FreeSpace® IZA 250-LZ / 190-HZ
integrated zone amplifier

TECHNICAL DATA SHEET

Product Overview

For background/foreground music and paging applications, the Bose® FreeSpace® IZA 250-LZ and IZA 190-HZ integrated zone amplifiers are designed to deliver premium sound, provide simplified set up and easy daily operation, and offer the flexibility to expand when more loudspeakers are required. When used with FreeSpace DS 16 and DS 40 loudspeakers, even further sound optimization is possible through onboard selectable EQ presets.

Product Information

The Bose® FreeSpace® IZA 250-LZ / IZA 190-HZ integrated zone amplifier provides signal processing, routing, paging and amplification for a wide range of commercial applications such as retail stores, restaurants and bars, hospitality venues, conference rooms, schools and auxiliary zones. The integrated zone amplifier offers a variety of easy-to-use input connections (mic/line/page), input gain and output level adjustments, and operational modes. Selectable Bose FreeSpace DS 16 and DS 40 loudspeaker EQ presets are available for loudspeaker optimization.

Applications

Designed for a wide range of applications, including:

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

Key Features

- **Amplification for premium sound** from a reliable, high quality Class-D amplifier provides optimized performance and premium sound quality through the use of internal digital signal processing
- **Installation made simple** with set up done locally from the front and rear panels of the amplifier—no computer is required
- **Opti-voice® paging** provides smooth automatic transition between the music and page signals
- **End-user friendly** front panel allows users to connect devices easily, make tonal adjustments or select between two sources. Optional accessory remote control panels allow volume and source selection controls to be placed away from the amplifier for user convenience
- **Compact, lightweight design** enables the FreeSpace integrated 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
- **Easy connectivity and expansion** are possible for applications where a second set of output channels are required. An auxiliary line output is provided to share signals with an optional FreeSpace ZA 250-LZ or ZA 190-HZ

FreeSpace® IZA 250-LZ / 190-HZ integrated zone amplifier

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Technical Specifications

Power Rating				
	FreeSpace® IZA 250-LZ integrated zone amplifier		**FreeSpace® IZA 190-HZ integrated zone amplifier**	
Amplifier Power	2 x 50 W @ 4 Ω, 2 x 32 W @ 8 Ω		1 x 90 W @ 70/100 V	
Audio Performance Specifications				
	FreeSpace® IZA 250-LZ integrated zone amplifier		**FreeSpace® IZA 190-HZ integrated zone amplifier**	
Frequency Response	40 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	
Integrated DSP				
A/D and D/A Converters	24-bit / 48 kHz			
Processing Functions	Loudspeaker EQ, Bose® Opti-voice® paging, Dynamic equalization			
Loudspeaker Presets	FreeSpace DS 16 and DS 40 loudspeakers, High-Pass Filter (HPF)			
Audio Inputs				
	Line Inputs	**Mic/Line Inputs**	**Page Inputs**	**Auxiliary Input**
Input Channels	2 Unbalanced line	1 Balanced mic/line	1 Balanced mic	1 Unbalanced line
Connectors, Input	Stereo RCA	Combo XLR - 1/4" (6.5mm) TRS	4-pin Euroblock	1/8" (3.5mm) TRS
Input Range	-10 dBV - +10 dBV	-60 dBV - +10 dBV	-60 dBV - +10 dBV	0 dBV - +10 dBV
Adjustment Range	-20 dB - +20 dB	0 dB - +50 dB	0 dB - +50 dB	Fixed
Input Impedance	20 kΩ	2 kΩ	2 kΩ	20 kΩ
Maximum Input Level	+10 dBV	+10 dBV	+10 dBV	+10 dBV
Sensitivity	n/a	n/a	n/a	0 dBV
Nominal Input Level	0 dBV	-40 dBV	-40 dBV	0 dBV
Audio Outputs				
	Amplifier Outputs		**Auxiliary Output**	
Outputs	**FreeSpace® IZA 250-LZ integrated zone amplifier**	**FreeSpace® IZA 190-HZ integrated zone amplifier**	**FreeSpace® IZA 250-LZ integrated zone amplifier**	**FreeSpace® IZA 190-HZ integrated zone amplifier**
	2	1	1 Unbalanced	1 Unbalanced
Connectors, Output	2-terminal barrier strip	3-pin inverted Euroblock	Stereo RCA	Stereo RCA
Output Impedance	4 Ω	n/a	400 Ω	400 Ω
Nominal Output Level	2 x 50 W @ 4Ω (min); 2 x 32 W @ 8Ω	1 x 90 W @ 70/100 V	0 dBV (max)	0 dBV (max)
Indicators and Controls				
LED Status Indicators	Power - blue, Input clip - red (-3 dBFS)			
Controls, Front Panel	Power On/Off, Input Select (A/B), Tone Controls (Treble/Bass), Mic/Line Gain, Master Level			
Controls, Rear Panel	Amplifier Mode DIP switch, Loudspeaker EQ preset selector, Input Gain (A/B/Page mic), Output trim			
Electrical Specifications				
Mains Voltage	100 V AC - 240 V AC (+/- 10%, 50/60 Hz)			
AC Power Consumption	15 W (Idle), 105 W (Full)			
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 12.2" D (45 mm x 214 mm x 310 mm)			
Shipping Weight	6.5 lb (3 kg)			
Net Weight	4.7 lb (2 kg)			
Cooling System	Natural convection			
General				
Inputs (Control)	Remote input for Volume Control (with A/B Select) user interface, Mute input for amplifier muting via contact closure			

FreeSpace® IZA 250-LZ / 190-HZ
integrated zone amplifier

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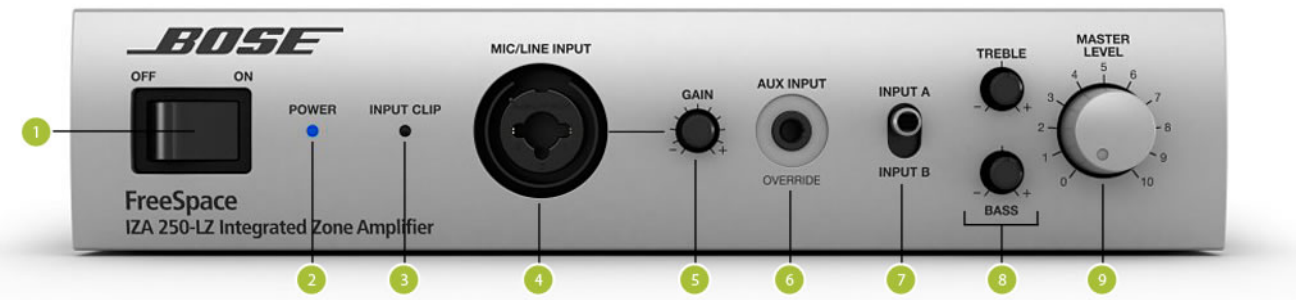
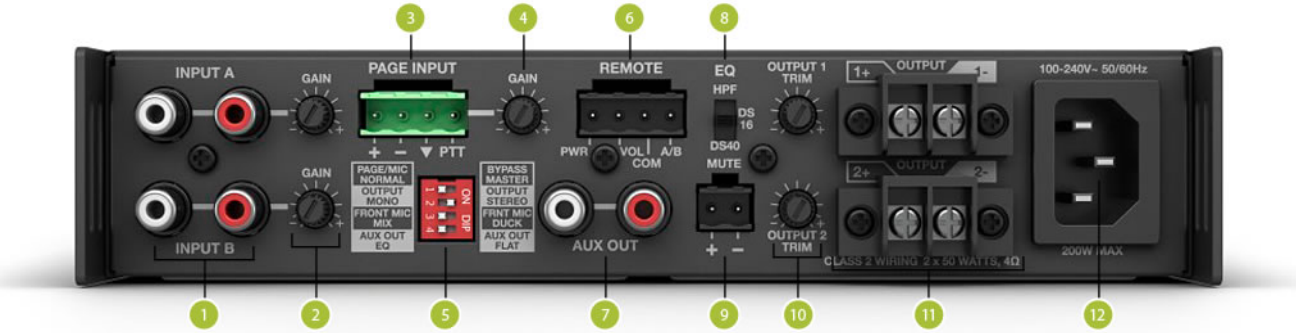


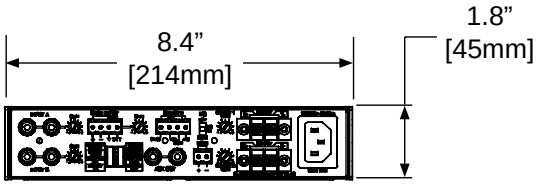
1. **POWER SWITCH** - ON/OFF AC power
2. **POWER** - LED indicates if unit is active
3. **INPUT CLIP** – LED indicates when any input source approaches the threshold value of -3 dBFS
4. **MIC/LINE INPUT** - Combination balanced XLR-TRS connector for use with dynamic microphones
5. **MIC/LINE INPUT GAIN** - Allows gain adjustment (0 dB to +50 dB) of microphones connected to the MIC/LINE INPUT
6. **AUX INPUT** - 1/8" (3.5 mm) stereo line-level input connector. Connection mutes INPUT A and INPUT B for priority override
7. **INPUT A/B*** - Allows selection of rear line-input channels A or B
8. **TREBLE/BASS** - Allows tonal adjustments of output channels. Provides +/-6 dB adjustment at 7 kHz and 100 Hz
9. **MASTER LEVEL*** - Controls the overall system volume for both the loudspeakers and the variable AUX OUT connector

* When using a REMOTE connection with the system, the INPUT A/B selector switch and MASTER LEVEL control become disabled.

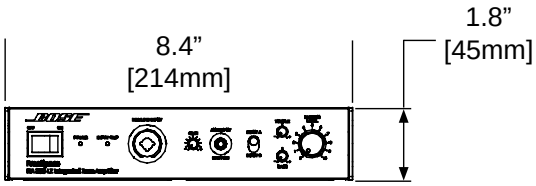


1. **INPUT A/B** - Two channels of stereo RCA input connectors
2. **INPUT GAIN** - Allows for -20 dB to +20 dB of adjustment to each INPUT A/B input
3. **PAGE INPUT** - Euroblock mic/line input with trigger contact closure for use with push-to-talk microphones
4. **PAGE INPUT GAIN** - Allows for 0 db to +50 dB of gain control of page input signal
5. **DIP switches** - A bank of four switches set the amplifier configuration
6. **REMOTE** - Input jack for Bose® Volume control with A/B switch or Volume control user interface
7. **AUX OUT** - Variable output line-level signal for use with ZA zone amplifiers or for routing signal to additional audio equipment
8. **EQ** - Provides loudspeaker equalization presets for the FreeSpace DS 16 and DS 40 loudspeakers. Can be set to high-pass filter (HPF) for an amplifier rated frequency response
9. **MUTE** - Contact closure connection that upon trigger (short) will mute all outputs (including AUX OUT)
10. **OUTPUT 1 / OUTPUT 2 TRIM** - Allows for up to 20 dB attenuation of the individual loudspeaker outputs relative to the master level
11. **OUTPUT** - Speaker connections for up to two 4Ω or 8Ω loudspeaker loads (IZA 250-LZ) or one 3-pin Euroblock for 70/100 V systems (IZA 190-HZ)
12. **AC Mains receptacle** – AC line voltage input

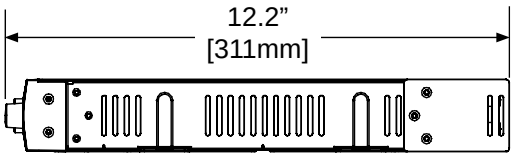
Mechanical Diagrams



Back View



Front View



Right View

TECHNICAL DATA SHEET

Architects' and Engineers' Specifications

The mixer/amplifier shall employ Class-D amplification together with a digital signal processing architecture running at 48 kHz / 24 bit. The mixer/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 mixer/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-width 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 40 Hz to 20 kHz (+0/-3 dB) and drive 4 ohm loads at 50 watts continuous power or 32 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 high 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 mixer/amplifier shall incorporate 3 line-level inputs (two RCA stereo, one 3.5 mm stereo) and two microphone inputs for paging applications. Two of the line level inputs shall be selectable via a switch on the front panel while the third input shall override line-input channels upon connection. The nominal input sensitivity shall be 0 dBV for line level inputs and -40 dBV for microphone inputs. One microphone input shall be mounted to the front panel, have a selectable mix/duck option and use a combination XLR-TRS connector for dynamic microphones. The second microphone input shall be mounted on the rear, support dynamic microphones and select telephone systems with PTT switching. Both microphone inputs shall bypass master volume control via a selector on the rear panel. All inputs shall have individual input gain controls with the exception of the 3.5 mm priority input connector on the front panel. Two LEDs shall be visible on the front panel—one (blue) for power indication, the second (red) for input level clip (over -3 dBFS). The mixer/amplifier shall have an auxiliary line-output via two RCA connectors. The digital signal processor shall enable a user-selectable loudspeaker preset (Bose® FreeSpace® DS 16 and DS 40) or high-pass filter to be applied to the loudspeaker output and (via selector) the auxiliary output connectors. The front panel shall also have user-accessible treble, bass and master volume controls. The mixer/amplifier shall have a remote control input intended for use with the Bose Volume control with A/B switch user interface, Bose Volume control user interface or third party switches/10k ohm potentiometers. The mixer/amplifier shall offer a master mute connection for use with external dry contacts to mute output of the amplifier and auxiliary output. The rear panel shall contain a stereo/mono switch that allows optimization of the amplifier output (low impedance model only) and the auxiliary line-level output when using stereo or mono sources.

The mixer/amplifier chassis shall be constructed of painted steel. The dimensions of the mixer/amplifier shall allow for 19-inch (483 mm) EIA standard rack mounting using the optional rack mounting kit accessory. The mixer/amplifier shall be 1.8 inches (45 mm) in height, 8.4 inches (214 mm) in width and 12.2 inches (310 mm) in depth and shall weigh 4.7 pounds (2 kg). The mixer/amplifier shall be the Bose FreeSpace IZA 250-LZ (or IZA 190-HZ) integrated zone amplifier.

Safety and Regulatory Compliance

FreeSpace IZA 250-LZ / IZA 190-HZ integrated 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 (IZA 250-LZ model), using test signals at 1 kHz.

CAD preview:

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

Rear panel diagram:

Panel diagrams shown in the Technical Data Sheet represent the FreeSpace IZA 250-LZ model. The IZA 190-HZ model is not shown but is similar to the IZA 250-LZ.

Product Codes

FreeSpace IZA 250-LZ integrated zone amplifier

120V – US	344871-1420
240V – AU	344871-2420
100V – Japan	344871-3420
230V – EU	344871-4420
230V – UK	344871-5420

FreeSpace IZA 190-HZ integrated zone amplifier

120V – US	344871-1410
240V – AU	344871-2410
100V – Japan	344871-3410
230V – EU	344871-4410
230V – UK	344871-5410

Accessories

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

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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

Other accessories

Rack Mount Kit	353689-0410
Volume control user interface	041967
Volume control with A/B switch user interface	041966