

## LS1-OC100E-1 Hemi-directional loudspeaker, 100W



The Bosch Hemi-directional Loudspeaker is an easy to install, innovative loudspeaker which projects consistent and high quality sound, ensuring superb reproduction of background music and high speech intelligibility for paging or emergency calls. The speaker's opening angle and high sound pressure level allows it to cover at least 700 m<sup>2</sup>, making it extremely suitable for indoor high-ceiling areas like warehouses, transport and exhibition halls, mega stores and swimming pools.

### Functions

#### Voice alarm loudspeaker

The LS1-OC100E-1 is used in voice alarm systems and is compliant with emergency standards. The loudspeaker has built-in protection to ensure that a fire-damaged loudspeaker does not cause failure of the connected circuit. This ensures system integrity, meaning loudspeakers in other areas can still be used to inform people of the fire. The loudspeaker has ceramic terminal blocks, a thermal fuse and heat-resistant, high-temperature wiring.

#### Materials

The loudspeaker is made of high-impact ABS TSG, self-extinguishing according to class UL 94 V 0 and with the highest flame retardant rating (UL 94 5VA). The loudspeaker has a white and silver finish; the metal grille has a silver finish. All metal parts are zinc plated.

#### Drivers

This acoustically innovative loudspeaker accommodates 14 drivers in combination with advanced positioning and filtering.

- ▶ For large area, high-ceiling applications
- ▶ Optional bracket for fixed mounting
- ▶ Self-restoring tweeter overload protection
- ▶ Provision for internal mounting of the optional line/loudspeaker supervision board
- ▶ EN 54-24 certified

### Regulatory information

|                           |                                         |
|---------------------------|-----------------------------------------|
| Safety                    | acc. to EN 60065                        |
| Emergency                 | acc. to EN 54-24 / BS 5839-8 / EN 60849 |
| Self-extinguishing        | acc. to UL 94 V 0                       |
| Flame retardant           | acc. to UL 94 5VA                       |
| Water and dust protection | acc. to EN 60529 IP 42                  |
| Chlorine resistant        | acc. to IEC 60068/2-60                  |
| Mechanical impact         | acc. to EN 50102 IK 07                  |

### Installation/configuration notes

The loudspeaker can be suspended from a steel wire or chain using Dee shackles (not supplied). A separate accessory, LM1-MSB-1, is available for applications where fixed suspension is required to avoid any loudspeaker movement (such as rotation, wobbling). This accessory uses a set of zinc plated steel mounting plates:

- one plate for mounting centrally onto the loudspeaker (with fixing provisions)
- one plate for fixing onto the ceiling or roof construction
- four fixing pins and spring clips
- four fixing screws

The mounting plates can be mechanically connected with a standard 42.4 mm (DIN EN 10255) dia. tube (not supplied by Bosch, but generally available in any required length).

For extra safety, the loudspeaker has an eye bolt (M8 x13) with a maximum tensile strain of 1500 N for attaching an optional safety cord.

The electrical connection box, under the suspension cover, provides connection of the installation cable, allowing loop through and provision for internally mounting the optional line/loudspeaker supervision board.

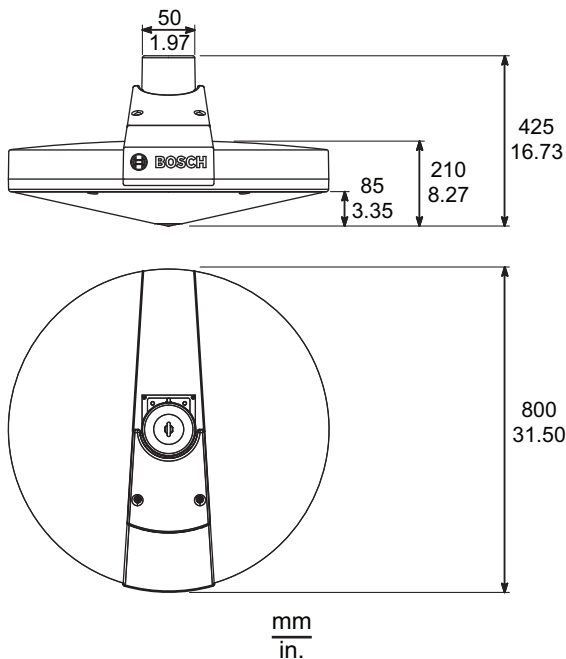


Fig. 1: Dimensions LS1-OC100E-1

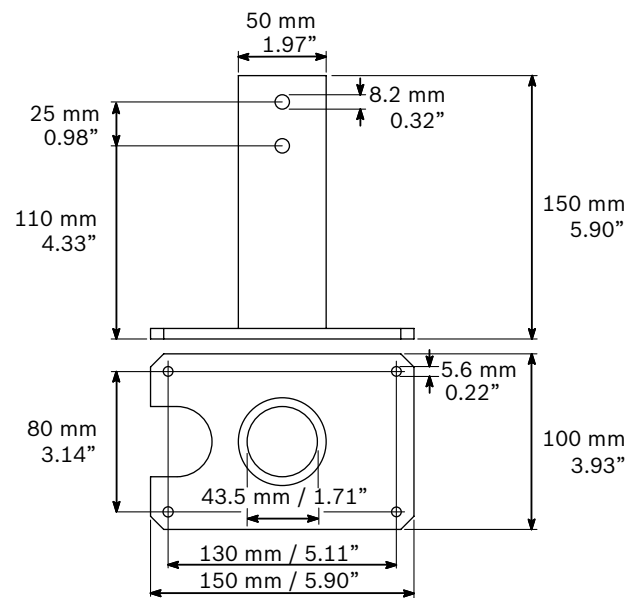


Fig. 2: Dimensions LM1-MSB-1

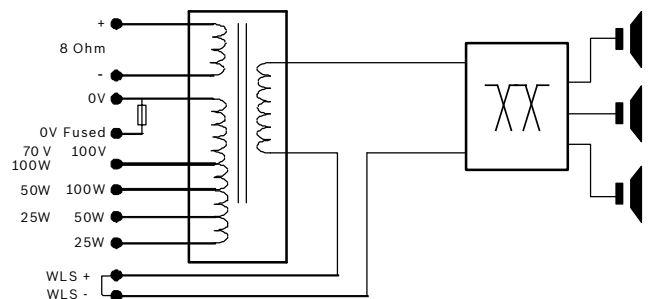


Fig. 3: Circuit diagram

#### Parts included

| Quantity | Component                                       |
|----------|-------------------------------------------------|
| 1        | LS1-OC100E-1 Hemi-directional loudspeaker, 100W |
| 1        | Installation instructions                       |

#### Technical specifications

##### Electrical\*

|                                                            |                   |
|------------------------------------------------------------|-------------------|
| Maximum power (W)                                          | 150 W             |
| Rated power (W)                                            | 100 W             |
| Transformer taps (W)                                       | 50 W; 25 W; 100 W |
| Sensitivity (1 W, 1 m, 1 kHz octave) (dB)                  | 89 dB             |
| Sensitivity (1 W, 4 m, 100 Hz - 10 kHz) (dB) acc. EN54-24  | 77 dB             |
| Sound pressure level (rated power, 1 m, 1 kHz octave) (dB) | 109 dB            |

|                                                                            |                        |
|----------------------------------------------------------------------------|------------------------|
| Sound pressure level (rated power, 4 m, 100 Hz - 10 kHz) (dB) acc. EN54-24 | 98 dB                  |
| Frequency range (-10 dB) (Hz)                                              | 60 Hz – 20,000 Hz      |
| Coverage angle HxV (-6 dB, 500 Hz) (°)                                     | 127° x 140°            |
| Coverage angle HxV (-6 dB, 1 kHz) (°)                                      | 175° x 180°            |
| Coverage angle HxV (-6 dB, 2 kHz) (°)                                      | 172° x 175°            |
| Coverage angle HxV (-6 dB, 4 kHz) (°)                                      | 96° x 135°             |
| Rated input voltage (V)                                                    | 28.3 V; 70 V; 100 V    |
| Rated impedance 28.3 V line (Ω)                                            | 8 Ω @100 W             |
| Rated impedance 70 V line (Ω)                                              | 50 Ω @100 W            |
| Rated impedance 100 V line (Ω)                                             | 400 Ω @25 W            |
|                                                                            | 200 Ω @50 W            |
|                                                                            | 100 Ω @100 W           |
| Connector type                                                             | Ceramic screw terminal |

\* Technical performance data acc. to IEC 60268-5

**Note:**

- The specification data was measured in an anechoic chamber, free-field.
- The reference plane is on the grille surface and perpendicular to the reference axis.
- The reference axis is perpendicular to the center point of the front grille surface.
- The horizontal plane contains the reference axis and is perpendicular to the reference plane.

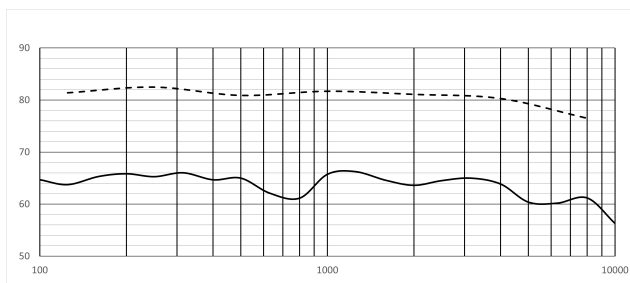


Fig. 4: Frequency response graph (— 1/3<sup>rd</sup> octave dB SPL @1 W (100 Hz — 10 kHz), 4 m; -- 1/1<sup>th</sup> octave dB SPL @1 W (100 Hz — 10 kHz), 1 m)

| (1/3) <sup>rd</sup> octave band | dB SPL at 4 m |
|---------------------------------|---------------|
| 160                             | 65.3          |
| 200                             | 65.8          |
| 250                             | 65.3          |
| 315                             | 66            |
| 400                             | 64.7          |
| 500                             | 65            |
| 630                             | 62.1          |
| 800                             | 61.2          |
| 1000                            | 65.7          |
| 1250                            | 66.3          |
| 1600                            | 64.6          |
| 2000                            | 63.6          |
| 2500                            | 64.5          |
| 3150                            | 65            |
| 4000                            | 63.9          |
| 5000                            | 60.4          |
| 6300                            | 60.2          |
| 8000                            | 61.2          |
| 10000                           | 56.3          |

| (1/1) <sup>th</sup> octave band | dB SPL at 1 m |
|---------------------------------|---------------|
| 125                             | 81.4          |
| 250                             | 82.5          |
| 500                             | 80.9          |
| 1000                            | 81.7          |
| 2000                            | 81.1          |
| 4000                            | 80.3          |
| 8000                            | 76.5          |

| (1/3) <sup>rd</sup> octave band | dB SPL at 4 m |
|---------------------------------|---------------|
| 100                             | 64.7          |
| 125                             | 63.8          |

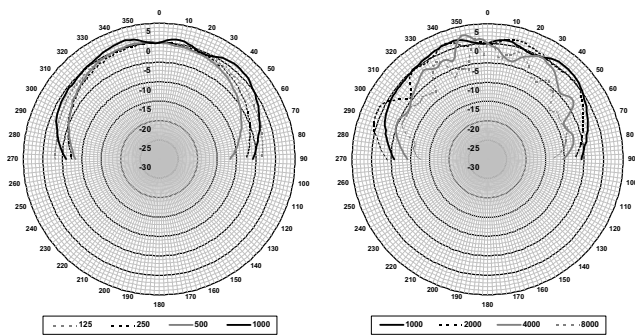


Fig. 5: Vertical polar diagram (pink noise octave, normalized @0° axis)

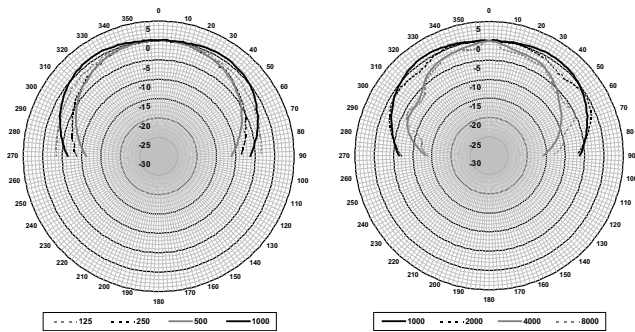


Fig. 6: Horizontal polar diagram (pink noise octave, normalized @0° axis)

## Mechanical

|                          |                          |
|--------------------------|--------------------------|
| Dimensions (Ø x H) (mm)  | 800 mm x 425 mm          |
| Dimensions (Ø x H) (in)  | 31.50 in x 16.74 in      |
| Weight (kg)              | 27 kg                    |
| Weight (lb)              | 59.52 lb                 |
| Color (RAL) (baffle)     | RAL 9010 Pure white      |
| Color in RAL (top cover) | RAL 9023 Pearl Dark Gray |
| Color in RAL (grille)    | RAL 9006 White aluminum  |
| Material                 | Plastic (ABS)            |

## Environmental

|                                                 |                 |
|-------------------------------------------------|-----------------|
| Operating temperature (°C)                      | -25 °C – 55 °C  |
| Operating temperature (°F)                      | -13 °F – 131 °F |
| Storage temperature (°C)                        | -40 °C – 70 °C  |
| Storage temperature (°F)                        | -40 °F – 158 °F |
| Transportation temperature (°C)                 | -40 °C – 70 °C  |
| Transportation temperature (°F)                 | -40 °F – 158 °F |
| Operating relative humidity, non-condensing (%) | 0% – 95%        |



1438

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12  
1438-CPR-0255

EN 54-24:2008

Loudspeaker for voice alarm systems  
for fire detection and fire alarm systems for buildings

Hemi-directional Loudspeaker LS1-OC100E-1  
Type A

DoP: LP052912v1

## Ordering information

### LS1-OC100E-1 Hemi-directional loudspeaker, 100W

Hemi-directional loudspeaker, 100 W, high-impact ABS enclosure, metal grille, suspended mounted for large areas/ high-ceilings, self-restoring tweeter overload protection, chlorine resistant, water and dust protected IP 42, white/ silver finish.

Order number **LS1-OC100E-1 | F.01U.167.870**

## Accessories

### LM1-MSB-1 Bracket adapter set for LS1-OC100E-1

Metal suspension bracket adaptor set for fixed suspension of the Hemi-directional Loudspeaker LS1-OC100E-1, prevents loudspeaker movement, zinc-plated steel, supplied with 4 fixing pins and screws.

Order number **LM1-MSB-1 | F.01U.215.019**



<https://www.boschsecurity.com>