8040A

Data Sheet

Genelec 8040A
Active Monitoring System

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Applications

- Near Field Monitoring
- Broadcast & TV Control Rooms
- Audio Video Post Production
- Mobile Vans
- Project / Home Studios
- Digital Workstations
- Multimedia Production and Playback

8040A Active Monitoring System

System

The Genelec 8040A is a compact bi-amplified active monitor system with performance comparable to much larger systems. The 8040A takes full advantage of the unconventional design and advanced technologies of Genelec's 8000 Series loudspeaker range. The all-aluminium Minimum Diffraction Enclosure™ (MDE™) and advanced Directivity Control Waveguide™ (DCW™) technologies are carefully matched with advanced amplifier and electronic circuitry and the latest drivers. Bass response has been widened down to 45 Hz (-3 dB) while distortion is substantially lower due to a uniquely new rear reflex port design. The system's excellent directivity characteristics and accurate imaging together with its compact size and flexible mounting options make the 8040A the perfect monitoring tool for a wide range of applications.

The 8040A has been specially designed to have a sufficient LF extension for most situations. However if greater SPL's and a lower cutoff frequency are required, it can be complemented with a Genelec 7060A or 7070A subwoofer.

Integrated construction

The 8040A is very easy to set up and use, the only connections required are the mains supply and the line level input. The input is made via a balanced female XLR connector. The input sensitivity of the 8040A can be adjusted for easy level matching with other audio equipment.

The integrated design allows the amplifiers and the drivers to be calibrated as a single unit, eliminating the effects of component tolerances and ensuring consistent production quality.

Crossover filters

The amplifier unit contains an active crossover, a feature more commonly used in large and expensive control room monitors. This is the ideal method for dividing the input signal between the driver units. The active crossover allows the overall response of the system to be optimized to an extent impossible with a passive system. To maintain uniform frequency balance in differing acoustic environments, special calibrated controls are included in the active crossover network. These controls include “treble tilt”, “bass tilt” and “bass roll-off” functions.

A new function, “desktop low frequency” control attenuates the bass frequencies around 160 Hz by 4 dB. This feature is designed to compensate for the boost often occurring at this frequency range when the loudspeaker is placed upon a meter bridge, table or a similar reflective horizontal surface.

Amplifiers

The bass and treble amplifiers produce 90 W of output power each, with very low THD and IM distortion values. Each amplifier is designed to precisely match the driver it is connected to, thus ensuring the highest subjective sound quality currently possible. The amplifier unit also contains a protection circuit that monitors the output levels and prevents any damage to the drivers. This makes the system immune to overloads and spurious signals.

Drivers

A 19 mm ($^3/_4$") metal dome tweeter is loaded by an advanced DCW™ waveguide, which is integrated into the one piece front baffle. The improved DCW™ provides superior directivity charcteristics and perfect matching between the drivers.

The 165 mm (6.5") bass cone driver is mounted in a newly designed bass reflex enclosure. The long, flow optimized reflex tube has a large cross sectional area and terminates with a wide flare at the back of the enclosure.

Protective grilles are positioned in front of both drivers. Magnetic shielding is standard on the 8040A. Shielding is vital for applications such as video post production, where stray magnetic fields must be minimized.

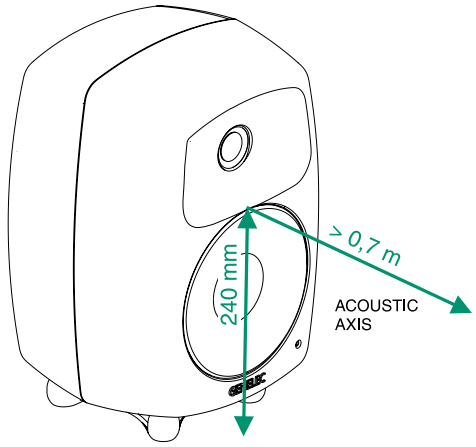

Figure 1: The location of the acoustic axis of the 8040A.

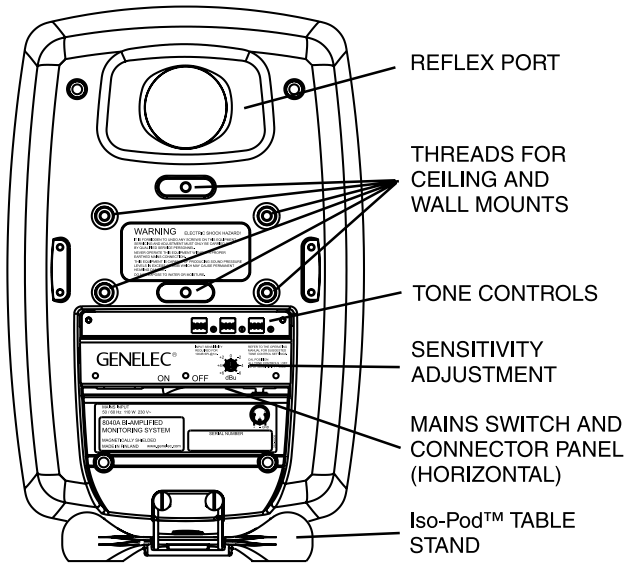

Figure 2: Back panel layout of the 8040A.

MDE™ and DCW™ Technology

The Minimum Diffraction Enclosure™ (MDE™) Technology increases the performance of the Genelec 8000 Series loudspeakers by minimizing edge diffraction and improving frequency and power response. The edges of the enclosure are rounded and blend seamlessly into the enlarged Directivity Control Waveguide™. Surface discontinuities that cause diffraction are minimized. The curved walls of the die-cast aluminium enclosure are thin but rigid, allowing maximum internal volume while also providing improved EMC shielding and heat dissipation for the amplifiers. Locating the reflex port to the back of the enclosure allows a generously dimensioned reflex port for minimal port noise and excellent bass articulation while freeing the front baffle for an enlarged and optimized DCW™.

The advanced DCW™ is designed to match the performance of the drivers in terms of both frequency response and directivity. This results in a smoother overall frequency response on and off axis. In addition, the improved directivity control causes more direct sound and less reflected sound to be received at the listening position, providing improved imaging and reducing the effects of differing control room acoustics. The DCW™ improves the drive unit sensitivity by +2 to +6 dB (depending on the particular application), thus also increasing the available system maximum sound pressure level.

Mounting

The 8040A offers several mounting options: The vibration insulating Isolation Positioner/ Decoupler™ (Iso-Pod™) table stand allows tilting the speaker for correct alignment of the acoustic axis. The stand can be attached to three mounting points allowing vertical and symmetrical horizontal positioning. On the rear of the enclosure there are two sets of M6x10 mm threaded holes to accommodate an Omnimount® size 30.0 bracket or a K&M 24180 wall mount. On the base of the enclosure is a M10x10 mm threaded hole which can be used for securing the loudspeaker to its base.

Options

	Order code
Floor stand, black	8000-400
Wall mount, black (Omnimount)	8040-404-B
Ceiling mount, black (Omnimount)	8040-405-B
Wall mount, black (K&M)	8000-401
Soft carrying bag for two monitors	8040-420

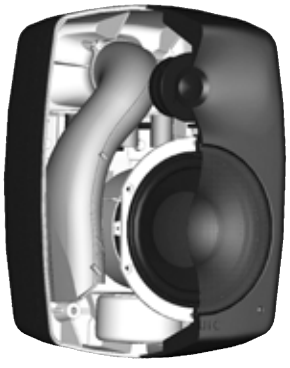

Figure 3: The curved reflex tube provides low distortion and excellent bass extention.

Figure 4: The vibration isolating Iso-Pod table stand has adjustable speaker tilt.

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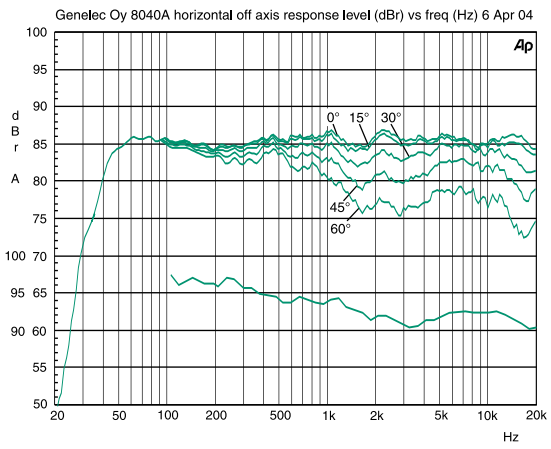

Figure 3: The upper curve group shows the horizontal directivity characteristics of the 8040A measured at 1 m. The lower curve shows the systems power response.

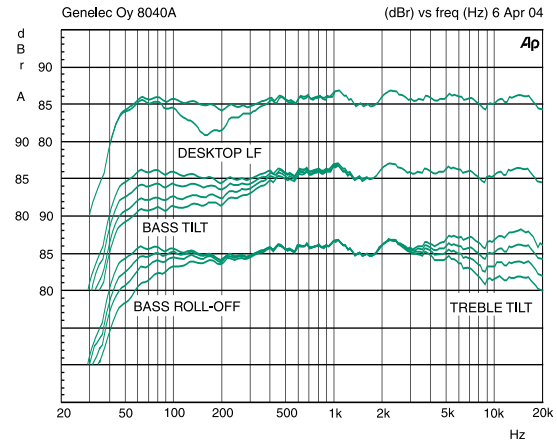

Figure 4: The curves above show the effect of the “bass tilt”, “treble tilt”, “desktop low frequency” and “bass roll-off” controls on the free field response.

SYSTEM SPECIFICATIONS

	8040A
Lower cut-off frequency, -3 dB Upper cut-off frequency, -3 dB	≤ 45 Hz ≥ 20 kHz
Free field frequency response of system (± 2.0 dB)	48 Hz - 20 kHz
Maximum short term sine wave acoustic output on axis in half space, averaged from 100 Hz to 3 kHz @ 1 m @ 0.5 m	 ≥ 105 dB SPL ≥ 111 dB SPL
Maximum long term RMS acoustic output in same conditions with IEC weighted noise (limited by driver unit protection circuit) @ 1 m	≥ 99 dB SPL
Maximum peak acoustic output per pair above console top, @ 1 m from the engineer with music material	≥ 115 dB SPL
Self generated noise level in free field @ 1m on axis (A-weighted)	≤ -10 dB
Harmonic distortion at 90 dB SPL @ 1m on axis Freq. 50 to 100 Hz > 100 Hz	 < 2 % < 0.5 %
Drivers: Bass Treble Both drivers are magnetically shielded	 165 mm (6 1/2") cone 19 mm (3/4") metal dome
Weight:	8.6 kg (18.9 lbs)
Dimensions: Height (without Iso-Pod table support Height (including Iso-Pod table support) Width Depth	 350 mm (13 13/16“) 365 mm (14 3/8“) 237 mm (9 3/8“) 223 mm (8 13/16“)

AMPLIFIER SECTION

	8040A
Bass amplifier short term output power Treble amplifier shortterm output power Long term output power is limited by driver unit protection circuitry	90 W (8 Ohm load) 90 W (8 Ohm load)
Amplifier system distortion at nominal output THD SMPTE-IM CCIF-IM DIM 100	 ≤ 0.05 % ≤ 0.05 % ≤ 0.05 % ≤ 0.05 %
Signal to Noise ratio, referred to full output Bass Treble	 ≥ 100 dB ≥ 100 dB
Mains voltage	100, 120, 220 or 230 V according to region
Voltage operating range	±10 %
Power consumption Idle Full output	 10 VA 110 VA

CROSSOVER SECTION

	8040A
Input connector XLR female	Pin 1 gnd, pin 2 +, pin 3 -
Input impedance	10 kOhm balanced
Input level for maximum short term output of 100 dB SPL @ 1m	Variable from +6 to -6 dBu
Crossover frequency, Bass/Treble	3.0 kHz
Treble tilt control operating range in 2 dB steps	From +2 to -4 dB & MUTE @ 15 kHz
Desktop low frequency control operating range	-4 dB @ 160 Hz
Bass roll-off control operating range in 2 dB steps	From 0 to -6 dB @ 45 Hz
Bass tilt control operating range in 2 dB steps	From 0 to -6 dB & MUTE @ 100 Hz
The 'CAL' position is with all tone controls set to 'off' and the input sensitivity control to maximum (fully clockwise)	

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