

FreeSpace® ZA 250-LZ / 190-HZ zone amplifier

BOSE

TECHNICAL DATA SHEET



Product Overview

Zone amplifier designed to serve as a standalone amplification system or expansion sound system that utilizes front-end signal processing from products such as FreeSpace IZA 250-LZ / IZA 190-HZ integrated zone amplifiers, the FreeSpace 4400 business music system and ControlSpace® engineered sound processors.

Product Information

The Bose® FreeSpace® ZA 250-LZ / ZA 190-HZ zone amplifier provides basic amplification and sound system expansion for use with front-end signal processing devices. Expansion is simplified when this amplifier is used with a FreeSpace IZA integrated zone amplifier, where one cable connection allows the amplifiers to function together as one system—sharing music and paging sources, as well as master volume control. You can also use the FreeSpace ZA amplifier with other products, such as the Bose FreeSpace 4400 business music system and ControlSpace® engineered sound processors, to provide amplification for additional zones.

Applications

Designed for a wide range of applications, including:

- Retail stores
- Restaurants and bars
- Hospitality venues
- Conference centers
- Schools
- Auxiliary zones

Key Features

- **Premium sound quality** from a reliable, high quality Class-D amplifier designed to expand sound systems for loudspeaker installations
- **Expandable amplification** allows for easy system expansion when coupled with a FreeSpace IZA 250-LZ or IZA 190-HZ integrated zone amplifier. The two amplifiers will function together as one system
- **Compact, lightweight design** enables the FreeSpace zone amplifier to be placed out of the way—on a table, desk, counter, shelf or in an equipment rack using the optional Rack Mount Kit accessory
- **Two models available**, 4/8 Ω or 70/100 V output, allow for better fit options for specific installations

FreeSpace® ZA 250-LZ / 190-HZ zone amplifier



Technical Specifications

Power Rating		
	FreeSpace® ZA 250-LZ zone amplifier	FreeSpace® ZA 190-HZ zone amplifier
Amplifier Power	2 x 50 W @ 4 Ω, 2 x 25 W @ 8 Ω	1 x 90 W @ 70/100 V
Audio Performance Specifications		
	FreeSpace® ZA 250-LZ zone amplifier	FreeSpace® ZA 190-HZ zone amplifier
Frequency Response	20 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)	60 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)
THD+N	≤0.3 % (at full rated power)	≤1 % (at full rated power)
Channel Separation (Crosstalk)	≤-60 dBV (below rated power, 1 kHz)	≤-60 dBV (below rated power, 1 kHz)
Dynamic Range	88 dB	88 dB
Audio Inputs		
	Line Inputs	
Input Channels	1 Unbalanced	
Connectors, Input	Stereo RCA	
Input Range	-10 dBV - +10 dBV	
Input Impedance	20 kΩ	
Maximum Input Level	+10 dBV	
Nominal Input Level	0 dBV	
Audio Outputs		
	FreeSpace® ZA 250-LZ zone amplifier	FreeSpace® ZA 190-HZ zone amplifier
Outputs	2	1
Connectors, Output	2-terminal barrier strip	3-pin inverted Euroblock
Nominal Output Level	2 x 50 W @ 4Ω (min); 2 x 25 W @ 8Ω	1 x 90 W @ 70/100 V
Indicators and Controls		
LED Status Indicators	Power - blue	
Controls, Front Panel	Power On/Off	
Controls, Rear Panel	Mono/Stereo amplifier mode switch (ZA 250-LZ only), Output trim	
Electrical Specifications		
Mains Voltage	100 V AC - 240 V AC (+/- 10%, 50/60 Hz)	
AC Power Consumption	15 W (Idle), 200 W (Max)	
Mains Connector	Standard IEC (C14)	
Maximum Inrush Current	13.9 Amps (230 V / 50 Hz), 7.6 Amps (120 V / 60 Hz)	
Overload Protection	High temperature, short	
Physical		
Rack Space Units	1 RU high, half rack wide	
Dimensions	1.8" H x 8.4" W x 11.9" D (45 mm x 214 mm x 302 mm)	
	FreeSpace® ZA 250-LZ zone amplifier	FreeSpace® ZA 190-HZ zone amplifier
Shipping Weight	6.4 lb (2.9 kg)	8.6 lb (3.9 kg)
Net Weight	4.4 lb (2.0 kg)	6.7 lb (3.0 kg)
Cooling System	Natural convection	

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1. **POWER SWITCH** – ON/OFF AC power
2. **POWER** – LED indicates if unit is active



1. **INPUT** – Stereo RCA input connectors
2. **OUTPUT MODE (ZA 250-LZ only)** – Switches between mono or stereo mode (mono mode sums both input signals)
3. **OUTPUT TRIM** – Allows for up to 20 dB attenuation of each loudspeaker output
4. **OUTPUT connectors** - Two terminal strip speaker connectors for two 4Ω or 8Ω loudspeaker loads (ZA 250-LZ) or one 3-pin Euroblock for 70/100 V systems
5. **AC Mains receptacle** – AC line voltage input

FreeSpace® ZA 250-LZ / 190-HZ zone amplifier

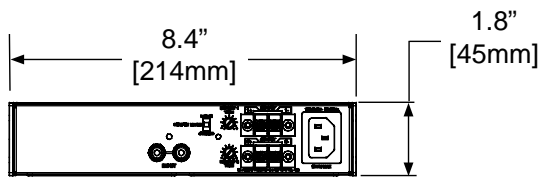


AC Current Draw and Thermal Dissipation Information

ZA 250-LZ								
Test Signal & Power Level	Load Configuration (Note: Both channels driven)	Total Audio Output, W	120VAC 60Hz. Line Current, A	230VAC 50Hz. Line Current, A	Thermal Dissipation, Max.			
					Watts	BTU/hr.	kCal/hr.	
Power On, Idling		0	0.18	0.14	32	110	28	
1/8th Rated Power IEC65 Bandlimited Pink Noise, 6dB Crest Factor	8 Ω / Ch	6	0.30	0.22	42	143	36	
	4 Ω / Ch	13	0.15	0.25	45	154	39	
1/3rd Rated Power IEC65 Bandlimited Pink Noise, 6dB Crest Factor	8 Ω / Ch	17	0.52	0.33	55	186	47	
	4 Ω / Ch	33	0.90	0.50	82	279	70	

ZA 190-HZ								
Test Signal & Power Level	Load Configuration	Total Audio Output, W	120VAC 60Hz. Line Current, A	230VAC 50Hz. Line Current, A	Thermal Dissipation, Max.			
					Watts	BTU/hr.	kCal/hr.	
Power On, Idling		0	0.15	0.14	32	108	27	
1/8th Rated Power IEC65 Bandlimited Pink Noise, 6dB Crest Factor	70 V	11	0.42	0.25	47	161	41	
	100 V	11	0.35	0.24	44	150	38	
1/3rd Rated Power IEC65 Bandlimited Pink Noise, 6dB Crest Factor	70 V	30	0.88	0.49	84	285	72	
	100 V	30	0.75	0.45	74	251	63	

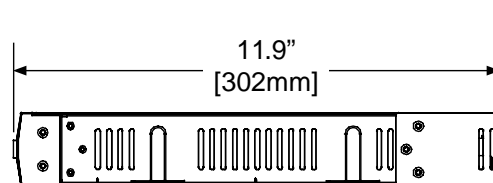
Mechanical Diagrams



Back View



Front View



Right View

FreeSpace® ZA 250-LZ / 190-HZ zone amplifier



Architects' and Engineers' Specifications

The amplifier shall employ Class-D amplification topology. The amplifier shall incorporate a switch-mode power supply allowing normal operation from AC outlets ranging from 100 – 240 V (+/- 10%) at 50/60 Hz. The amplifier shall have an IEC 320-C14 electrical power inlet and shall be equipped with a removable power supply cord. A power switch shall be located on the front panel. The product shall include protection from shorted loads and general overheating. The amplifier's physical size shall be 1 RU in height by 1/2 RU in width and be capable of rack mounting using an accessory kit. Two models shall be designed to be rack mounted together horizontally to combine for a full 1 RU installation. The product shall have venting appropriate for natural convection without fans. The amplifier section shall have two amplifier configurations offered in two separate models. Each output channel shall have output trim controls.

The low impedance model shall have two output channels with a frequency response of 20 Hz to 20 kHz (+0/-3 dB) and drive 4 ohm loads at 50 watts continuous power or 25 watts per channel continuous power into 8 ohm loads. The low impedance model shall have THD+N at full-rated power less than or equal to 0.3%. Output connection shall be made via two terminal strips that accommodate 22-14 AWG wires using included spade lug connectors.

The high impedance model shall have a single output channel with a frequency response of 60 Hz to 20 kHz (+0/-3 dB) and drive 70/100 V distributed audio systems. The low impedance model shall have THD+N at full-rated power less than or equal to 1%. Output connection shall be made via a 3-pin Euroblock connector.

Both models shall meet or exceed the following performance specifications: channel separation (crosstalk) less than or equal to -60 dB below rated power at 1 kHz and dynamic range of 88 dB. The amplifier shall incorporate one set of line-level inputs (two RCA stereo) with a nominal input sensitivity of 0 dBV. The rear panel shall contain a stereo/mono switch that allows optimization of the amplifier output (low impedance model only) when using a mono source. The front panel shall have a power switch and an LED (blue) for power indication.

The amplifier chassis shall be constructed of painted steel. The dimensions of the amplifier shall allow for 19-inch (483 mm) EIA standard rack mounting using the optional rack mounting kit accessory. The amplifier shall be 1.8 inches (45 mm) in height, 8.4 inches (214 mm) in width, and 11.9 inches (302 mm) in depth. The low impedance model shall weigh 4.4 pounds (2.0 kg). The high impedance model shall weigh 6.7 pounds (3.0 kg). The amplifier shall be the Bose FreeSpace ZA 250-LZ (or ZA 190-HZ) zone amplifier.

Safety and Regulatory Compliance

FreeSpace ZA 250-LZ / ZA 190-HZ zone amplifiers comply with CE requirements, are cUL listed according to UL60065 (7th edition) and CAN/CSA C22.2 No. 60065-03; CB approved, according to IEC60065 (7th edition), including group and national differences. These models also comply with FCC Part 15B Class A (2003), EN55103-1 (1997), EN55103-2 (1996), and CISPR13 (2003) requirements.

Additional Notes

Power rating:

Output power is measured per channel, both channels driven (ZA 250-LZ model), using test signals at 1 kHz.

CAD preview:

Mechanical drawings shown in this Technical Data Sheet represent the FreeSpace ZA 250-LZ model. Mechanical drawings for both models are available by download on the Bose Professional Systems Division website.

Product Codes

FreeSpace ZA 250-LZ zone amplifier

120V – US	344872-1420
240V – AU	344872-2420
100V – Japan	344872-3420
230V – EU	344872-4420
230V – UK	344872-5420

FreeSpace ZA 190-HZ zone amplifier

120V – US	344872-1410
240V – AU	344872-2410
100V - Japan	344872-3410
230V – EU	344872-4410
230V – UK	344872-5410

Accessories

Rack Mount Kit	353689-0410
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