

LSE Series

Data Sheet

Genelec 7060B, 7070A and
7071A Active Subwoofers

GENELEC®





Main Features:

- LSE™ Power efficient port/ enclosure design
- Highly configurable 6.1 channel Bass Management System
- Unparalleled low frequency performance
- Phase calibration test tone
- RJ11 remote control connection
- SUM out and in for “daisy chaining” units

Active Subwoofers 7060B, 7070A and 7071A

System

Genelec LSE series active subwoofers are powerful and precise bass monitoring tools for modern 6.1 or 5.1 channel Surround Sound as well as traditional Stereo systems. With their 19 Hz lower cut-off frequency, high sound pressure output capability and versatile bass management systems, they can be adapted to all low frequency monitoring situations.

The amplifier unit integrated into the cabinet contains active crossover filters, driver overload protection circuits and power amplifiers. The built-in bass management unit has six signal input and output channels (L/C/R Front and L/C/R Rear), LFE input and summed signal output connectors, 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. An integrated 85 Hz test tone generator is provided for accurate crossover phase alignment.

LSE™ cabinet construction

These LSE series subwoofers feature Genelec's new 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 bass management unit is mounted on vibration absorbers, to ensure rattle-free operation. This results in a robust and reliable system. The handsome cast-aluminium grille also functions as a heatsink for the power amplifier.

Speaker configuration and positioning

With their built-in bass management unit the LSE series subwoofers may be used with other Genelec monitors to extend their low frequency response and SPL performance. Two or more subwoofers can be coupled together via the “SUM OUT” connector if a higher maximum SPL is required.

The phase correction switch in the bass management unit allows for the subwoofer to be freely placed away from the main monitors without phase cancellation.

Drivers

The 7060B has one 250 mm (10”) cone driver, the 7070A one 305 mm (12”) cone and the 7071A two 305 mm cone drivers. The drivers are magnetically shielded long throw types capable of producing high SPLs.

Amplifier

The amplifiers produce 120, 250 and 500 W of short term RMS power for the 7060B, 7070A and 7071A respectively, with very low THD and IM distortion. Driver overload protection and power-on signal muting is included in the amplifier circuitry.

Bass management unit

The built-in bass management unit splits the six main channel input signals into low and high frequency components, accurately dividing the input signal between the subwoofer and the main speakers. The crossover frequency is fixed at 85 Hz. The low pass section has an adjustable sensitivity, to allow easy level matching with the main speakers. The six high pass sections have 0 dB passband gain. The high pass filters can be bypassed using an optional bypass switch so that the effect of the subwoofer to the whole monitoring system can be determined. Balanced XLR connectors are used for the system inputs and outputs.

A dedicated “LFE IN” input connector allows easy set-up and accurate monitoring of the LFE channel in 5.1 and 6.1 channel surround sound systems. The LFE channel on the 7000 series subwoofers can be set to two bandwidths: 19 to 85 Hz or 19 to 120 Hz. If the LFE signal includes higher frequencies than 120 Hz, they can be monitored by

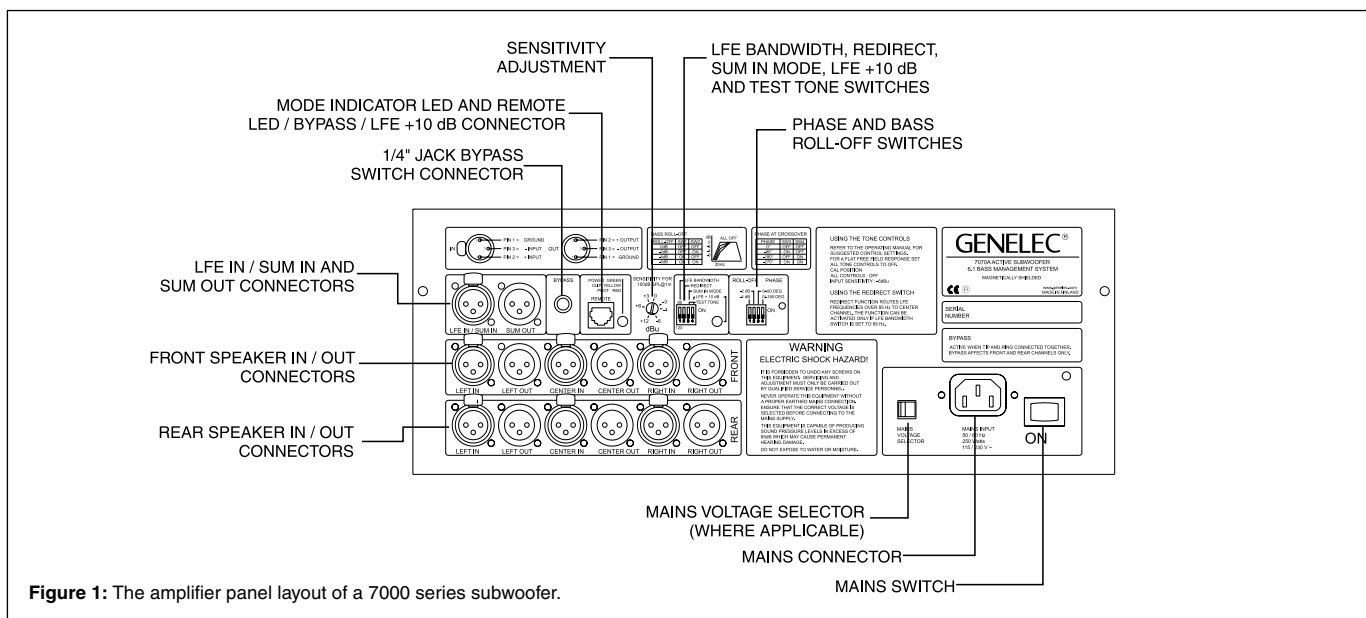


Figure 1: The amplifier panel layout of a 7000 series subwoofer.

using the "redirect" function. In this case, frequencies above 85 Hz in the LFE signal are redirected to the center channel output to be reproduced by the center channel monitor. The sensitivity of the LFE channel can easily be set to 0 or +10 dB according to the monitoring needs.

To provide a flat bass response in many different acoustic environments, a 'bass roll-off' switch is included, which makes adjustments to the subwoofer response in three 2 dB steps possible. Two phase alignment switches in the crossover allow compensation for the phase delay which occurs if the subwoofer is placed away from the main speakers or for other phase changes in the loudspeaker system. Four settings are provided between 0° and -270°.

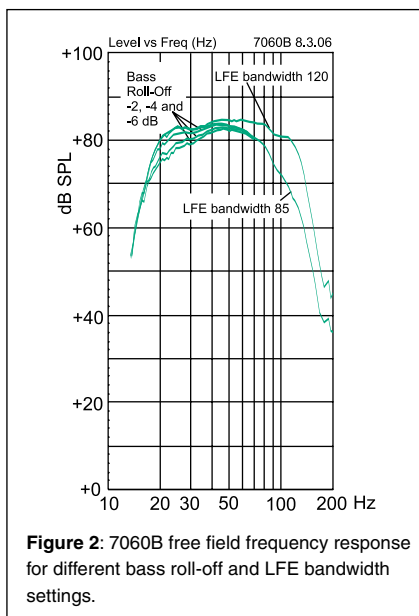


Figure 2: 7060B free field frequency response for different bass roll-off and LFE bandwidth settings.

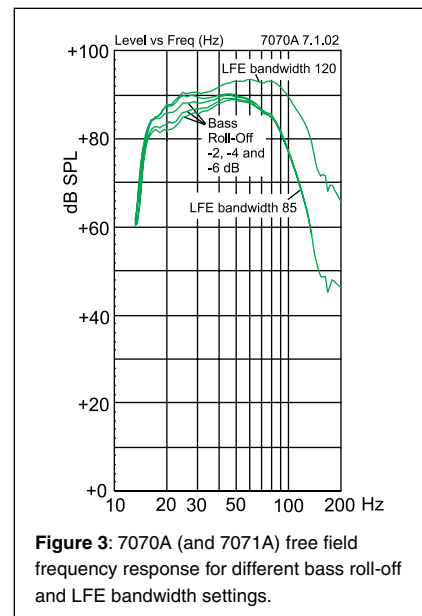


Figure 3: 7070A (and 7071A) free field frequency response for different bass roll-off and LFE bandwidth settings.

Options

Order code	Description
1092-400	1/4" jack bypass switch
7000-415 RJ 11	Remote Power/ Overload LED
7000-416 RJ 11	Remote control for bypass and +10 dB LFE functions

7060B / 7070A / 7071A Data Sheet

SYSTEM SPECIFICATIONS

	7060B	7070A	7071A
Free field frequency response (+/- 3 dB)	19 Hz...85 Hz LFE 85/120 Hz	19 Hz...85 Hz LFE 85/120 Hz	19 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	≥ 108 dB SPL	≥ 112 dB SPL	≥ 118 dB SPL
Maximum peak SPL output with random pink noise, measured in half space at 1 meter	≥ 113 dB SPL	≥ 117 dB SPL	≥ 123 dB SPL
Self generated noise level in free field @ 1 m on axis (A-weighted)	≤ 15 dB		
Harmonic distortion at @ 1 m on axis in half space	@ 90 dB SPL 30 ... 85 Hz ≤ 3 % ≤ 2 %	@ 95 dB SPL 30 ... 85 Hz ≤ 3 % ≤ 3 %	@ 100 dB SPL 30 ... 85 Hz ≤ 3 % ≤ 3 %
Driver, magnetically shielded	250 mm (10")	305 mm (12")	2 x 305 mm (12")
Weight	26 kg (57 lbs)	50 kg (110 lbs)	81 kg (178 lbs)
Dimensions			
Height	527 mm (20 3/4")	625 mm (24 5/8")	755 mm (29 3/4")
Width	462 mm (18 3/16")	555 mm (21 7/8")	803 mm (31 5/8")
Depth	363 mm (14 5/16")	490 mm (19 5/16")	490 mm (19 5/16")

CROSSOVER SECTION

	7060B	7070A	7071A
Subsonic filter (18 dB/octave) below	19 Hz		
Crossover frequency, (sub/main channels)	85 Hz		
LFE cutoff Hz	85 Hz/120 Hz selectable		
Crossover slopes	36 dB/octave		
Lowpass	12 dB/octave		
Highpass			
Midband rejection >400 Hz	≥ 50 dB		
Bass roll-off control operating range in 2 dB steps	From 0 to -6 dB @ 20 Hz		
Phase matching control in 90° steps	From 0 to -270° @ 85 Hz		

AMPLIFIER SECTION

	7060B	7070A	7071A
Short term amplifier output power (Long term output power is limited by driver unit protection circuitry)	120 W	250 W	500 W
Amplifier system distortion at nominal output THD	≤ 0.05%		
Mains voltage	100/200 V or 115/230 V		
Power consumption (average)			
Idle	15 VA	15 VA	30 VA
Full output	150 VA	250 VA	500 VA

INPUT SECTION

	7060B	7070A	7071A
Input connector XLR female	gnd + -		
pin 1			
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

	7060B	7070A	7071A
Output connector XLR male	gnd + -		
pin 1			
pin 2			
pin 3			
Remote LED connector (RJ11)	Remote LED for Power/Overload+Bypass		
Main monitor Out gain	0 dB		
Sum Out gain	0 dB		

CONTROLS

	7060B	7070A	7071A
Input sensitivity	+12 to -6 dBu		
Bypass	Bypasses the bass management for the main channels		
LFE bandwidth	85 / 120 Hz		
LFE sensitivity	0 / +10 dB		
Redirect	Redirects LFE channel signal above 85 Hz to center channel		
Sum in	Changes subwoofer to Sum in mode		
Test tone for phase adjustment	85 Hz		
Bass roll-off	0/-2 dB/ -4 dB/ -6 dB @ 20 Hz		
Phase	0/90/180/270°		

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