

FreeSpace® DS 40SE 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 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 features high output and 125° x 125° coverage pattern with a frequency range down to 70 Hz.

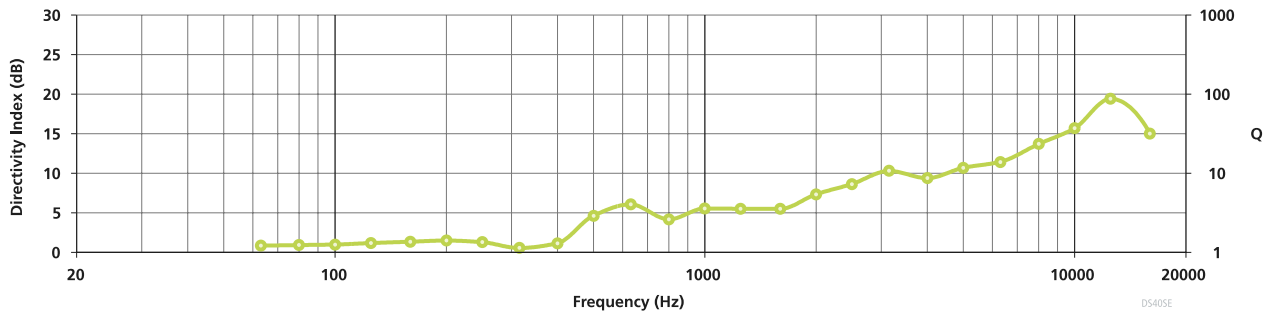
Technical Specifications

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 IEC 529 IP55
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 (2.0 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	321279-0110
White	321279-0210

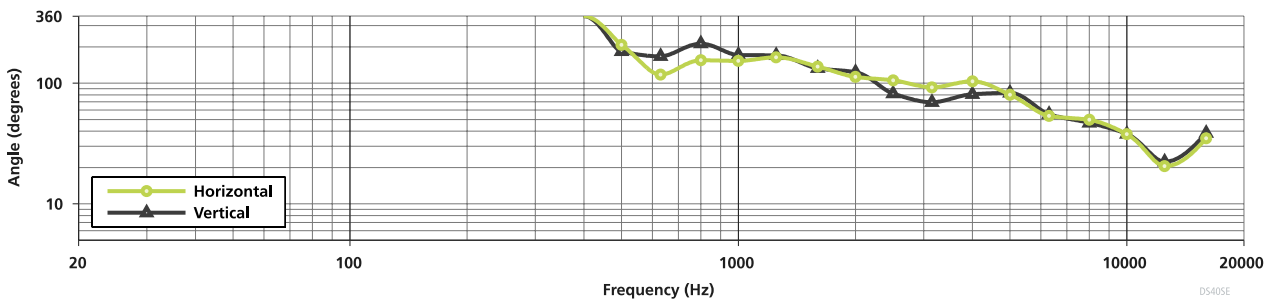
Footnotes:

- 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.

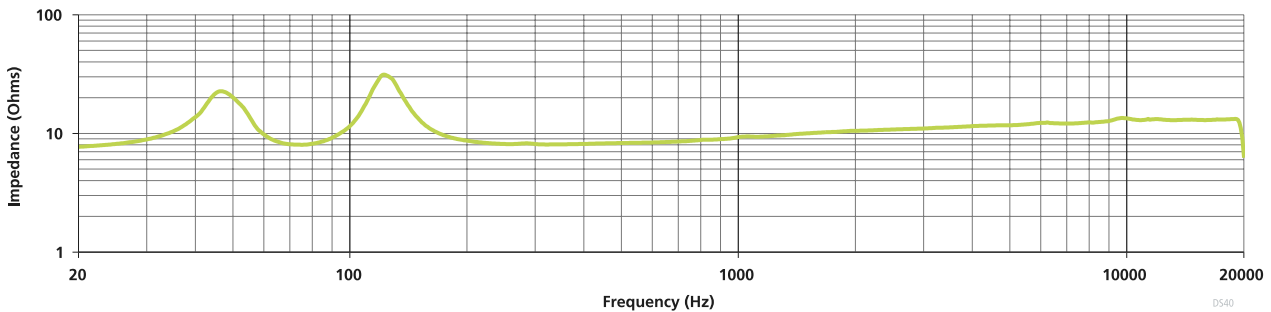
Directivity Index and Q



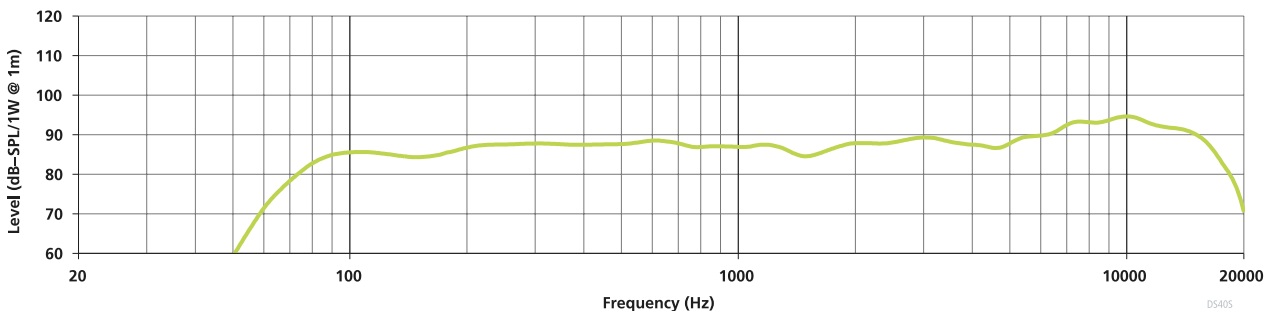
Beamwidth



Impedance



On-Axis Response



FreeSpace[®] DS 40SE loudspeaker

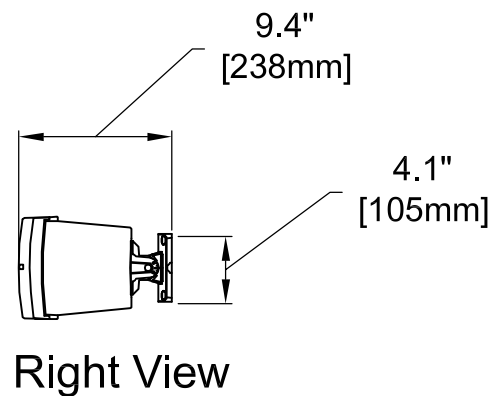
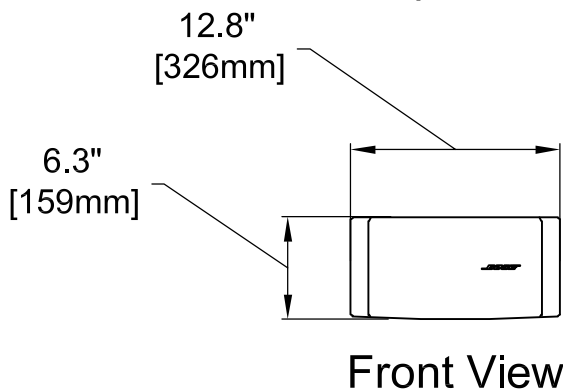
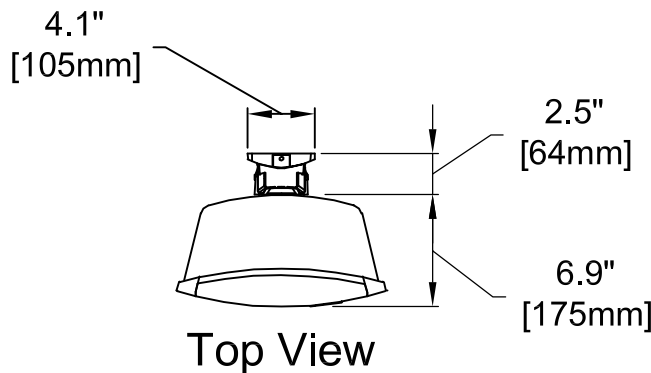


Tap Chart

DS 40SE												
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.

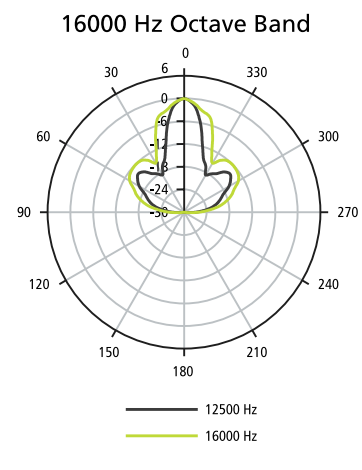
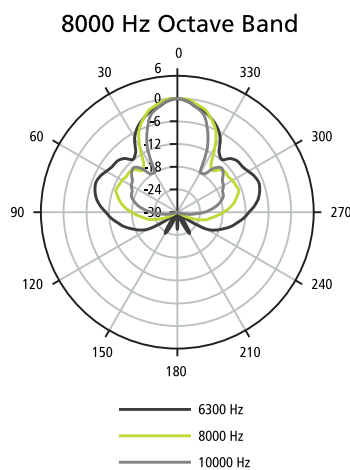
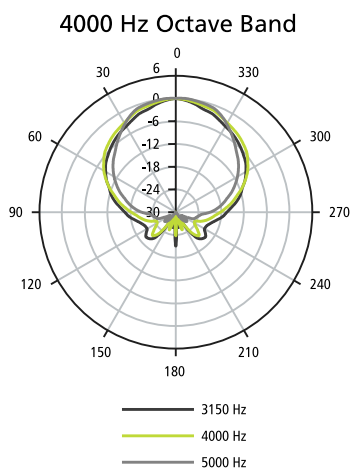
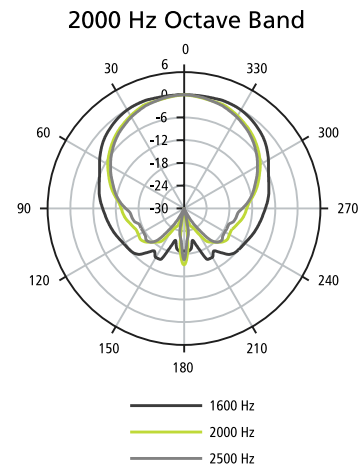
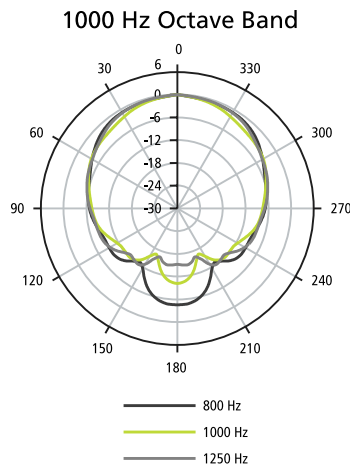
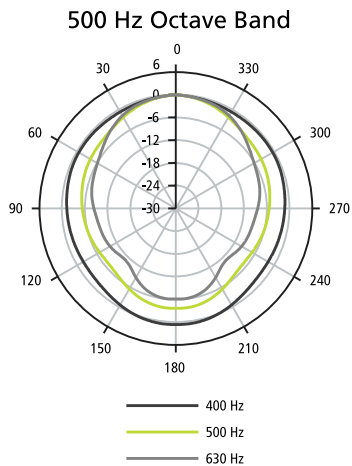
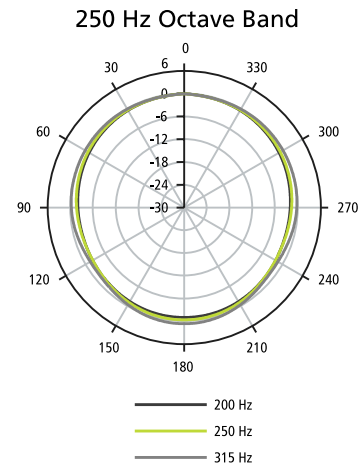
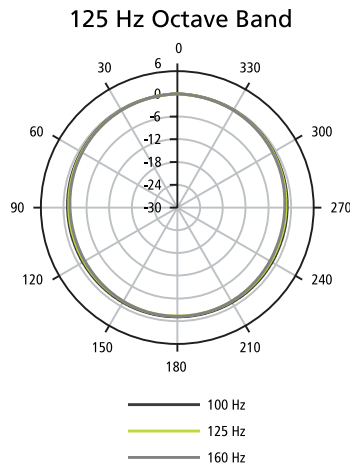
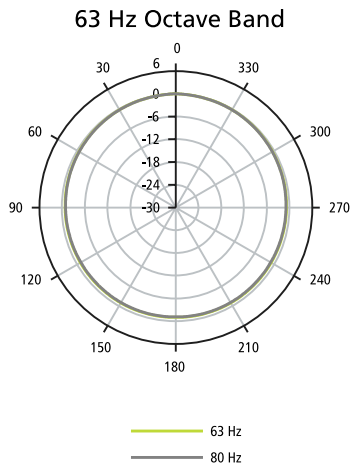
Mechanical Diagrams



FreeSpace[®] DS 40SE loudspeaker



Horizontal Plots



DS40SE

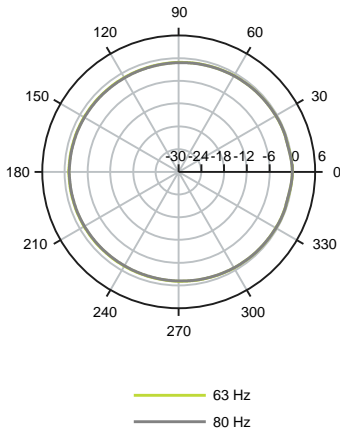
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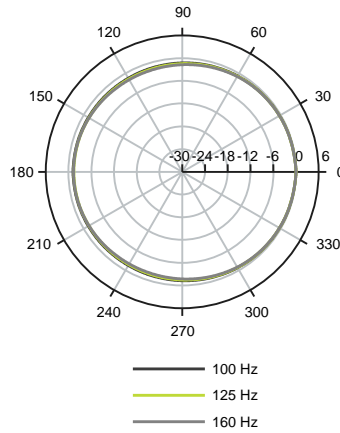
Vertical Plots

TECHNICAL DATA SHEET

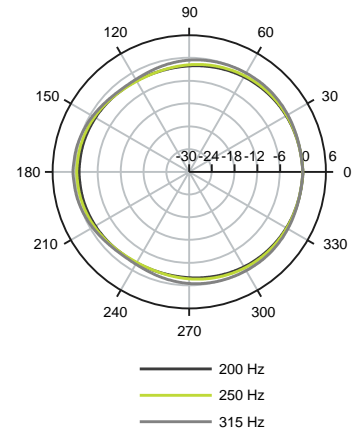
63 Hz Octave Band



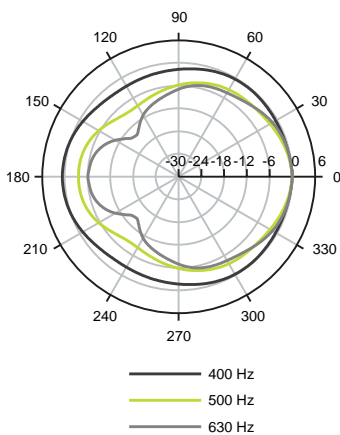
125 Hz Octave Band



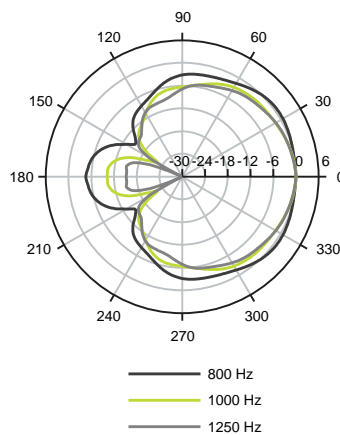
250 Hz Octave Band



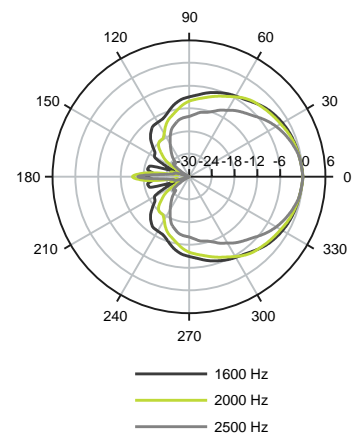
500 Hz Octave Band



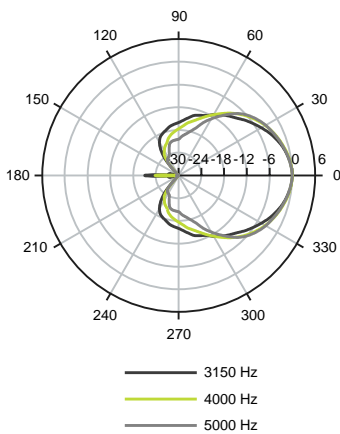
1000 Hz Octave Band



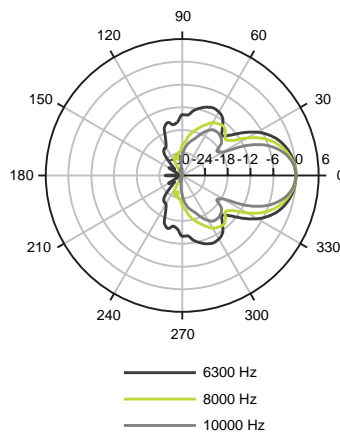
2000 Hz Octave Band



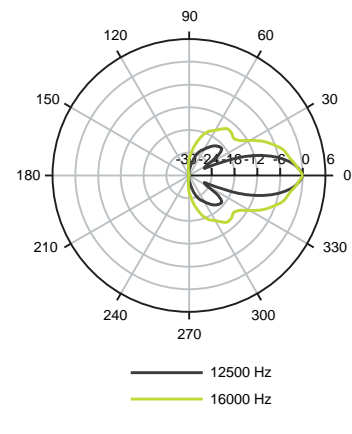
4000 Hz Octave Band



8000 Hz Octave Band



16000 Hz Octave Band



DS40SE

FreeSpace® DS 40SE loudspeaker



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 loudspeaker.

Safety and Regulatory Compliance

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

Listed to ANSI/UL 1480-2005

- Fire Protective Signaling Use – UL Category UUMW, File Number S 3241. Control Number 42S9 when installed with a ceiling-mount bracket or a wall-mount bracket and junction box (on-wall or in-wall). Not for use with DC-supervised systems.
- General-Purpose Use – UL Category UEAY, File Number S 5591 Control Number 3N89.
- Suitable for use outdoors in wet locations.
- Suitable for installation using Class 1, Class 2 or Class 3 wiring methods in accordance with NFPA 70, National Electric Code, 2008, Article 640.
- Suitable for use with fire alarm circuit wiring methods in accordance with NFPA 70, National Electric Code, 2008, Article 760.

The DS 40SE loudspeaker has been designed to the requirements defined in the following European regulatory specification for combination systems:

- British Standard Code of Practice BS 5839, Part 8.