

7050B

Data Sheet

Genelec 7050B
Active Subwoofer

GENELEC®





Main Features:

- LSE™ Power efficient port/ enclosure design
- Unparalleled low frequency performance
- Precise integration to Genelec 8020A or 8030A systems

7050B Active Subwoofer

System

The Genelec 7050B active subwoofer is a very compact low frequency loudspeaker, designed to extend the bass reproduction of Genelec 8020A active loudspeakers in stereo or surround applications and models 8030A or 8130A in stereo applications. Adding the 7050B to these loudspeakers creates a compact near-field monitoring system capable of a flat frequency response from 25 Hz to 20 kHz (± 3 dB). The 7050B should not be used in surround applications with the 8030A or 8130A due to their greater SPL capacity.

Driver

The 7050B contains a single 205 mm (8") magnetically shielded low frequency driver, housed in a Genelec Laminar Spiral Enclosure™ (LSE™) bass reflex cabinet.

Crossover

The built-in crossover unit has five signal input and output channels (L/C/R Front and L/R Rear) and a LFE input, providing great flexibility and easy connection. The discrete LFE signal input is equipped with a selectable 85/120 Hz low-pass filter and a 0/+10 dB LFE sensitivity switch.

The amplifier has adjustable sensitivity, bass roll-off and phase matching controls

to tailor the response of the subwoofer to its environment.

The crossover has a fixed 85 Hz low pass filter for five main channels. However, the signal passing through the "OUT" connectors is full bandwidth, i.e. not filtered. Because of this, the "BASS ROLL-OFF" switch (switch 2) on the main loudspeakers must be switched on to avoid unwanted overlapping of the frequency bands between the subwoofer and main loudspeakers. Due to this and the input sensitivity of the 7050B subwoofer, it can only be used with Genelec 8020A, 8030A, 8130A, 1029A, 2029A and 2029B active loudspeakers.

The overall input sensitivity of the subwoofer can be reduced from 0 dB to -18 dB for easy level matching with the main loudspeakers.

Amplifier

The amplifier produces 70 W of output power, with very low THD and IM distortion. Driver overload protection and power-on signal muting is included in the amplifier circuitry. The amplifier also incorporates thermal overload and short circuit protection.

LSE™ cabinet construction

Like the larger Genelec 7000 series subwoofers, the 7050B features the new Genelec Laminar Spiral Enclosure™ (LSE™) bass reflex cabinet. The cabinet is made of sheet

metal rolled into a spiral shape and clamped between thick MDF side panels. The spiral forms a seamless, gently curving reflex tube with excellent laminar flow characteristics and minimal turbulence noise. The curved shape also offers excellent structural stiffness and optimal packing of a very long reflex tube into a small space.

The overall construction of the 7050B is rugged and reliable: The amplifier unit is mounted on vibration absorbers to ensure rattle-free operation and the handsome cast-aluminium grille protects the magnetically shielded 8 inch driver.

Why a subwoofer?

For applications, such as computer multimedia work and most types of near field monitoring, the Genelec 8020A and 8030A are appropriate monitor systems. However if lower LF cutoff and more LF SPL are required, the 7050B subwoofer has been specifically designed to complement these compact loudspeakers. When combined they give a frequency response comparable to some larger Genelec models - one of the differences is the greater SPL's offered by larger systems.

The 8020A/8030A and 7050B combination offers great flexibility in loudspeaker placement. Due to the small physical size of the main loudspeakers, they can be located on

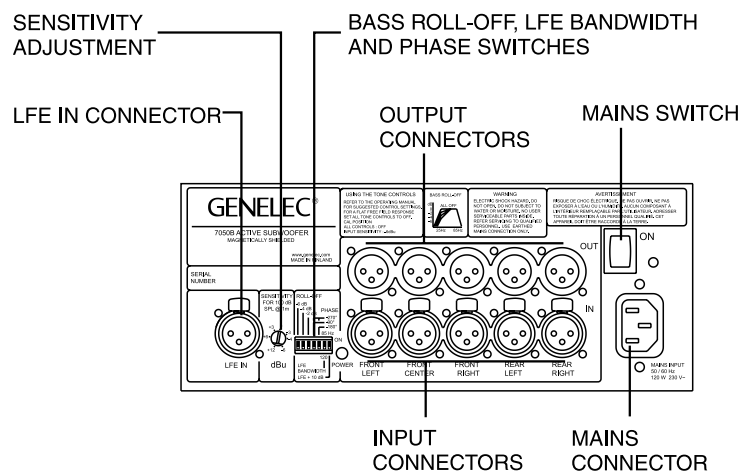


Figure 1: The amplifier panel layout of a 7050B subwoofer.

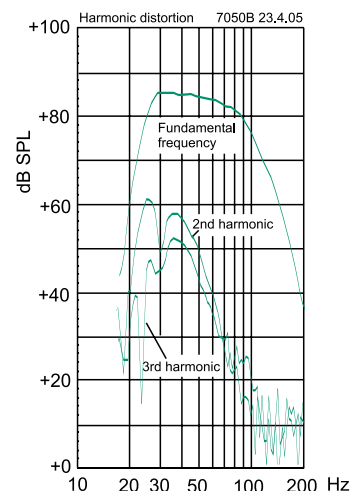


Figure 2: 7050B harmonic distortion analysis in free field. In half space the SPL will be 6 dB higher.

desks and, if carefully placed appear fairly innocuous in a room. Further advice on how to place the loudspeaker is described in the operating manual.

If the subwoofer and main loudspeakers are placed properly some of the low frequency problems associated with free standing speakers can be avoided.

sequencers and multimedia sources, such as sound cards, can occasionally produce.

The crossover and phase responses are optimized for each particular model to achieve highly accurate system performance. Consequently every model has the same neutral sound.

Why active loudspeakers?

There are various reasons why active loudspeakers are preferable to passive alternatives, the most dominant being the integrated construction allowing better optimization of the system performance. The loudspeakers are always delivered as a complete factory calibrated system, consisting of all amplifiers, crossover electronics and speaker cabinets.

In an active loudspeaker system the amplifiers are connected directly to the drive units. Distortion anomalies and losses caused by passive crossovers are completely avoided resulting in better sound quality and maximum acoustic efficiency.

For every model of monitor the associated amplifiers have a unique design including driver overload protection. The overload protection detects signals that are above the drivers safe limits preventing damage. This makes the system immune to overloads and spurious signals which synthesizers,



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SYSTEM SPECIFICATIONS	
	7050B
Free field frequency response (± 3 dB)	25 Hz...85 Hz LFE 85/120 Hz
Maximum short term sine wave SPL output averaged from 30 to 85 Hz, measured in half space at 1 meter	≥ 100 dB
Self generated noise level in half space at 1 m on axis (A-weighted)	≤ 15 dB
Harmonic distortion at 90 dB SPL at 1 m on axis in half space 30... 85 Hz	
2nd	$\leq 4\%$
3rd	$\leq 1\%$
Driver, magnetically shielded	205 mm (8")
Weight	18 kg (39.6 lb)
Dimensions	
Height	410 mm (16 $\frac{1}{8}$ ")
Width	350 mm (13 $\frac{3}{4}$ ")
Depth	319 mm (12 $\frac{9}{16}$ ")

CROSSOVER SECTION	
	7050B
Subsonic filter (18 dB/octave) below	25 Hz
Input channels	5 main + LFE
Low pass frequency for 5 main channels	85 Hz
LFE cutoff frequency	85 or 120 Hz selectable
Midband rejection >400 Hz	≥ 50 dB
Bass Roll-Off control in 2 dB steps	0 to -6 dB @ 26 Hz
Phase matching control in 90° steps	0 to -270°
Input sensitivity control	+12 to -6 dBu
LFE input sensitivity control	0 or +10 dB selectable

AMPLIFIER SECTION	
	7050B
Amplifier short term output power (Long term output power is limited by driver unit protection circuitry)	70 W
Amplifier system THD at nominal output	$\leq 0.08\%$
Mains voltage	100, 120 or 230 V
Power consumption (average)	
Idle	11 VA
Full output	120 VA

INPUT SECTION	
	7050B
Input connectors XLR female	
pin 1	gnd
pin 2	+
pin 3	-
Input impedance	10 kohm balanced
Input level for 100 dB SPL output @ 1 m	Variable from +12 to -6 dBu

OUTPUT SECTION	
	7050B
Input connectors XLR male	
pin 1	gnd
pin 2	+
pin 3	-
Main loudspeaker Out gain	0 dB
Main loudspeaker Out connectors carry an unfiltered copy of the signal arriving into their respective Input connectors.	