

LBC 3941/11 Sound Projector



Features

- ▶ Excellent speech and music reproduction
- ▶ Very wide opening angle
- ▶ Modern unobtrusive styling
- ▶ Simple power setting
- ▶ Splash – waterproof
- ▶ Compact yet powerful
- ▶ Complies with international installation and safety regulations

The LBC 3941/11 is a 6 W cost-effective sound projector. It features a very wide opening angle and unobtrusive styling. Water and dust protection to IP 65 make it suitable for indoor and outdoor use.

Functions

The sound projector features a very wide opening angle (90 degrees) which means fewer units are required to cover a given area. Its wide frequency range also results in better speech and music reproduction, while the directivity ensures that the sound is accurately projected to where it is needed most.

The LBC 3941/11 sound projector is finished in an attractive white color, and its unobtrusive appearance complements today's interior lighting. The color and styling of the front grille matches an existing Bosch ceiling loudspeaker (LBC 3951/11).

Certifications and Approvals

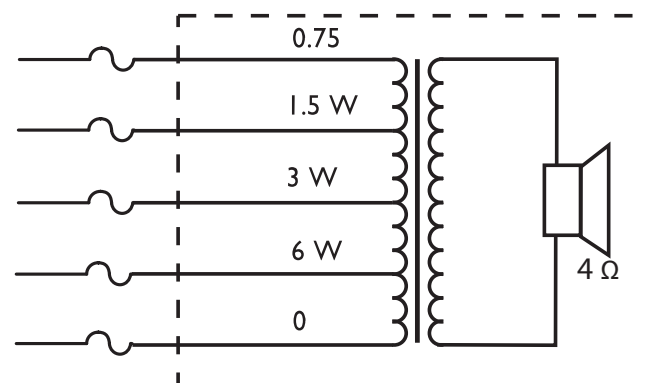
All Bosch loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures extra reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and much less chance of failure or performance deterioration.

The enclosures are made from high-impact self-extinguishing ABS (according to class UL 94 V0).

Region	Certification
Europe	CE
Safety	acc. to EN 60065
Water and dust protection	acc. to EN 60529, IP 65
Self-Extinguishing	acc. to UL 94 V0

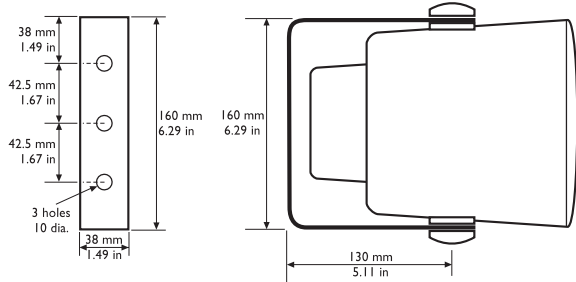
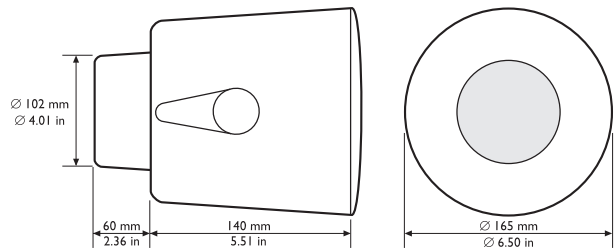
Installation/Configuration Notes

The sound projector is supplied with a steel mounting bracket painted in white. The bracket has three 10 mm holes, which can be used to easily mount the projector to walls and ceilings. The direction of the projector can be adjusted by means of two screws covered with white plastic covers. The unit is supplied with a 2 m color-coded five-core cable, with each color connected to a different primary tap on the matching transformer. This makes it easy to select full-power, half-power, quarter-power and eighth-power radiation without opening the unit during installation.

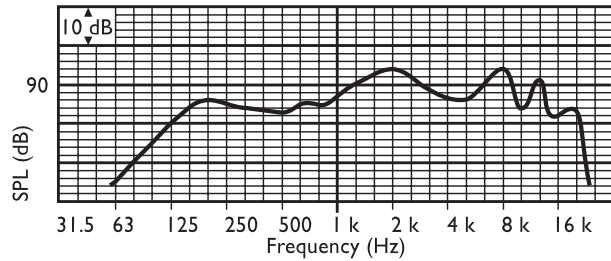


Circuit diagram

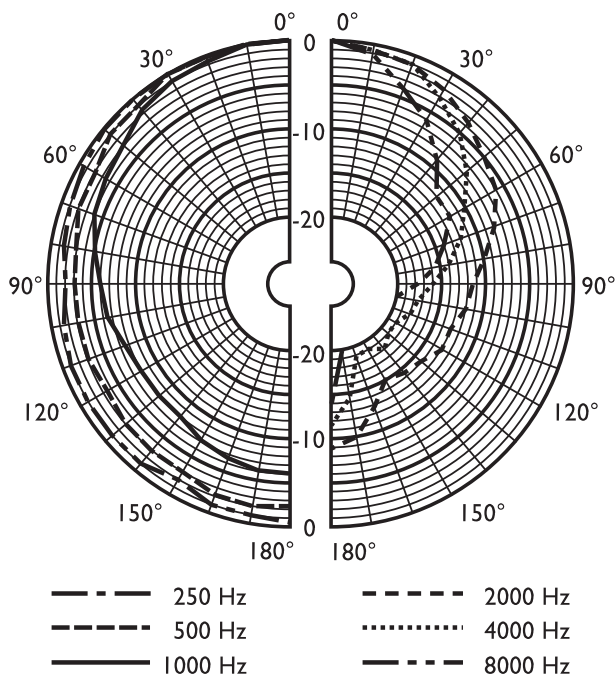
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Dimensions in mm (in)



Frequency response



Polar diagram (measured with pink noise)

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	82	84	83	88	92	88	88
SPL max.	90	92	91	96	100	96	96
Q-factor	1.2	1.2	1.6	2.9	5.1	8.5	18
Efficiency	0.17	0.26	0.16	0.28	0.39	0.09	0.04
H. angle	360	360	360	180	120	90	60
V. angle	360	360	360	180	120	90	60

Acoustical performance specified per octave

Technical Specifications

Electrical*

Maximum power	9 W
Rated power	6 / 3 / 1.5 / 0.75 W
Sound pressure level at 6 W / 1 W (1 kHz, 1 m)	96 dB / 88 dB (SPL)
Sound pressure level at 6 W / 1 W (2 kHz, 1 m)	100 dB / 92 dB (SPL)
Opening angle at 1 kHz / 4 kHz (-6 dB)	180° / 90°
Effective frequency range (-10 dB)	130 Hz to 18 kHz
Rated voltage	100 V
Rated impedance	1667 ohm
Connection	2 m 5-wire cable

* Technical performance data acc. to IEC 60268-5

Mechanical

Dimensions (D x L)	165 x 200 mm (6.50 x 7.87 in)
Speaker diameter	100 mm (4 in)
Weight	1.5 kg (3.3 lb)
Color	White (RAL 9010)
Magnet weight	101 g (3.57 oz)

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LBC 3941/11 Sound Projector
6 W, white ABS

LBC3941/11

LBC 3094/15 Sound Projector



Features

- ▶ Suitable for speech and music reproduction
- ▶ Simple power setting
- ▶ 2 m fixed connection cable
- ▶ Splash-waterproof
- ▶ Robust self-extinguishing ABS enclosure to UL 94 V0
- ▶ Complies with international installation and safety regulations

The LBC 3094/15 is a sound projector for speech and music reproduction in indoor or outdoor applications such as shopping centers, factory grounds and sports fields.

Functions

Sound projectors are intended for applications where directing the sound beam is desirable. Similar in concept to a spotlight, a sound projector can be used to provide localized sound reproduction. Typical examples include restaurants, exhibitions, factory grounds and shopping centers.

The sound projectors are splash waterproof and suitable for outdoor use and in environments with high humidity levels such as swimming pools.

The enclosures are made from high-impact self-extinguishing ABS (acc. to class UL 94 V0). The sound projector enclosures are colored off-white and supplied with steel mounting brackets painted in off-white. They are suitable for mounting onto walls or ceilings.

Certifications and Approvals

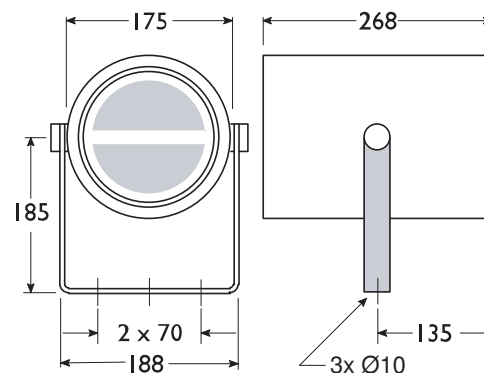
All Bosch loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures extra reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and much less chance of failure or performance deterioration.

All plastic parts are manufactured from self-extinguishing high-impact ABS material (according to UL 94 V0). In common with all Bosch products, care is taken to meet high safety standards. These sound projectors comply with all the relevant safety and installation regulations of EN 60065.

Region	Certification
Europe	CE
Water and dust protection	acc. to EN 60529, IP 63

Installation/Configuration Notes

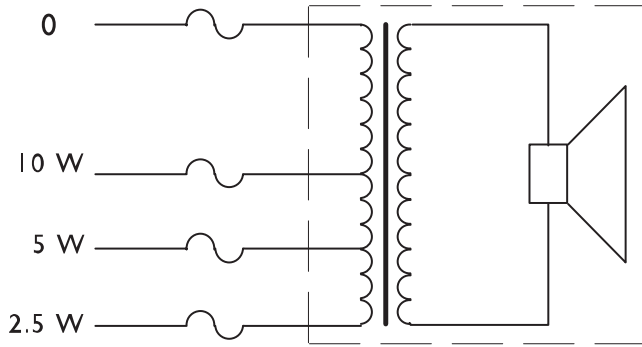
All units are supplied with a color-coded four-core connecting cable with each color connected to a different primary tap on the 100 V matching transformer. This allows nominal full-power, half-power or quarter-power radiation to be selected (in 3 dB steps).



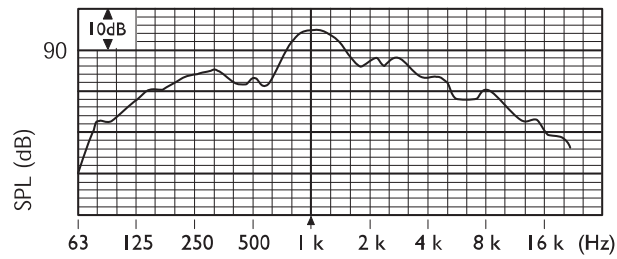
Dimensions in mm

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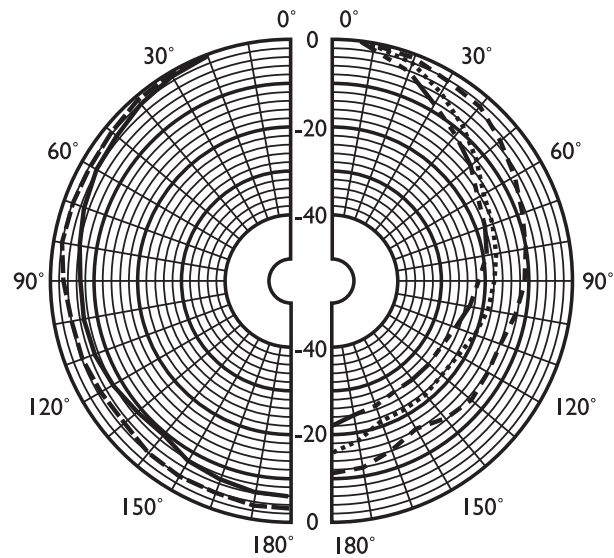
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Circuit diagram



Frequency response



Polar diagram (measured with pink noise)

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	81	82	85	92	89	87	79
SPL max.	91	92	95	102	99	97	89
Q-factor	1.2	1.3	1.8	3.1	5.9	20	32
Efficiency	0.1	0.1	0.2	0.6	0.2	0.03	0.01
H. angle	360	360	360	160	105	70	40
V. angle	360	360	360	160	105	70	40

Acoustical performance specified per octave

Technical Specifications

Electrical*

Maximum power	15 W
Rated power	10 / 5 / 2.5 W
Sound pressure level at 10 W / 1 W (1 kHz, 1 m)	102 dB / 92 dB (SPL)
Effective frequency range (-10 dB)	140 Hz to 13 kHz
Opening angle at 1 kHz / 4 kHz (-6 dB)	160° / 70°
Rated voltage	100 V
Rated impedance	1000 ohm
Connection	2 m 4-wire cable

* Technical performance data acc. to IEC 60268-5

Mechanical

Dimensions (D x L)	175 x 268 mm (6.9 x 10.5 in)
Weight	2.5 kg (7.3 lb)
Color	White (RAL 9010)

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LBC 3094/15 Sound Projector 10 W, white ABS	LBC3094/15
Accessories	
LBC 1256/00 EVAC Connection Adapter 3-pole screw connector, 100 pieces	LBC1256/00

LBC 3095/15 Pendant Sphere Loudspeaker



Features

- ▶ Suitable for speech and music reproduction
- ▶ Simple power setting
- ▶ 5 m fixed connection cable
- ▶ Splash-waterproof type
- ▶ Robust self-extinguishing ABS enclosure to UL 94 V0
- ▶ Complies with international installation and safety regulations

The LBC 3095/15 is a pendant sphere designed to be suspended from the ceiling via its connecting cable. The pleasing shape and neutral color make the pendant sphere models interesting architectural features in their own right.

Functions

The pendant sphere is splash waterproof and suitable for outdoor use and in environments with high humidity levels such as swimming pools.

Their excellent sound spread makes them ideal for use in buildings with high ceilings such as hypermarkets and superstores.

The enclosures are made from high-impact self-extinguishing ABS (according to class UL 94 V0) and are colored off-white. The pendant sphere is designed to be suspended from its color-matched connecting cable (easy to shorten for desired height). A cable clamp and ceiling cover are supplied.

They are not recommended for use in windy environments.

Certifications and Approvals

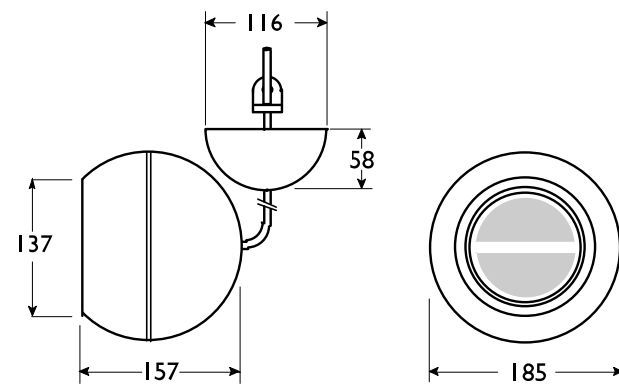
All Bosch loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures extra reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and much less chance of failure or performance deterioration.

All plastic parts are manufactured from self-extinguishing high-impact ABS material (according to UL 94 V0). In common with all Bosch products, care is taken to meet high safety standards. These sound projectors comply with all the relevant safety and installation regulations of EN 60065.

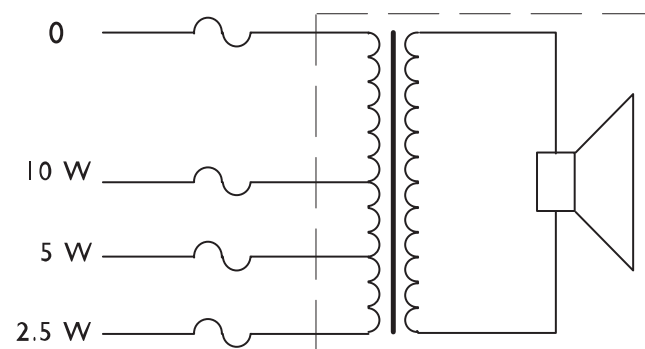
Region	Certification
Europe	CE
Water protected	acc. to EN 60529, IP 63

Installation/Configuration Notes

All units are supplied with a color-coded four-core connecting cable with each color connected to a different primary tap on the 100 V matching transformer. This allows nominal full-power, half-power or quarter-power radiation to be selected (in 3 dB steps).

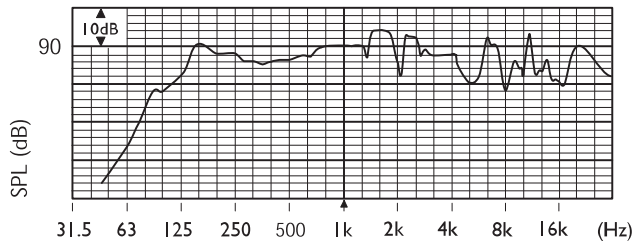


Dimensions (in mm)

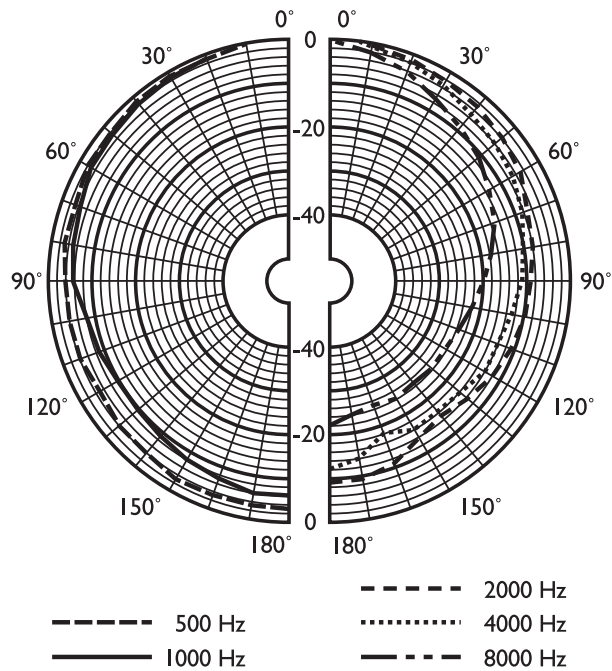


Circuit diagram

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Frequency response



Polar diagram (measured with pink noise)

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	80	85	84	89	89	85	85
SPL max.	90	95	94	99	99	95	95
Q-factor	1.2	1.3	1.8	3.1	5.2	8.5	18
Efficiency	0.1	0.3	0.2	0.3	0.2	0.05	0.02
H. angle	360	360	360	180	125	90	55
V. angle	360	360	360	180	125	90	55

Acoustical performance specified per octave

Parts Included

Quantity	Components
1	LBC 3095/15
1	Cable clamp
1	Ceiling cover

Technical Specifications

Electrical*

Maximum power	15 W
Rated power	10 / 5 / 2.5 W
Sound pressure level at 10 W / 1 W (1 kHz, 1 m)	99 dB / 89 dB (SPL)
Opening angle at 1 kHz / 4 kHz (-6 dB)	180° / 90°
Effective frequency range (-10 dB)	130 Hz to 20 kHz
Rated voltage	100 V
Rated impedance	1000 ohm
Connection	5 m 4-wire cable

Mechanical

Dimensions (D x L)	185 x 157 mm (7.3 x 6.2 in)
Weight	2.5 kg (5.5 lb)
Color	White (RAL 9010)

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LBC 3095/15 Pendant Sphere Loudspeaker 10 W, white ABS	LBC3095/15
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Accessories

LBC 1256/00 EVAC Connection Adapter 3-pole screw connector, 100 pieces	LBC1256/00
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LP1-BC10E-1 Bidirectional Sound Projector



Features

- ▶ **Superb speech and music reproduction**
- ▶ **Integrated connection cable**
- ▶ **Ceiling or wall mounting**
- ▶ **Water and dust protected to IP 65**
- ▶ **BS 5839-8 and EN 60849 compliant**

The LP1-BC10E-1 is a powerful 10 W bidirectional sound projector intended for high quality speech and music reproduction in indoor and outdoor applications. The two loudspeakers facing in opposite directions are ideally suited to applications such as tunnels, long corridors and shopping arcades. The state-of-the-art design is matched to both modern and traditional style environments. The sound projector is suitable for use in voice alarm systems.

Functions

Superb sound quality

The use of high-quality drivers in combination with advanced filtering has resulted in a very natural sound reproduction.

Voice alarm loudspeaker

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal communication announcements is governed by regulations. The LP1-BC10E-1 is designed for use in voice alarm systems. The sound projector is pre-wired for use with an optional line/loudspeaker supervision board externally mounted. The loudspeaker has built-in protection to secure that, in the event of a fire; damage to the loudspeaker does not result in failure of the circuit to

which it is connected. In this way, system integrity is maintained; ensuring loudspeakers in other areas can still be used to inform people of the situation. The loudspeaker has a ceramic terminal block, thermal fuse and heat resistant, high-temperature wiring.

The sound projector is made from high-impact self-extinguishing ABS according to class UL 94 V 0, finished in white.

Certifications and Approvals

Quality assurance

All Bosch loudspeakers are designed to withstand operating at their rated power for 100 continuous hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures improved reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and lessens the chance of failure or performance deterioration.

Safety aspects

In common with all Bosch products, care is taken to meet high safety standards. This sound projector complies with the relevant safety and installation regulations of EN 60065, BS 5839-8 and EN 60849. All ABS parts are self-extinguishing (according to UL 94 V 0)

Region	Certification
Europe	CE
Poland	CNBOP
Water and dust protection	according to IEC 60529, IP 65
Emergency	according to BS 5839-8 / EN 60849

Installation/Configuration Notes

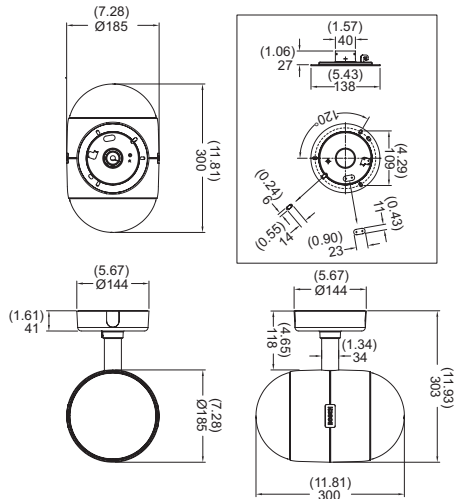
Mounting

Ease of installation is realized in the way of mounting: first the mounting plate is fixed to the wall or ceiling, secondly a safety cord is attached to the mounting plate, allowing the installer temporarily hang the loudspeaker during installation. After making the connections, the sound projector can be fixed to the mounting plate by means of a fixing screw nut and the horizontal direction can be fixed. A cover plate covers screws and electrical wiring. The versatile mounting bracket allows the sound projector to be horizontal directed. The cover plate is provided with two cable – or 16 mm (0.63 inch) conduit entries (covered as standard supplied) in opposite position, suitable for loop-through cabling.

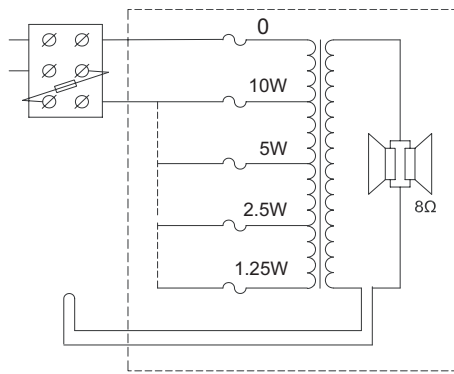
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Power setting

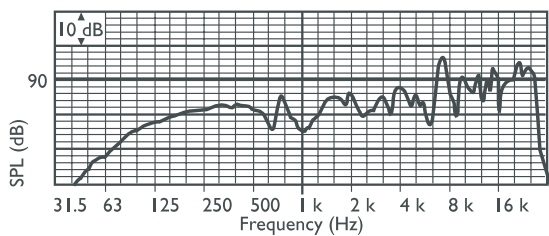
A ceramic terminal for electrical connection is provided. The loudspeaker is standard connected to full power. Half-power, quarter-power or eighth-power can be selected by connecting the appropriate color coded wire to the terminal block.



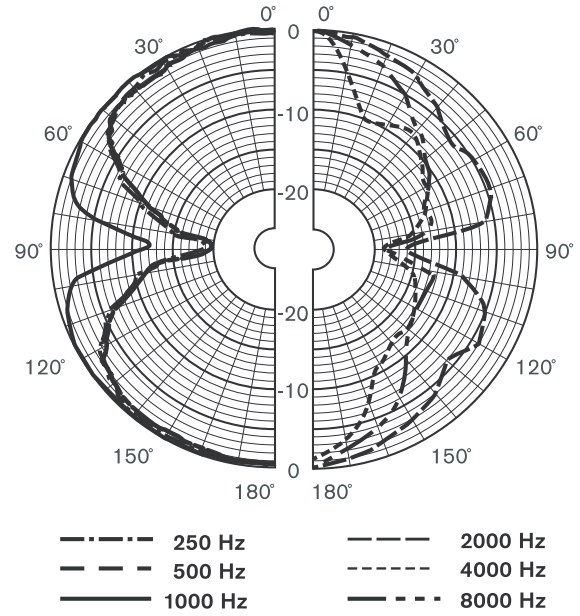
Dimensions in mm / (in)



Circuit diagram



Frequency response



Polar diagram (measured with pink noise)

Octave band sensitivity*

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	75.4	-	-
250 Hz	80.3	-	-
500 Hz	81.3	-	-
1000 Hz	80.5	-	-
2000 Hz	83.5	-	-
4000 Hz	85.4	-	-
8000 Hz	89.2	-	-
A-weighted	-	83.0	92.4
Lin-weighted	-	85.3	93.5

Octave band opening angles

	Horizontal	Vertical
125 Hz	120	120
250 Hz	120	120
500 Hz	132	132
1000 Hz	162	162
2000 Hz	153	153
4000 Hz	62	62
8000 Hz	35	35

Acoustical performance specified per octave * (all measurements are done with a pink noise signal; the values are in dB SPL).

Technical Specifications
Electrical*

Maximum power	15 W
Rated power	10 / 5 / 2.5 / 1.25 W
Sound pressure level at 10 W / 1 W (1kHz, 1 m)	90 dB / 80 dB (SPL)
Opening angle at 1 kHz / 4 kHz (-6 dB)	165° / 60°
Effective frequency range (-10 dB)	75 Hz to 20 kHz
Rated voltage	100 V
Rated impedance	1000 ohm
Connector	3-pole screw terminal

* Technical performance data according to IEC 60268-5

Mechanical

Dimensions (D x L)	185 x 297 mm (7.3 x 11.7 in)
Weight	3 kg (6.6 lb)
Color	White (RAL 9010)
Material	ABS

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LP1-BC10E-1 Bidirectional Sound Projector 10 W, white ABS	LP1-BC10E-1
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LP1-UC10E-1 Unidirectional Sound Projector



4

Features

- ▶ **Superb speech and music reproduction**
- ▶ **Integrated connection cable**
- ▶ **Ceiling or wall mounting**
- ▶ **Water and dust protected to IP 65**
- ▶ **BS 5839-8 and EN 60849 compliant**

The LP1-UC10E-1 is a powerful, 10 W sound projector intended for high quality speech and music reproduction in indoor and outdoor applications. The state-of-the-art design is matched to both modern and traditional style environments. The sound projector is suitable for use in voice alarm systems.

Functions

Superb sound quality

The use of a high-quality driver in combination with advanced filtering has resulted in a very natural sound reproduction with excellent bass response.

Voice alarm loudspeaker

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal communication announcements is governed by regulations. The LP1-UC10E-1 is designed for use in voice alarm systems. The sound projector is pre-wired for use with an optional line/loudspeaker supervision board external mounted. The loudspeaker has built-in protection to secure that, in the event of a fire; damage to the loudspeaker does not result in failure of the circuit to which it is connected. In this way, system integrity is maintained; ensuring loudspeakers in other areas can still

be used to inform people of the situation. The loudspeaker has a ceramic terminal block, thermal fuse and heat resistant, high-temperature wiring.

The sound projector is made from high-impact self-extinguishing ABS according to class UL 94 V0, finished in white.

Certifications and Approvals

Quality assurance

All Bosch loudspeakers are designed to withstand operating at their rated power for 100 continuous hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures improved reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and lessens the chance of failure or performance deterioration.

Safety aspects

In common with all Bosch products, care is taken to meet high safety standards. All ABS parts are self-extinguishing (according to UL 94 V0). This sound projector complies with the relevant safety and installation regulations of EN 60065, BS 5839-8 and EN 60849.

Region	Certification
Europe	CE
Poland	CNBOP
Water and dust protection	according to IEC 60529, IP 65
Emergency	according to BS 5839-8 / EN 60849

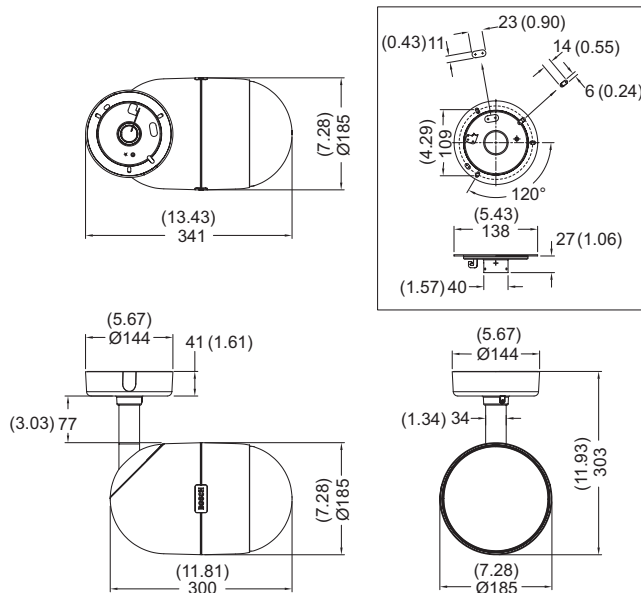
Installation/Configuration Notes

Mounting

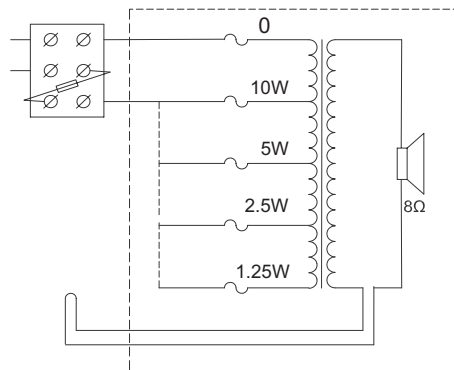
Ease of installation is realized in the way of mounting: first the mounting plate is fixed to the wall or ceiling, secondly a safety cord is attached to the mounting plate, allowing the installer temporarily hang the loudspeaker during installation. After making the connections, the sound projector can be fixed to the mounting plate, by means of a fixing screw nut, and the horizontal direction can be fixed. A cover plate covers screws and electrical wiring. The versatile mounting bracket allows the sound projector to be horizontal and vertical directed. The vertical direction can be permanent fixed with a recessed socket head screw via a small hole located in the rear housing. The cover plate is provided with two cable – or 16 mm (0.63 inch) conduit entries (covered as standard supplied) in opposite position, suitable for loop-through cabling.

Power setting

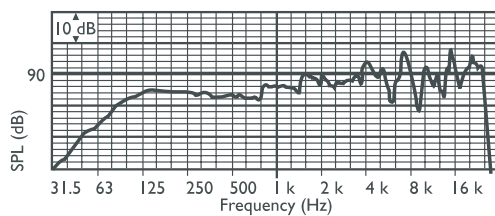
A ceramic terminal for electrical connection is provided. The loudspeaker is standard connected to full power. Half-power, quarter-power or eighth-power can be selected by connecting the appropriate color-coded wire to the terminal block.



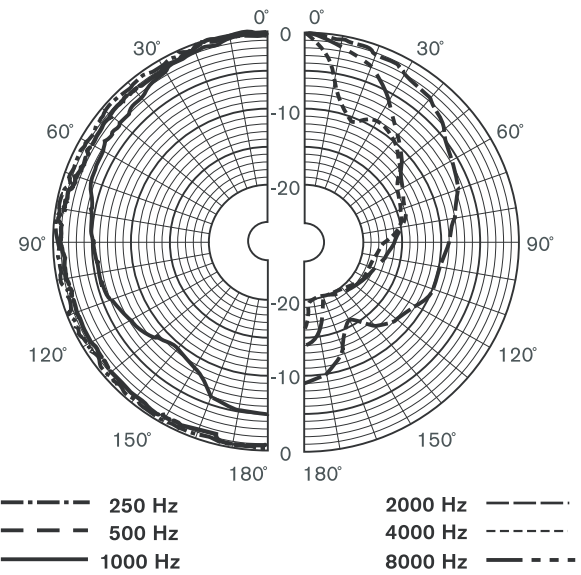
Dimensions in mm / (in)



Circuit diagram



Frequency response



Polar diagram (measured in pink noise)

Octave band sensitivity*

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	84.0	-	-
250 Hz	84.3	-	-
500 Hz	84.4	-	-
1000 Hz	86.0	-	-
2000 Hz	89.4	-	-
4000 Hz	91.1	-	-
8000 Hz	94.3	-	-
A-weighted	-	88.2	97.7
Lin-weighted	-	89.9	98.8

Octave band opening angles

	Horizontal	Vertical
125 Hz	360	360
250 Hz	360	360
500 Hz	360	360
1000 Hz	224	224
2000 Hz	124	124
4000 Hz	63	63
8000 Hz	35	35

Acoustical performance specified per octave * (all measurements are done with a pink noise signal; the values are in dB SPL).

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Technical Specifications**Electrical***

Maximum power	15 W
Rated power	10 / 5 / 2.5 / 1.25 W
Sound pressure level at 10 W / 1 W (1kHz, 1 m)	96 dB / 86 dB (SPL)
Opening angle at 1 kHz / 4 kHz (-6 dB)	220° / 65°
Effective frequency range (-10 dB)	75 Hz to 20 kHz
Rated voltage	100 V
Rated impedance	1000 ohm
Connector	3-pole screw terminal

* Technical performance data according to IEC 60268-5

Mechanical

Dimensions (D x L)	185 x 300 mm (7.3 x 11.8 in.)
Weight	3 kg (6.6 lb)
Color	White (RAL 9010)
Material	ABS

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LP1-UC10E-1 Unidirectional Sound **LP1-UC10E-1**
Projector
 10 W, white ABS

LP1-UC20E-1 Unidirectional Sound Projector



Features

- ▶ **Superb speech and music reproduction**
- ▶ **Integrated connection cable**
- ▶ **Ceiling or wall mounting**
- ▶ **Water and dust protected to IP 65**
- ▶ **BS 5839-8 and EN 60849 compliant**

The LP1-UC20E-1 is a powerful 20 W sound projector intended for high quality speech and music reproduction in indoor and outdoor applications. The state-of-the-art design is matched to both modern and traditional style environments. The sound projector is suitable for use in voice alarm systems.

Functions

Superb sound quality

The use of a high-quality driver in combination with advanced filtering has resulted in a very natural sound reproduction with excellent bass response.

Voice alarm loudspeaker

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal communication announcements is governed by regulations. The LP1-UC20E-1 is designed for use in voice alarm systems and is compliant with British Standard BS 5839-8 and EN 60849. The sound projector is pre-wired for use with an optional line/loudspeaker supervision board external mounted. The loudspeaker has built-in protection to secure that, in the event of a fire; damage to the loudspeaker does not result in failure of the circuit to which it is connected. In this way, system

integrity is maintained; ensuring loudspeakers in other areas can still be used to inform people of the situation. The loudspeaker has a ceramic terminal block, thermal fuse and heat resistant, high-temperature wiring.

The sound projector is made from high-impact self-extinguishing ABS according to class UL 94 V 0, finished in white.

Certifications and Approvals

All Bosch loudspeakers are designed to withstand operating at their rated power for 100 continuous hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures improved reliability under extreme conditions, leading to higher customer satisfaction, longer operating life and lessens the chance of failure or performance deterioration.

Safety aspects

In common with all Bosch products, care is taken to meet high safety standards.

- All ABS parts are self-extinguishing (according to UL 94 V 0). This sound projector complies with the relevant safety and installation regulations of EN 60065 and EN 60849.

Region	Certification
Europe	CE
Poland	CNBOP
Water and dust protection	according to IEC 60529, IP 65
Emergency	according to BS 5839-8 / EN 60849

Installation/Configuration Notes

Mounting

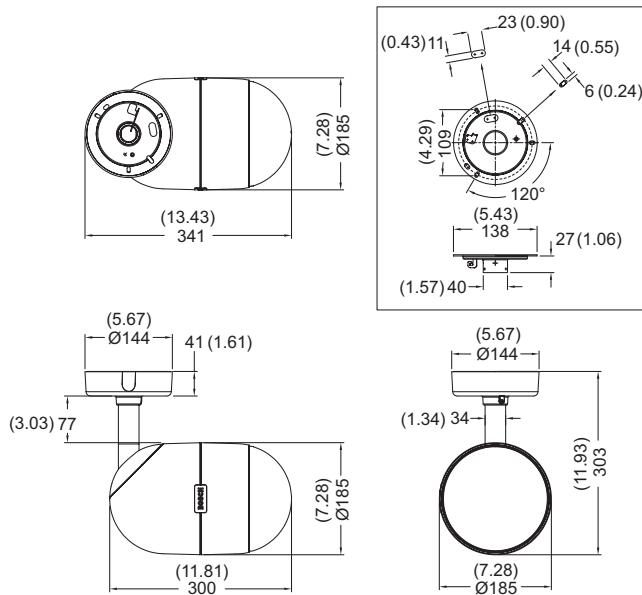
Ease of installation is realized in the way of mounting: first the mounting plate is fixed to the wall or ceiling, secondly a safety cord is attached to the mounting plate, allowing the installer temporarily hang the loudspeaker during installation. After making the connections, the sound projector can be fixed to the mounting plate, by means of a fixing screw nut, and the horizontal direction can be fixed. A cover plate covers screws and wiring. The versatile mounting bracket allows the sound projector to be horizontal and vertical directed. The vertical direction can be permanent fixed with a recessed socket head screw via a small hole located in the rear panel. The cover plate is provided with two cable – or 16 mm (0.63 inch) conduit entries (covered as standard supplied) in opposite position, suitable for loop-through cabling.

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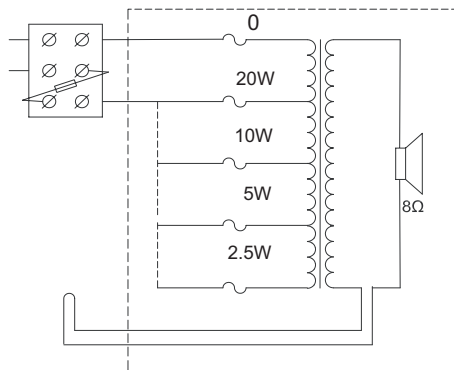
Power setting

A ceramic terminal for electrical connection is provided. The loudspeaker is standard connected to full power. Half-power, quarter-power or eighth-power can be selected by connecting the appropriate color-coded wire to the terminal block.

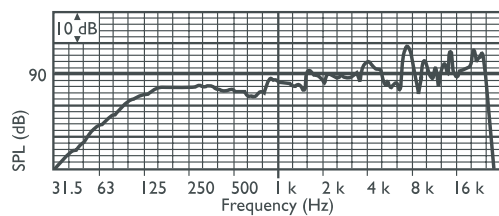
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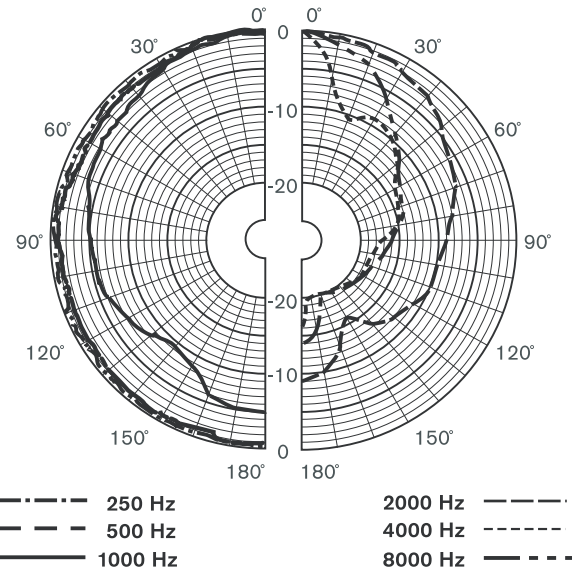
Dimensions in mm / (in)



Circuit diagram



Frequency response



Polar diagram (measured with pink noise)

Octave band sensitivity*

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	84.5	-	-
250 Hz	85.5	-	-
500 Hz	84.7	-	-
1000 Hz	87.2	-	-
2000 Hz	90.2	-	-
4000 Hz	92.1	-	-
8000 Hz	95.9	-	-
A-weighted	-	89.4	101.0
Lin-weighted	-	91.3	102.3

Octave band opening angles

	Horizontal	Vertical
125 Hz	360	360
250 Hz	360	360
500 Hz	360	360
1000 Hz	226	226
2000 Hz	124	124
4000 Hz	65	65
8000 Hz	34	34

Acoustical performance specified per octave * (all measurements are done with a pink noise signal; the values are in dB SPL).

Technical Specifications
Electrical*

Maximum power	30 W
Rated power	20 / 10 / 5 / 2.5 W
Sound pressure level at 20 W / 1 W (1kHz, 1 m)	100 dB / 87 dB (SPL)
Opening angle at 1 kHz / 4 kHz (-6 dB)	220° / 65°
Effective frequency range (-10 dB)	75 Hz to 20 kHz
Rated voltage	100 V
Rated impedance	500 ohm
Connector	3-pole screw terminal

* Technical performance data accordance to IEC 60268-5

Mechanical

Dimensions (D x L)	185 x 300 mm (7.3 x 11.8 in.)
Weight	3 kg (6.6 lb)
Color	White (RAL 9010)
Material	ABS

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LP1-UC20E-1 Unidirectional Sound Projector	LP1-UC20E-1
20 W, white ABS	

LS1-UC20E-1 Pendant Sphere Loudspeaker

4



Features

- ▶ **Superb speech and music reproduction**
- ▶ **5 m connection cable**
- ▶ **Provision for optional safety cord**
- ▶ **Water and dust protected to IP 65**
- ▶ **BS 5839-8 and EN 60849 compliant**

Sound spheres are pendant sound projectors designed to be suspended from the ceiling by their connecting cables. Their excellent sound spread makes them ideal for use in buildings with high ceilings, such as hypermarkets and superstores.

The LS1-UC20E-1 is a powerful 20 W pendant sphere loudspeaker, intended for high quality speech and music reproduction. The state-of-the-art design is matched to both modern and traditional style environments. The loudspeaker is suitable for use in voice evacuation systems.

Functions

Voice Alarm Loudspeaker

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal communication announcements is governed by regulations. The LS1-UC20E-1 is designed for use in voice alarm systems and is compliant with British Standard BS 5839-8 and EN 60849.

The loudspeaker has built-in protection to ensure that, in the event of a fire, damage to the loudspeaker does not result in failure of the circuit to which it is connected. In this way, system integrity is maintained; ensuring loudspeakers in other areas can still be used to inform people of the situation. The loudspeaker is supplied with a ceramic terminal block and thermal fuse.

Superb Sound Quality

The use of a high-quality driver in combination with advanced filtering, have resulted in a very natural sound reproduction with excellent bass response.

Certifications and Approvals

All Bosch loudspeakers are designed to withstand operating at their rated power for 100 continuous hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures improved reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and lessens the chance of failure or performance deterioration.

Safety Aspects

In common with all Bosch products, care is taken to meet high safety standards. All ABS parts are self-extinguishing (according to UL 94 V 0). This sound projector complies with the relevant safety and installation regulations of EN 60065.

Region	Certification
Europe	CE
Water and dust protection	according to IEC 60529, IP 65
Emergency	according to BS 5839-8 / EN 60849

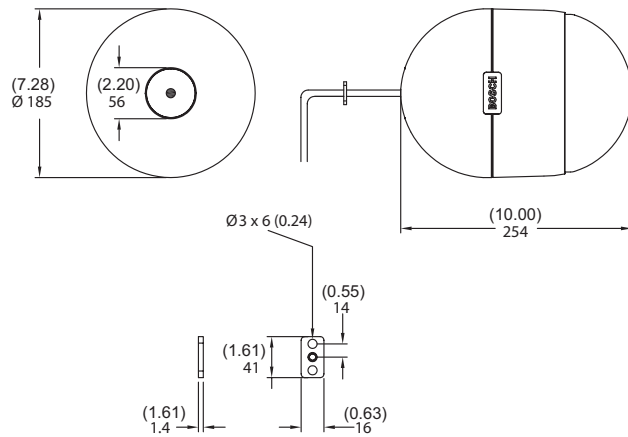
Installation/Configuration Notes

Mounting

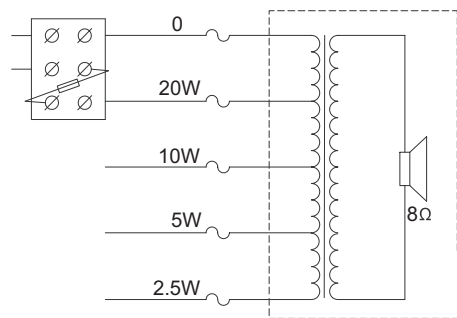
The loudspeaker is suspended from the ceiling via its five meter, five-core connecting cable, which is easy to shorten for the desired height. For optional safety, a steel safety cord can be attached.

Power Setting

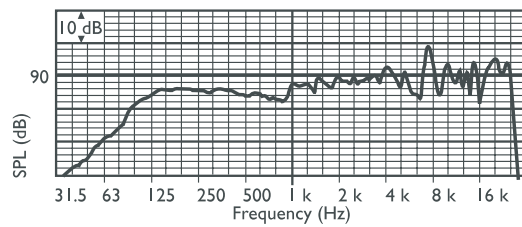
The loudspeaker is supplied with a five meter color-coded, five-core connecting cable with each color connected to a different primary tap on the 100 V matching transformer. This allows nominal full-power, half-power, quarter-power or eighth-power radiation to be selected (in 3 dB steps).



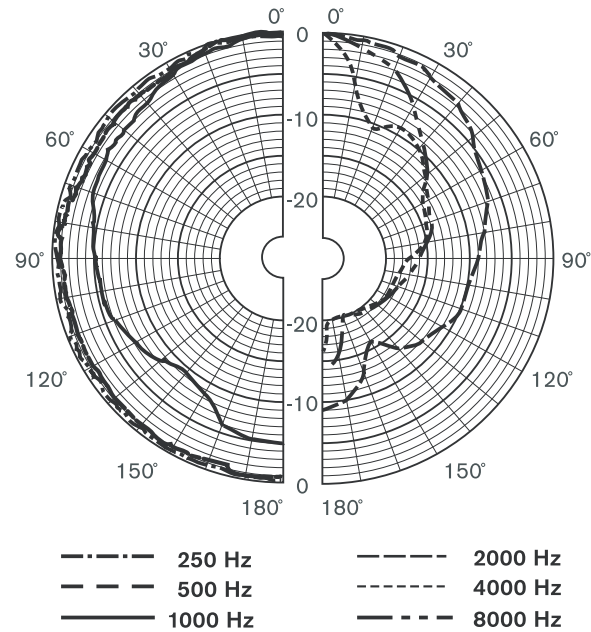
Dimensions in mm / (in)



Circuit diagram



Frequency response



Polar diagram (measured with pink noise)

Octave band sensitivity*

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	84.1	-	-
250 Hz	84.7	-	-
500 Hz	84.3	-	-
1000 Hz	85.3	-	-
2000 Hz	88.3	-	-
4000 Hz	90.7	-	-
8000 Hz	90.7	-	-
A-weighted	-	87.4	99.3
Lin-weighted	-	89.4	101.0

Octave band opening angles

	Horizontal	Vertical
125 Hz	360	360
250 Hz	360	360
500 Hz	360	360
1000 Hz	220	220
2000 Hz	122	122
4000 Hz	67	67
8000 Hz	37	37

Acoustical performance specified per octave * (all measurements are done with a pink noise signal; the values are in dBSPL).

Parts Included

Quantity	Components
1	LS1-UC20E-1 Pendant Sphere Loudspeaker
1	Cable clamp

Technical Specifications**Electrical***

Maximum power	30 W
Rated power	20 / 10 / 5 / 2.5 W
Sound pressure level at 20 W / 1 W (1kHz, 1 m)	99 dB / 86 dB (SPL)
Opening angle at 1 kHz / 4 kHz (-6 dB)	220° / 65°
Effective frequency range (-10 dB)	80 Hz to 20 kHz
Rated voltage	100 V
Rated impedance	500 ohm
Connector	3-pole screw terminal

* Technical performance data acc. to IEC 60268-5

Mechanical

Dimensions (D x L)	185 x 254 mm (7.3 x 10 in)
Weight	3 kg (6.6 lb)
Color	White (RAL 9010)
Material	ABS

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LS1-UC20E-1 Pendant Sphere	LS1-UC20E-1
Loudspeaker	
20 W, white ABS	

LBC 3430/02 Bidirectional Sound Projector



Features

- ▶ **Excellent speech and music reproduction**
- ▶ **Ceiling and/or wall mounting**
- ▶ **Robust aluminum extrusion enclosure**
- ▶ **Water and dust protected to IP 55**
- ▶ **BS 5839-8 and EN 60849 compliant**

The LBC 3430/02 is a 12 W bidirectional sound projector intended for speech and music reproduction in indoor and outdoor applications. The two loudspeakers facing in opposite directions are ideally suited to applications such as subway tunnels, long corridors and shopping arcades. The sturdy, aluminum enclosure is finished in the color off-white. The sound projector is suitable for use in voice alarm systems.

Functions

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal communication announcements is governed by regulations. The LBC 3430/02 is designed for use in voice alarm systems and is compliant with British Standard BS 5839-8 and EN 60849.

The loudspeaker has built-in protection to secure that, in the event of a fire; damage to the loudspeaker does not result in failure of the circuit to which it is connected. In this way, system integrity is maintained; ensuring loudspeakers in other areas can still be used to inform people of the situation. The loudspeaker has a ceramic terminal block, thermal fuse and heat resistant, high-temperature wiring.

The sound projector is constructed from extruded aluminum and finished in off-white. The front-grills and bracket are made from aluminum to increase corrosion resistance.

Certifications and Approvals

Quality assurance

All Bosch loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures improved reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and lessens the chance of failure or performance deterioration.

Region	Certification
Europe	CE
Safety	acc. to EN 60065
Emergency	acc. to BS 5839-8 / EN 60849
Water and dust protection	acc. to IEC 60529, IP 55

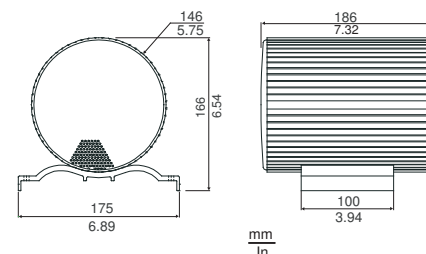
Installation/Configuration Notes

Mounting

The sound projector mounts to the ceiling or to the wall in such a way, that the connection cable is not visual which is important in areas where vandalism is a potential hazard.

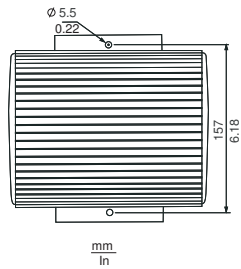
Power setting

A one-meter long fire-resistant six-core connection cable is standard fitted to the loudspeaker. Each core is a different color, and is connected to one of the primary taps on the transformer.

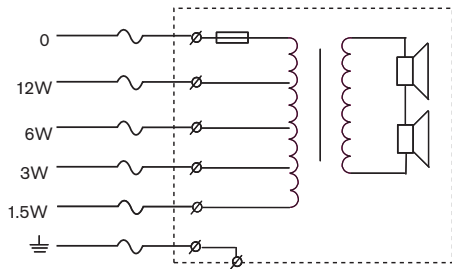


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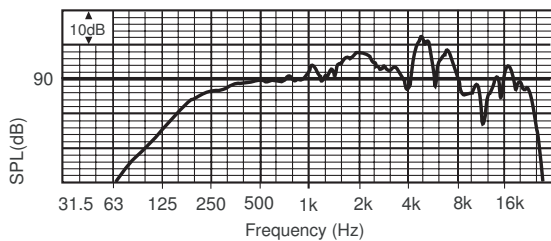
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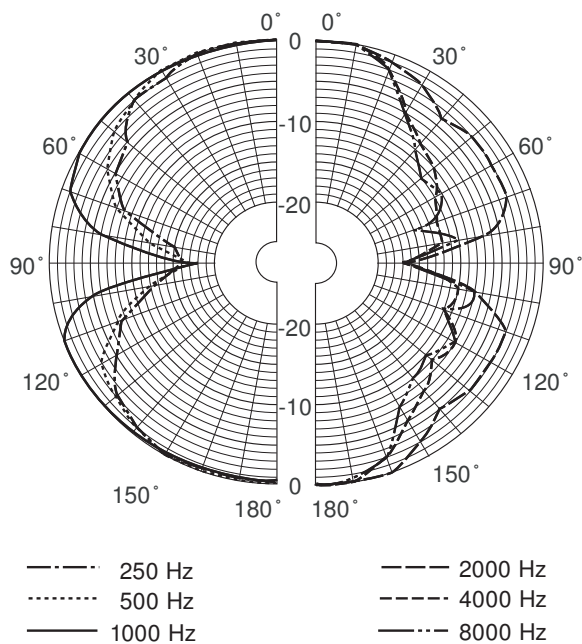
Dimensions mm / in



Circuit diagram



Frequency response



Polar diagram

Octave band sensitivity *

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	76.8	-	-
250 Hz	85.0	-	-
500 Hz	88.9	-	-
1000 Hz	91.6	-	-
2000 Hz	95.5	-	-
4000 Hz	96.4	-	-
8000 Hz	92.3	-	-
A-weighted	-	91.3	101.3
Lin-weighted	-	91.4	100.6

Octave band opening angles

	Horizontal	Vertical
125 Hz	119	119
250 Hz	129	129
500 Hz	131	131
1000 Hz	159	159
2000 Hz	149	149
4000 Hz	55	55
8000 Hz	60	60

Acoustical performance specified per octave

* (all measurements are done with a pink noise signal; the values are in dB SPL)

Technical Specifications

Electrical*

Maximum power	18 W
Rated power	12 / 6 / 3 / 1.5 W
Sound pressure level at 12 W / 1 W (1kHz, 1 m)	102 dB / 91 dB (SPL)
Opening angle at 1 kHz / 4 kHz (-6 dB)	160° / 60°
Effective frequency range (-10 dB)	180 Hz to 20 kHz
Rated voltage	100 V
Rated impedance	833 ohm
Connection	1 m fire-resistant cable

* Technical performance data acc. to IEC 60268-5

Mechanical

Dimensions (D x L)	146 x 186 mm (5.7 x 7.3 in)
Weight	3.3 kg (7.3 lb)
Color	White (RAL 9010)
Material	Aluminum

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LBC 3430/02 Bidirectional Sound Projector 12 W, white (RAL 9010)	LBC 3430/02
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LBC 3432/02 Unidirectional Sound Projector

4



Features

- ▶ **Excellent speech and music reproduction**
- ▶ **Provision for supervision board mounting**
- ▶ **(Suspended) ceiling and/or wall mounting**
- ▶ **Water and dust protected to IP 66**
- ▶ **EN 54-24 certified**
- ▶ **BS 5839-8 and EN 60849 compliant**

The LBC 3432/02 is a powerful 20 W sound projector intended for speech and music reproduction in indoor and outdoor applications. The sturdy, aluminum enclosure is finished in the color off-white. It has provisions for cable loop through connection and mounting of a line or loudspeaker supervision board. The sound projector is suitable for use in voice alarm systems.

Functions

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal communication announcements is governed by regulations. The LBC 3432/02 is designed for use in voice alarm systems and is compliant with British Standard BS 5839-8 and EN 60849.

The sound projector has provision inside for mounting an optional line/loudspeaker supervision board.

The loudspeaker has built-in protection to secure that, in the event of a fire; damage to the loudspeaker does not result in failure of the circuit to which it is connected. In this way, system integrity is maintained; ensuring loudspeakers in other areas can still be used to inform people of the situation. The loudspeaker has a ceramic terminal block, thermal fuse and heat resistant, high-temperature wiring.

The sound projector is constructed from extruded aluminum and finished in off-white. The front-grill and bracket are made from aluminum to increase corrosion resistance.

Certifications and Approvals

Quality assurance

All Bosch loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures improved reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and lessens the chance of failure or performance deterioration.

Region	Certification
Europe	CE
Poland	CNBOP
Safety	acc. to EN 60065
Emergency	acc. to BS 5839-8 / EN 54-24 / EN 60849
Water and dust protection	acc. to IEC 60529, IP 66

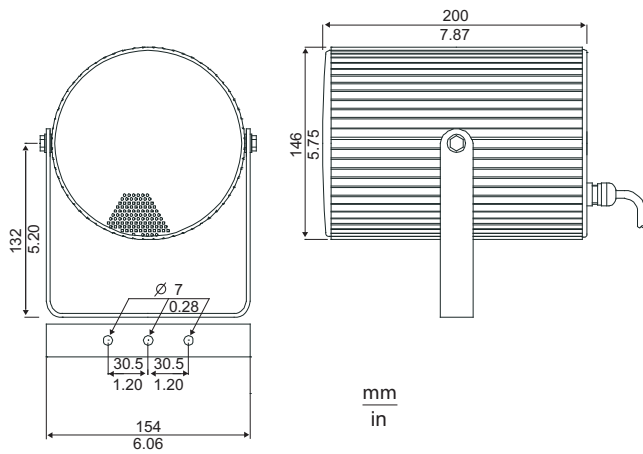
Installation/Configuration Notes

Mounting

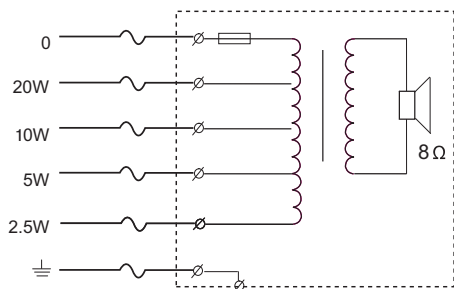
A sturdy aluminum mounting bracket is supplied to allow easy mounting and directing in virtually any position. The sound projector may also be suspended using the bracket.

Power Setting

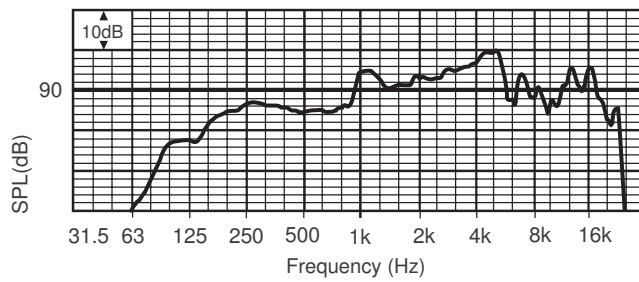
A one meter long fire-resistant six-core cable is standard fitted to the loudspeaker. Each core is a different color, and is connected to one of the primary taps on the transformer. For loop-through connection, the rear cover is fitted with a second entry hole (covered as standard supplied).



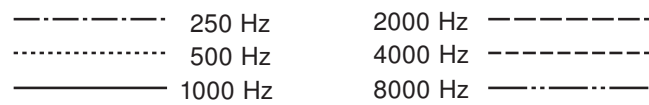
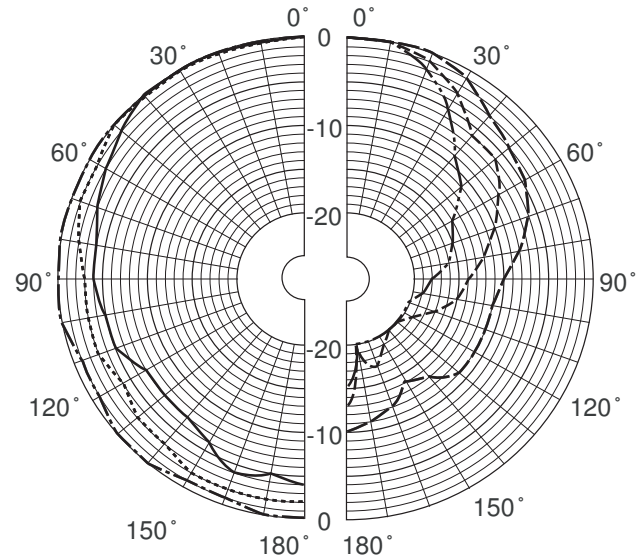
Dimensions: mm / in



Circuit diagram



Frequency response



Polar diagram

Octave band sensitivity*

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	81.2	-	-
250 Hz	87.0	-	-
500 Hz	86.2	-	-
1000 Hz	92.2	-	-
2000 Hz	94.5	-	-
4000 Hz	100.4	-	-
8000 Hz	93.3	-	-
A-weighted	-	93.2	104.9
Lin-weighted	-	93.1	104.2

Octave band opening angles

	Horizontal	Vertical
125 Hz	360	360
250 Hz	360	360
500 Hz	360	360
1000 Hz	179	179
2000 Hz	105	105
4000 Hz	49	49
8000 Hz	46	46

Acoustical performance specified per octave

* (all measurements are done with a pink noise signal; the values are in dB SPL)

Technical Specifications
Electrical*

Maximum power	30 W
Rated power	20 / 10 / 5 / 2.5 W
Sound pressure level at 20 W / 1 W (1kHz, 1 m)	105 / 92 dB (SPL)
Opening angle at 1 kHz / 4 kHz (-6 dB)	180° / 70°
Effective frequency range (-10 dB)	150 Hz to 20 kHz
Rated voltage	100 V
Rated impedance	500 ohm
Connector	1 m fire-resistant cable

* Technical performance data acc. to IEC 60268-5

Mechanical

Dimensions (D x L)	146 x 200 mm (5.7 x 7.9 in)
Weight	2.6 kg (5.7 lb)
Color	White (RAL 9010)
Material	Aluminum

Environmental

Operating temperature	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LBC 3432/02 Unidirectional Sound **LBC 3432/02**
Projector
 20 W, white (RAL 9010)

LS1-OC100E-1 Hemi-directional Loudspeaker



Features

- ▶ 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
- ▶ BS 5839-8 and EN 60849 compliant

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 m², 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. *

* *patent pending*

Certifications and Approvals

Region	Certification
Europe	CE
Safety	acc. to EN 60065
Emergency	acc. to 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, 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

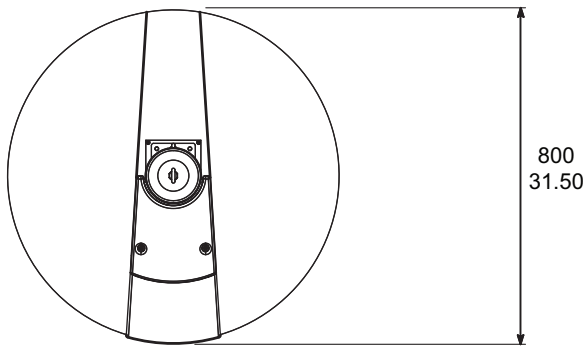
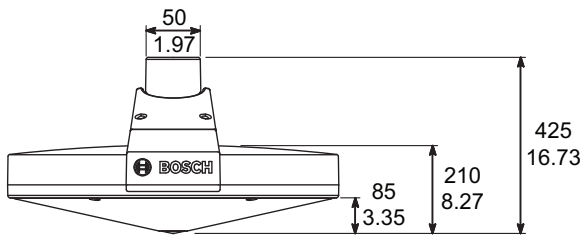
The mounting plates can be mechanically connected with a standard 39 mm dia. tube (not supplied by Bosch, but generally available in any required length).

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.

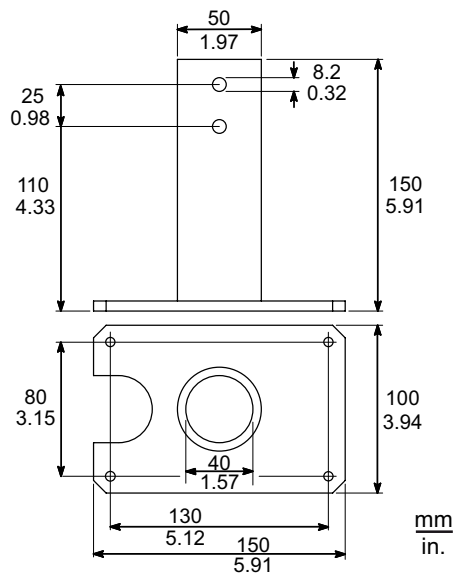
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4



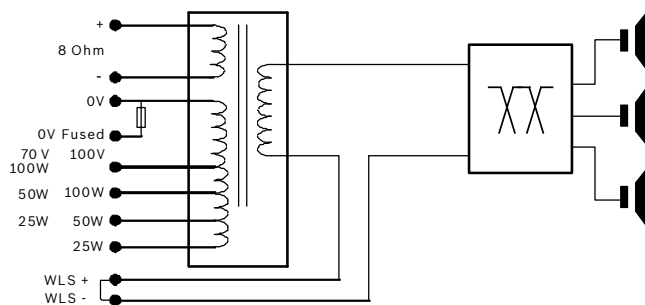
mm
in.

Dimensions LS1-OC100E-1

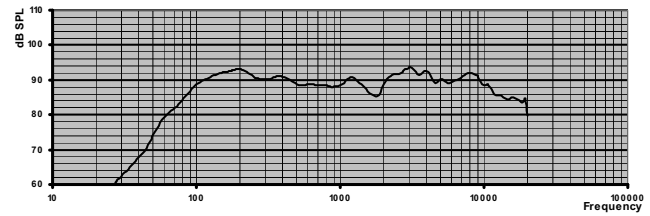


mm
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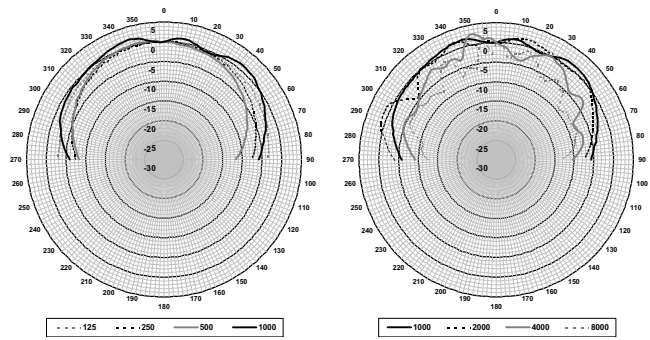
Dimensions LM1-MSB



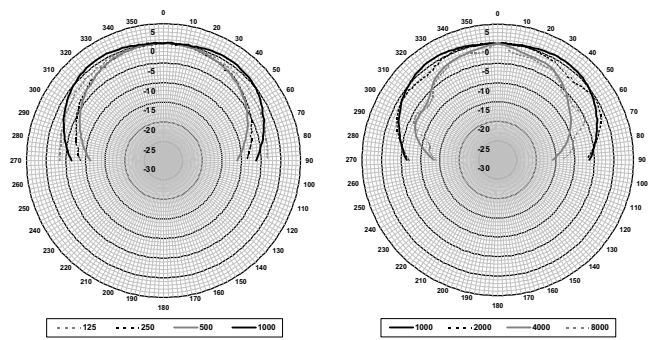
Circuit diagram



Frequency response



Vertical polar diagram of LS1-OC100E-1 (pink noise octave, normalized at 0° axis)



Horizontal polar diagram of LS1-OC100E-1 (pink noise octave, normalized at 0° axis)

Octave band sensitivity *

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	91.2	-	-
250 Hz	92.1	-	-
500 Hz	90.5	-	-
1000 Hz	89.5	-	-
2000 Hz	90.1	-	-
4000 Hz	92.1	-	-
8000 Hz	91.8	-	-
A-weighted	-	88.0	107.1
Lin-weighted	-	89.7	109.0

Octave band opening angles

	Horizontal	Vertical
125 Hz	>180	>180
250 Hz	139	153
500 Hz	127	136
1000 Hz	175	180
2000 Hz	172	180
4000 Hz	96	137
8000 Hz	111	80

Acoustical performance specified per octave

* (all measurements are done with a pink noise signal; the values are in dB SPL)

Parts Included

Quantity	Components
1	LS1-OC100E-1
1	Installation Instructions

Technical Specifications

Electrical*

Maximum power	150 W
Rated power	100 W (100 – 50 – 25 W)
Sound pressure level at 100 W / 1 W (1 kHz, 1 m)	110 / 90 dB
Opening angle at 1 kHz / 4 kHz (-6 dB)	175° / 96° (horizontal) 180° / 137° (vertical)
Effective frequency range (-10 dB)	60 Hz to 20 kHz
Rated voltage	100 V, 70 V and 28.3 V
Rated impedance	100 ohm, 50 ohm and 8 ohm
Connector	Ceramic screw terminal

* Technical performance data acc. to IEC 60268-5

Mechanical

LS1-OC100E-1

Dimensions (dia. x H)	800 x 425 mm (31.50 x 16.74 in)
Weight	27 kg (59.52 lb)
Color baffle	White (RAL 9010)
Color top cover	Silver (RAL 9023)
Color grille	Silver (RAL 9006)
Material	ABS TSG

LM1-MSB

Dimensions (H x W x D)	150 x 100 x 150 mm (5.90 x 3.94 x 5.90 in)
Weight	2.9 kg (6.39 lb)
Material	Zinc plated steel

Environmental

Operating temperature	-25 to +55 °C (-13 to 131 °F)
Storage temperature	-40 to +70 °C (-40 to +158 °F)
Relative humidity	<95%

Ordering Information

LS1-OC100E-1 Hemi-directional Loudspeaker 100 W	LS1-OC100E-1
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Accessories

LM1-MSB Metal Suspension Bracket Adaptor Set Metal Suspension Bracket Adaptor Set	LM1-MSB
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