

GENELEC®

Data Sheet **8020C**



8020C

Active Monitoring System



System

The Genelec 8020C is a very compact bi-amplified active monitor system with performance comparable to much larger systems. The 8020C 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 8020C the perfect monitoring tool for a wide range of applications.

The 8020C 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 sub-woofer, which has a lower cutoff point of 25 Hz.

Integrated construction

The 8020C 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 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 cir-

cuit 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 8020C. Shielding is vital for applications such as video post production, where stray magnetic fields must be minimized.

ISS™ autostart function

When the power switch on the back panel of the loudspeaker is set to "ON", the Intelligent Signal Sensing™ (ISS™) autostart function of the 8020C is active. Automatic powering down to standby mode happens after a certain time when playback has ended. The power consumption in standby mode is typically less than 0.5 watts. The playback will automatically resume once an input signal is

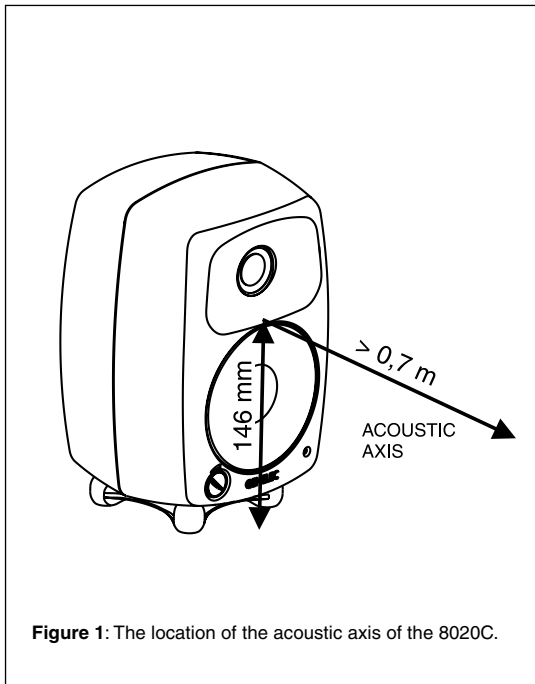


Figure 1: The location of the acoustic axis of the 8020C.

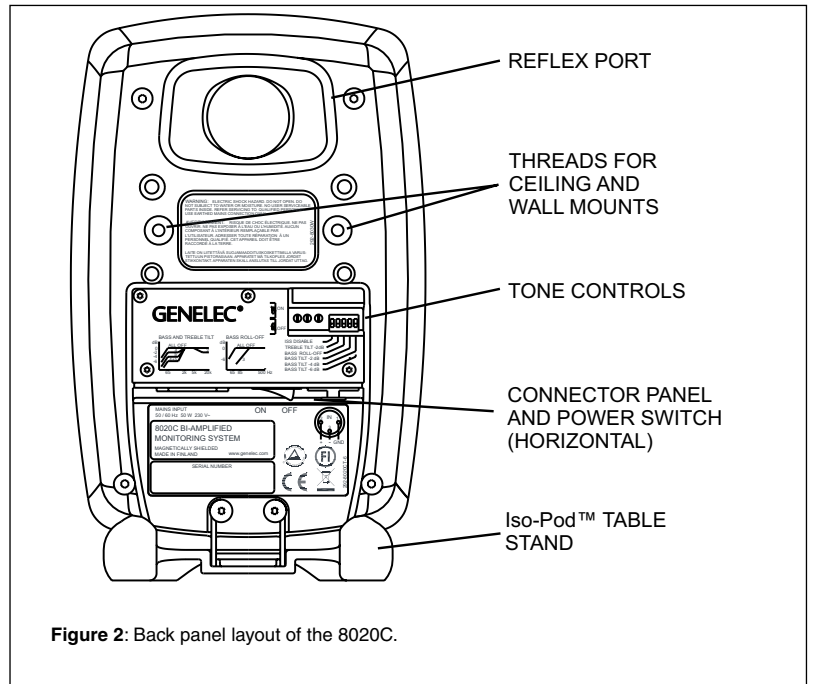


Figure 2: Back panel layout of the 8020C.

detected from the source.

There is a slight delay in the automatic powering up. If this is undesirable, the ISS™ function can be disabled by setting the “ISS DISABLE” switch on the back panel to “ON” position. In this mode, the monitor is powered on and off using the power switch on the back panel.

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 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 8020C 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.

Guarantee

The 8020C is guaranteed for a period of two years against faults in materials or workmanship.

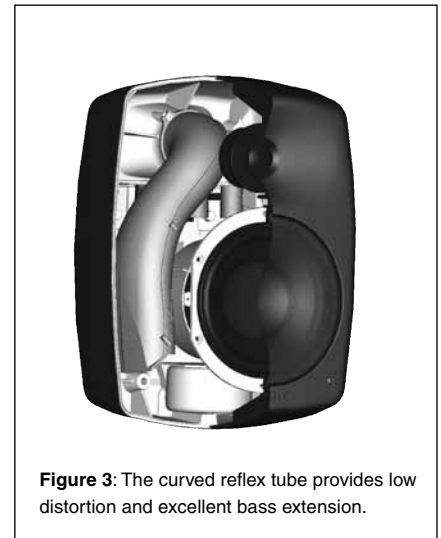


Figure 3: The curved reflex tube provides low distortion and excellent bass extension.

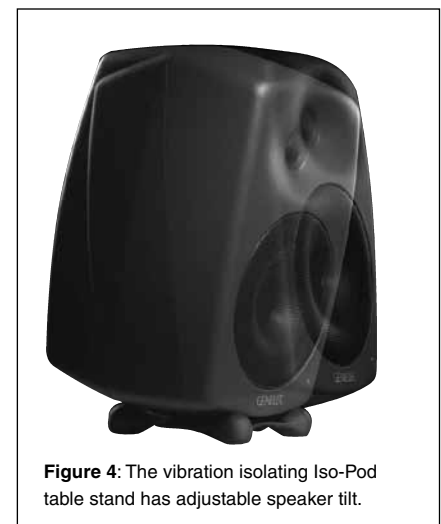


Figure 4: The vibration isolating Iso-Pod table stand has adjustable speaker tilt.

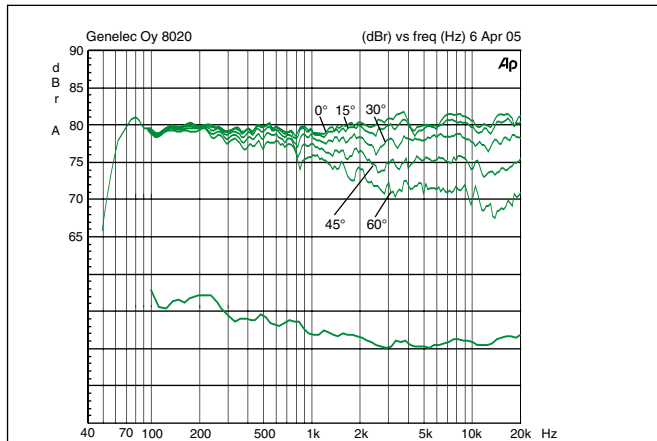


Figure 5: The upper curve group shows the horizontal directivity characteristics of the 8020C measured at 1 m. The lower curve shows the systems power response.

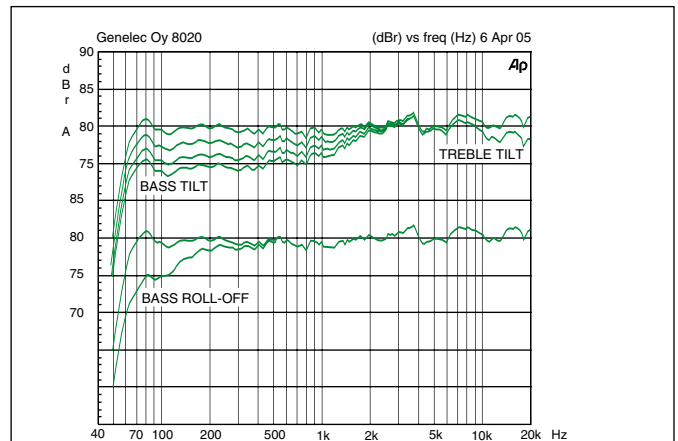


Figure 6: The curves above show the effect of the "bass tilt", "treble tilt" and "bass roll-off" controls on the free field response.

SYSTEM SPECIFICATIONS

	8020C
Lower cut-off frequency, -3 dB	≤ 65 Hz
Upper cut-off frequency, -3 dB	≥ 21 kHz
Free field frequency response	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
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 with music material	@ 1 m ≥ 105 dB
Self generated noise level in half space at 1 m on axis (A-weighted)	≤ 10 dB
Harmonic distortion at 85 dB SPL at 1 m on axis Freq: 50...100 Hz > 100 Hz	< 3 % < 0.5 %
Drivers Bass Treble	105 mm (4 in) cone 19 mm (3/4 in) metal dome Both drivers are magnetically shielded
Weight	3.7 kg (8.1 lb)
Dimensions Height including Iso-Pod™ table stand Height without Iso-Pod™ table stand Width Depth	242 mm (9 1/2 in) 230 mm (9 1/8 in) 151 mm (6 in) 142 mm (5 5/8 in)

AMPLIFIER SECTION

	8020C
Bass amplifier short term output power Treble amplifier short term output power	20 W at 8 Ohm load 20 W at 8 Ohm load
Long term output power is limited by driver unit protection circuitry	
Amplifier system THD at nominal output	< 0.08 %
Mains voltage	100, 120, 220 or 230 V according to region
Voltage operating range:	±10 %
Power consumption (average) Standby Idle Full output	<0.5 W 5 W 50 W

CROSSOVER SECTION

	8020C
Signal input connector XLR female, balanced 10 kOhm	pin 1 gnd, pin 2 +, pin 3 -
Input level for 100 dB SPL output at 1 m	-6 dBu at volume control max
Sensitivity control range	-80 dB relative to max output
Crossover frequency, Bass/Treble	3.0 kHz
Treble Tilt control operating range	0 to -2 dB @ 15 kHz
Bass Tilt control operating range in 2 dB steps	From 0 to -6 dB @ 100 Hz
Bass Roll-Off control	-6 dB step @ 85 Hz (to be used in conjunction with a 7050B subwoofer)

The 'CAL' position is with all tone controls set to 'off' and the input sensitivity control to maximum (fully clockwise).