

# GENELEC®

Genelec 1038AC  
Monitoring Speaker

Operating  
Manual



# 1. General description

## System

The Genelec 1038AC is a dedicated center channel speaker for three channel (LCR) and Surround systems. Its compact cabinet has been designed for optimum placement in the limited space above or below a video screen. The Genelec 1038AC is totally compatible for use with standard Genelec 1038A active monitors, but it can also be used in all channels of a Surround Sound or stereo system. The 1038AC is a three-way active monitoring system including drivers, multiple power amplifiers and active crossovers. The amplifiers and crossovers are built into a separate rack mount chassis.

The system is designed for film and video post-production, DVD mastering and medium sized control rooms. It also suits project studios, general purpose broadcasting, television studios and digital workstations. The 1038AC is recommended to be flush mounted into the control room wall, but it can also be used as a free-standing monitor.

The unique Directivity Control Waveguide (DCW) Technology used provides excellent stereo imaging and frequency balance even in difficult acoustics environments. The fast, low distortion amplifiers are capable of driving the 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.

## Drivers

The bass frequencies are reproduced by two 250 mm (10") bass drivers loaded with a 110 liter 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 a DCW. The high frequency driver is a 25 mm (1") metal dome also loaded by a DCW.

The 1038AC is magnetically shielded in order to minimise interference with video monitors.

## Crossover filters

The crossover frequencies of the active crossover network are 410 Hz and 3.0 kHz in order to obtain a 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.

Speaker Mounting Position	Bass Roll-off	Bass Tilt	Bass Level	Midrange Level	Treble Level
Flat anechoic response	None	None	None	None	None
Free standing in a damped room	None	-2 dB	None	None	None
Free standing in a reverberant room	None	-2 dB	-2 dB	None	None
Soffit mounted in a control room wall	None	None	-4 dB	None	None
In a corner	-2 dB	-2 dB	-2 dB	None	None

Figure 1. Suggested tone control settings for different acoustic environments

## Amplifiers

The bass, midrange and treble amplifiers produce 400W, 120W and 120W of short term power respectively with very low THD and IM distortion values. The system incorporates special circuitry for driver overload protection and amplifier thermal protection.

## 2. Installation

Each 1038AC monitor is supplied with a separate amplifier unit in a 12 U 19" rack mount chassis, a 10 meter connecting cable set, a mains cable and an operating manual. Once unpacked, place the loudspeaker in its required listening position, taking note of the line of the listening axis (see figure 3) and install the amplifier into a standard 19" rack. When flush-mounting the units it should be noted that the cable connectors require 10 cm (4") of free space behind both the speaker and the amplifier. It is also necessary to leave 5 cm (2") of space above and below the amplifier to ensure adequate cooling.

Before connecting up, ensure that the mains switch is off (see figure 4). Check that the mains voltage selector is correctly set and that the appropriate fuse is fitted.

The connecting cables between the amplifier and the speaker cabinet have Speakon 8- and 4-pole connectors. Push the connector in and turn it clockwise until the retaining clip clicks.

The audio input to the amplifier is made via a 10 kOhm balanced XLR connector, however, unbalanced leads may be used as long as pin 3 is grounded to pin 1 of the XLR (see figure 2). Once the connections have been made, the speakers are ready to be powered-up.

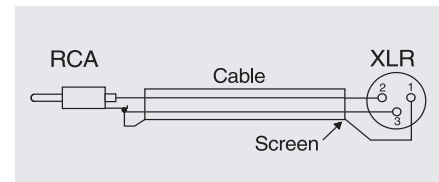


Figure 2. XLR connection if unbalanced input is required.

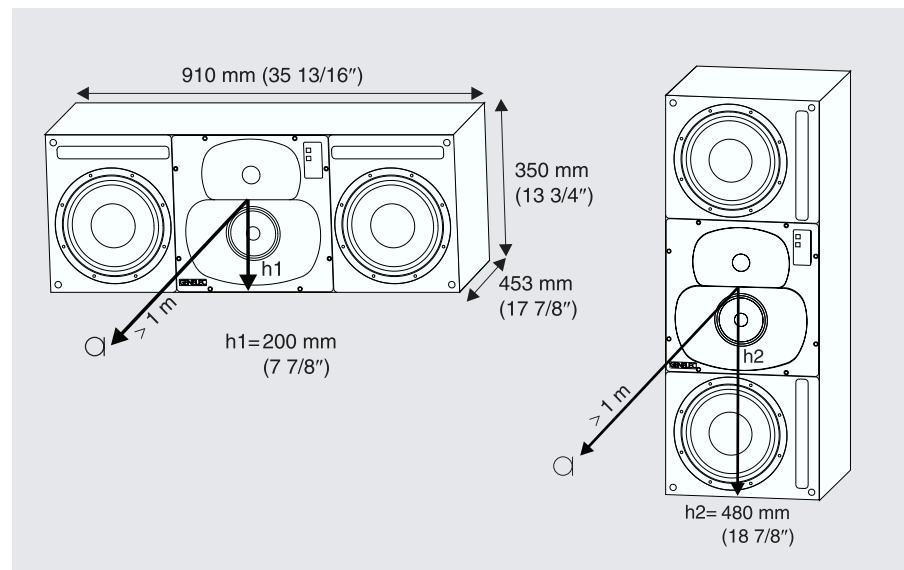


Figure 3. Speaker cabinet dimensions and acoustic axis in horizontal and vertical mounting positions.

## Setting the input sensitivity

Adjustment of the input sensitivity of each speaker can be made to match that of the mixing desk or other sources, by use of the input sensitivity control on the amplifier panel (see figure 4). A small screwdriver is needed for the adjustment. The manufacturer default setting for this control is -6 dBu (fully CW) which gives an SPL of 100 dB@1m with -6 dBu input level. Note that to get the full output level of 120 dB SPL, an input level of +14 dBu is needed at this setting.

## Setting tone controls

The acoustic response of the system may also have to be adjusted to match the acoustic environment. The adjustment is done by setting the five tone control switches 'bass tilt', 'bass roll-off', 'bass level', 'mid level' and 'treble level' on the rear panel of the amplifier. The manufacturers default settings for these controls are 'All Off' to give a flat anechoic response. See Figure 1 for suggested tone control settings in differing acoustic environments.

Figure 5 overleaf shows the effect of the controls on the anechoic response. Always start adjustment by setting all switches to the 'OFF' position. Then set only one switch to the 'ON' position to select the response curve required. If more than one switch is set to 'ON' (within one switch group) the attenuation value is no longer accurate.

## Vertical / horizontal mounting

Genelec 1038AC can be used vertically or horizontally. If the speakers orientation is changed the DCW plate must be rotated so that the mid- and high-frequency drivers are aligned vertically (see figure 2). Remove the four corner screws of the DCW (use a 4 mm Allen key) and pull the plate carefully out without stressing the wires and the gasket. Rotate the plate 90 degrees to the appropriate direction and remount the screws.

## Flush mounting

The 1038AC is recommended to be flush mounted into the control room wall thereby offering some acoustical benefits. No cabinet edge reflections will occur, resulting in an improved response, especially in the midrange. Reflection behind the speaker can be avoided, which improves the bass frequency response and allows the bass drivers to work in half space conditions, thus improving low frequency efficiency and response. The speakers acoustical axis (See figure 3.) should also point directly to the listening position.

## Overload indicators

The speaker is provided with two warning LED's marked 'CLIP PROTECT (FAULT)' and 'READY'. The green READY-LED when lit

indicates that the speaker is ready for use. The red CLIP PROTECT (FAULT)-LED indicates that the amplifier is overloaded or the driver protection circuit is activated. In both cases reduce the signal level so that the LED stops blinking. If the CLIP PROTECT (FAULT)-LED stays on constantly it indicates that the amplifier thermal protection is activated. Let the amplifier cool down and check that the ventilation around the amplifier is not blocked. There should be a clearance of at least five centimeters above and below the amplifier and the amplifier front should be facing into free air.

## 3. Maintenance

No user serviceable parts are to be found within the amplifier unit. Any maintenance or repair of the 1038AC unit should only be undertaken by qualified service personnel. Ensure that if fuse replacement is required, only fuses of the appropriate voltage and current ratings are used. Always disconnect the mains cable before replacing the fuse.

## 4. Safety Considerations

Although the 1038AC has been designed in accordance with international safety standards, to ensure safe operation and to maintain the instrument under safe operating conditions, the following warnings and cautions

must be observed:

- Servicing and adjustment should only be performed by qualified service personnel. Opening the amplifier's rear panel is strictly prohibited except by qualified service personnel who are aware of the hazards involved.
- It is forbidden to use this product with an unearthed mains cable, which may lead to personal injury.
- Do not expose the loudspeaker, amplifier or cables to water or moisture.

**WARNING!** This equipment is capable of delivering Sound Pressure Levels in excess of 85 dB, which may cause permanent hearing damage.

## 5. Accessories

Opt 09 Grille Order code  
1038-439

## 6. Guarantee

This product is supplied with a ONE YEAR guarantee against manufacturing faults or defects that might alter the performance of the 1038AC unit. Refer to supplier for full sales and guarantee terms.

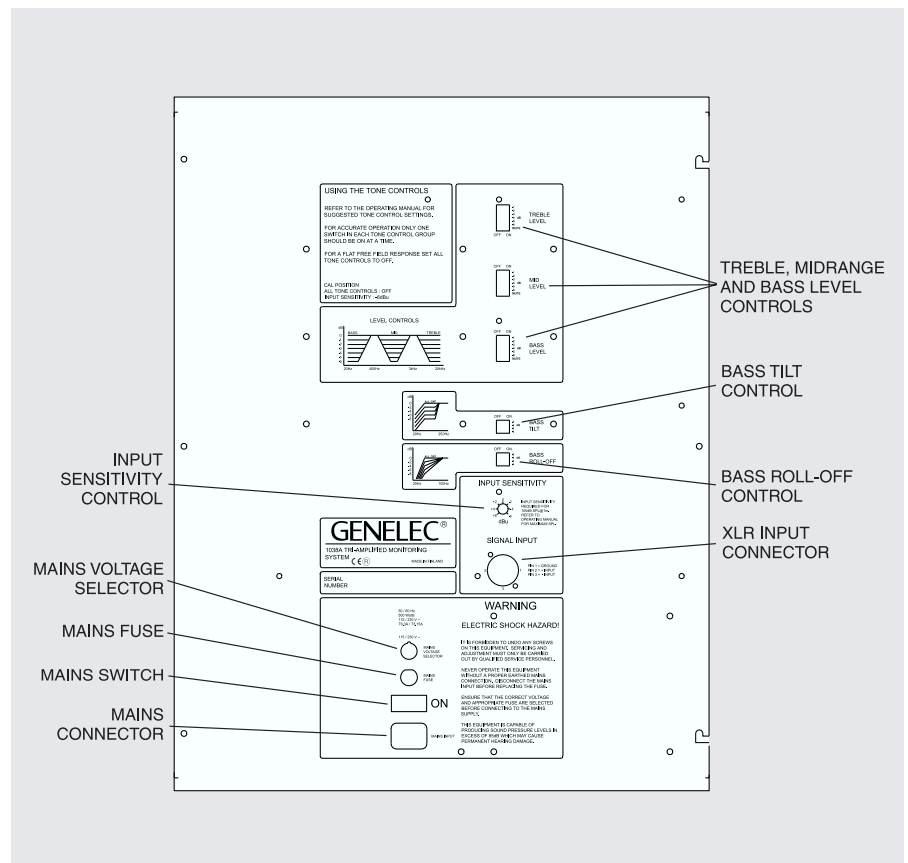


Figure 4. Amplifier panel layout.

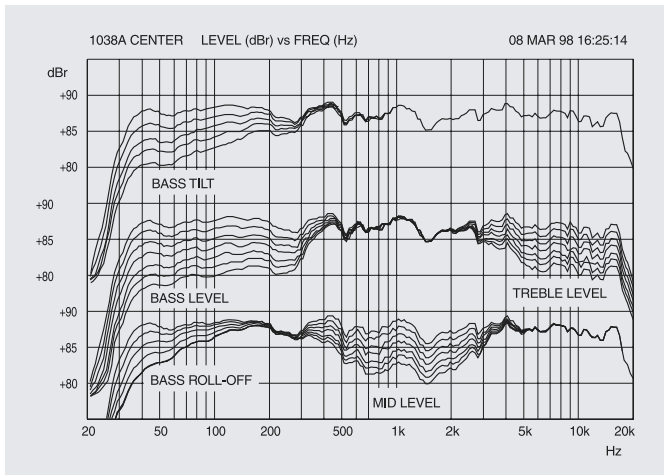


Figure 5. The curves above left show the effect of the 'bass tilt', 'bass level' and 'bass roll-off' controls on the free field response. The curves to the right show the effect of the treble and midrange 'level' controls.

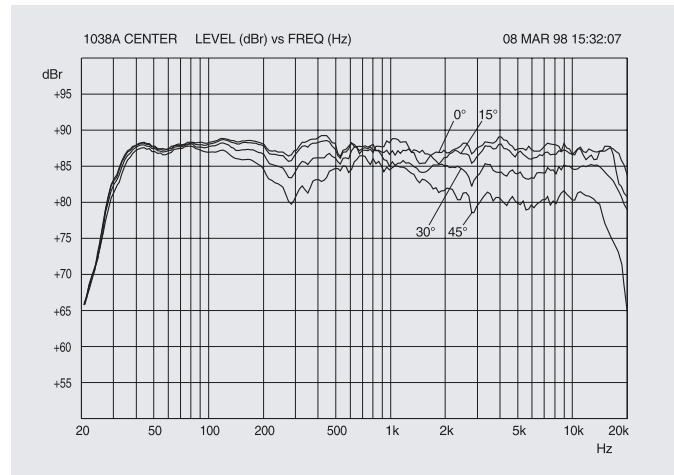


Figure 6. The curve group above shows the horizontal directivity characteristics of 1038AC in its vertical configuration measured at 1m.

SYSTEM SPECIFICATIONS	AMPLIFIER SECTION	CROSSOVER SECTION
Lower cut-off frequency, -3 dB: $\leq 33$ Hz	Bass amplifier output power with an 4 Ohm load: Short term 2 x 200W	Input connector: XLR female      pin 1 gnd pin 2 + pin 3 -
Upper cut-off frequency, -3 dB: $\geq 20$ kHz	Midrange amplifier output power with an 8 Ohm load: Short term 120W	Input impedance: 10 kOhm
Free field frequency response of system: 35 Hz - 20 kHz ( $\pm 2.5$ dB)	Treble amplifier output power with an 8 Ohm load: Short term 1 20W	Input level for 100 dB SPL output @1m: variable from +6 to -6 dBu
Maximum short term sine wave acoustic output on axis in half space, averaged from 100 Hz to 3 kHz: @1m $\geq 120$ dB SPL @0.5m $\geq 126$ dB SPL	Long term output power is limited by driver unit protection circuitry.	Input level for maximum short term output of 120 dB SPL @1m: variable from +26 to +14 dBu
Maximum long term RMS acoustic output in same conditions with IEC-weighted noise (limited by driver unit protection circuit): @1m $\geq 116$ dB SPL @0.5m $\geq 122$ dB SPL	Slew rate : 80V/ $\mu$ s	Subsonic filter below 33 Hz : 18 dB/octave
Maximum peak acoustic output per pair on top of console, @ 2m from the engineer with music material: $\geq 124$ dB SPL	Amplifier system distortion at nominal output: THD $\leq 0.05\%$ SMPT-IM $\leq 0.05\%$ CCIF-IM $\leq 0.05\%$ DIM 100 $\leq 0.05\%$	Ultrasonic filter above 25 kHz: 12 dB/octave
Self generated noise level in free field @ 1m on axis: $\leq 15$ dBA	Signal to Noise ratio, referred to full output: Bass $\geq 100$ dB Midrange $\geq 100$ dB Treble $\geq 100$ dB	Crossover frequency: Bass/Mid 410 Hz Mid/Treble 3 kHz
Harmonic distortion at 95 dB SPL at 1m on axis: freq. 50...100 Hz $< 1\%$ freq. $> 100$ Hz $< 0.5\%$	Mains voltage: 100/200V or 115/230V	Crossover acoustical slopes: 24 - 32 dB/octave
Drivers: Bass 2 x 250 mm (10") cone Mid 130mm (5") cone Treble 25mm (1") metal dome	Voltage operating range at 230V setting: 207 - 253V ( $\pm 10\%$ ) 115V setting: 104 - 126V ( $\pm 10\%$ )	Crossover level control operating range in 1 dB steps: Bass from 0 to -6 dB Mid from 0 to -6 dB Treble from 0 to -6 dB
Speaker weight: 60 kg (130 lb)	Power consumption: Idle 60W Full output 500W	Bass roll-off control in 2 dB steps: from 0 to -8 dB @33 Hz
Speaker dimensions (horizontal mounting): Height 350mm (13 3/4") Width 910mm (35 13/16") Depth 453mm (17 7/8") *	Amplifier weight: 14 kg (31 lb)	Bass tilt control in 2 dB steps: from 0 to -8 dB @80 Hz
* Without connecting cable. Cable connectors require additional 100 mm (4") of space behind the speaker and the amplifier	Amplifier dimensions: Height 530 mm (20 7/8") (12U) Width 480 mm (18 7/8") Depth 113 mm (4 7/16") *	The 'CAL' position is with all tone controls set to 'off' and input sensitivity control to maximum.

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