

1038B

Data Sheet

Genelec 1038B

Tri-amplified Monitoring System

GENELEC®





1038B Tri-amplified Monitoring System

System

The Genelec 1038B is a three-way active monitoring system including loudspeaker drivers, speaker enclosure, multiple power amplifiers and low level active crossovers. Designed for medium sized control rooms this system is ideal for music recording studios, film and video post-production and broadcast main monitoring. Mastering suites are also tailored for, where broad bandwidth, high SPL's and extended low frequency response are essential. The 1038B 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 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 orientation by simply rotating the DCW unit.

Integrated construction

The system is very easy to use as only mains power and a balanced input signal are

needed. 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 the enclosure with vibration isolators, which also acts 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 a 385 mm (15") bass driver 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

Applications

- Main monitors for medium sized control rooms
- Music Recording Studios
- Broadcast Main Monitoring
- Video/Film Post production Studios
- TV Production Rooms
- Mastering Suites

reproduced by a proprietary 130 mm (5") direct radiating cone driver loaded with the DCW. The high frequency driver is a 25mm (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 of the system. 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 system maximum sound pressure level.

Crossover filters

The crossover frequencies of the active crossover network are 410 Hz and 3.0 kHz.

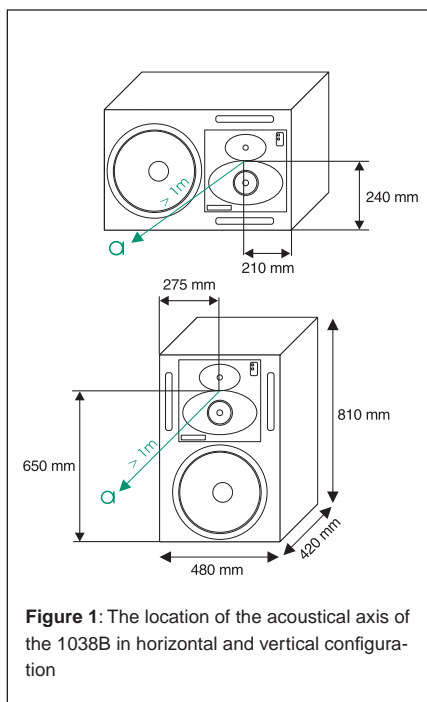


Figure 1: The location of the acoustical axis of the 1038B in horizontal and vertical configuration

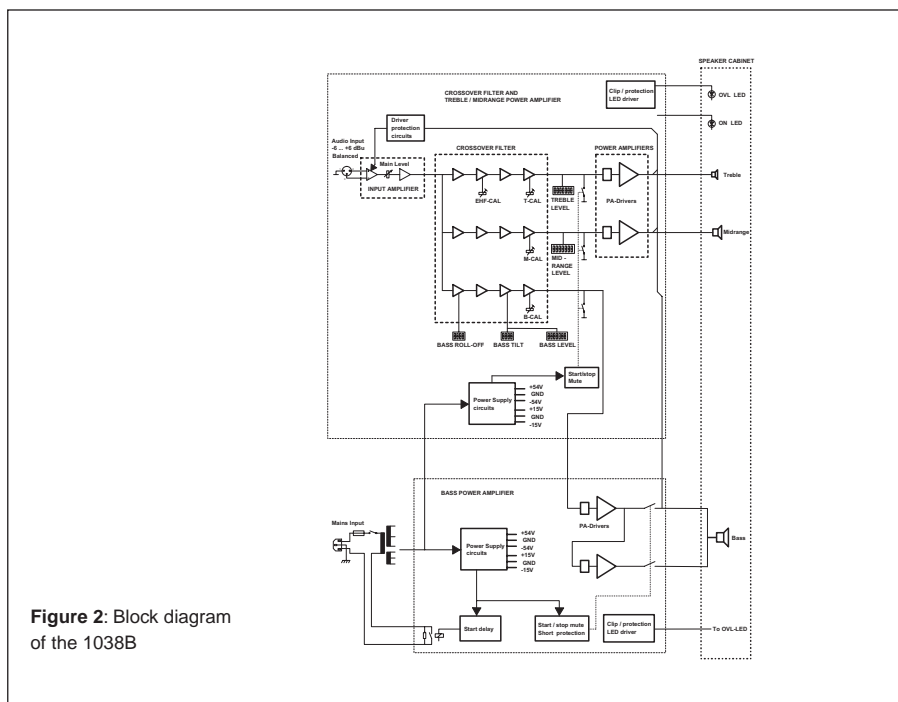


Figure 2: Block diagram of the 1038B

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

	Order code
Opt-01 Flight case	1038-401
Opt-06 Carrying handles	1038-406
Opt-09 Grille	1038-409
Opt-11 Rack adapter kit	1038-411

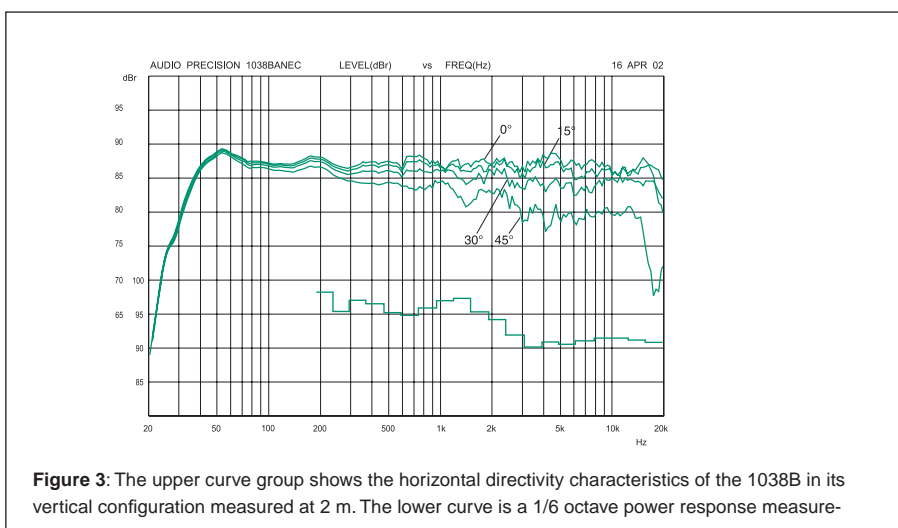


Figure 3: The upper curve group shows the horizontal directivity characteristics of the 1038B in its vertical configuration measured at 2 m. The lower curve is a 1/6 octave power response measure-

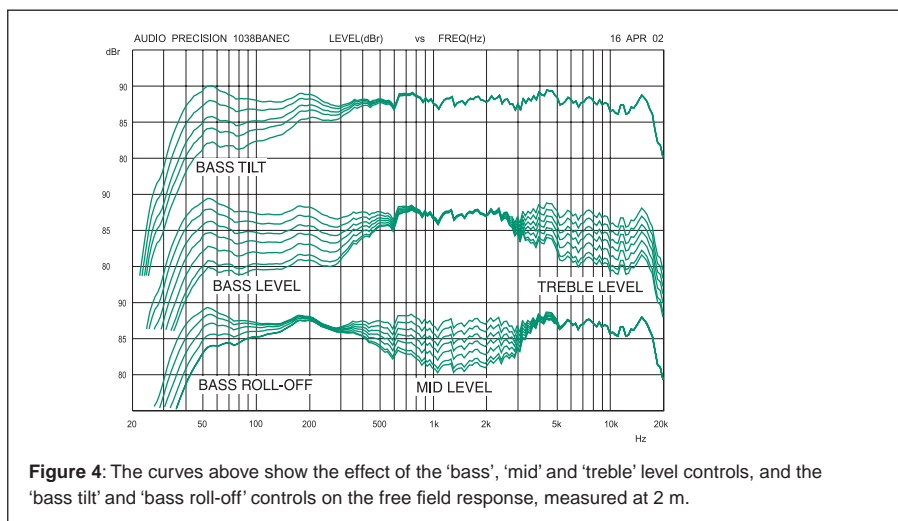


Figure 4: The curves above show the effect of the 'bass', 'mid' and 'treble' level controls, and the 'bass tilt' and 'bass roll-off' controls on the free field response, measured at 2 m.

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SYSTEM SPECIFICATIONS

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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 385 mm (15") Mid 130 mm (5") Treble 25 mm (1") metal dome All drivers are magnetically shielded
Weight	60 kg (130 lb)
Speaker dimensions	Height 810 mm (31 7/8") Width 480 mm (18 7/8") Depth 420 mm (16 9/16") * Note that the cable connectors require additional 100 mm (4") of space behind the speaker cabinet.

AMPLIFIER SECTION

	1038B
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

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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.