


FreeSpace® ZA 2120-HZA Zone Amplifier


Product Description

The Bose® FreeSpace® ZA 2120-HZA zone amplifier is designed to provide basic amplification and sound system expansion when using front-end Bose products such as FreeSpace® integrated zone amplifiers and ControlSpace® engineered sound processors. With the inclusion of AmpLink, up to 8 digital audio channels can be sent to the amp from a Bose DSP via a shielded CAT 5 cable.

Key Features

- **Reliable 2 x 120 W Class-D amplification** optimized for 70/100V high-impedance applications.
- **AmpLink** transports up to 8 uncompressed, near zero latency, digital audio channels between Bose DSPs and the ZA 2120-HZA via shielded CAT 5 cable. The amp also supports a THRU path for daisy-chaining digital audio to other Bose AmpLink products at a distance of up to 10 m between products.
- **Dual Remotes** support optional volume adjustment 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® IZA amplifiers and ControlSpace® engineered sound processors when additional sources and loudspeaker processing is required.
- **Intuitive feature setup** enables the amplifier to be configured without a PC for remote, input, output and automatic standby options.
- **Auto-Standby feature** allows the amplifier to consume less power when not in use.
- **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

FreeSpace® ZA 2120-HZA Zone Amplifier



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	
Audio Latency	1 ms (any analog input to loudspeaker output); 1.5 ms (Amplink input to loudspeaker output)	
AUDIO INPUTS	ANALOG	AMPLINK
Input Channels	1 unbalanced, 1 balanced	8 digital
Connectors	Stereo RCA, 5-pin Euroblock	RJ-45 (Input)
Input Range	-8 dBu to 22 dBu	
Input Impedance	20 kΩ	
Maximum Input Level	22 dBu	
Nominal Input Level	4 dBu	
AUDIO OUTPUTS	ANALOG	AMPLINK
Outputs	2	8 digital
Connectors	2-pin inverted Euroblock	RJ-45 (Thru)
Nominal Output Level	2 x 120 W @ 70/100V	
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.	
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.	
Amplink ERR LED	Solid yellow indicates muted audio from the mute connector. Blinking yellow indicates an error, which will also mute the audio.	
Amplink LNK LED	Solid green indicates normal operation.	
Controls, Front Panel	Power On/Off	
Controls, Rear Panel	Auto Standby On/Off switch, Input: Dual/Summed switch, Remote 1 Control: Zone 1/Zone 1+2 switch, Output Voltage: 70/100V switch, Mute, Output trims, Remote RJ-45	
ELECTRICAL		
Mains Voltage	100 VAC - 240 VAC (±10%, 50/60 Hz)	
AC Power Consumption	13 W (Standby)	300 W (Max)
Mains Connector	Standard IEC (C14)	
Maximum Inrush Current	12.6 Amps (230 VAC / 50 Hz), 7.8 Amps (120 VAC / 60 Hz)	
Overload Protection	High temperature, output short, excessively low or high AC line voltage	
PHYSICAL		
Dimensions (H x W x D)	1.7" H x 19.0" W x 12.8" D (44 mm x 483 mm x 324 mm)	
Shipping Weight	11.7 lb (5.3 kg)	
Net Weight	9.5 lb (4.3 kg)	
Cooling System	Single fan creates continuous left-to-right air flow	
GENERAL		
Inputs (Control)	1 RJ-45 input connector for the CC-1 ControlCenter zone controller, or the CV41 4-to-1 converter. Mute input control via a normally open contact closure.	

For additional specifications and application information, please visit pro.bose.com. Specifications subject to change without notice

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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.
- 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.



- 1 **AMPLINK** - INPUT RJ-45 connector that receives up to 8 digital audio channels from a Bose AmpLink product. The amp also supports a THRU path for daisy-chaining the 8 digital audio channels to other Bose AmpLink products.
CAUTION: Shielded EIA/TIA 568B straight CAT 5 cable, or equivalent, is required for proper AmpLink operation. Unshielded cable is not supported and may cause AmpLink to operate improperly. Do NOT connect either RJ-45 port to an Ethernet-based network.
- 2 **AMPLINK ERR LED** - Solid yellow indicates muted audio from the mute connector. Blinking yellow indicates an error, which will also mute the audio.
- 3 **AMPLINK LNK LED** - Solid green indicates normal operation.
- 4 **INPUT SELECT** - Switch selects if analog or two consecutive AmpLink audio inputs are used. Choose from AmpLink channels 1-2, 3-4, 5-6, or 7-8. The default state is analog.
- 5 **ANALOG INPUT** - Balanced and unbalanced line-level input connectors.
- 6 **AUTO STANDBY** - If enabled (ON) the amplifier will go into standby mode after twenty minutes without an input signal. If in standby mode and an audio signal is detected, the amplifier will automatically wake and amplify audio within 0.7 seconds. The OFF position disables the feature.
- 7 **INPUT** - The input can be set to either DUAL or SUMMED mode.
- 8 **REMOTE 1 CONTROL** - Sets the REMOTE 1 input to control both outputs (or zones) simultaneously (ZONE 1+2), or allows each REMOTE input to control its own output (ZONE 1). Each remote has independent A/B selection capability. If only one remote is being used, then this switch must be set to ZONE 1+2.
- 9 **70V/100V** - The output can be set to 70V or 100V.
- 10 **REMOTE** - RJ-45 input connector for the CC-1 ControlCenter zone controller, or the CV41 if connecting to two non-ganged CC-1s. If the two CC-1s are ganged together, then the CV41 is not needed.
- 11 **MUTE** - Contact closure connection that upon trigger (short) will mute all outputs.
- 12 **OUTPUT TRIM** - Allows for up to 40 dB attenuation of each loudspeaker output.
- 13 **OUTPUT** - Two inverted 2-pin Euroblock connectors for loudspeaker connections. Outputs are not bridgeable.
- 14 **AC MAINS RECEPTACLE** - AC line voltage input.

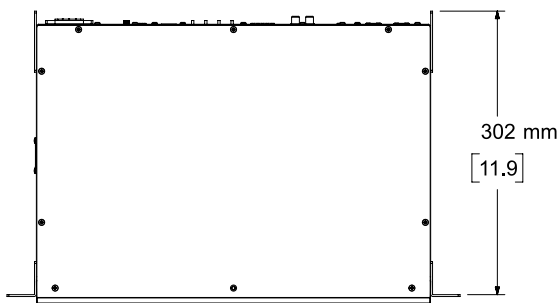
FreeSpace[®] ZA 2120-HZA Zone Amplifier



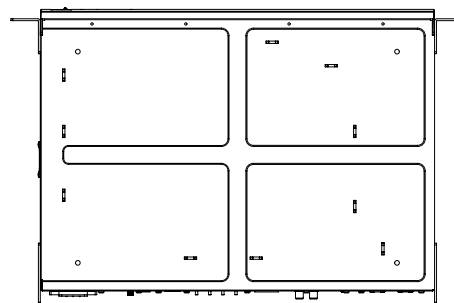
AC Current Draw and Thermal Dissipation Information

ZA 2120-HZA, AC Current Draw and Thermal Dissipation							
Test Signal & Power Level	Load Configuration (Both ZA channels driven)	Total Audio Output, W	120 VAC 60 Hz Line Current, A	230 VAC 50 Hz Line Current, A	Thermal Dissipation, Max		
					Watts	BTU/hr	kCal/hr
Power On, Idling		0	0.20	0.14	32	110	28
1/8th Rated Power IEC65 Bandlimited Pink Noise 6 dB Crest Factor DS 16 EQ Enabled	70V/Ch	30	0.50	0.30	37	125	32
	100V/Ch	30	0.60	0.30	41	141	36
1/3rd Rated Power IEC65 Bandlimited Pink Noise 6 dB Crest Factor DS 16 EQ Enabled	70V/Ch	80	1.10	0.60	58	198	50
	100V/Ch	80	1.10	0.60	58	198	50

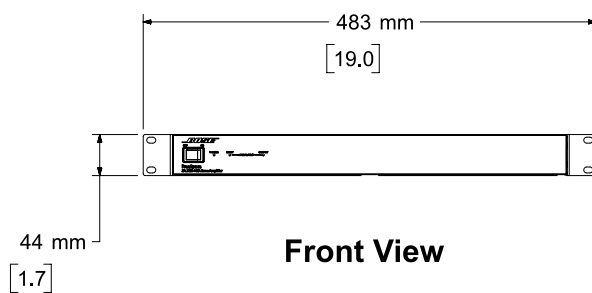
Mechanical Diagrams



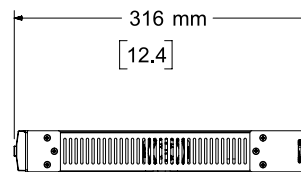
Top View



Bottom View

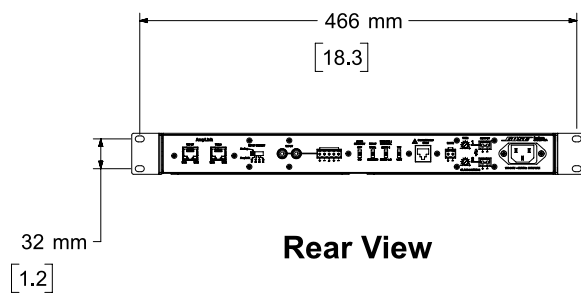


Front View



Right View

DIMENSIONS APPLY TO BOTH SIDES



Rear View



Left View

FreeSpace® ZA 2120-HZA

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 ($\pm 10\%$) 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 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 amplifier shall have two output channels with a frequency response of 55 Hz to 20 kHz (+0/-3 dB) and drive 70/100V distributed audio systems. The 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 amplifier shall meet or exceed the following performance specifications: channel separation (crosstalk) less than or equal to -58 dB below rated power at 1 kHz and dynamic range of 88 dB. The amplifier shall have 1 line-level input (RCA stereo or 5-pin Euroblock), one AmpLink digital audio input (RJ-45), one AmpLink digital audio thru connection (RJ-45), and 1 remote control input (RJ-45). Three LEDs shall be visible on the front panel - one (blue) for power/standby indication, the second (red) for input level over 11 dBV, and the third (red) for output level over -2 dBFS.

The amplifier shall have a 2 remote control inputs intended for use with the Bose Volume control user interface or third party 10k ohm linear taper potentiometers. The amplifier shall offer a master mute connection for use with external dry contacts to mute output of the amplifier. The rear panel shall contain a dual/summed input switch that allows optimization of the amplifier output.

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. The chassis 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 amplifier chassis shall weigh 8.5 pounds (3.9 kg). The amplifier shall be the Bose FreeSpace ZA 2120-HZA zone amplifier.

Safety and Regulatory Compliance

The FreeSpace ZA 2120-HZA zone amplifier complies with CE requirements and is UL listed according to UL60065 (8th edition) and CAN/CSA C22.2 No. 60065-16; CB approved, according to IEC60065 (8th edition), including group and national differences. This model also complies with FCC Part 15B Class A, ICES-003 Class A, EN55032, EN55103-2:2009, CISPR 13: Ed. 5.0 (2009-06), and CISPR-32 requirements. The product must be used indoors. It is neither designed nor tested for use outdoors, in recreational vehicles, or on boats.

Product Codes

FreeSpace ZA 2120-HZA integrated zone amplifier

120V - US	791355-1410
230V - EU	791355-2410
100V - Japan	791355-3410
230V - UK	791355-4410
240V - AU	791355-5410

Accessories

ControlCenter CC-1 zone controller

US-Black	768932-0110
US-White	768932-0210
EU-Black	768932-2110
EU-White	768932-2210
JP-Black	768928-3110
JP-White	768928-3210
ControlCenter CV41 4-to-1 converter	768928-0010
6' (1.8M) Shielded F/UTP CAT-5E Cable	804380-0010
33' (10M) Shielded F/UTP CAT-5E Cable	804380-0010