

# 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.

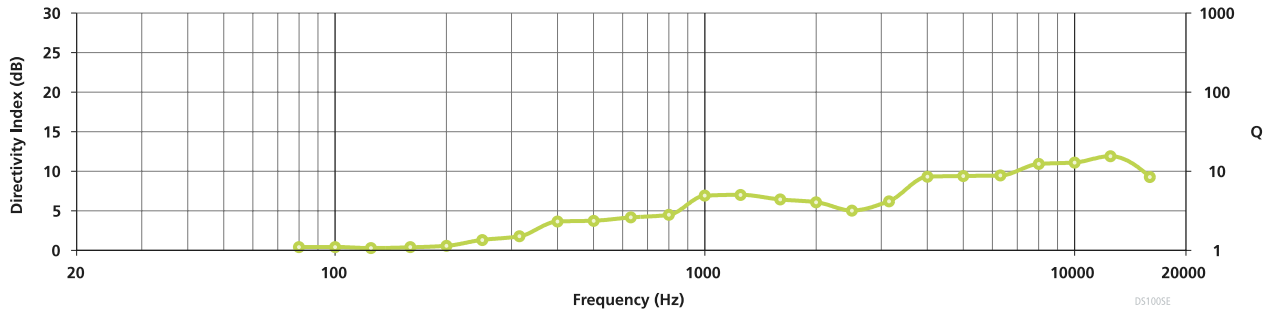
## Technical Specifications

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

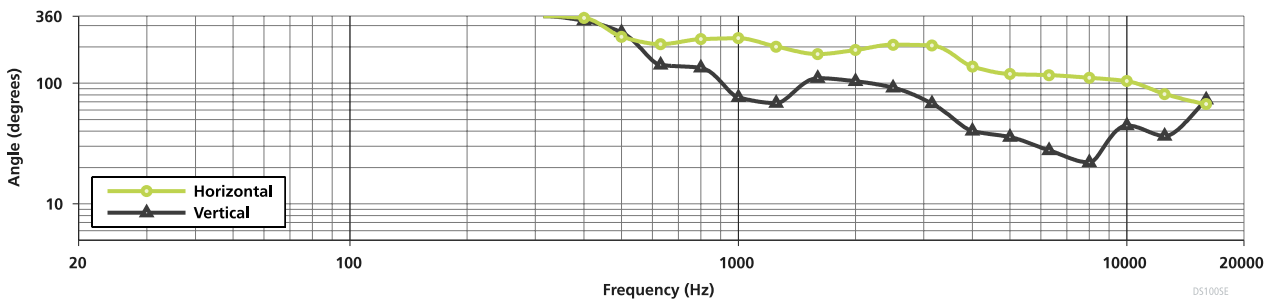
### Footnotes:

- 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.

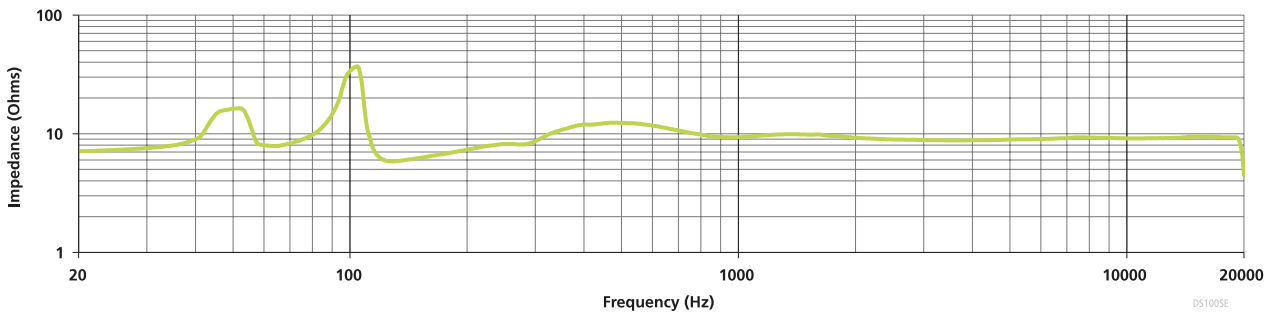
## Directivity Index and Q



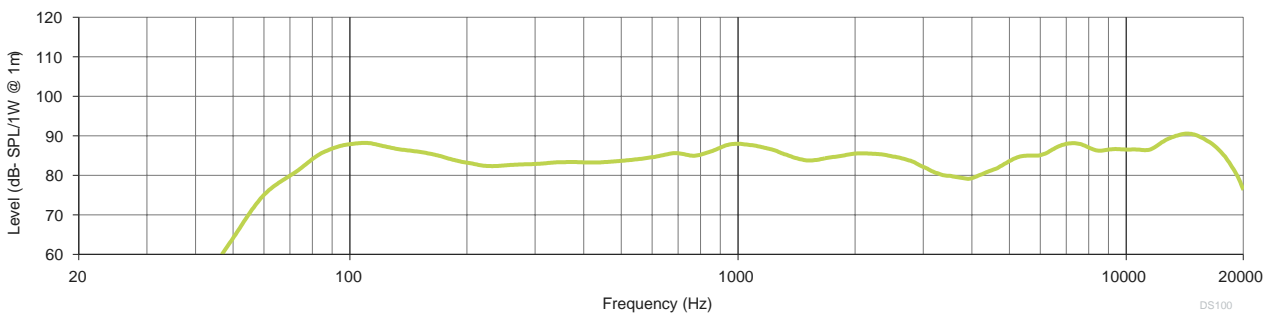
## Beamwidth



## Impedance



## On-Axis Response



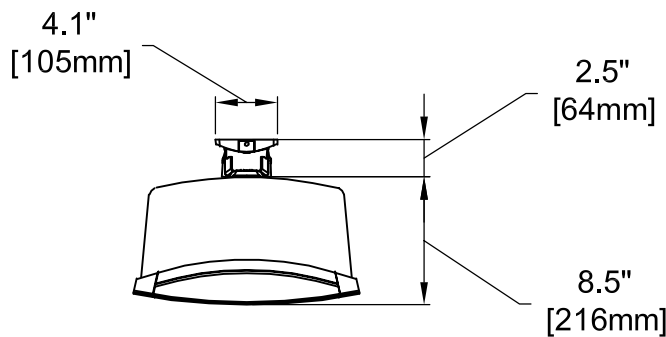
## Tap Chart

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
	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

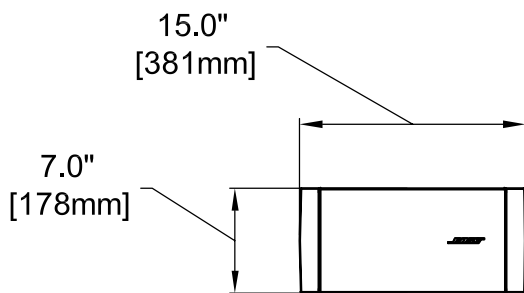
dB<sub>SPL</sub>

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

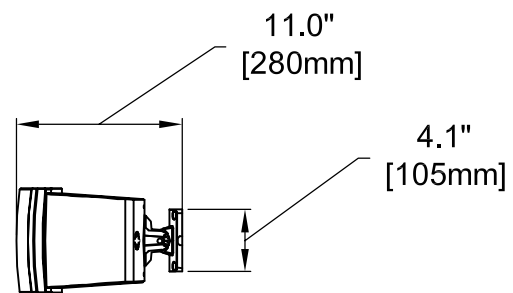
## Mechanical Diagrams



Top View



Front View



Side View

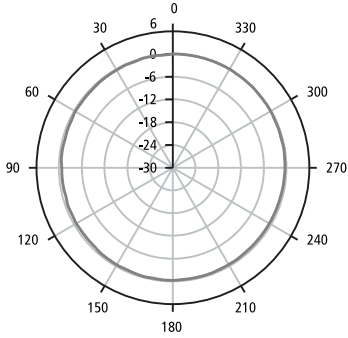
# FreeSpace® DS 100SE loudspeaker



## Horizontal Plots

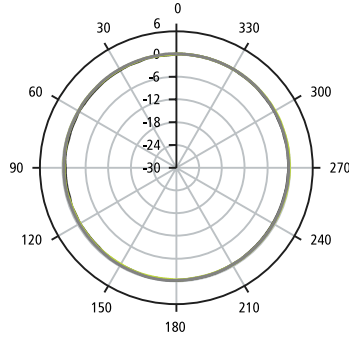
TECHNICAL DATA SHEET

63 Hz Octave Band



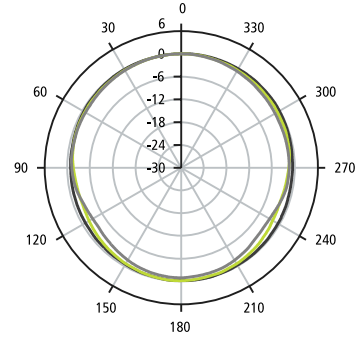
— 80 Hz

125 Hz Octave Band



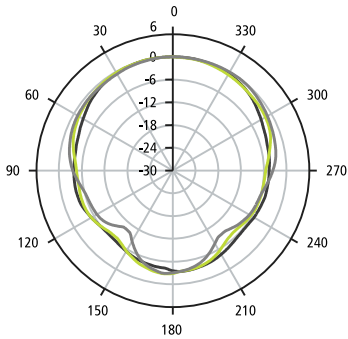
— 100 Hz  
— 125 Hz  
— 160 Hz

250 Hz Octave Band



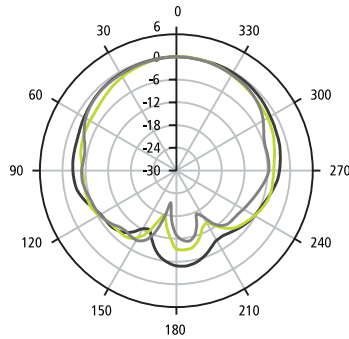
— 200 Hz  
— 250 Hz  
— 315 Hz

500 Hz Octave Band



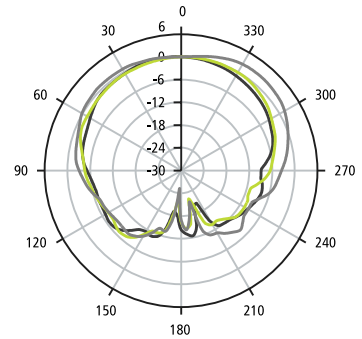
— 400 Hz  
— 500 Hz  
— 630 Hz

1000 Hz Octave Band



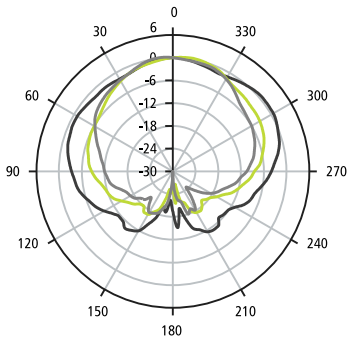
— 800 Hz  
— 1000 Hz  
— 1250 Hz

2000 Hz Octave Band



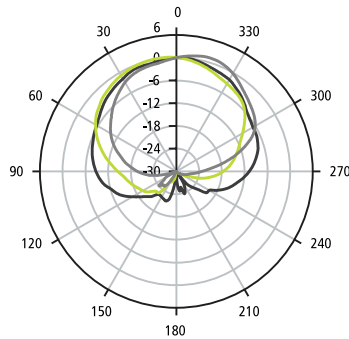
— 1600 Hz  
— 2000 Hz  
— 2500 Hz

4000 Hz Octave Band



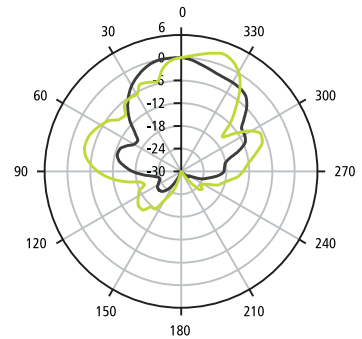
— 3150 Hz  
— 4000 Hz  
— 5000 Hz

8000 Hz Octave Band



— 6300 Hz  
— 8000 Hz  
— 10000 Hz

16000 Hz Octave Band



— 12500 Hz  
— 16000 Hz

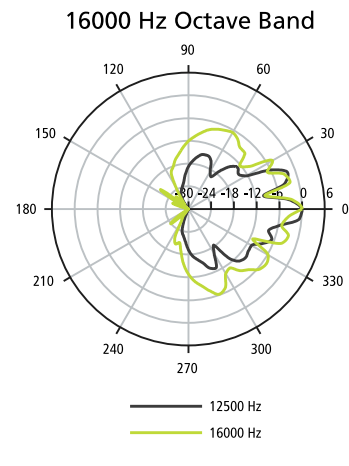
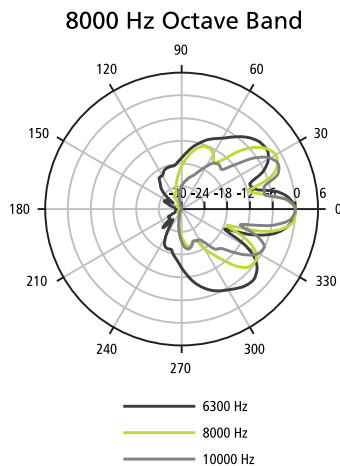
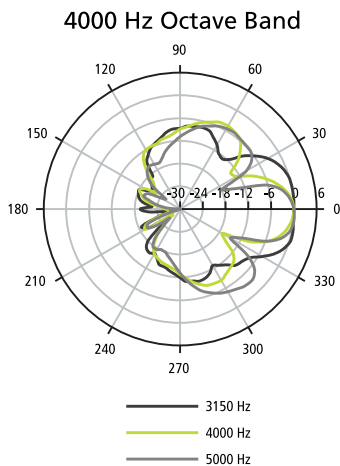
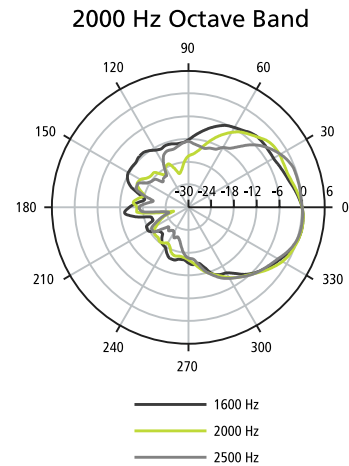
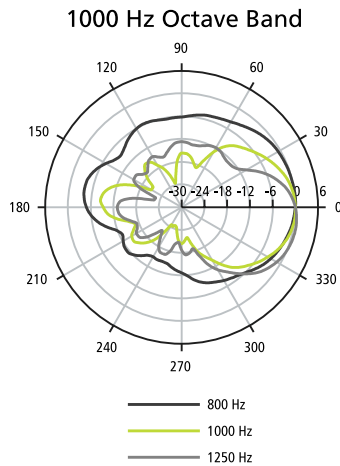
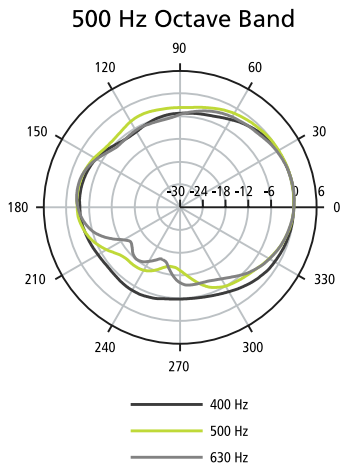
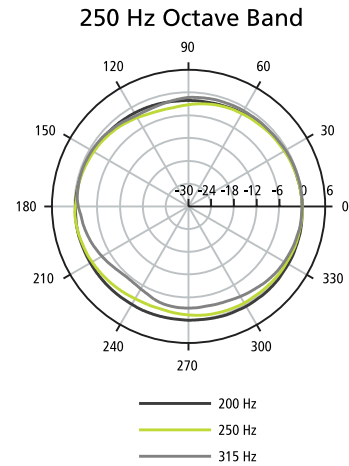
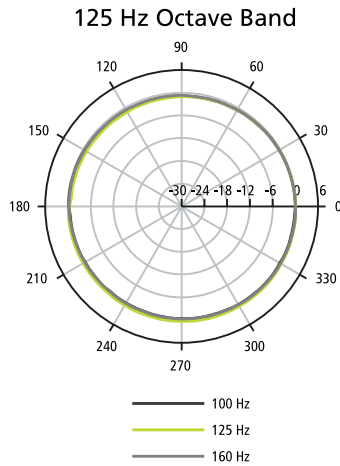
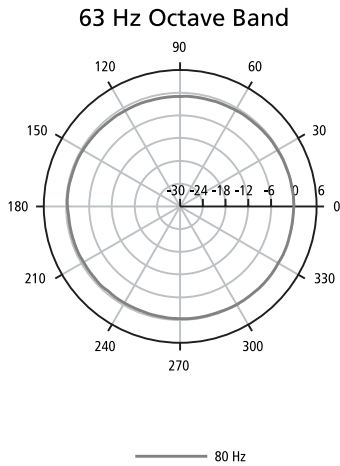
DS100SE

# 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.