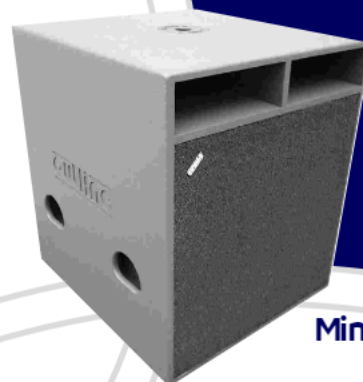


Minisub Plus Topsub Plus



Minisub Plus



TECHNICAL SPECIFICATIONS

Frequency Response		
<i>Minisub-P</i>	(-10 dB) 32Hz ÷ 3kHz (sug. max 180Hz) (±3 dB) 42Hz ÷ 2.5kHz	
<i>Topsub-P</i>	(-10 dB) 28Hz ÷ 2.5kHz (sug. max 180Hz) (±3 dB) 38Hz ÷ 2kHz	
Average Dispersion		
<i>Minisub-P</i>	Quasi-omnidirectionals	
<i>Topsub-P</i>	Quasi-omnidirectionals	
Impedance (ohms)		
<i>Minisub-P</i>	Tot (min) 8 (6.9 @ 35Hz)	
<i>Topsub-P</i>	Tot (min) 4 (3.5 @ 32Hz)	
Max Sensitivity (dB SPL 1W 1m)		
<i>Minisub-P</i>	98	(Full-space)
	101	(Half-space)
<i>Topsub-P</i>	102	(Full-space)
	105	(Half-space)
Power - Watts AES		
<i>Minisub-P</i>	<i>Cont.</i>	<i>Peak</i>
	700	2800
<i>Topsub-P</i>	1400	5600
Max Output Level (calculated)		
<i>Minisub-P</i>	<i>Cont.</i>	<i>Peak</i>
	126	132 (Full-space)
	129	135 (Half-space)
<i>Topsub-P</i>	133	139 (Full-space)
	136	142 (Half-space)
Loudspeakers and Loading		
<i>Minisub-P</i>	1 x 18" High pass Vented Box.	
<i>Topsub-P</i>	2 x 18" High pass Vented Box.	

PHYSICAL PROPERTIES

Product type	High efficiency, high power system for the reproduction of low frequencies.	
Enclosure Material and Finish	Rectangular enclosures in 15 mm. Plywood with internal bracing, rounded corners and integral handles. Scratchproof paint.	
Standard accessories	Highly resistant vibration-free protective perforated aluminium grill covered in black foam; 4 handles; internal support tube/stand housing. Neutrik Speakon NL4FC connector.	
Protection	Electronic, only when the dedicated Outline processors are used with limiter functions.	
Optional accessories	Aluminium edge trim and plastic corners. Transport wheels and "Shower Cap" water-proof cover.	
Connectors		
<i>Minisub-P</i>	2xNL4 Speakon in parallel: Pin 1+ pos; Pin 1- neg	
	<i>LF</i>	
<i>Topsub-P</i>	1xNL4 Speakon: Pin 1+ pos; Pin 1- neg	
	<i>LF1</i>	
	<i>LF2</i>	
Weight (Kg)		
<i>Net (gross)</i>	<i>Minisub-P</i>	<i>Topsub-P</i>
	42 (47)	78 (87)
Dimensions (cm)		
<i>Height (with packing)</i>	65 (74)	65 (75)
<i>Width (with packing)</i>	55 (63)	110 (117)
<i>Depth (with packing)</i>	60 (68)	60 (68)

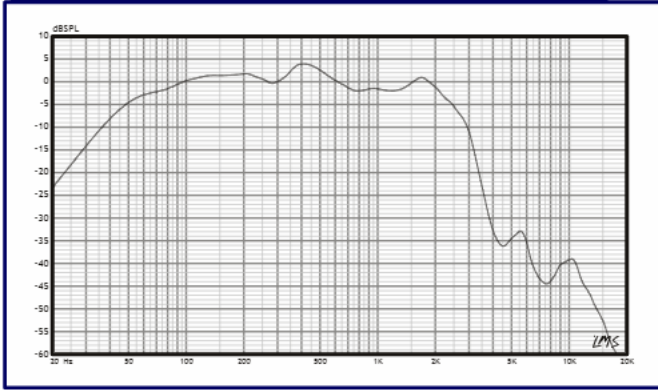
FEATURES

- Very high efficiency high-power subwoofers with one (MiniSub Plus) and two (TopSub Plus) 18" long excursion woofers featuring a special spider to maintain performance through the years.
- Very high power handling capacity (700/1400 Watts AES, 2800/5600 Watts peak) and sound pressure (135/142dB peak at 1 meter).
- Woofers mounted in separate chambers (TopSub Plus) ensure operation even in the event of a fault with one of them; possibility of connecting two different signals, stereo, and/or using two separate amplification channels.
- The cabinet is internally reinforced to ensure the utmost sturdiness, eliminating coloration due to resonance. An optional set of sturdy smooth-running wheels facilitates transport, even on rather rough ground.

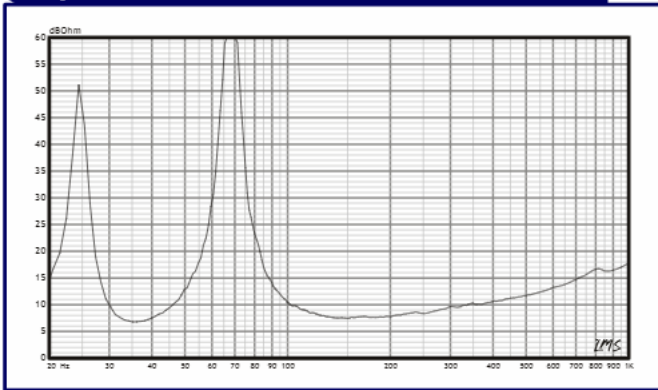
APPLICATIONS

- No-nonsense use in concerts of all sizes, floor-mounted or on-stage and used along with other units of the same type for low and infra-low frequency reinforcement.
- Permanent high quality installations in theatres, clubs and indoor sports arenas: ideal for use along with all Outline loudspeaker systems.

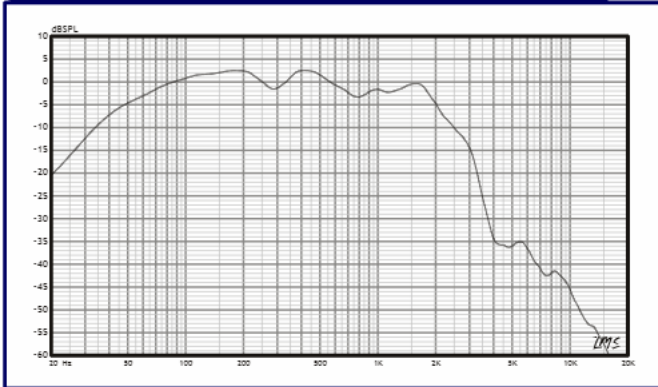
frequency response - Minisub Plus



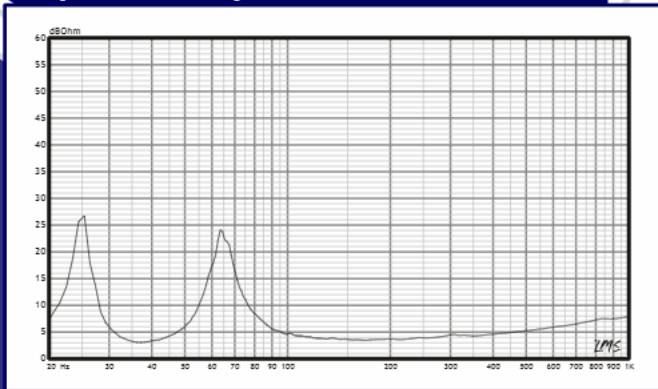
impedance - Minisub Plus



frequency response - Topsub Plus



impedance - Topsub Plus



DESCRIPTION

Loudspeaker systems suitable for high sound level reproduction of low and infra-low frequencies. The units use one (MiniSub Plus) and two (TopSub Plus) 18" long excursion woofers with 4" copper voice coil and a special spider to keep resonance frequency steady through the years (system performance depends on this important parameter). Loading is of the phase inversion type with a chamber tuned at a rather low frequency by a long port with a large surface area. The peculiarity of this 4th order loading consists in obtaining a wide passband and great extension towards the bottom end of the frequency response. Their useable range is therefore moved towards the bottom end of the audio spectrum, as should be the case with subwoofers, and is sufficiently wide for reproducing all kind of music. Performance is extremely high, bearing in mind the components used, thanks to careful choice of the reflex alignment and cabinet construction. In the MiniSub Plus, the useable frequency range at -10dB goes from 32Hz to 3kHz. The complete system's frequency response, measured on-axis according to AES standards, is within +/-3dB from 42Hz to 2500Hz, even though it's strongly inadvisable to "cut" above 150Hz. It produces 98dB SPL on axis at 1m, driven hanging in full space with 1 Watt on input at rated impedance, and is able to produce a maximum peak pressure of 132dB SPL in the same conditions with 2800 Watts peak on the input. In 2π configuration, 3dB are added to these values, reaching respectively 101 and no less than 135 peak, a remarkably high value when bearing in mind that it's generated by just one 18" loudspeaker. The MiniSub Plus is able to handle a maximum power of 700Watts according to AES standards at a minimum impedance of 6.9 Ohms. The TopSub Plus, having two loudspeakers, has a useable band at -10dB from 28Hz to 2500Hz, whereas the response is within +/-3dB from 38Hz to 2000Hz, even though it's strongly inadvisable to "cut" above 150Hz. Sound pressure in full space at 1m according to AES standards is 103dB with 1W at rated impedance, whereas in 2π it rises to 105dB. At maximum continuous power AES, 1400W and the minimum impedance of 3.8 Ohms, 133dB SPL is obtained in full space and 136dB SPL in 2π, while peak values reach respectively 139dB SPL and no less than 142dB SPL. Both systems have a parallelepiped cabinet built from 15mm high quality Baltic birch plywood. Inside, as well as bracing to ensure even greater panel rigidity and avoid vibrations, the tuning port with its long wide surface area ensure further reinforcement. The cabinet is finished in quality scratch-resistant black paint. Connectors are Neutrik Speakon NL4: two on the MiniSub Plus to facilitate connecting several units in parallel, and one on the TopSub Plus, with separate contacts for each loudspeaker. In the event of one of the two woofers being damaged (TopSub Plus), the cabinet structure's separate chambers, as well as increasing structural rigidity, allow to continue running without worrying about the other component breaking; it's also possible to connect two different signals, stereo, and/or use two separate amplification channels. The front of both models is protected by a vibration-free aluminium mesh covered in acoustically transparent foam. Both are equipped with a socket for fitting the optional satellite support; four recessed handles in the side panels facilitate handling, while an optional set of sturdy smooth-running wheels facilitate transport even on rather rough ground. The market names are MINISUB PLUS and TOPSUB PLUS.

loudspeakers

Minisub Plus - Topsub Plus

outline

Via L. da Vinci, 56 - 25020 Flero (Brescia) Italy
 tel. +39 030 3581351 - fax +39 030 3580431
 www.outline.it - e-mail: info@outline.it

