

# FreeSpace® IZA 2120-LZ Integrated Zone Amplifier

**BOSE**



TECHNICAL DATA SHEET

## Product Description

For background/foreground music and paging applications, Bose® FreeSpace® IZA 2120-LZ integrated zone amplifier elevates the audio experience when using FreeSpace® loudspeakers. Optimized for commercial applications, FreeSpace IZA amplifiers feature selectable Loudspeaker EQ to enrich audio quality, Opti-voice® paging for clear speech intelligibility while providing seamless transitions and Dynamic EQ that ensures full and balanced music at any volume level.

## Key Features

- **Opti-voice® paging** equalizes the vocal frequency range for clear speech intelligibility while providing seamless transitions.
- **Dynamic EQ** ensures full and balanced music at any volume level.
- **Loudspeaker EQ** enriches audio quality and simplifies connection to Bose® loudspeakers: FreeSpace® DS 16, DS 40, DS 100 and RoomMatch® Utility RMU105.
- **Remote** option for volume/source selection eliminates the need for bulky, inefficient, and sound-altering in-line volume controls.
- **Expansion-ready connectivity** with FreeSpace ZA amplifiers to drive additional zones.
- **Reliable 2 x 120 W Class-D amplification** optimized for low-impedance applications.
- **Intuitive feature setup** enables the amplifier to be configured without a PC for output, remote, paging, auxiliary input/output and automatic standby options.
- **Auto-Standby feature** allows the amplifier to consume less power when not in use.
- **Simplified front panel interface** provides end users with tone, source selection and master volume controls as well as a connection to mobile sources via a 3.5 mm connector.
- **Remote muting** allows the amplifier to be muted via a centralized control system.

## Applications

- Designed for a wide range of applications, including:
- Retail stores
- Restaurants and bars
- Hospitality venues
- Conference centers
- Schools
- Auxiliary zones

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## Technical Specifications

<b>Power Rating</b>			
Amplifier Power	2 x 120 W @ 4 Ω, 2 x 60 W @ 8 Ω		
<b>Audio Performance</b>			
Frequency Response	20 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)		
THD+N	≤ 0.5 % (at rated power)		
Channel Separation (Crosstalk)	≤ -60 dBV (below rated power, 1 kHz)		
Dynamic Range	88 dB		
<b>Integrated DSP</b>			
A/D and D/A Converters	24-bit / 48 kHz		
Processing Functions	Loudspeaker EQ, Bose® Opti-voice® paging, Dynamic equalization		
Loudspeaker Presets	Flat, FreeSpace® DS 16, DS 40, DS 100, and RoomMatch Utility® RMU105		
Audio Latency	10.4 ms (any input to speaker output or aux output)		
<b>Audio Inputs</b>			
	<b>Line Inputs</b>	<b>Page Input</b>	<b>Auxiliary Input</b>
Input Channels	2 unbalanced, 2 balanced	1 balanced mic/line	1 unbalanced line
Connectors	Stereo RCA, 5-pin Euroblock	4-pin Euroblock	1/8" (3.5mm) TRS
Input Range	-10 dBV to +10 dBV	-60 dBV to +10 dBV	-0 dBV to +10 dBV
Adjustment Range	-20 dB to +20 dB	0 dB to +50 dB	Fixed
Input Impedance	20 kΩ	2 kΩ	20 kΩ
Maximum Input Level	+10 dBV	+10 dBV	+10 dBV
Sensitivity	n/a	n/a	0 dBV
Nominal Input Level	0 dBV	-40 dBV	0 dBV
<b>Audio Outputs</b>			
	<b>Amplifier Outputs</b>	<b>Auxiliary Output</b>	
Outputs	2	1 unbalanced	
Connectors	2-pin touch-proof Euroblock	Stereo RCA	
Output Impedance	4 Ω	150 Ω	
Nominal Output Level	2 x 120 W @ 4 Ω, 2 x 60 W @ 8 Ω	0 dBV (max)	
<b>Indicators and Controls</b>			
Power LED	Solid blue indicates power is on, blinking blue indicates standby mode		
Input Signal Clip LED	Green indicates input signal is within -39 dBV to 9 dBV, red indicates signal is over 9 dBV		
Output Signal Clip LED	Green indicates output signal is within -46 dBFS to -2 dBFS, red indicates signal is over -2 dBFS, approximately 80 W/channel		
Controls, Front Panel	Power On/Off, Input Select (A/B), Treble/Bass Tone Controls (Treble/Bass), Master Level		
Controls, Rear Panel	Amplifier Mode DIP switches, Loudspeaker EQ preset selector, Input Gain (A/B/Page), Output trims, Remote		
<b>Electrical</b>			
Mains Voltage	100 VAC - 240 VAC (±10%, 50/60 Hz)		
AC Power Consumption	24 W (Standby), 350 W (Max)		
Mains Connector	Standard IEC (C14)		
Maximum Inrush Current	5.0 Amps (230 VAC / 50 Hz), 2.7 Amps (120 VAC / 60 Hz)		
Overload Protection	High temperature, output short, excessively low or high AC line voltage		
<b>Physical</b>			
Dimensions	1.7" H x 19.0" W x 12.8" D (44 mm H x 483 mm W x 324 mm D)		
Shipping Weight	12.0 lb (5.4 kg)		
Net Weight	9.0 lb (4.1 kg)		
Cooling System	Single fan, continuous left-to-right air flow		
<b>General</b>			
Inputs (Control)	Remote input for Volume Control user interface (PC041966), Remote input for Volume Control with A/B Select user interface (PC041967), Mute input control via contact closure (normally open)		

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- ❶ **POWER switch** – ON/OFF AC power.
- ❷ **Power LED** – Solid blue LED indicates the unit is ON. Blinking blue LED indicates the unit is in standby mode.
- ❸ **INPUT SIGNAL LED** – LED is green from  $-39$  dBV to  $9$  dBV, LED goes red over  $9$  dBV.
- ❹ **OUTPUT LIMIT LED** – LED is green from  $-46$  dBFS to  $-2$  dBFS, LED goes red over  $-2$  dBFS, approximately  $80$  W/channel.
- ❺ **AUX INPUT Connector** –  $1/8"$  ( $3.5$  mm) stereo line-level input connector. Connection mutes INPUT A and INPUT B for priority override.
- ❻ **INPUT A/B Switch** – Allows selection of rear line-input channels A or B.
- ❼ **TREBLE/BASS Controls** – Provides  $\pm 6$  dB adjustment at  $7$  kHz and  $100$  Hz. One set of controls allows tonal adjustments of both outputs simultaneously.
- ❽ **MASTER LEVEL Control\*** – Controls the overall system volume for both the loudspeakers and the AUX OUTPUT when the AUX OUTPUT is set to VARIABLE. If the AUX OUTPUT is set to FIXED, then the AUX OUTPUT goes to maximum level and changes in the MASTER LEVEL do not affect the AUX OUTPUT level.

\*When using a REMOTE volume connection the front panel MASTER LEVEL control becomes disabled. When using a REMOTE volume connection with A/B source selection, either the REMOTE or the front panel can be the MASTER SOURCE control for A/B select, selectable via a DIP switch. The MASTER LEVEL control will always be from the REMOTE and the front panel MASTER LEVEL control becomes disabled.



- ❶ **INPUT A/B** – Balanced and unbalance input connectors.
- ❷ **INPUT GAIN** – Allows for  $-20$  dB to  $+20$  dB of adjustment to each INPUT A/B.
- ❸ **PAGE INPUT** – Euroblock mic/line input with trigger contact closure for use with push-to-talk microphones.
- ❹ **MUTE** – Contact closure connection that upon trigger (short) will mute all outputs (including AUX OUTPUT).
- ❺ **PAGE INPUT GAIN** – Allows for  $0$  dB to  $+50$  dB of gain control of PAGE INPUT signal.
- ❻ **EQ** – Provides loudspeaker equalization presets: Flat, DS 16, DS 40, DS 100 and RMU105.
- ❼ **PAGE INPUT THRESHOLD** – Adjusts the level at which the PAGE INPUT signal causes other inputs to be lowered.
- ❽ **DIP Switches** – A bank of switches to set the amplifier configuration.
- ❾ **AUX OUTPUT** – Variable or fixed line-level output signal for use with ZA zone amplifiers or for routing the signal to additional audio equipment.
- ❿ **REMOTE** – Input connector for the Bose® Volume Control with A/B Switch (PC 041967).
- ⓫ **OUTPUT 1/OUTPUT 2 TRIM** – Allows for up to  $40$  dB attenuation of the individual loudspeaker outputs relative to the master level.
- ⓬ **OUTPUT** – Two inverted touch-proof 2-pin Euroblock connectors for loudspeaker connections.
- ⓭ **AC Mains receptacle** – AC line voltage input.

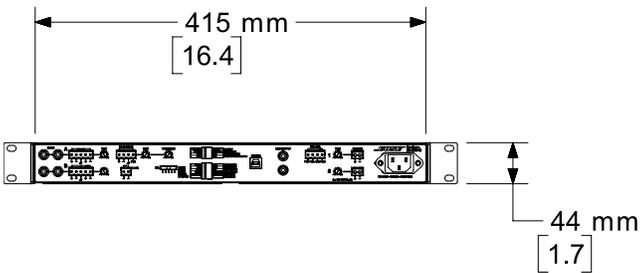
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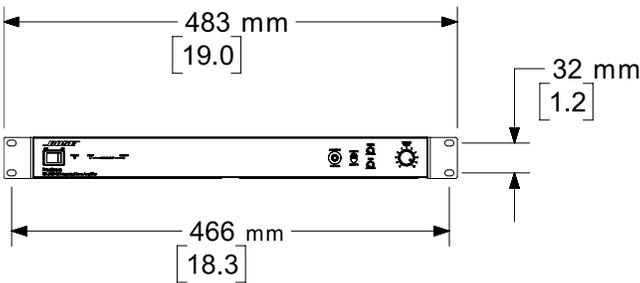
## AC Current Draw and Thermal Dissipation Information

Test Signal & Power Level	Load Configuration (Both IZA 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	0.16	0.13	30	102	26
<b>1/8th Rated Power</b> IEC65 Bandlimited Pink Noise	8 Ω / Ch	15	0.19	0.15	34	116	29
6dB Crest Factor DS 16 EQ Enabled	4 Ω / Ch	30	0.50	0.28	64	218	55
<b>1/3rd Rated Power</b> IEC65 Bandlimited Pink Noise	8 Ω / Ch	40	0.25	0.17	39	133	34
6dB Crest Factor DS 16 EQ Enabled	4 Ω / Ch	80	1.00	0.539	136	464	117

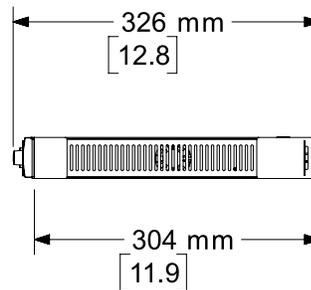
## Mechanical Diagrams



BACK VIEW



FRONT VIEW



RIGHT VIEW

# FreeSpace® IZA 2120-LZ Integrated Zone Amplifier



## 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 ( $\pm 10\%$ ) 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 RU in width and be capable of rack mounting using an included accessory kit. The product shall have venting with a single fan, continuous left-to-right airflow. Each output channel shall have output trim controls.

The mixer/amplifier shall have two output channels with a frequency response of 20 Hz to 20 kHz (+0/-3 dB) and drive 4 ohm loads at 120 watts per channel or 60 watts per channel into 8 ohm loads. The mixer/amplifier shall have THD+N at rated power less than or equal to 0.5%. Output connections shall be made via two 2-pin touch-proof Euroblock connectors.

The mixer/amplifier 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 one microphone input 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. The microphone input shall be mounted on the rear, support dynamic microphones and select telephone systems with PTT switching. The microphone input 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. Three LEDs shall be visible on the front panel – one (blue) for power/standby indication, the second (red) for input level over 9 dBV, and the third (red) for output level over -2 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 (Flat, Bose® FreeSpace® DS 16, DS 40, DS 100 and RoomMatch® RMU105) 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 or third party switches/10k ohm linear taper 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 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. The mixer/amplifier shall be 1.7 inches (44 mm) in height, 19.0 inches (483 mm) in width and 12.8 inches (324 mm) in depth. The mixer/amplifier shall weigh 9.0 pounds (4.1 kg). The mixer/amplifier shall be the Bose FreeSpace IZA 2120-LZ integrated zone amplifier.

## Safety and Regulatory Compliance

The FreeSpace IZA 2120-LZ integrated zone amplifier complies with CE requirements and is UL 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. This model also complies with FCC Part 15B Class A (2003), EN55103-1 (1997), EN55103-2 (1996), and CISPR13 (2003) requirements.

## Product Codes

FreeSpace IZA 2120-LZ integrated zone amplifier

120V – US	719782-1420
240V – AU	719782-2420
100V – Japan	719782-3420
230V – EU	719782-4420
230V – UK	719782-5420

## Accessories

Volume control user interface (PC041966)

Volume control with A/B switch user interface (PC041967)