FreeSpace® 360P Series II Loudspeaker

General Description

The Bose® FreeSpace 360P-II loudspeaker is a full-range environmental loudspeaker with a 360˚ horizontal dispersion. It is designed for use with constant voltage amplifiers in a variety of applications, such as shopping malls, outdoor restaurants, resorts and theme parks. It offers the following features:

- An environmental 4.5" (11.4 cm) Bose driver with passive equalization, providing high reliability and high-quality sound for outdoor applications
- A multi-tap line transformer that permits selection of tap settings of 10W, 20W, 40W, or 80W at the 70V or 100V inputs
- The freestanding design blends with the landscaping and permits installation either in-ground or attached to a horizontal concrete or wood surface
- Tamper-resistant design
- Automatic internal speaker protection circuit safeguards drivers

Technical Information

Frequency Range
70 Hz to15 kHz (±3 dB)

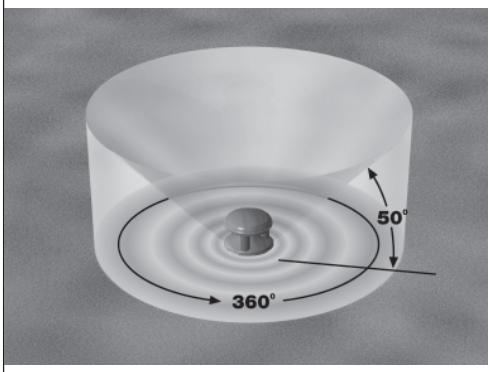
FreeSpace 360P versions
70V/100V (10W, 20W, 40W, 80W taps)

Sensitivity[1]
87 dB-SPL @ 1W, 1m

Maximum SPL[2] (calculated)
10W-97 dB-SPL @ 1m
20W-100 dB-SPL @ 1m
40W-103 dB – SPL @ 1m
80W-106 dB-SPL @ 1m

Mechanical Specifications
Dimensions: 14.5" (36.8 cm) diameter; 14.9" (37.8 cm) high
Weight: 14.5 lb (6.6 kg)
Input Connections: External multi-wire cable with wire nuts included
Enclosure Construction: Glass-reinforced polypropylene
Mounting Points: Three (3) #10 (M4) holes in base

Dispersion (-6 dB point, average, 1-4 kHz)
360˚ horizontal; 50˚ vertical
(see pattern, below)



Maximum Sound Pressure Level Table: *Measured at 1m, 30˚ above the ground plane and expressed as dB-SPL. These measurements most accurately represent the maximum sound pressure level experienced when using the loudspeaker with ordinary program material.*

Tap	Pink Noise[3] (dB - SPL)
10W	93
20W	96
40W	99
80W	101

[1] 70Hz-15kHz pink noise is applied to the speaker and amplified to a level at the loudspeaker terminals corresponding to 1 watt as referenced to the nominal impedance. The average sound pressure level is measured at 1 meter, 30° above the ground plane.

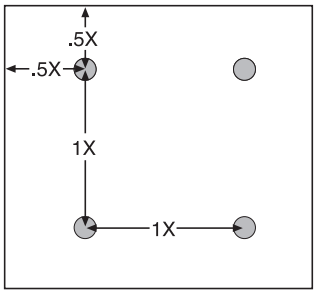
[2] Calculated level for sine wave is obtained by adding $10*\log(W_{tap})$ to the measured sensitivity of the speaker.

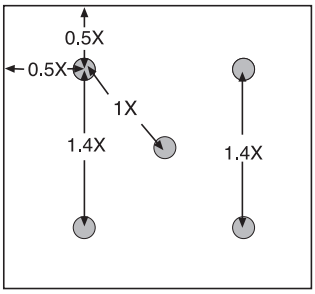
[3] Using a 70V amplifier, 70Hz-15kHz pink noise is applied to the loudspeaker and amplified to a level at the loudspeaker terminal corresponding to 50Vrms, thus allowing for 100V peaks (6dB) without clipping. Please note that a 70Vrms measurement using a 70V amplifier – and without clipping the amplifier – is possible only with a sine wave, or other signals that have less than 3dB of crest factor.

Direct Field Coverage and Placement

- To achieve ±1.5 dB, use 10 ft (3 m) spacing as X, center to center.
- To achieve ±3.0 dB, use 20 ft (6 m) spacing as X, center to center.
- To achieve ±6.0 dB, use 30 ft (9 m) spacing as X, center to center.

To diagram your loudspeaker placement, as shown below, start in the upper left-hand corner and move down and to the right.





For linear spacing (for bordering sidewalks, paths or walkways): Use the ratios shown above left, keeping the speaker at least 3 ft (1 m) from the listeners.

Loudspeaker Configuration

The FreeSpace® 360P Series II loudspeaker is designed for use in a distributed sound system when used with a constant voltage amplifier.

The loudspeaker is packaged as one single unit per carton.

Installation

The FreeSpace 360P-II loudspeakers are complete and ready for in-ground installation. Mounting each loudspeaker securely on a horizontal surface requires three #10 (M4) screws, which the installer must provide.

Installation options include in-ground (with up to 40% of the enclosure buried in earth), or attached to a horizontal surface (a wooden deck or concrete patio, for example).

Product color is green and blends with most surroundings. Painting is not recommended.

It is recommended to use the FreeSpace 360P-II with a 2nd-order or higher high-pass filter at 70 Hz.

Note: *The FreeSpace 360P Series II loudspeaker is equipped with a protection circuit that reduces the low-frequency output when overpowered. In the event that the protection circuit is activated, turn off the signal source for 30 seconds for full recovery.*

Engineers' and Architects' Specifications

The loudspeaker shall be a ported loudspeaker system utilizing one 4.5" (11.4 cm) HVC environmental full-range driver mounted in the underside of the top of the loudspeaker enclosure. The driver shall have a rated impedance of 4Ω and shall be wired in parallel with a line voltage-matching (stepdown) transformer with taps at 10, 20, 40, or 80 watts.

The loudspeaker shall have a single-port vented system, with a maximum acoustic output of 101 dB-SPL from 70 Hz to 15 kHz, with measurements referenced with full-bandwidth pink noise at 1 meter at the loudspeaker's rated power.

The input connection shall consist of wires with wire nuts on a cable attached to the base of the loudspeaker.

The nominal dispersion of the loudspeaker shall be 360˚ horizontal and 50˚ vertical.

The loudspeaker shall be the FreeSpace 360P Series II loudspeaker.

Safety and Regulatory Compliance

The FreeSpace® 360P Series II loudspeaker is suitable for general purpose use. It complies with EMC Directive 89/336/EEC and Article 10 (1) of the Directive in compliance with EN50081-1, EN50082-1, as signified by the CE mark.

Warranty Information

The Bose FreeSpace 360P Series II loudspeaker is covered by a 5-year, transferable limited warranty.

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