

FreeSpace® DS 40SE VA loudspeaker



Key Features

- **Full-range** loudspeaker with a single 4.5" (114 mm) full-range driver in a ported enclosure designed for surface mounting in foreground and background music and paging applications
- **Simple 1->2->3** installation system. Mounting hardware allows for horizontal and vertical orientation with adjustable pitch or yaw
- **Integrated multi-tap transformer** with innovative thumb wheel adjustment for easy-to-change tap settings from under front end cap
- **Shared voicing** across entire FreeSpace DS product family enables DS 16, DS 40, and DS 100 loudspeakers to be integrated on the same system and maintain consistent tonal quality
- **Supported** by a suite of accessories, including wall-mount bracket, ceiling-mount bracket, pole-mount bracket and junction boxes



TECHNICAL DATA SHEET

Product Overview

The Bose® FreeSpace DS 40SE VA is the most versatile member of the DS loudspeaker family. It is a high-performance, full-range, surface-mount loudspeaker designed for foreground and background music and speech reproduction in a wide range of installed applications. The DS 40SE VA features high output and 125° x 125° coverage pattern with a frequency range down to 70 Hz.

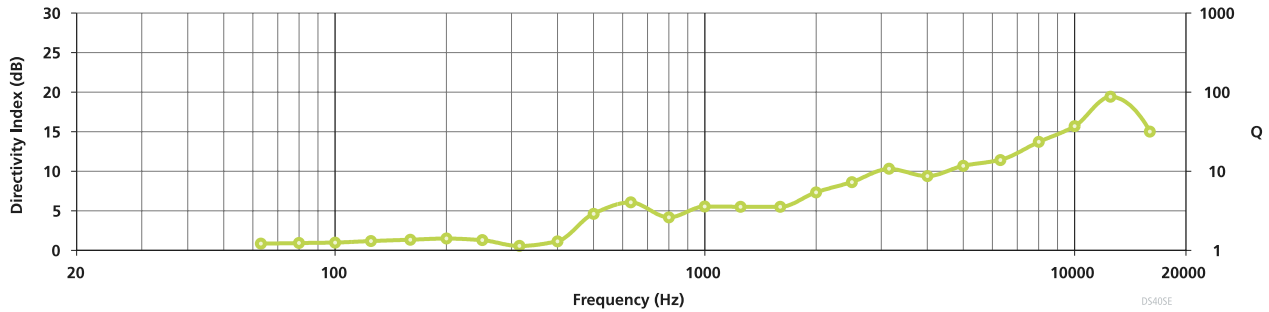
Technical Specifications

| System Performance | |
|--|--|
| Frequency Response (+/-3 dB) ¹ | 80 Hz - 17 kHz |
| Frequency Range (-10 dB) ¹ | 70 Hz - 19 kHz |
| Nominal Dispersion | 125° H x 125° V |
| Recommended High-Pass Filter | 70 Hz high-pass filter |
| Loudspeaker EQ | Recommended |
| Overload Protection | PTC/Resistor |
| Long-Term Power Handling ² | 40 W (160 W peak) |
| Sensitivity (SPL / 1 W @ 1 m) ³ | 87 dB SPL |
| Maximum SPL @ 1 m ⁴ | 103 dB SPL (109 dB SPL peak) |
| Nominal Impedance | 8 Ω (transformer bypassed) |
| Transformer Taps (70/100 V) | 70 V: 2.5 W, 5 W, 10 W, 20 W, 40 W 100 V: 5 W, 10 W, 20 W, 40 W |
| Transducers | |
| Driver Compliment | 4.5" (114 mm) full-range driver |
| Physical | |
| Enclosure | PC/ABS, textured |
| Grille | Powder-coated steel grille |
| Environmental | Outdoor per EN34-24 Type B |
| Connectors | Three-terminal barrier strip integrated on included mounting bracket. Optional accessories available for use when ceramic connector and thermal fuse are required. Wire gauge: 18 AWG (0.8 mm) to 14 AWG (2.5 mm) |
| Suspension / Mounting | Included bracket allows for horizontal or vertical mounting positions, each with either pitch or yaw adjustment. Insert on rear of enclosure sized for M4 x 14 mm screw for use with safety chain |
| Dimensions | 6.3" H x 12.8" W x 6.9" D (159 mm x 326 mm x 175 mm) Depth with wall mount bracket: 9.4" (238 mm) |
| Net Weight | 8.5 lb (3.9 kg) |
| Shipping Weight | 10.8 lb (4.9 kg) |
| Product Code | |
| Black | 321279-0130 |
| White | 321279-0230 |

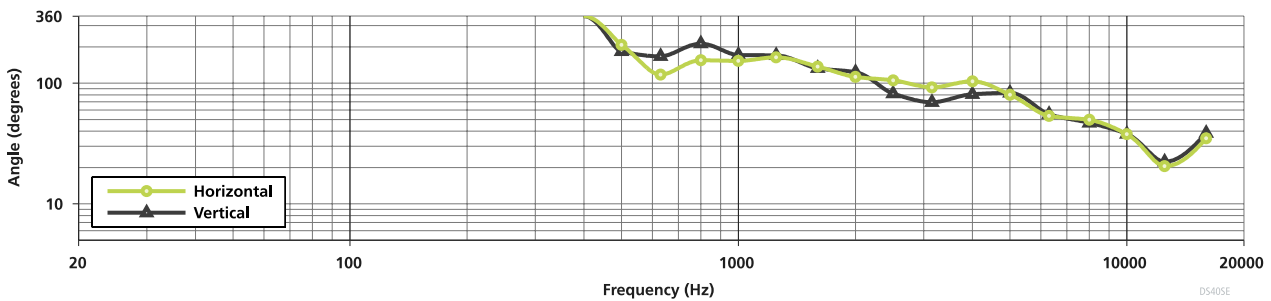
Footnotes:

- ¹ Frequency response and range measured on-axis with recommended active EQ in an anechoic environment.
- ² Power handling tested using pink noise filtered to meet IEC 268-5, 6 dB crest factor, 100 hours, with recommended EQ.
- ³ Sensitivity measured in free field (no boundary-loading gain) with recommended active EQ, referenced to 1W/1m.
- ⁴ Maximum SPL calculated from sensitivity and power handling specifications, exclusive of power compression.

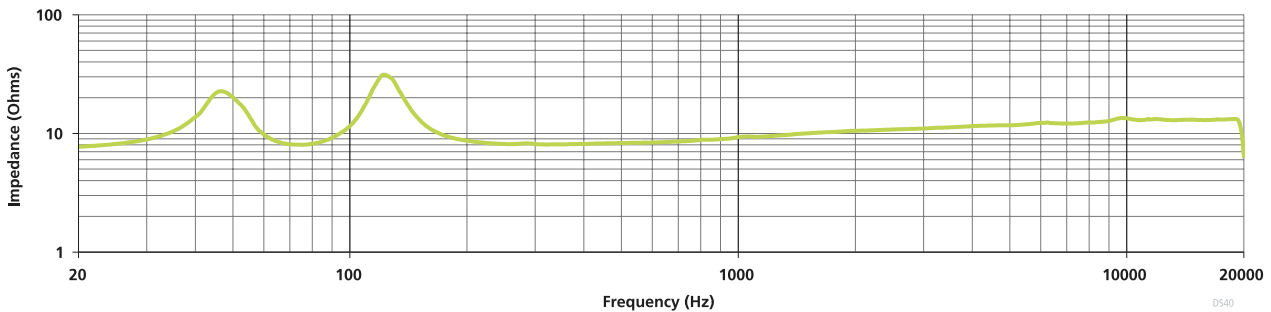
Directivity Index and Q



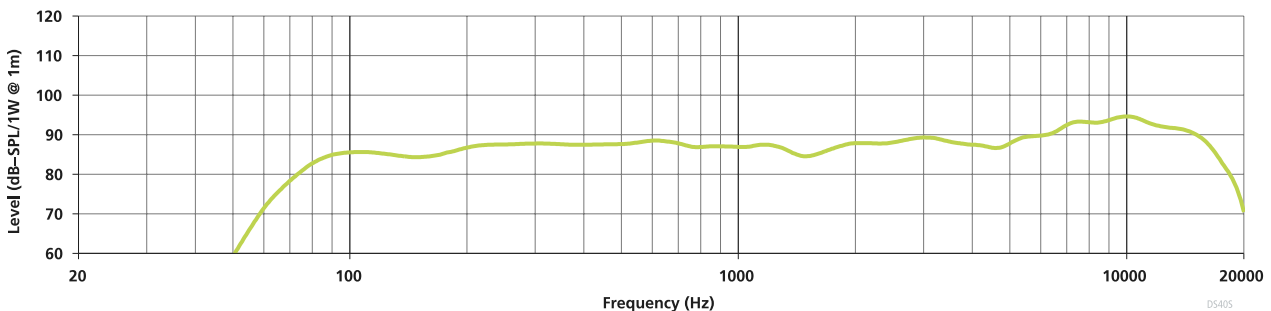
Beamwidth



Impedance



On-Axis Response



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Tap Chart

| DS 40SE VA | | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------|
| Mount | m | 2.4 | 3.0 | 3.6 | 4.2 | 4.8 | 5.5 | 6.1 | 6.7 | 7.3 | 8.0 | |
| Height | ft | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | |
| T A P | 2.5 | 85 | 84 | 84 | 83 | 82 | 81 | 80 | 79 | 79 | 78 | dB _{SPL} |
| | 5 | 88 | 87 | 87 | 86 | 85 | 84 | 83 | 82 | 82 | 81 | |
| | 10 | 91 | 90 | 90 | 89 | 88 | 87 | 86 | 85 | 85 | 84 | |
| | 20 | 94 | 93 | 93 | 92 | 91 | 90 | 89 | 88 | 88 | 87 | |
| | 40 | 97 | 96 | 96 | 95 | 94 | 93 | 92 | 91 | 91 | 90 | |

Note: 2.5 Watt tap available only in 70V mode.

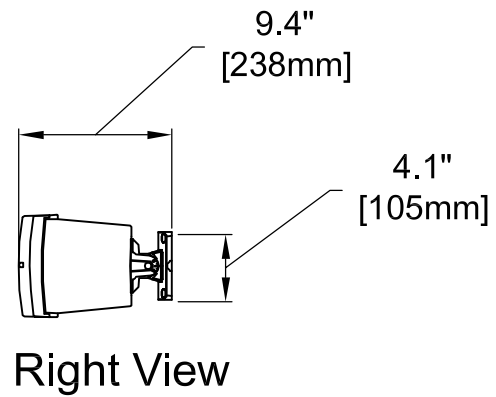
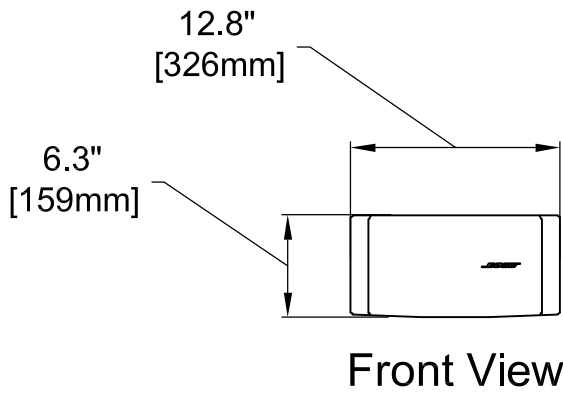
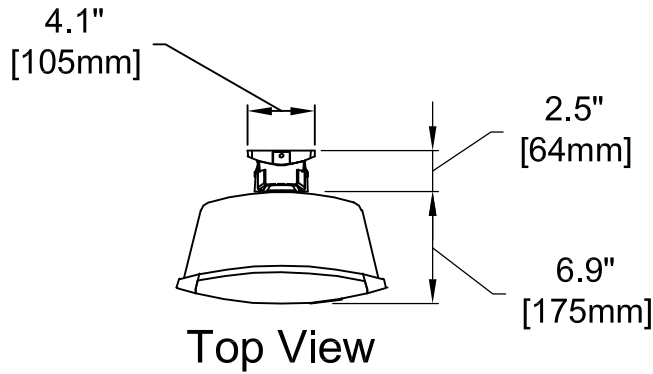
Additional Product Specifications per EN54.24 (2008)
 Environmental Type: A (Indoor Applications)
 EN 54-24 testing done without EQ applied

| | | | | | | |
|---|---|------------------|----------------|----------------|----------------|----------------|
| Rated impedance for each tapping | 70V: | 1087.2 Ω (2.5 W) | 753.1 Ω (10 W) | 436.8 Ω (10 W) | 218.6 Ω (20 W) | 109.0 Ω (40 W) |
| | 100V: | - | 1087.2 Ω (5 W) | 753.1 Ω (10 W) | 436.8 Ω (20 W) | 218.6 Ω (40 W) |
| Sensitivity | 76.2 dB SPL @ 1 W, 4 m | | | | | |
| Maximum Sound Pressure (at highest power setting) | 88.5 dB SPL @ 40 W, 4 m | | | | | |
| Coverage Angle (-6 dB) | H: | 500 Hz = 248° | 1 kHz = 154° | 2 kHz = 112° | 4 kHz = 92° | |
| | V: | 500 Hz = 203° | 1 kHz = 187° | 2 kHz = 116° | 4 kHz = 75° | |
| Reference Axis, Reference Plane, & Horizontal Plane | The specifications data was measured in an anechoic chamber, free-field: Reference axis: Axis is on the center of grille surface and perpendicular to the grille surface Reference plane: Plane is on the grille surface and perpendicular to the reference axis Horizontal plane: Plane is containing the reference axis and perpendicular to the reference plane | | | | | |
| Rated Noise Power | 40 W | | | | | |

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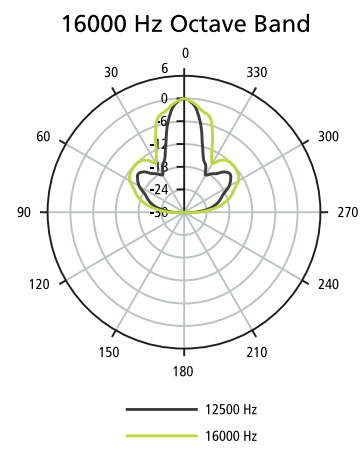
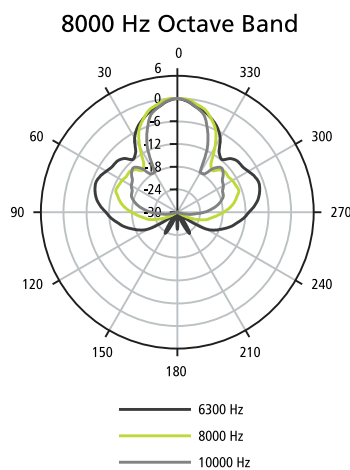
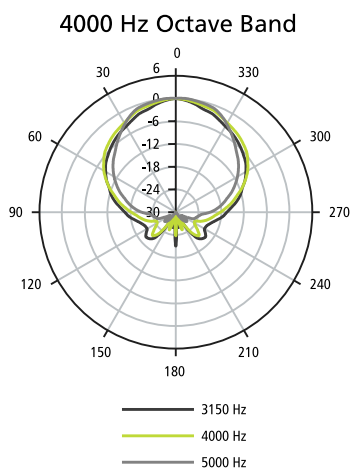
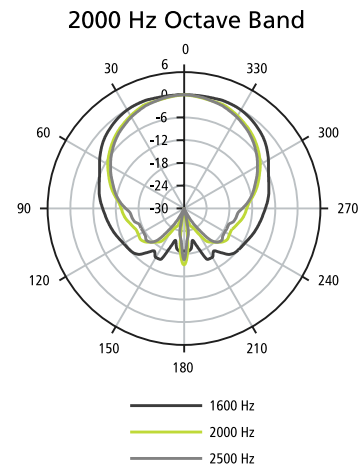
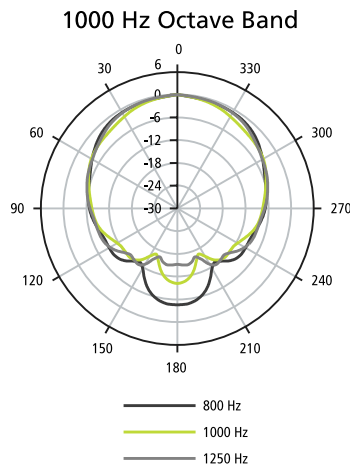
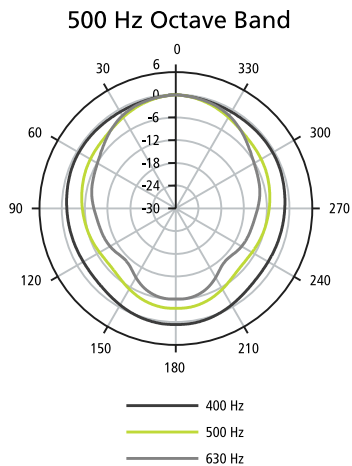
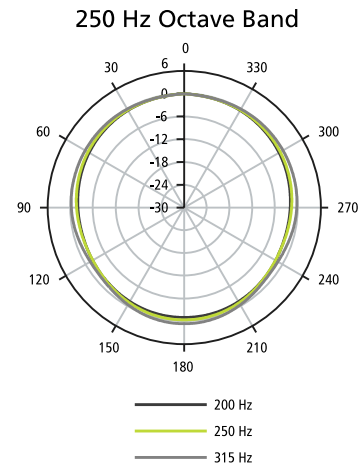
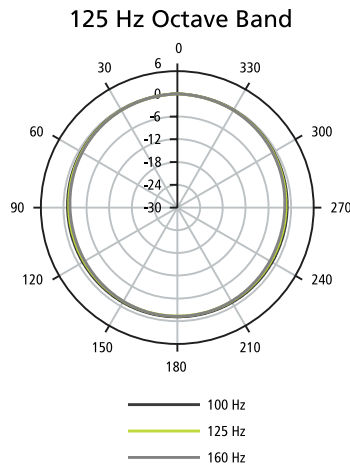
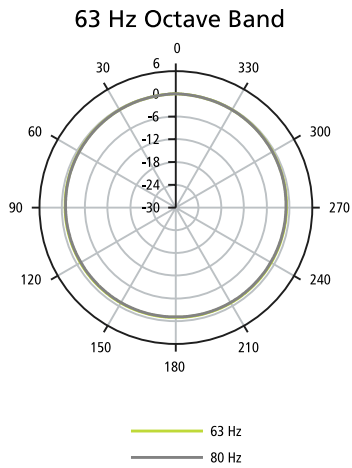
Mechanical Diagrams



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Horizontal Plots

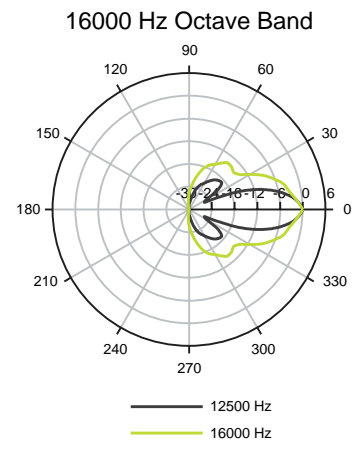
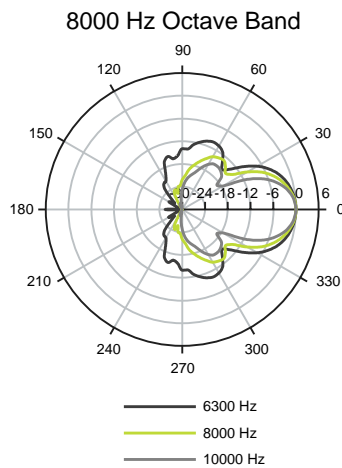
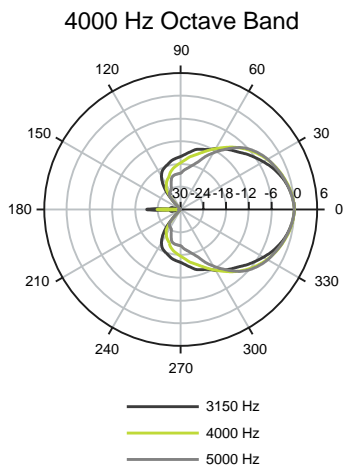
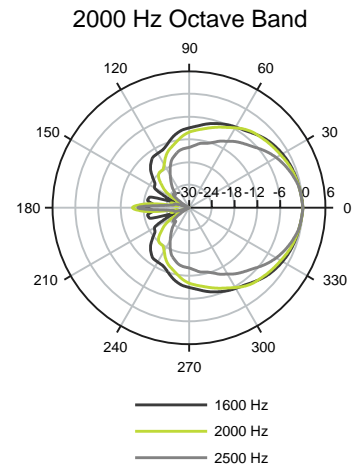
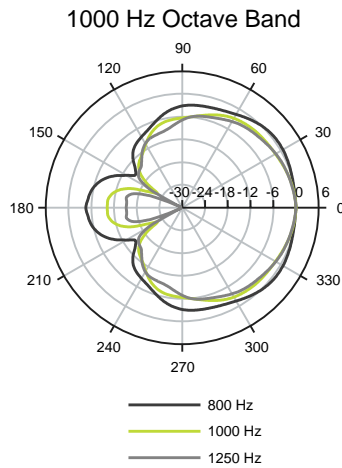
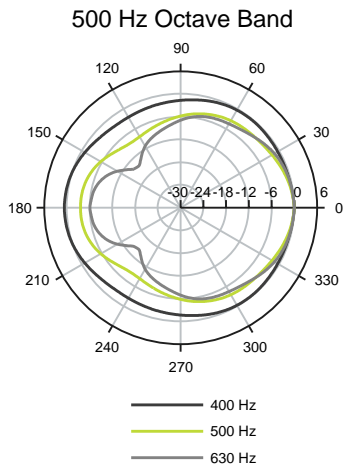
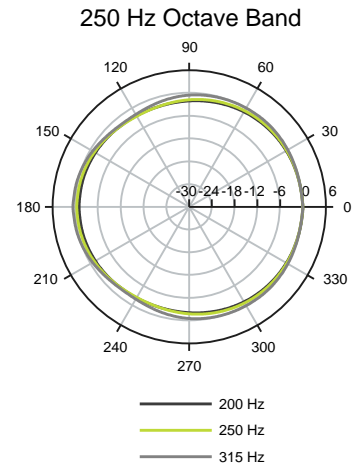
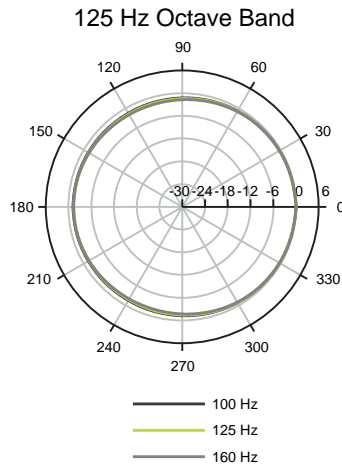
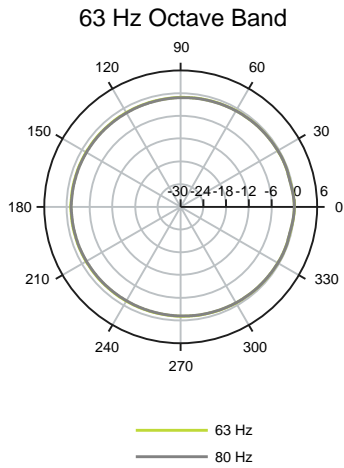


DS40SE

FreeSpace[®] DS 40SE VA loudspeaker



Vertical Plots



DS40SE

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Architects' and Engineers' Specifications

Each loudspeaker shall be a 40 watt, ported loudspeaker system utilizing one 4.5" (114 mm) full-range HVC (Helical Voice Coil) driver. The loudspeaker shall be used for installation on walls, ceilings, and other flat, solid surfaces.

Each loudspeaker shall have a nominal rated impedance of 8 ohms and shall be wired in parallel with a line voltage matching (step-down) transformer with an accessible, front-mounted level selector appropriate for setting various output taps. The loudspeaker input connections will allow for direct connection to 70 volt, 100 volt or low-impedance amplifiers.

The loudspeaker shall have a protection circuit to protect the product from occasionally being overdriven.

Each loudspeaker shall have a bandwidth of 80 Hz – 17 kHz and a maximum continuous acoustic output of 103 dB SPL referenced to a full bandwidth pink noise input at 1 meter at the loudspeaker's rated power. The input connection shall consist of a three-terminal barrier strip on the included mounting bracket. Each loudspeaker shall be wired to the mounting bracket via a 4-pin, pre-wired connector.

Power settings available shall be: 2.5, 5, 10, 20, and 40 watts at 70 volt; 5, 10, 20, and 40 watts at 100 volt; and 40 watts at 8 ohms (when referenced to IEC noise for 100 hours). The nominal dispersion shall be 125° H x 125° V coverage pattern at -6 dB (average 1 – 4 kHz).

When used with optional junction boxes (wall-mount bracket variant only), ceramic terminals and thermal fuse, the loudspeaker shall meet numerous standards for combination music and evacuation systems around the world.

Exposed cosmetic surfaces of the loudspeaker shall be paintable, and the acoustically transparent grille component shall be formed of powder-coated steel.

The loudspeaker shall be the Bose® FreeSpace® DS 40SE VA loudspeaker.

Safety and Regulatory Compliance

The FreeSpace® DS 40SE VA has passed extensive testing and complies with the following specifications and uses:

Certified to European Standard EN 54-24:2008 Components of Voice Alarm Systems-Loudspeakers

Environmental Type: B (outdoor applications)

Sensitivity (per EN 54-24) 76.2 @ 1W, 4m

Maximum Sound Pressure level (per EN 54-24): 88.5 @ 16W, 4m

Fire Alarm: 100Hz to 10kHz

General Signaling: 80Hz to 16kHz (+/- 3dB)

Wire Gauge

The FreeSpace DS 40SE VA loudspeaker is designed to work with 18 AWG (0.8 mm²) to 14 AWG (2.5 mm²) size wire only.

This product conforms to all applicable EU directive requirements. The complete declaration of conformity can be found at www.bose.com/compliance



ID # of the Certified Body: 0560

Year of the CE Mark: 2012

EC Certificate of Conformity #: 0560-CPD-12219002/AA/00