

FreeSpace® IZA 2120-HZ Integrated Zone Amplifier

BOSE



TECHNICAL DATA SHEET

Product Description

For background/foreground music and paging applications, Bose® FreeSpace® IZA 2120-HZ 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

- **True two-zone capability** provides two independent outputs that each support volume/source selection remotes, EQ, tone controls, and paging/auxiliary routing options.
- **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.
- **Independent Loudspeaker EQ per output** enriches audio quality and simplifies connection to Bose® loudspeakers: FreeSpace® 3 systems, FS3 subwoofer, DS 16, DS 40 and DS 100.
- **Dual remotes** support optional volume/source selection for independent, or combined, zone control which eliminates the need for bulky, inefficient, and sound-altering 70/100V 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 70/100V high-impedance applications.
- **Intuitive feature setup** enables the amplifier to be configured without a PC for 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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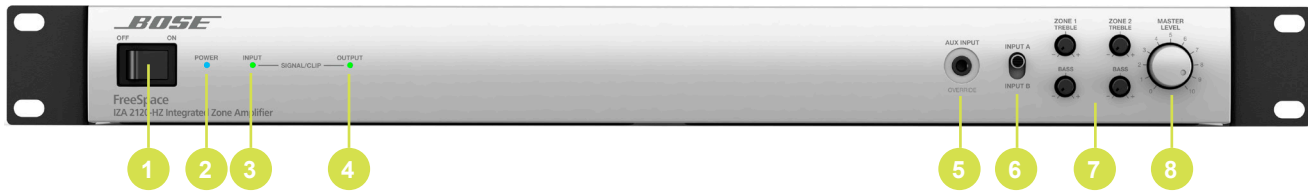


Technical Specifications

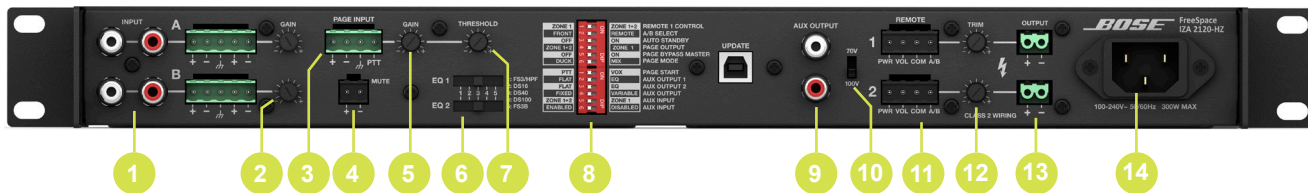
Power Rating			
Amplifier Power	2 x 120 W @ 70/100V		
Audio Performance			
Frequency Response	55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)		
THD+N	≤ 0.3 % (at rated power)		
Channel Separation (Crosstalk)	≤ -58 dBu (below rated power, 1 kHz)		
Dynamic Range	88 dB		
Integrated DSP			
A/D and D/A Converters	24-bit / 48 kHz		
Processing Functions	Loudspeaker EQ, Bose® Opti-voice® paging, Dynamic equalization		
Loudspeaker Presets	FreeSpace® FS3/HPF, DS 16, DS 40, DS 100, and FS3B		
Audio Latency	10.4 ms (any input to speaker output or aux output)		
Audio Inputs			
	Line Inputs	Page Input	Auxiliary Input
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	-8 dBu to 22 dBu	-58 dBu to 12 dBu	-60 dBu to -1 dBu
Adjustment Range	0 dB to -30 dB	0 dB to +50 dB	Fixed
Input Impedance	20 kΩ	2 kΩ	20 kΩ
Maximum Input Level	22 dBu	12 dBu	-1 dBu
Sensitivity	-8 dBu	n/a	-3 dBu
Nominal Input Level	4 dBu	-38 dBu	-8 dBu
Audio Outputs			
	Amplifier Outputs	Auxiliary Output	
Outputs	2	1 unbalanced	
Connectors	2-pin inverted Euroblock	Stereo RCA	
Output Impedance	n/a	400 Ω	
Nominal Output Level	2 x 120 W @ 70/100V	2 dBu	
Indicators and Controls			
Power LED	Solid blue indicates power is on, blinking blue indicates standby mode		
Input Signal Clip LED	Green indicates input signal is within -37 dBu to 11 dBu, red indicates signal is over 11 dBu, master level set to 5		
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, for each output 120 watts is 0 dBFS		
Controls, Front Panel	Power On/Off, Input Select (A/B), Treble/Bass Tone Controls (x2), Master Level		
Controls, Rear Panel	Amplifier Mode DIP switches, Loudspeaker EQ preset selector, Input Gain (A/B/Page), Output trims, Remote (x2)		
Electrical			
Mains Voltage	100 VAC – 240 VAC (±10%, 50/60 Hz)		
AC Power Consumption	26 W (Standby), 300 W (Max)		
Mains Connector	Standard IEC (C14)		
Maximum Inrush Current	12.6 Amps (230 VAC / 50 Hz), 6.6 Amps (120 VAC / 60 Hz)		
Overload Protection	High temperature, output short, excessively low or high AC line voltage		
Physical			
Dimensions	1.7" H x 19.0" W x 12.8" D (44 mm x 483 mm x 324 mm)		
Shipping Weight	12.0 lb (5.4 kg)		
Net Weight	9.0 lb (4.1 kg)		
Cooling System	Single fan creates continuous left-to-right air flow		
General			
Inputs (Control)	Remote input for Volume Control with A/B Select user interface (PC041967), Volume Control user interface (PC041966), Mute input control via a normally open contact closure		

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- 1 **POWER switch** – ON/OFF AC power.
- 2 **Power LED** – Solid blue LED indicates the unit is ON. Blinking blue LED indicates the unit is in standby mode.
- 3 **INPUT SIGNAL LED** – LED is green from -37 dBu to 11 dBu, LED goes red over 11 dBu. MASTER LEVEL set to 5.
- 4 **OUTPUT LIMIT LED** – LED is green from -46 dBFS to -2 dBFS, LED goes red over -2 dBFS, approximately 80 W/channel. For each output 120 watts is 0 dBFS.
- 5 **AUX INPUT** – $1/8"$ (3.5 mm) stereo line-level input connector. A cable insertion mutes INPUT A and INPUT B for priority override. Pages can still be made from the PAGE INPUT. AUX INPUT does not have any gain adjustment, therefore, all gain adjustments must be done from the external source device.
- 6 **INPUT A/B Switch** – Selects either INPUT A or INPUT B on the rear panel when the rear panel A/B SELECT DIP switch is set to FRONT.
- 7 **TREBLE/BASS Controls** – Allows tonal adjustments of both outputs simultaneously. First order shelving filters provide a ± 6 dB adjustment at 7 kHz and above (TREBLE) and 100 Hz and below (BASS). They have a slope of approximately 6 dB/octave.
- 8 **Master level Control** – Controls the overall system volume for both the loudspeakers and the AUX OUTPUT when the AUXOUTPUT DIP switch is set to VARIABLE. If the AUX OUTPUT DIP switch is set to FIXED, the AUX OUTPUT maintains maximum level. When using a REMOTE volume connection, the front panel MASTER LEVEL control becomes disabled.



- 1 **INPUT A/B** – Balanced and unbalanced line-level input connectors. Each input is summed to mono.
- 2 **INPUT GAIN** – Allows for 0 dB to -30 dB of adjustment to each INPUT A/B.
- 3 **PAGE INPUT** – Euroblock mic/line input that supports dynamic microphones with voice activation (VOX) or a trigger contact closure for use with push-to-talk (PTT) microphones.
- 4 **MUTE** – Contact closure connection that upon trigger (short) will mute all outputs (including AUX OUTPUT).
- 5 **PAGE INPUT GAIN** – Allows for 0 dB to $+50$ dB of gain control of PAGE INPUT signal.
- 6 **EQ** – Provides loudspeaker equalization presets: FS3/HPF, DS 16, DS 40, DS 100 and FS3B. The FS3/HPF is the flat setting. Use this setting for loudspeakers that are not Bose or that do not require EQ. The HPF is set at 55 Hz.
- 7 **PAGE INPUT THRESHOLD** – Adjusts the level at which the VOX PAGE INPUT signal causes other inputs to be lowered. A 10 dB adjustment range lifts the page trigger level away from the noise floor to prevent false triggers. At minimum setting, a -70 dBu signal will trigger a VOX page. At maximum setting, a -60 dBu signal will trigger a VOX page. When in PTT page mode this adjustment is not active.
- 8 **DIP Switches** – A bank of switches to set the amplifier configuration. All switches set to the left position is the standard configuration.
- 9 **AUX OUTPUT** – Variable or fixed, unbalanced line-level output signal for use with ZA zone amplifiers or for routing the signal to additional audio equipment.
- 10 **70V/100V** – Changes the outputs from 70 V to 100 V.
- 11 **REMOTE** – Input connector for either a Bose® volume control with A/B switch user interface accessory (PC 041967) or a Bose volume control user interface accessory (PC 041966).
- 12 **OUTPUT 1/OUTPUT 2 TRIM** – Allows for up to 40 dB attenuation of the individual loudspeaker outputs relative to the master level.
- 13 **OUTPUT** – Two inverted 2-pin Euroblock connectors for loudspeaker connections. Outputs are not bridgeable.
- 14 **AC Mains receptacle** – AC line voltage input.

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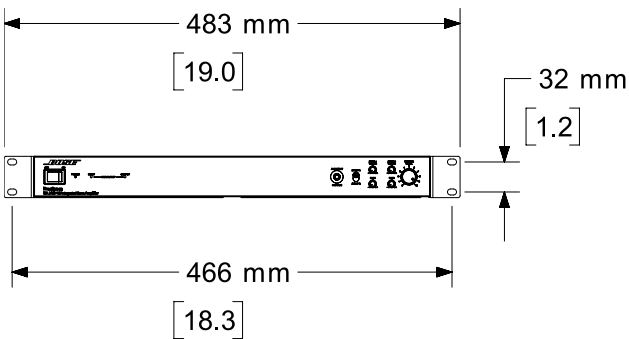
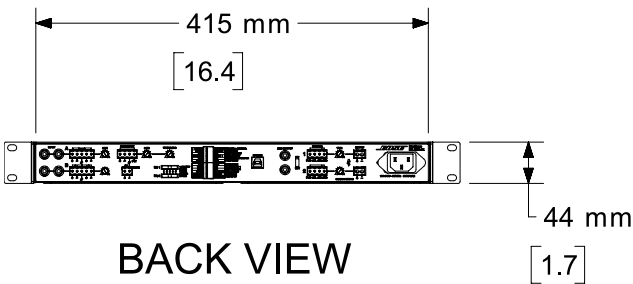
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AC Current Draw and Thermal Dissipation Information

IZA 2120-HZ, AC Current Draw and Thermal Dissipation							
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	0.27	0.17	40	136	34
1/8th Rated Power IEC65 Bandlimited Pink Noise	70V / Ch	30	0.55	0.30	69	235	59
6 dB Crest Factor DS 16 EQ Enabled	100V / Ch	30	0.61	0.33	76	259	65
1/3rd Rated Power IEC65 Bandlimited Pink Noise	70V / Ch	80	1.15	0.60	138	471	119
6 dB Crest Factor DS 16 EQ Enabled	100V / Ch	80	1.15	0.64	147	502	127

Mechanical Diagrams



FreeSpace® IZA 2120-HZ 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. 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 55 Hz to 20 kHz (+0/-3 dB) and drive 70/100 V distributed audio systems. The mixer/amplifier shall have THD+N at rated power less than or equal to 0.3%. Output connections shall be made via 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 -58 dBu 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 4 dBu for line level inputs and -38 dBu 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 switch 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 11 dBu, 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 (Bose® FreeSpace® FS3/HPF, DS 16, DS 40, DS 100 and FS3B) 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 two remote control inputs 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 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-HZ integrated zone amplifier.

Safety and Regulatory Compliance

The FreeSpace IZA 2120-HZ 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-HZ integrated zone amplifier

120V – US	719782-1410
230V – EU	719782-2410
100V – Japan	719782-3410
230V – UK	719782-4410
240V – AU	719782-5410

Accessories

Volume control user interface (PC041966)

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