower cut-off frequency, -3 dB Upper cut-off frequency, -3 dB Free field frequency response	≤ 33 Hz ≥ 20 kHz 35 Hz - 20 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 ≥120 dB SPL @ 0.5 m ≥126 dB SPL
Maximum long term RMS acoustic output in same conditions with IEC-weighted noise (limited by driver unit protection circuit)	@ 1 m ≥116 dB SPL @ 0.5 m ≥122 dB SPL
Maximum peak acoustic output per pair @ 2 m from the engineer with music material	≥ 124 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: 50...100 Hz <1% 100...20 kHz <0.5
Drivers	Bass 2 x 250mm (10") Mid 130 mm (5") Treble 25 mm (1") metal dome All drivers are magnetically shielded
Weight	60 kg (130 lb)
Speaker dimensions (horizontal mounting)	Height 350 mm (13 3/4") Width 950 mm (37 3/8") Depth 453 mm (17 7/8")
Amplifier dimensions (horizontal mounting)	Height 530 mm (20 7/8") Width 480 mm (18 7/8") Depth 113 mm (4 7/16")

* Note that the cable connectors require additional 100 mm (4") of space behind the speaker cabinet and the amplifier.

AMPLIFIER SECTION

	1038BC
Bass amplifier output power with an 4 Ohm load	Short term 400 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 230V setting 115V setting	207 - 244 V (-10/+6 %) 104 - 122 V (-10/+6 %)
Power consumption	Idle 60 W Full output 500 W

CROSSOVER SECTION

	1038BC
Input connector: XLR female	pin 1 gnd pin 2 + pin 3 -
Input impedance	10 kOhm balanced
Input level for 100 dB SPL output @ 1m	variable from +6 to -6 dBu
Input level for maximum short term output of 120 dB SPL @ 1m	variable from +26 to +14 dBu
Subsonic filter below 33 Hz Ultrasonic filter above 25 kHz	18 dB/octave 12 dB/octave
Crossover frequencies	Bass/Mid 410 Hz Mid/Treble 3 kHz
Crossover acoustical slopes	24 - 32 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 @ 33 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.

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