

# FreeSpace® DS 100SE loudspeaker



## Key Features

- **Extended-range**, high-performance loudspeaker with two (2) 2.25" (57 mm) Twiddler® drivers and a single 5.25" (133 mm) woofer in a ported enclosure designed for surface-mounted foreground and background music and paging applications
- **Proprietary Articulated Array®** speaker configuration provides 180° H x 75° V coverage out of the box when the loudspeaker is mounted horizontally. Array can be rotated for horizontal or vertical use
- **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 100SE is the premier member of the DS loudspeaker family. It is a high-performance, full-range surface-mount loudspeaker designed for foreground music and speech reproduction in a wide range of installed applications. The DS 100SE features a rotatable array that delivers a 180° x 75° coverage pattern and a frequency range down to 60 Hz.

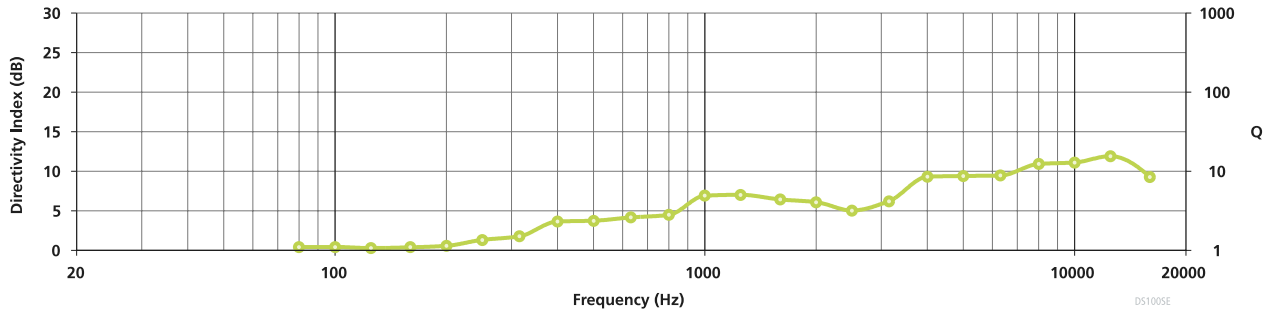
## Technical Specifications

System Performance	
Frequency Response (+/-3 dB) <sup>1</sup>	75 Hz - 18 kHz
Frequency Range (-10 dB) <sup>1</sup>	60 Hz - 20 kHz
Nominal Dispersion	180° H x 75° V
Recommended High-Pass Filter	55 Hz high-pass filter
Loudspeaker EQ	Recommended
Overload Protection	Lamp
Long-Term Power Handling <sup>2</sup>	100 W (400 W peak)
Sensitivity (SPL / 1 W @ 1 m) <sup>3</sup>	85 dB SPL
Maximum SPL @ 1 m <sup>4</sup>	105 dB SPL (111 dB SPL peak)
Nominal Impedance	8 Ω (transformer bypassed)
Transformer Taps (70/100 V)	70 V: 12.5 W, 25 W, 50 W, 100 W 100 V: 25 W, 50 W, 100 W
Transducers	
Driver Compliment	Two (2) 2.25" (57 mm) Twiddler® drivers in an Articulated Array® speaker configuration 5.25" (133 mm) woofer
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	7.0" H x 15.0" W x 8.5" D (178 mm x 381 mm x 216 mm) Depth with wall mount bracket: 11.0" (280 mm)
Net Weight	14.0 lb (6.4 kg)
Shipping Weight	16.9 lb (7.7 kg)
Product Code	
Black	040806
White	040807

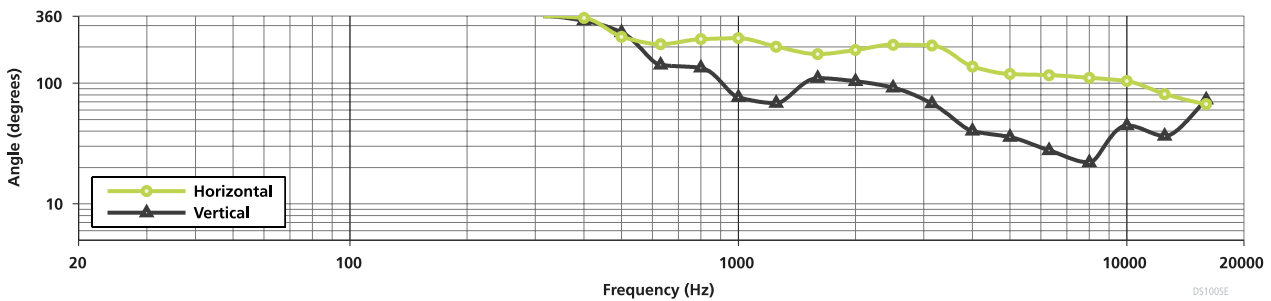
### Footnotes:

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

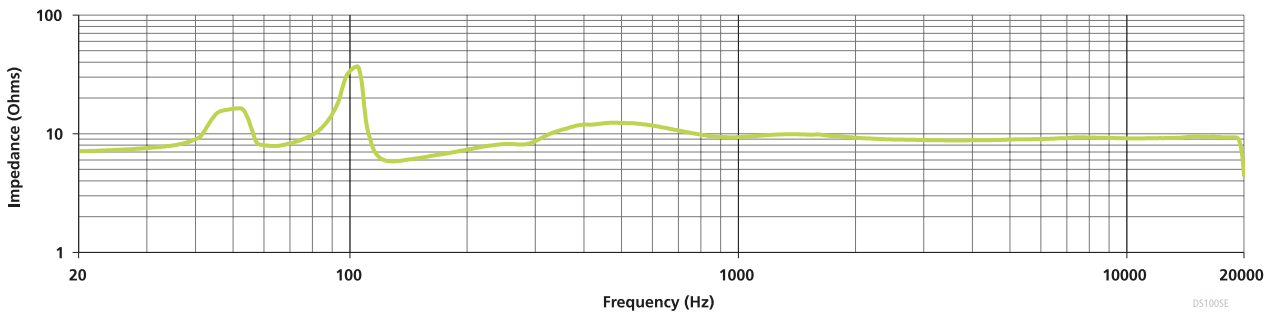
## Directivity Index and Q



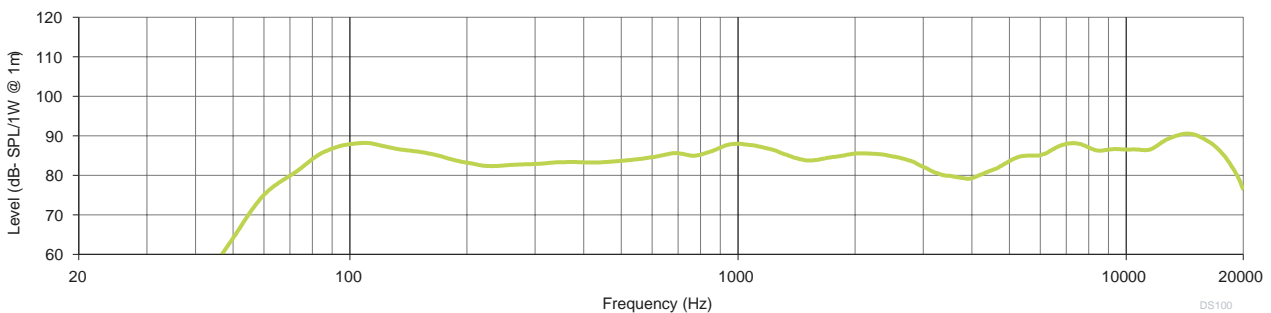
## Beamwidth



## Impedance



## On-Axis Response



# FreeSpace<sup>®</sup> DS 100SE loudspeaker

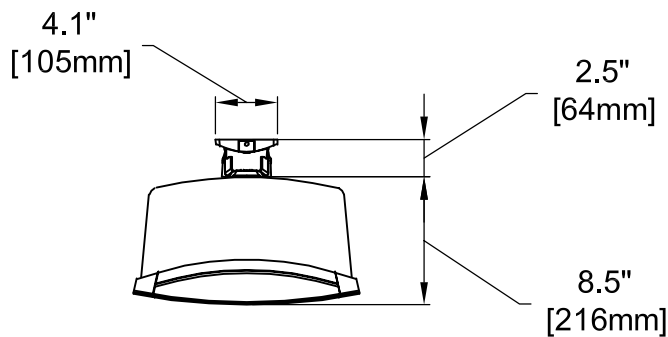


## Tap Chart

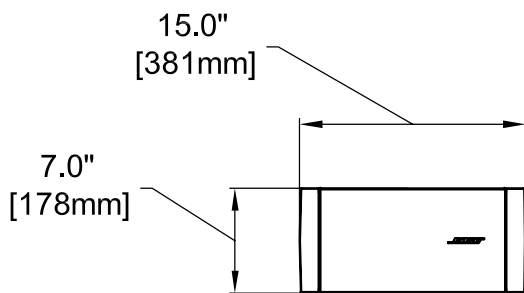
FreeSpace DS 100SE Tap Chart													
Mount	m	2.4	3.0	3.6	4.2	4.8	5.5	6.1	6.7	7.3	8.0	10.0	
Height	ft	8	10	12	14	16	18	20	22	24	26	32	
T A P	12.5	89	88	88	87	86	85	84	83	83	82	80	dB <sub>SPL</sub>
	25	92	91	91	90	89	88	87	86	86	85	83	
	50	95	94	94	93	92	91	90	89	89	88	86	
	100	98	97	97	96	95	94	93	92	92	91	89	

**Note:** 12.5 watt tap is not available for 100V operation.

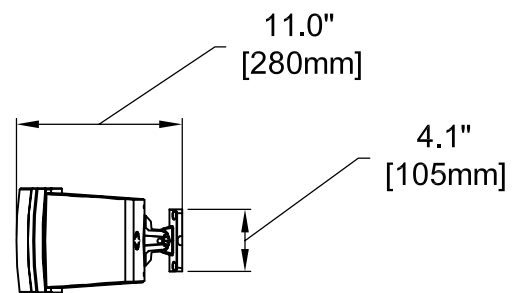
## Mechanical Diagrams



Top View



Front View



Side View

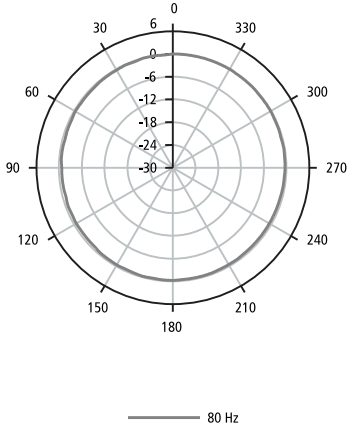
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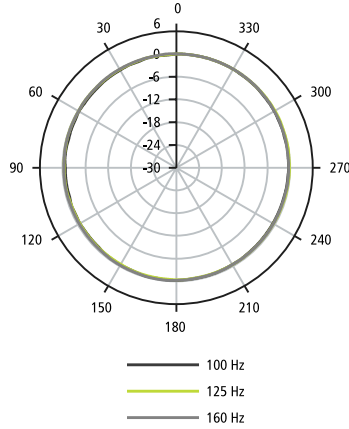
## Horizontal Plots

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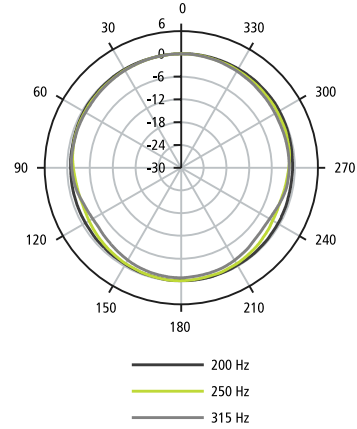
63 Hz Octave Band



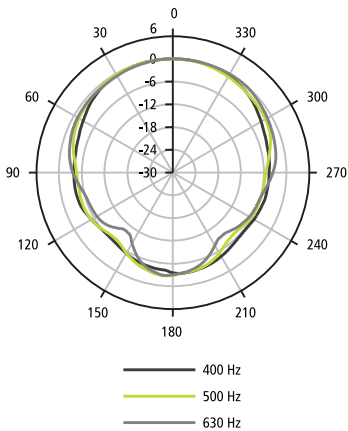
125 Hz Octave Band



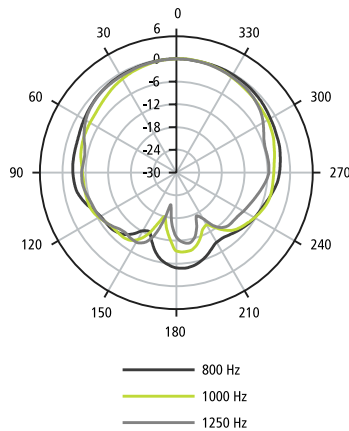
250 Hz Octave Band



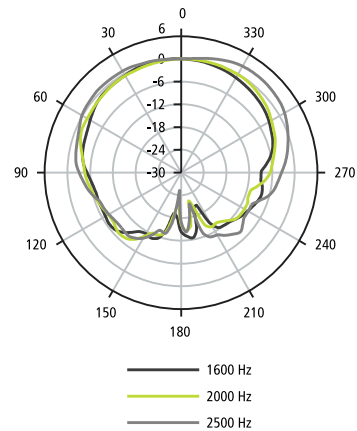
500 Hz Octave Band



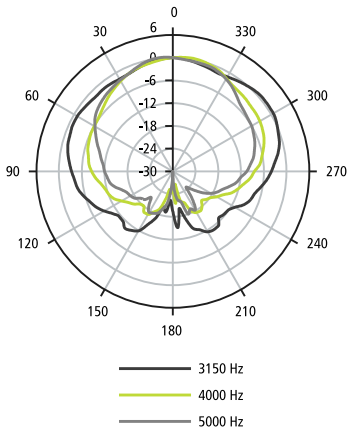
1000 Hz Octave Band



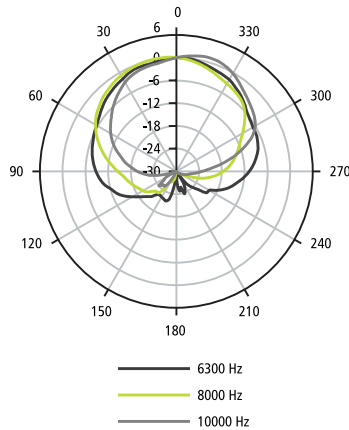
2000 Hz Octave Band



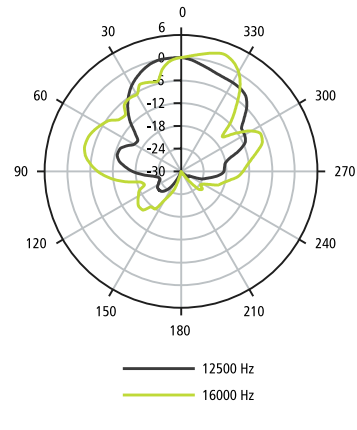
4000 Hz Octave Band



8000 Hz Octave Band



16000 Hz Octave Band



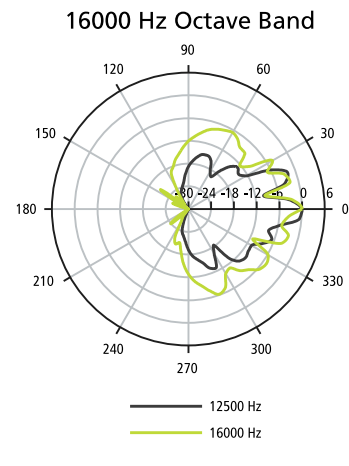
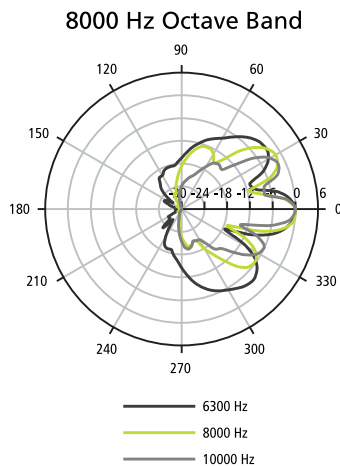
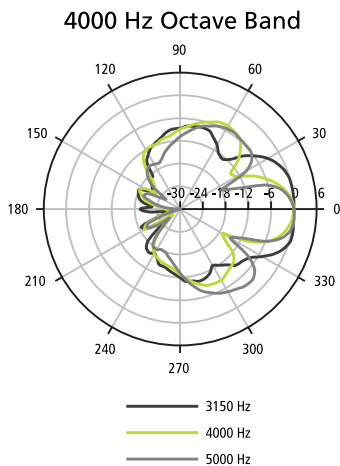
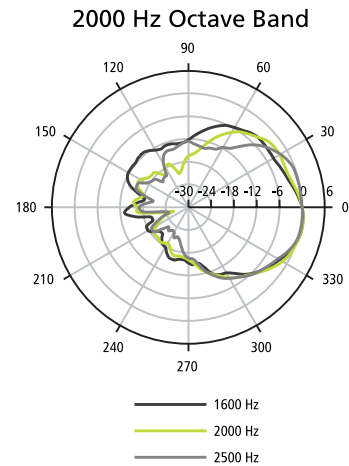
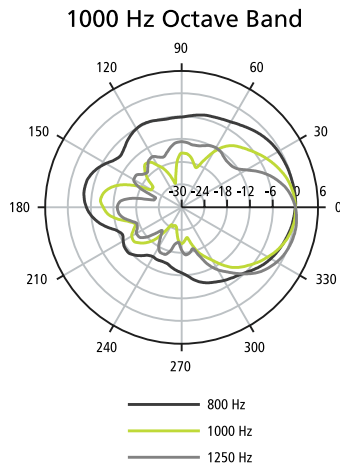
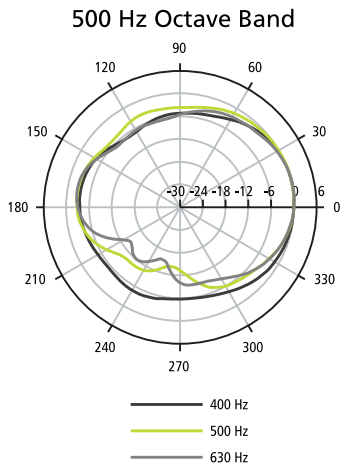
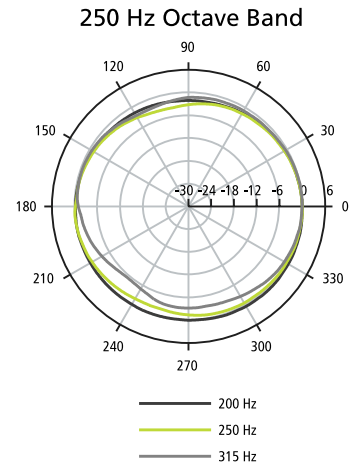
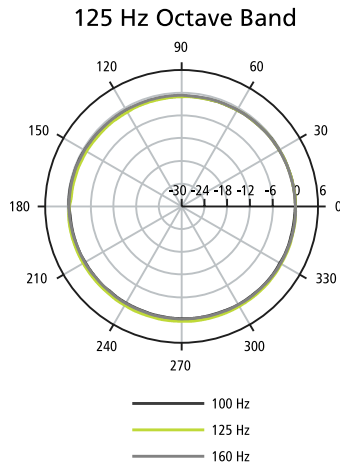
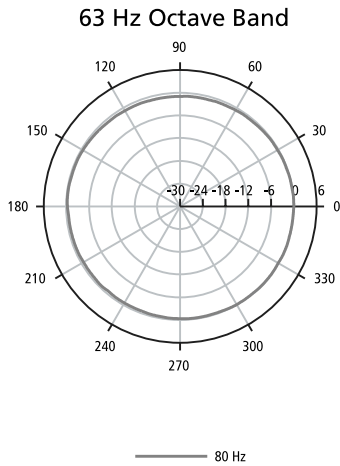
DS100SE

# FreeSpace® DS 100SE loudspeaker



## Vertical Plots

TECHNICAL DATA SHEET



DS100SE

# FreeSpace® DS 100SE loudspeaker



## Architects' and Engineers' Specifications

Each loudspeaker shall be a 100 watt, ported loudspeaker system utilizing two 2.25" (57 mm) mid-high frequency drivers mounted vertically on a rotatable, faceted baffle and a separate 5.25" (133 mm) woofer. The loudspeaker shall be used for installation on walls 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.

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

Each loudspeaker shall have a bandwidth of 75 Hz – 18 kHz and a maximum continuous acoustic output of 105 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: 12.5, 25, 50, and 100 watts at 70 volts; 25, 50, and 100 watts at 100 volts; and 100 watts at 8 ohms (when referenced to IEC noise for 100 hours). The nominal dispersion shall be 180° H x 75° V at -6 dB (average 1 – 4 kHz).

When used with optional junction boxes, which include a ceramic connector and a thermal fuse, the loudspeaker shall meet numerous standards for combination music and evacuation systems around the world.

The loudspeaker shall be the Bose® FreeSpace® DS 100SE loudspeaker.

## Safety and Regulatory Compliance

The FreeSpace® DS 100SE loudspeaker 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 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.
- The DS 100SE loudspeaker is 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*, 2002, Article 640.
- Suitable for use with fire alarm circuit wiring methods in accordance with NFPA 70, *National Electric Code*, 2002, Article 760.

The DS 100SE 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.
- Tested to IEC60268-5.