

8020A

Data Sheet
Genelec 8020A
Active Monitoring System

GENELEC®





Applications

- Near Field Monitoring
- Audio Video Post Production
- Mobile Vans
- Home Theaters
- Project / Home Studios
- Digital Workstations
- Multimedia Production and Playback

8020A Active Monitoring System

System

The Genelec 8020A is a very compact bi-amplified active monitor system with performance comparable to much larger systems. The 8020A excels in applications where space is at a premium, taking 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 complementing advanced amplifier and electronics circuitry and the latest drivers. Bass response reaches down to 65 Hz (-3 dB) with low distortion 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 8020A the perfect monitoring tool for a wide range of applications.

The 8020A has been specially designed to have a sufficient LF extension for a variety of situations. However if greater SPL's and a lower cutoff frequency are required, it can be complemented with Genelec 7050B subwoofer, which has a lower cutoff point of 25 Hz.

Integrated construction

The 8020A 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. A balanced male XLR output connector can be used for connecting a 7050B subwoofer or daisy chaining up to six 8020A's together.

The volume control is located on the front panel. This allows 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 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" switches.

Amplifiers

The bass and treble amplifiers produce 20 W of output power each, with very low THD and IM distortion values. The amplifiers are

designed to ensure 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 ($\frac{3}{4}$ ") metal dome tweeter is loaded by an advanced DCW™ waveguide. The DCW™ is integrated into the one piece front baffle.

The 105 mm (4") 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 8020A. Shielding is vital for applications such as video post production, where stray magnetic fields must be minimized.

MDE™ and DCW™ Technologies

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

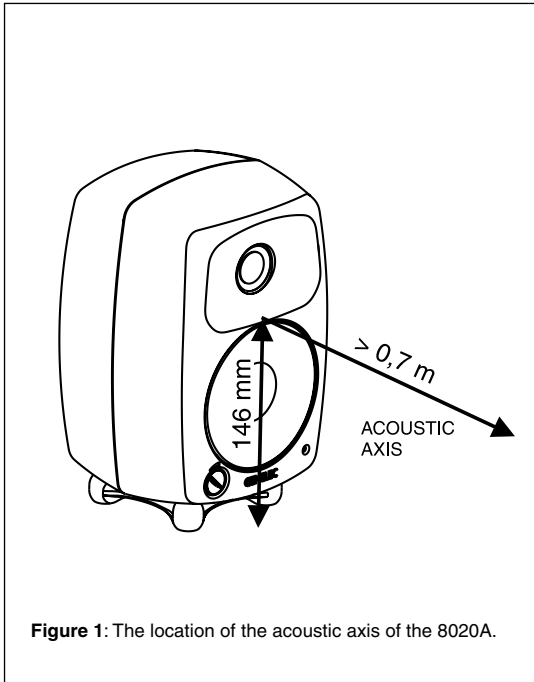


Figure 1: The location of the acoustic axis of the 8020A.

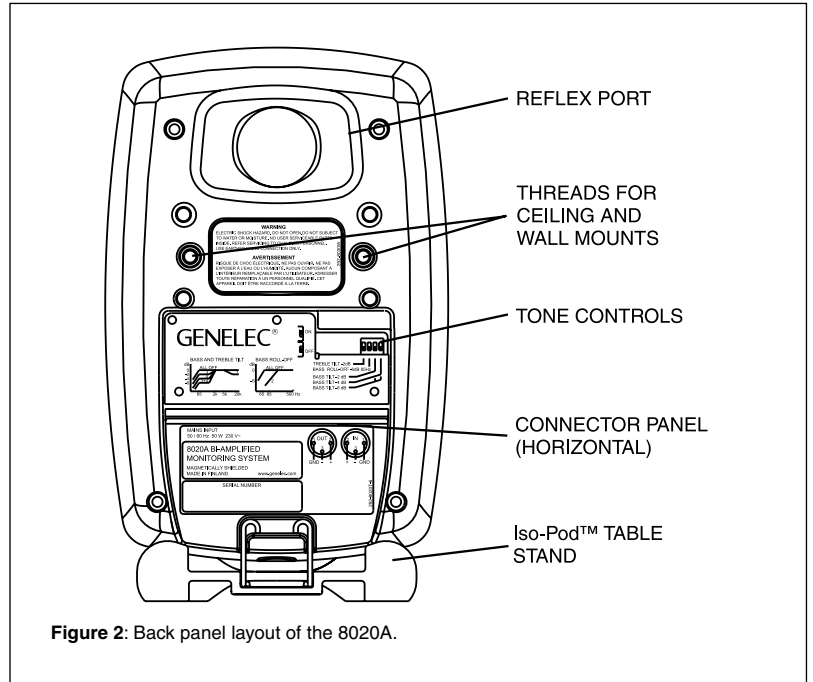


Figure 2: Back panel layout of the 8020A.

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 8020A offers several mounting options: The vibration insulating Isolation Positioner/Decoupler™ (Iso-Pod™) table stand allows

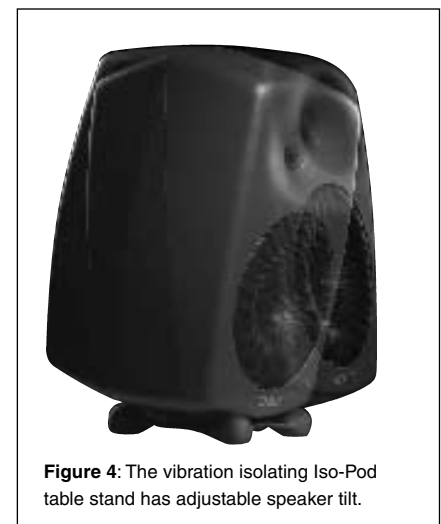
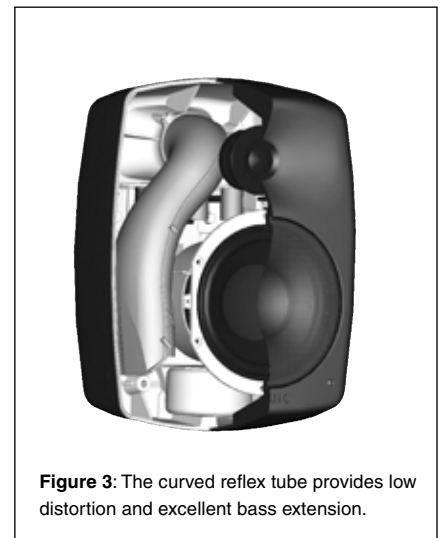
tilting the speaker for correct alignment of the acoustic axis. The stand can be attached to three mounting points allowing vertical and symmetrical horizontal positioning. On the base of the monitor is a 3/8" UNC threaded hole which can accommodate a standard microphone stand. On the rear there are two M6x10 mm threaded holes for an Omnimount® size 20.5 bracket.

Options

	Order code
Floor stand black (K&M)	1029-407
Wall mount black (Omnimount)	8030-404-B
Ceiling mount black (Omnimount)	8030-405-B
Table stand (K&M)	8030-406
Soft carrying bag for two monitors	8020-420

Colours

The 8020A cabinet has a durable painted surface in Black, Silver or White.



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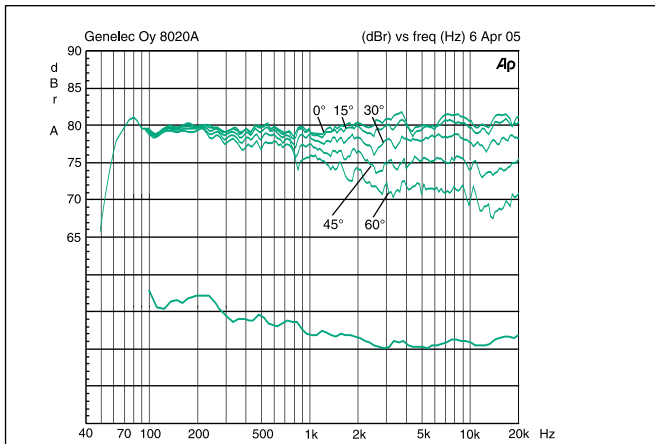


Figure 3: The upper curve group shows the horizontal directivity characteristics of the 8020A measured at 1 m. The lower curve shows the systems power response.

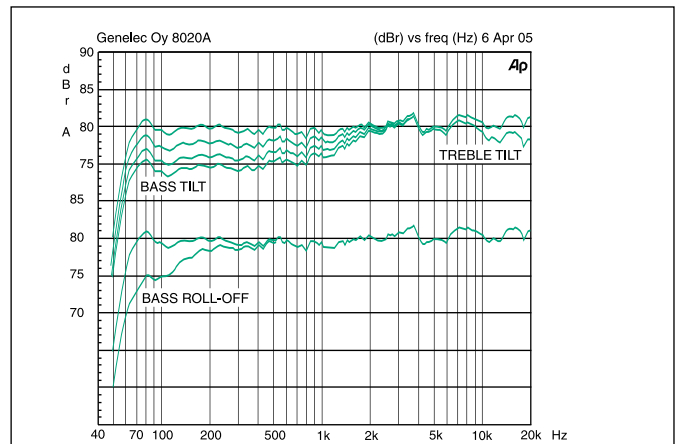


Figure 4: The curves above show the effect of the "bass tilt", "treble tilt" and "bass roll-off" controls on the free field response.

SYSTEM SPECIFICATIONS

	8020A
Lower cut-off frequency, -3 dB Upper cut-off frequency, -3 dB Free field frequency response	≤ 65 Hz ≥ 21 kHz 66 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 ≥ 96 dB SPL @ 0.5 m ≥ 102 dB SPL
Maximum long term RMS acoustic output in same conditions with IEC-weighted noise (limited by driver unit protection circuit)	@ 1 m ≥ 95 dB SPL
Maximum peak acoustic output per pair @ 1 m from the engineer with music material	≥ 105 dB
Self generated noise level in free field @ 1 m on axis	≤ 10 dB (A-weighted)
Harmonic distortion at 85 dB SPL @ 1 m on axis	Freq: 50...100 Hz < 3 % > 100 Hz < 0.5 %
Drivers	Bass 105 mm (4") cone Treble 19 mm (3/4") metal dome Both drivers are magnetically shielded
Weight	3.7 kg (8.1 lb)
Speaker dimensions	Height 242 mm (9 1/2") (including Iso-Pod table stand) Height 230 mm (9 1/16") (without Iso-Pod table stand) Width 151 mm (6") Depth 142 mm (5 5/8")

AMPLIFIER SECTION

	8020A
Bass amplifier output power Treble amplifier output power	Short term 20 W (8 Ohm load) Short term 20 W (8 Ohm load) Long term output power is limited by driver unit protection circuitry.
Amplifier system distortion at nominal output	THD ≤ 0.08 % SMPTE-IM ≤ 0.08 % CCIF-IM ≤ 0.08 % DIM 100 ≤ 0.08 %
Signal to Noise ratio, referred to full output	Bass ≥ 95 dB Treble ≥ 95 dB
Mains voltage: Voltage operating range:	100, 120, 220 or 230 V according to region. ± 10 %
Power consumption	Idle 5 VA Full output 50 VA

CROSSOVER SECTION

	8020A
Input connector: XLR female, balanced 10 kOhm	pin 1 gnd, pin 2 +, pin 3 -
Output connector: XLR male, balanced 100 Ohm	pin 1 gnd pin 2 +, pin 3 -
Input level for 100 dB SPL output @ 1m	-6 dBu at volume control max
Volume control range	-80 dB relative to max output Output signal level is 0 dB relative to input signal level but adjustable by volume control
Crossover frequency	3.0 kHz
Treble tilt control operating range	0 to -2 dB @ 15 kHz
Bass roll-off control	-6 dB step @ 85 Hz (to be used in conjunction with a 7050B subwoofer)
Bass tilt control	0 to -6 dB @ 100 Hz in 2 dB steps 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.