

LBC 3950/01 Ceiling Loudspeaker

4



Features

- ▶ **Compact yet powerful**
- ▶ **Very wide opening angle**
- ▶ **Modern unobtrusive styling**
- ▶ **Installation friendly**
- ▶ **Splash-waterproof**
- ▶ **Comply with international installation and safety regulations**

The LBC 3950/01 is a compact, 6 W loudspeaker with a circular plastic grille. It has excellent audio performance and is easy to install with its integral mounting clips. The loudspeaker is IPx4 water protected from the front so it can be installed in humid environments.

Functions

The LBC 3950/01 has a circular pattern plastic grille with a plastic surround, finished in an attractive off-white RAL color. The unobtrusive styling of this loudspeaker complements modern interior lighting.

The loudspeaker feature a very wide opening angle, which means fewer units are required to cover a given area. The wide frequency range means better speech and music reproduction. The unit is supplied with a 100 V matching transformer with taps on the primary winding for full-power, half-power, quarter-power and eighth-power radiation.

The loudspeaker (with special treated paper cone), is IP 4 water protected from the front and can be applied in humidity environments for example bathrooms, saunas, atriums and swimming pool areas.

Certifications and Approvals

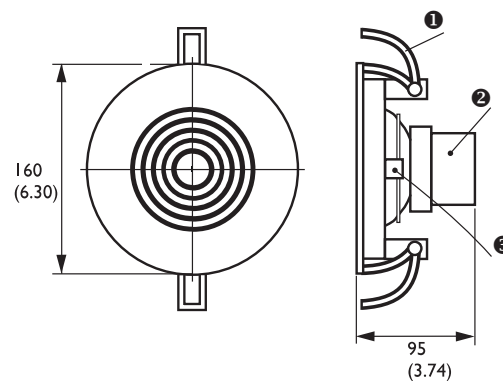
All Bosch loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated 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 94V0).

Region	Certification
Europe	CE Declaration of Conformity
Safety	acc. to EN 60065
Water protected	acc. to EN 60529, IPx4

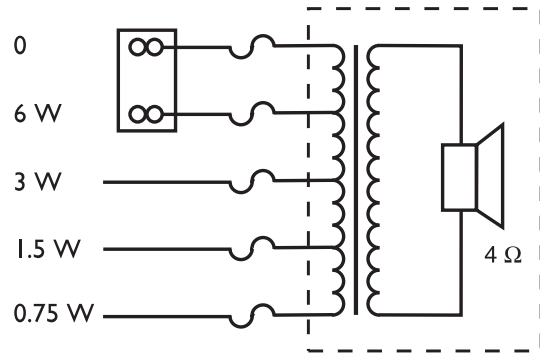
Installation/Configuration Notes

Installation is easy with integral clips that securely hold the ceiling loudspeaker in its cut-out. Ceilings from 9 to 25 mm thick can be accommodated. A template is also provided for accurately marking the cutout in ceiling panels. Wiring is via a connection block with push-type terminals, making installation possible without using any special tools. The terminal blocks have provision for loop-through wiring. The transformer is delivered wired for 6 W rated output power, but can easily be changed for other connections using the color-coded wires and terminal block.

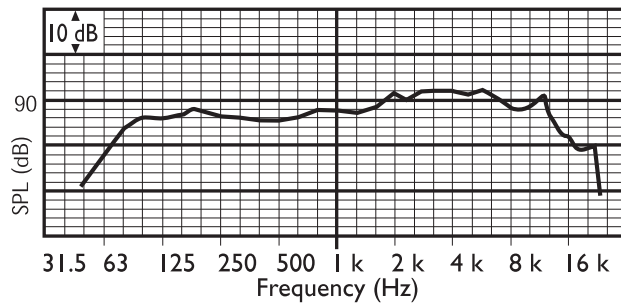


- 01 Clamp
- 02 Matching transformer
- 03 Terminal block

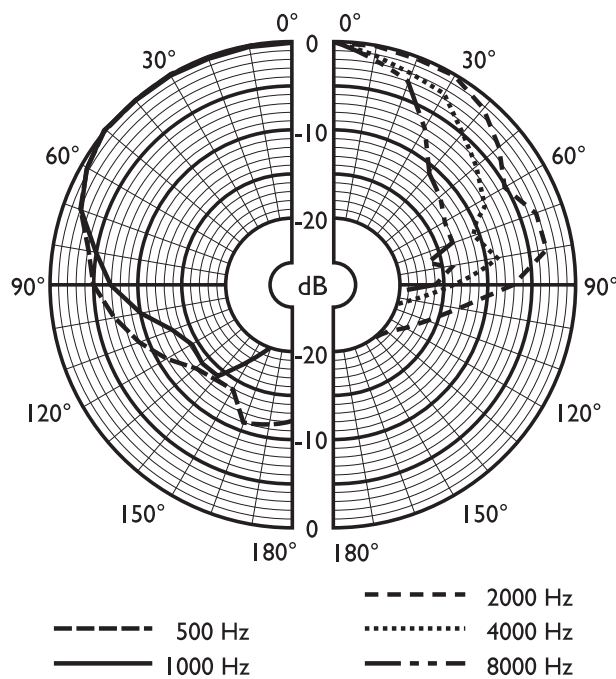
Dimensions in mm (in)



Circuit diagram



Frequency response



Polar diagram

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	87	88	86	88	89	91	89
SPL max.	95	96	94	96	97	99	97
Q-factor	4	5.6	2.6	3	3.8	8.1	15
Efficiency	0.16	0.14	0.19	0.27	0.26	0.19	0.06

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
H. angle	180	180	180	170	165	90	55
V. angle	180	180	180	170	165	90	55

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 (4 kHz, 1 m)	99 dB / 91 dB (SPL)
Effective frequency range (-10 dB)	60 Hz to 18 kHz
Opening angle at 1 kHz/4 kHz (-6 dB)	170° / 90°
Rated voltage	100 V
Rated impedance	1667 ohm
Connector	2-pole push-in terminal block

* Technical performance data acc. to IEC 60268-5

Mechanical

Diameter	160 mm (6.30 in)
Maximum depth	95 mm (3.74 in)
Ceiling thickness	9 to 25 mm (0.35 to 0.98 in)
Mounting cut-out	145 mm (5.71 in)
Speaker diameter	101.6 mm (4 in)
Weight	690 g (1.52 lb)
Color	Off-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 3950/01 Ceiling Loudspeaker 6 W, with a circular plastic grille.	LBC3950/01
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Accessories

LBC 1256/00 EVAC Connection Adapter 3-pole screw connector, 100 pieces	LBC1256/00
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LBC 3951/11 Ceiling Loudspeaker

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Features

- ▶ **Compact yet powerful**
- ▶ **Very wide opening angle**
- ▶ **Modern unobtrusive styling**
- ▶ **Installation friendly**
- ▶ **Splash - waterproof**
- ▶ **Comply with international installation and safety regulations**

The LBC 3951/11 is a compact, 6 W loudspeaker with a perforated metal grille. It has excellent audio performance and is easy to install with its integral mounting clips. The loudspeaker is IPx4 water protected from the front so it can be installed in humid environments.

Functions

The LBC 3951/11 has a perforated metal grille with a plastic surround, finished in an attractive off-white RAL color. The unobtrusive styling of this loudspeaker complements today's interior lighting.

The loudspeaker feature a very wide opening angle, which means fewer units are required to cover a given area. The wide frequency range means better speech and music reproduction. The unit is supplied with a 100 V matching transformer with taps on the primary winding for full-power, half-power, quarter-power and eighth-power radiation.

The loudspeaker (with special treated paper cone), is IPx4 water protected from the front and can be applied in humidity environments for example bathrooms, saunas, atriums and swimming pool areas.

Certifications and Approvals

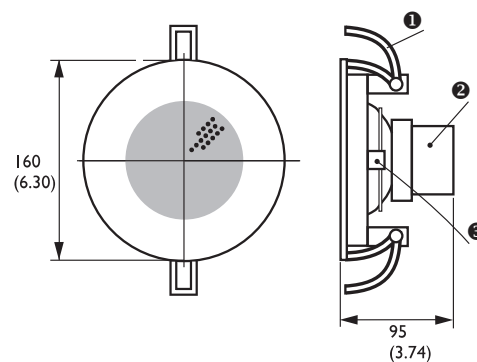
All plastic parts are manufactured from self-extinguishing high-impact ABS material (according to UL 94V0).

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.

Region	Certification
Europe	CE
Safety	acc. to EN 60065
Water protected	acc. to EN 60529, IPx4

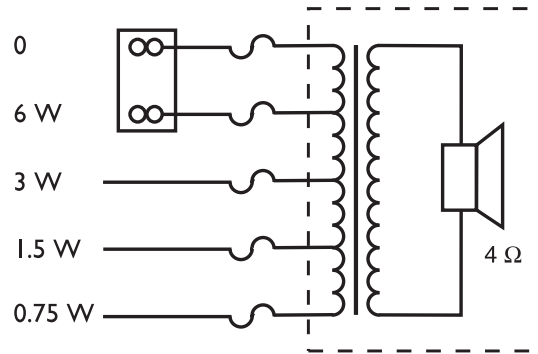
Installation/Configuration Notes

Installation is easy with integral clips that securely hold the ceiling loudspeaker in its cut-out. Ceilings from 9 to 25 mm thick can be accommodated. A template is also provided for accurately marking the cutout in ceiling panels. Wiring is via a connection block with push-type terminals, making installation possible without using any special tools. The terminal blocks have provision for loop-through wiring. The transformer is delivered wired for 6 W rated output power, but can easily be changed for other connections using the color-coded wires and terminal block.

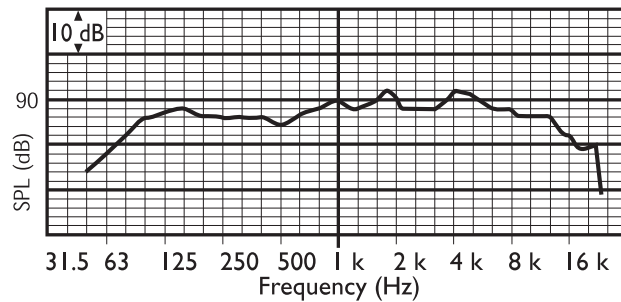


- 01 Clamp
- 02 Matching transformer
- 03 Terminal block

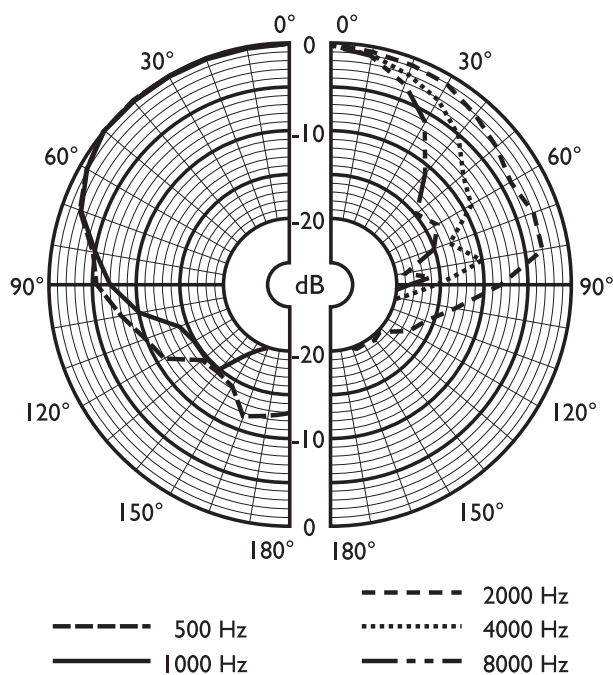
Dimensions in mm (inch)



Circuit diagram



Frequency response



Polar diagram

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	87	87	85	88	89	89	86
SPL max.	95	95	93	96	97	97	94
Q-factor	4	5.6	2.2	3.2	4.6	10.7	19
Efficiency	0.16	0.11	0.18	0.25	0.22	0.09	0.03
H. angle	180	180	180	170	160	80	60
V. angle	180	180	180	170	160	80	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 (4 kHz, 1 m)	99 dB / 91 dB (SPL)
Effective frequency range (-10 dB)	60 Hz to 18 kHz
Opening angle at 1 kHz/4 kHz (-6 dB)	170° / 80°
Rated voltage	100 V
Rated impedance	1667 ohm
Connector	2-pole push-in terminal block

* Technical performance data acc. to IEC 60268-5

Mechanical

Diameter	160 mm (6.30 inch)
Maximum depth	95 mm (3.74 inch)
Ceiling thickness	9 to 25 mm (0.35 to 0.98 inch)
Mounting cut-out	145 mm (5.71 inch)
Speaker diameter	101.6 mm (4 in)
Weight	690 g (1.52 lb)
Color	off-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 3951/11 Ceiling Loudspeaker 6 W loudspeaker with a perforated metal grille.	LBC3951/11
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Accessories

LBC 1256/00 EVAC Connection Adapter 3-pole screw connector, 100 pieces	LBC1256/00
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LC3 Ceiling Loudspeaker Range

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Features

- ▶ Suitable for speech and music reproduction
- ▶ Light weight ABS material
- ▶ Easy to install
- ▶ Optional back-box
- ▶ Unobtrusive design

The LC3-UC06 is a general purpose, cost-effective 6 W ceiling loudspeaker, suitable for 100 V connection with power tapping of: 6, 3 and 1.5 Watt.

The LC3-UC06-LZ is a low impedance (4 Ohm) version ceiling loudspeaker for direct connection to a low impedance amplifier output.

The optional back-box LC3-CBB fully protects the loudspeaker from dust, falling objects and prevents sound traveling via the ceiling cavity to adjacent areas.

The loudspeaker frame, grill and back-box are manufactured from self-extinguishing ABS according to UL 94V0.

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.

CE	Declaration of Conformity
Safety	According to EN 60065

Installation/Configuration Notes

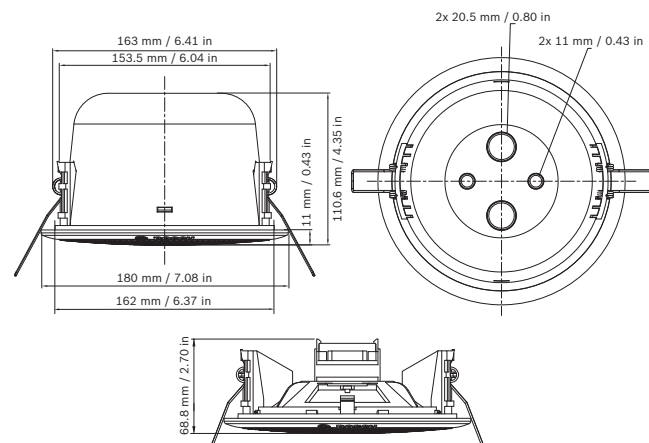
Installation is easy with integral spring arms that securely hold the ceiling loudspeaker in its cut-out. Ceilings from 5 to 25 mm thick can be accommodated. A template is also provided for accurately marking the cut-out in ceiling panels.

The electrical connection is by means of flying leads, with each color connected to a different primary tap of the matching transformer.

Three primary taps for 100 V are provided on the matching transformer to allow selection of nominal full-power, half-power and quarter-power.

The optional back-box (LC3-CBB) protects the rear of the loudspeaker from dust, falling objects, makes the unit vermin proof and prevents sound traveling via the ceiling cavity to adjacent areas.

The back-box is assembled with the loudspeaker by means of a snap-in construction and has knock-out holes for two grommets (11 mm) and for two cable glands (20.5 mm).



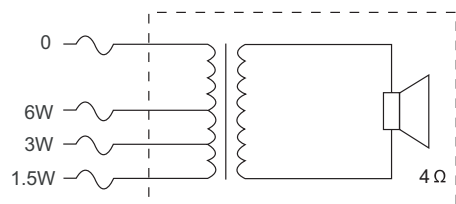
Mechanical diagram LC3-UC06 and LC3-CBB



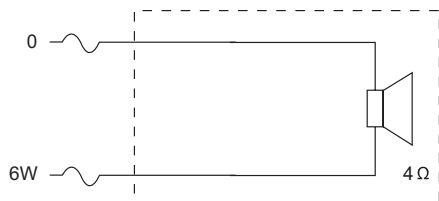
LC3-UC06 and LC3-CBB



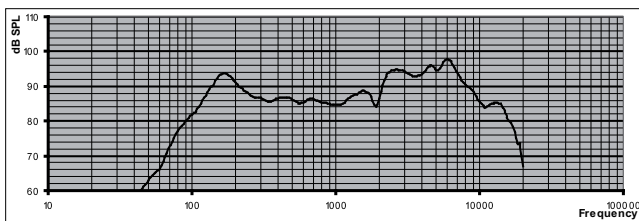
LC3-CBB



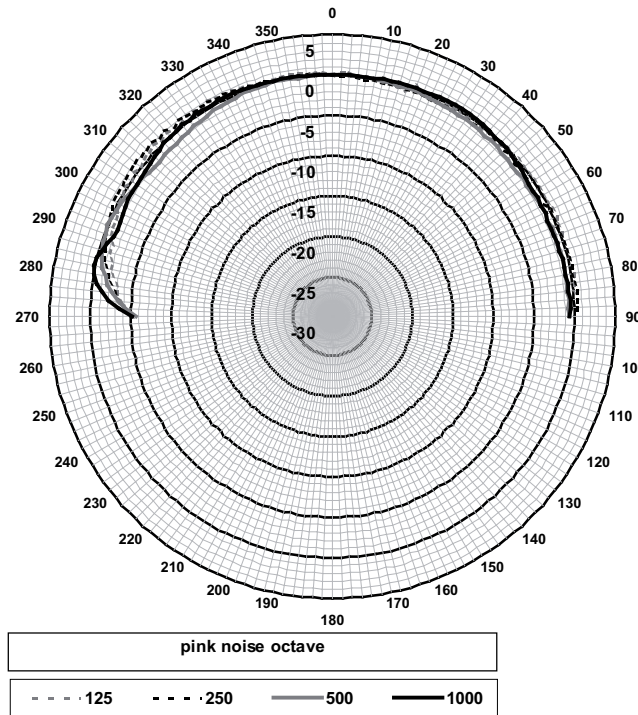
Circuit diagram LC3-UC06



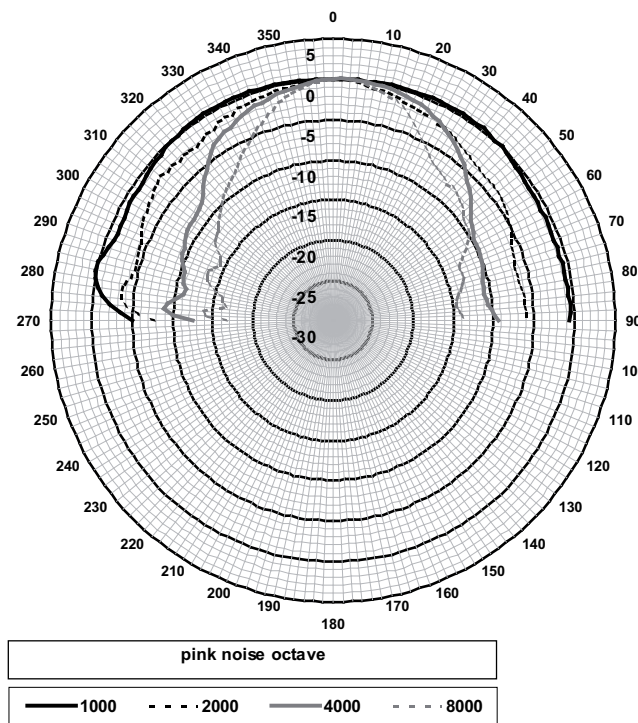
Circuit diagram LC3-UC06-LZ



Frequency response LC3-UC06



LC3-UC06 horizontal/vertical polar diagram (low frequency). Normalized at 0-degrees axis.



LC3-UC06 horizontal/vertical polar diagram (low frequency). Normalized at 0-degrees axis.

Octave band sensitivity LC3-UC06 *

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	90.7	-	-
250 Hz	89.7	-	-
500 Hz	86.3	-	-

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1000 Hz	85.9	-	-
2000 Hz	91.4		
4000 Hz	94.5	-	-
8000 Hz	93.4	-	-
A-weighted	-	89.1	95.9
Lin-weighted	-	89.7	96.7

Octave band opening angles LC3-UC06

	Horizontal	Vertical
125 Hz	180	180
250 Hz	180	180
500 Hz	180	180
1000 Hz	180	180
2000 Hz	180	180
4000 Hz	85	85
8000 Hz	56	56

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	LC3-UC06 Ceiling Loudspeaker
1	Installation Instruction
1	Ceiling cut-out template

Technical Specifications

Electrical

	LC3-UC06	LC3-UC06-LZ
Description	Ceiling loudspeaker	Ceiling loudspeaker
Maximum power	9 W	9 W
Rated power	6 W (6/3/1.5 W)	6 W
Sound pressure level at 6 W power / 1 W (1 kHz, 1 m)	94 dB / 86 dB (SPL)	94 dB / 86 dB (SPL)
Sound pressure level at 6 W power / 1 W (4 kHz, 1 m)	103 dB / 95 dB (SPL)	103 dB / 95 dB (SPL)
Opening angle at 1 kHz / 4kHz (-6 dB)	180° / 85°	180° / 85°
Effective frequency range (-10 dB)	90 Hz to 20 kHz	90 Hz to 20 kHz
Rated voltage	100 V	4.9 V
Rated impedance	1667 Ohm	4 Ohm
Electrical connection	Flying leads: Length is 150 mm (5.90 in)	

Mechanical

	LC3-UC06	LC3-UC06-LZ
Description	Ceiling Loudspeaker	Ceiling Loudspeaker
Diameter	180 mm (7.08 in)	180 mm (7.08 in)
Mounting cut-out	167 mm (6.57 in)	167 mm (6.57 in)
Max. ceiling thickness	5 to 25 mm (0.19 to 0.98 in)	5 to 25 mm (0.19 to 0.98 in)
Maximum depth	59 mm (2.32 in)	59 mm (2.32 in)
Material (frame, front grille)	ABS	ABS
Weight	475 g (1.04 lb)	337 g (0.74 lb)
Color	White (RAL 9010)	White (RAL 9010)

	LC3-CBB
Description	Back-Box
Diameter	148 mm (5.82 in)
Maximum depth	96.3 mm (3.79 in)
Material	ABS
Weight	110 g (0.24 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%

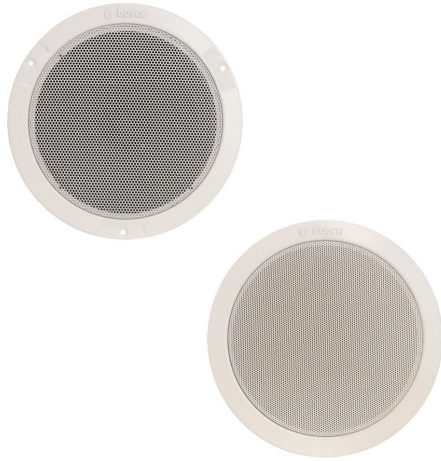
Ordering Information

LC3-UC06 Ceiling Loudspeaker 6 W	LC3-UC06
LC3-UC06-LZ Ceiling Loudspeaker 6 W, 4 Ohm	LC3-UC06-LZ

Accessories

LC3-CBB Back Box Prevents sound traveling via the ceiling cavity to adjacent areas, and fully protects the loudspeaker from dust, falling objects.	LC3-CBB
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LHM 0606/xx Ceiling Loudspeaker



Features

- ▶ Suitable for speech and music reproduction
- ▶ Flush-mounting in ceiling cavity
- ▶ Easy to install
- ▶ Simple power setting
- ▶ Unobtrusive in virtually all interiors
- ▶ Complies with international installation and safety regulations

The LHM 0606/xx is a general purpose, 6 W, cost-effective ceiling loudspeaker. The /00 version is screw mounted and the /10 version is clamp mounted into the ceiling. An optional fire dome LBC 3080/01 is available.

Functions

An economic flushing-mounting ceiling loudspeaker is available for general purpose applications. This full range loudspeaker is suitable for both speech and music reproduction in shops, department stores, schools, offices, sports halls, hotels and restaurants.

The speaker assembly consists of a single-piece, 6W dual cone loudspeaker and frame, with a 100 V, matching transformer mounted on the back. A circular metal grille is an integrated part of the front. The appearance and neutral white color has been selected to be unobtrusive in virtually all interiors.

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.

Safety acc. to EN 60065

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Installation/Configuration Notes

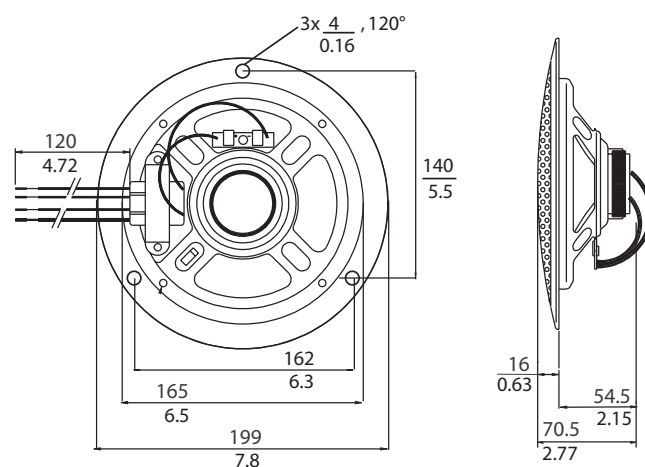
Mounting

The assembly is simply and quickly installed into a hole in the ceiling cavity. The /00 version is secured with the three white screws (supplied). The /10 version is secured by two integral spring-loaded ceiling locking clamps. A circular template for marking a 165 mm diameter hole is included with the loudspeaker.

Three wires on the matching transformer (primary) provide for selection of nominal full-power, half-power or quarter-power radiation.

Fire dome

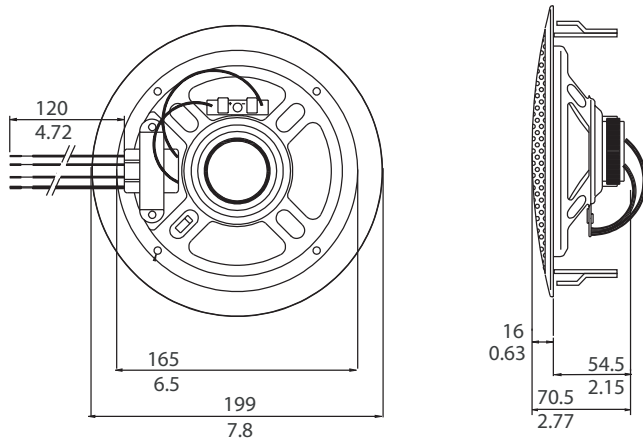
During a fire, the ceiling cavity in which loudspeakers are installed can allow flames to spread throughout a building. To prevent fire entering the cavity via the loudspeaker, the ceiling loudspeaker can be fitted with a protective steel fire dome (LBC 3080/01). This optional fire dome is mounted on the loudspeaker assembly using four self-tapping screws, supplied as standard. There are four knock-out holes; two (2) for rubber grommets (supplied) and two (2) for cable glands. (PG13).



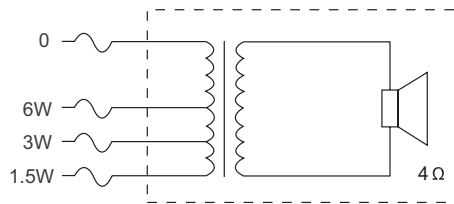
LHM 0606/00 Dimensions in mm / inch

270 | Loudspeakers | Ceiling

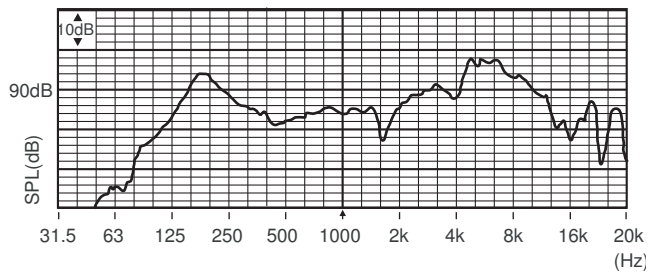
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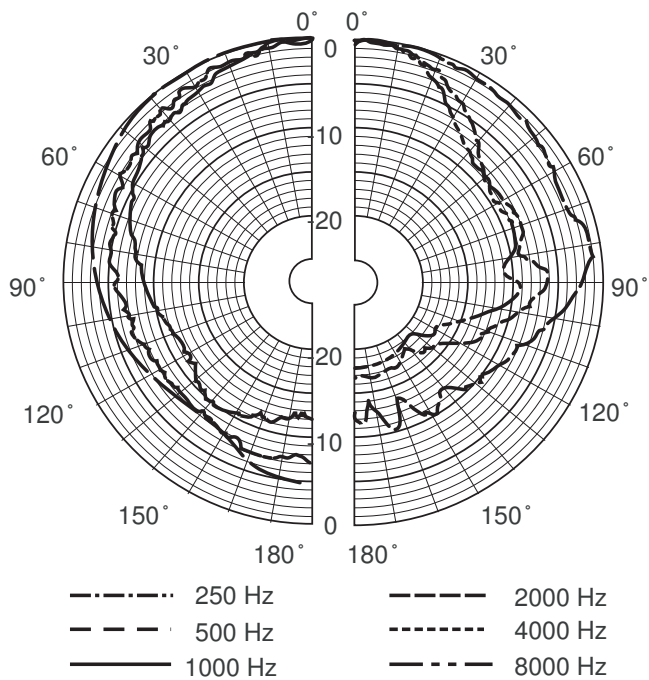
LHM 0606/10 Dimensions in mm / inch



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	91.3	-	-
250 Hz	85.3	-	-
500 Hz	85.3	-	-
1000 Hz	85.7	-	-
2000 Hz	90.5	-	-
4000 Hz	98.2	-	-
8000 Hz	91.1	-	-
A-weighted	-	90.4	97.1
Lin-weighted	-	90.4	97.6

Octave band opening angles

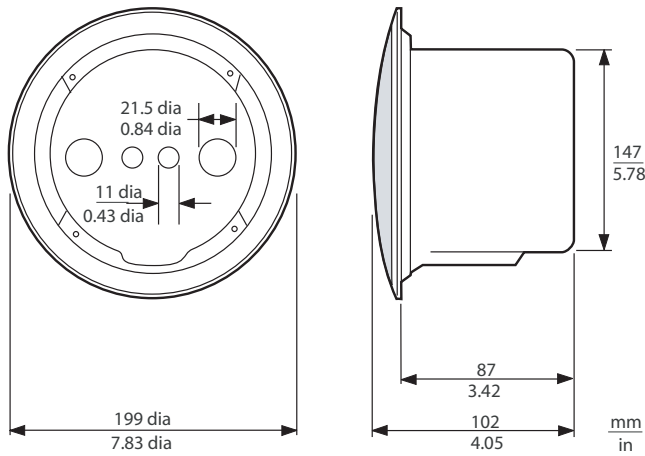
	Horizontal	Vertical
125 Hz	180	180
250 Hz	180	180
500 Hz	180	180
1000 Hz	180	180
2000 Hz	122	122
4000 Hz	51	51
8000 Hz	42	42

Acoustical performance specified per octave

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



LBC 3080/01 Fire Dome (optional)



LHM 0606/xx + LBC 3080/01 Fire dome assembly
dimensions in mm

Ordering Information

LHM 0606/00 Ceiling Loudspeaker LHM0606/00
6 W, screw mounted

LHM 0606/10 Ceiling Loudspeaker LHM0606/10
6 W, clamp mounted

Accessories

LBC 1256/00 EVAC Connection Adapter LBC1256/00
3-pole screw connector, 100 pieces

LBC 3080/01 Fire Dome LBC 3080/01
metal fire dome for the LBC 3087/41,
LBC 3090/01, LBC 3090/31, LHM 0606/00
and LHM 0606/10 ceiling loudspeakers

Technical Specifications

Electrical

Maximum power	9 W
Rated power	6 / 3 / 1.5 W
Sound pressure level at 6 W / 1 W (1 kHz, 1 m)	94 dB / 86 dB (SPL)
Sound pressure level at 6 W / 1 W (4 kHz, 1 m)	106 dB / 98 dB (SPL)
Effective frequency range (-10 dB)	80 Hz to 18 kHz
Opening angle at 1 kHz/4 kHz (-6 dB)	175° / 55°
Rated voltage	100 V
Rated impedance	1667 ohm
Connection	Flying leads

Mechanical

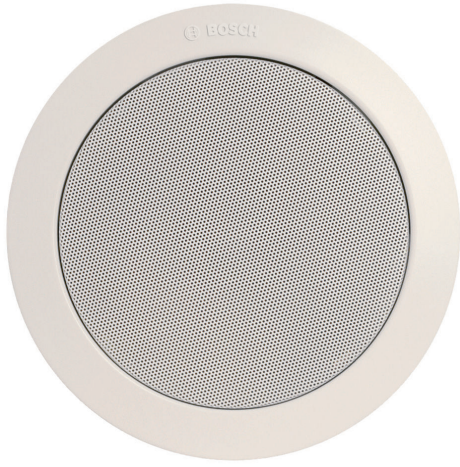
Diameter	199 mm (7.8 in)
Maximum depth	70.5 mm (2.8 in)
Mounting cut-out	165 + 5 mm (6.5 + 0.20 in)
Speaker diameter	152.4 mm (6 in)
Weight	620 g (1.37 lb)
Color	White (RAL 9010)

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%

LBC 3086/41 Ceiling Loudspeaker

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Features

- ▶ Suitable for speech and music reproduction
- ▶ Flush-mounting in ceiling cavity
- ▶ Easy to install
- ▶ Simple power setting
- ▶ Optional certified fire dome
- ▶ Unobtrusive in virtually all interiors
- ▶ Complies with international installation and safety regulations
- ▶ EN 54-24 certified
- ▶ BS-5839-8 and EN 60849 compliant

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal evacuation announcements is governed by regulations. The LBC 3086/41 is designed for use in voice alarm systems.

Functions

The loudspeaker unit is a 6 W, dual-cone loudspeaker with an integrated circular metal grille. A 100 V matching transformer is mounted on the back. The appearance and neutral white RAL color have been selected to be unobtrusive in virtually all interiors.

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 has ceramic

terminal blocks, thermal fuse and heat-resistant, high-temperature wiring. It can also be fitted with an optional fire-dome to increase protection of the cable termination.

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.

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 EN 60529-IP32

* only in combination with the LBC 3081/02 Fire Dome

Installation/Configuration Notes

Installation

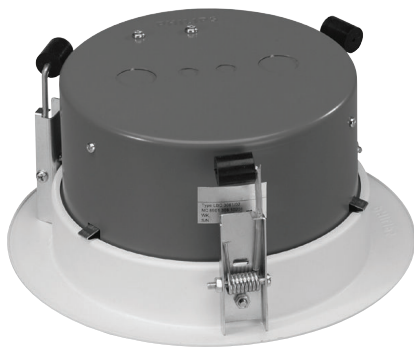
The assembly is quickly installed into a hole in the ceiling cavity. A separate mounting ring, secured by three integral spring-loaded ceiling locking clamps (for ceilings and wall boards from 9 to 25 mm thick) holds it in place. The clamps are provided with protective rubbers to avoid damaging soft ceiling material. A circular template for marking a 196 mm (7.7 in) diameter hole is included with the loudspeaker. The loudspeaker unit is held in the mounting ring with a bayonet fitting.

Terminal Block

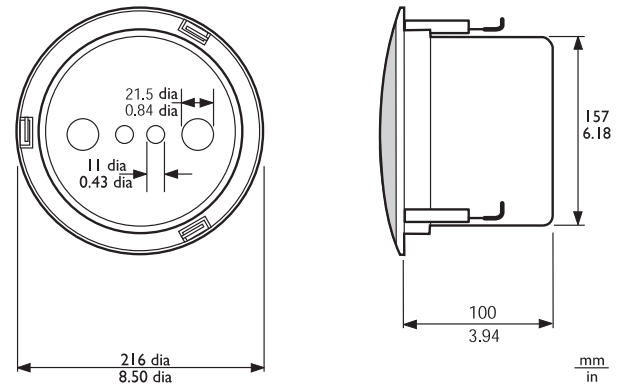
The unit has a three-way terminal block with screw connections suitable for loop-through wiring. Four primary taps are provided on the matching transformer to allow selection of nominal full-power, half-power, quarter-power or eighth power radiation (i.e. in 3 dB steps).

LBC 3081/02 Fire Dome Assembly

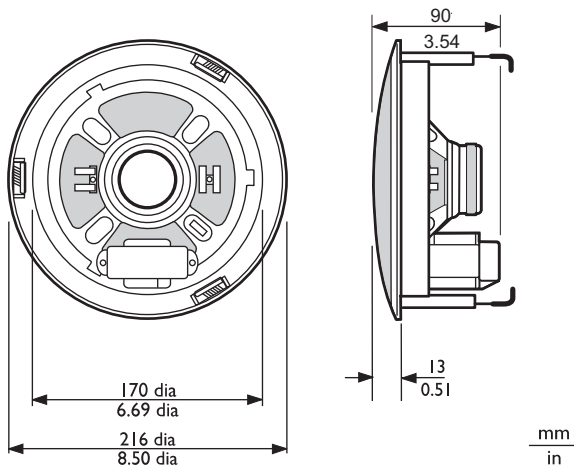
During a fire, the ceiling cavity in which loudspeakers are installed can allow flames to spread throughout a building. To prevent fire entering the cavity via the loudspeaker, the ceiling loudspeaker can be fitted with a protective steel fire dome (LBC 3081/02).



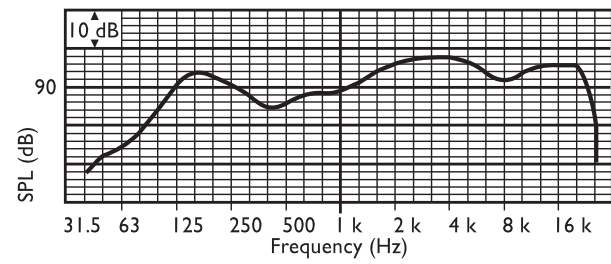
LBC 3086/41 with LBC 3081/02 fire dome assembly



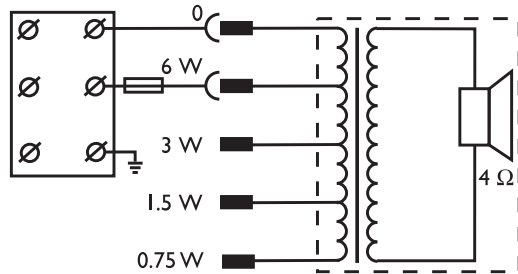
LBC 3086/41 with LBC 3081/02 fire dome assembly dimensions in mm (in)



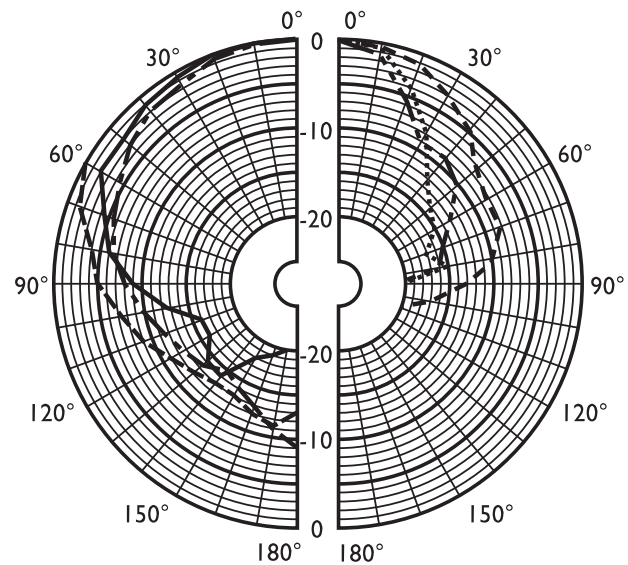
Dimensions in mm (in)



Frequency response



Circuit diagram



- 250 Hz
- - - 500 Hz
- 1000 Hz
- - - 2000 Hz
- 4000 Hz
- - - 8000 Hz

Polar diagram (measured with pink noise)

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	92	90	85	90	96	98	92
SPL max.	100	98	93	98	104	106	100
Q-factor	4.8	4.4	2.5	3.7	8.3	20	21
Efficiency	0.42	0.29	0.16	0.34	0.6	0.4	0.1

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	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
H. angle	160	160	180	160	90	50	40
V. angle	160	160	180	160	90	50	40

Acoustical performance specified per octave

Parts Included

Quantity	Components
1	LBC 3086/41 Ceiling Loudspeaker
1	196 mm circular template

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)	98 dB / 90 dB (SPL)
Effective frequency range (-10 dB)	90 Hz to 20 kHz
Opening angle at 1 kHz/4 kHz (-6 dB)	180° / 50°
Rated voltage	100 V
Rated impedance	1667 ohm
Connector	3-pole screw terminal block

* Technical performance data acc. to IEC 60268-5

Mechanical

Diameter	216 mm (8.5 in)
Maximum depth	90 mm (3.54 in)
Ceiling thickness	9 to 25 mm (0.35 to 0.98 in)
Mounting cut-out	196 mm (7.7 in)
Weight	1.3 kg (2.86 lb)
Color	off-white (RAL 9010)
Magnet weight	150 g (5.3 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%

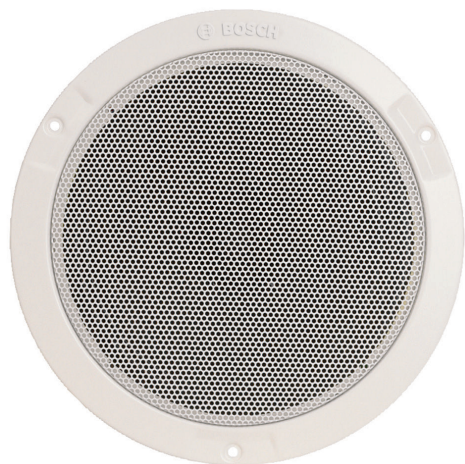
Ordering Information

LBC 3086/41 Ceiling Loudspeaker	LBC3086/41
6 W, dual-cone loudspeaker with an integrated circular metal grille.	

Accessories

LBC 3081/02 Fire Dome	LBC3081/02
metal fire dome for LBC 3086/41 ceiling loudspeaker	

LBC 3087/41 Ceiling Loudspeaker



Features

- ▶ Suitable for speech and music reproduction
- ▶ Increased sensitivity
- ▶ Flush-mounted in ceilings
- ▶ Screw mounting
- ▶ Simple power setting
- ▶ Optional certified fire dome
- ▶ Unobtrusive white metal grille
- ▶ Ball-proof
- ▶ Complies with international installation and safety regulations
- ▶ BS 5839-8 and EN 60849 compliant

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal evacuation announcements is governed by regulations. The LBC 3087/41 is designed for use in voice alarm systems and is compliant with British standard BS 5839-8.

Functions

The LBC 3087/41 is an economic flush-mounting ceiling loudspeaker for general-purpose applications. It is a full-range loudspeaker for speech and music reproduction in shops, department stores, schools, offices, sports halls, hotels and restaurants.

The LBC 3087/41 has a single-piece, 6 W, dual-cone loudspeaker. A 100 V matching transformer is mounted on the back of the frame. The circular metal grille is an integrated part of the front, and is finished in an unobtrusive white color (RAL 9010)

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 has ceramic terminal blocks, thermal fuse and heat-resistant, high-temperature wiring. It can also be fitted with an optional fire-dome to increase protection of the cable termination.

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.

Region	Certification
Europe	CE
Poland	CNBOP
Safety	acc. to EN 60065
Emergency	acc. to BS 5839-8 / EN 60849
Ball-proof	acc. to DIN VDE 0710 part 13
* Water and dust protection	acc. to EN 60529-IP32
Note	* only in combination with the LBC 3080/01 Fire Dome

Installation/Configuration Notes

Installation

The assembly is quickly installed into a hole in the ceiling cavity and secured with three white-colored screws (supplied). A circular template for marking a 165 mm (6.5 in) diameter hole is included with the loudspeaker.

Terminal Block

The unit has a three-way terminal block with screw connections suitable for loop-through wiring. Four primary taps are provided on the matching transformer to allow selection of nominal full-power, half-power, quarter-power or eighth power radiation (i.e. in 3 dB steps).

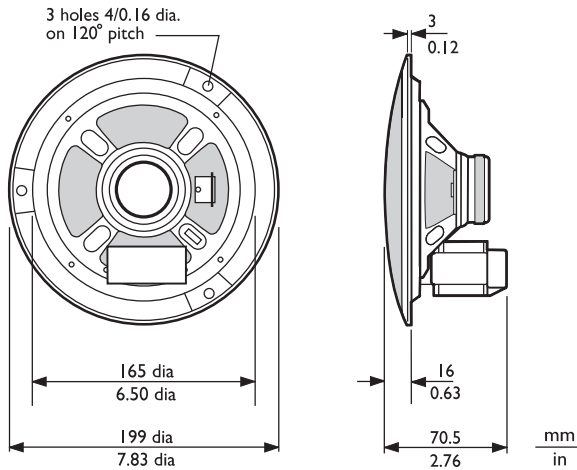
Fire dome

During a fire, the ceiling cavity in which loudspeakers are installed can allow flames to spread throughout a building. To prevent fire entering the cavity via the loudspeaker, the ceiling loudspeaker can be fitted with a protective steel fire dome (LBC 3080/01). This optional fire dome is mounted on the loudspeaker assembly using

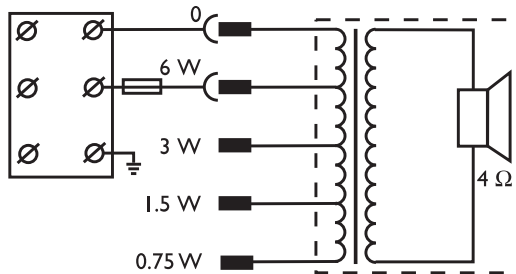
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four self-tapping screws, supplied as standard. There are four knock-out holes; two (2) for rubber grommets (supplied) and two (2) for cable glands. (PG13).

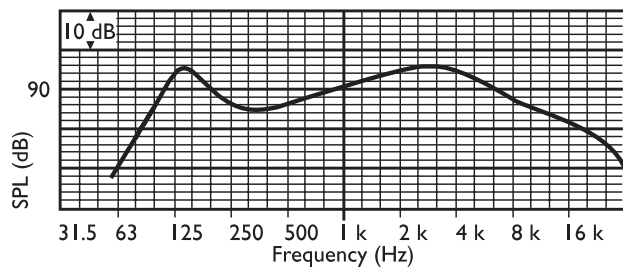
4



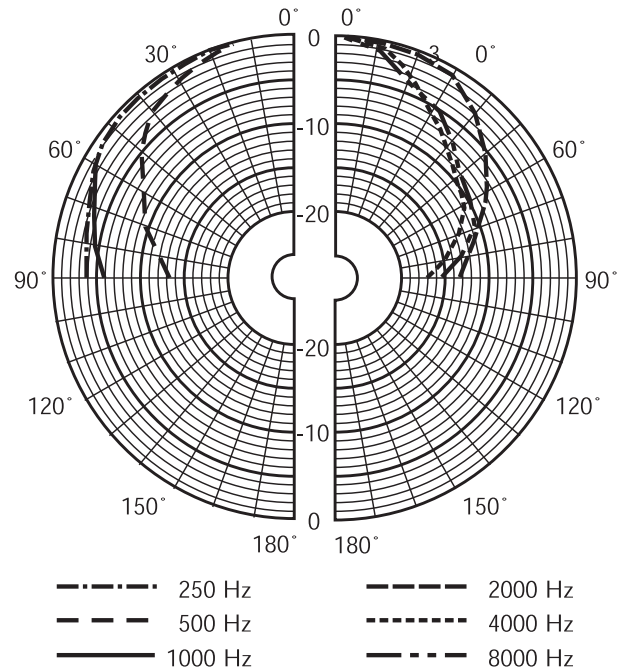
Dimensions in mm (in)



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	94	91	86	89	94	94	86
SPL max.	102	99	94	97	102	102	94
Q-factor	3	4.7	2.3	4.5	6.6	11	17
Efficiency	1.1	0.4	0.2	0.22	0.48	0.3	0.03
H. angle	170	150	180	160	100	65	55
V. angle	170	150	180	160	100	65	55

Acoustical performance specified per octave

Parts Included

Quantity	Component
1	LBC 3087/41 Ceiling Loudspeaker
3	White colored screws
1	165 mm circular template

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)	97 dB / 89 dB (SPL)
Sound pressure level at 6 W / 1 W (4 kHz, 1 m)	102 dB / 94 dB (SPL)
Effective frequency range (-10 dB)	80 Hz to 18 kHz
Opening angle at 1 kHz / 4 kHz (-6 dB)	160° / 65°

Rated voltage	100 V
Rated impedance	1667 ohm
Connector	3-pole screw terminal block

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

Mechanical

Diameter	199 mm (7.8 in)
Maximum depth	70.5 mm (2.8 in)
Mounting cut-out	165 + 5 mm (6.5 + 0.20 in)
Speaker diameter	152.4 mm (6 in)
Weight	720 g (1.6 lb)
Color	White (RAL 9010)
Magnet weight	80 g (2.8 oz)

Environmental

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

Ordering Information

LBC 3087/41 Ceiling Loudspeaker	LBC3087/41
6 W, dual-cone flush-mounting ceiling loudspeaker for general-purpose applications.	

Accessories

LBC 3080/01 Fire Dome	LBC 3080/01
metal fire dome for the LBC 3087/41, LBC 3090/01, LBC 3090/31, LHM 0606/00 and LHM 0606/10 ceiling loudspeakers	

LBC 3090/01 Ceiling Loudspeaker

4



Features

- ▶ Suitable for speech and music reproduction
- ▶ Increased sensitivity
- ▶ Flush-mounting in ceiling cavity
- ▶ Easy to install
- ▶ Protective dust cover
- ▶ Optional certified fire dome
- ▶ Simple power setting
- ▶ Matching surface mounting box
- ▶ Comply with international safety regulations

The LBC 3090/01 is an economic flush-mounting ceiling loudspeaker for general purpose applications. It is a full range loudspeaker for speech and music reproduction in shops, department stores, schools, offices, sports halls, hotels and restaurants.

Functions

The LBC 3090/01 has a single-piece, 6 W dual cone loudspeaker. A 100 V matching transformer is mounted behind the front panel assembly. The moulded plastic front panel is mounted onto the loudspeaker's metal frame, and a dust cover protects the rear. The appearance and colour are unobtrusive in any interior.

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 94V0).

Region	Certification
Europe	CE
Safety	acc. to EN 60065

Installation/Configuration Notes

Installation

Installation is both quick and easy, as the unit(s) have two built-in spring-loaded locking clamps that secure them into holes in the ceiling (for suspended ceilings and wall boards from 9 to 25 mm thick). Alternatively, they can be fixed with four screws (using pre-drilled holes) in ceiling or wall panels less than 9 mm thick. A circular template for marking a 182 mm (7.1 in) diameter hole is included with the loudspeaker.

Terminal Block

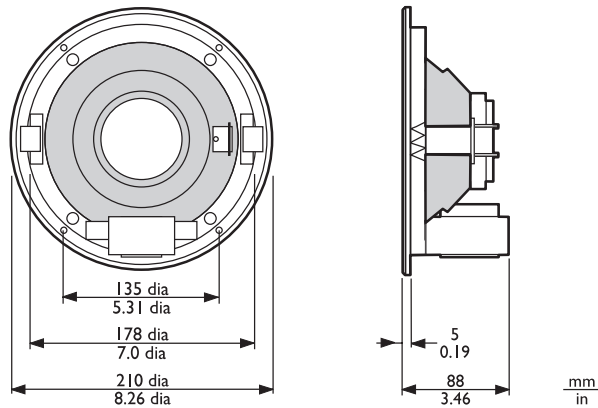
The unit has a two-way terminal block with push connections suitable for loop-through wiring. Three primary taps are provided on the matching transformer to allow selection of nominal full- power, half-power or quarter-power radiation (i.e. in 3 dB steps).

LBC 3091/01 Surface Mounting Box

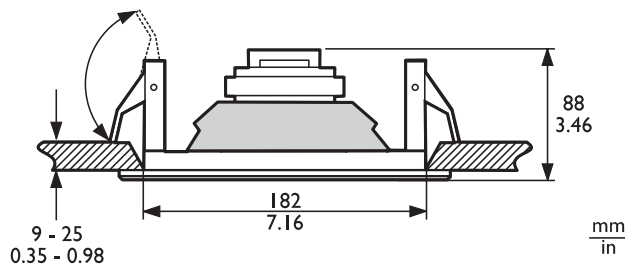
For mounting onto the surface of a wall or ceiling, the color-matched surface mounting box LBC 3091/01 is available.

LBC 3080/01 Fire Dome

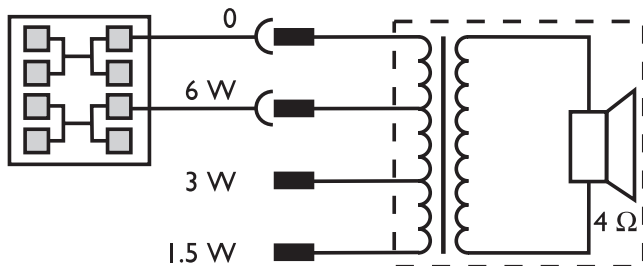
During a fire, the ceiling cavity can allow fire or smoke to spread throughout a building. To inhibit fire entering the cavity via the ceiling loudspeaker, it can be fitted with an LBC 3080/01 steel fire dome. This is mounted on the loudspeaker assembly using four self-tapping screws supplied with the fire dome. The fire-dome has knock-out holes for two grommets (supplied) and two cable glands (PG 13).



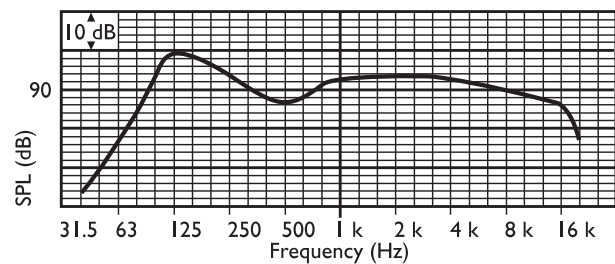
Dimensions in mm (in)



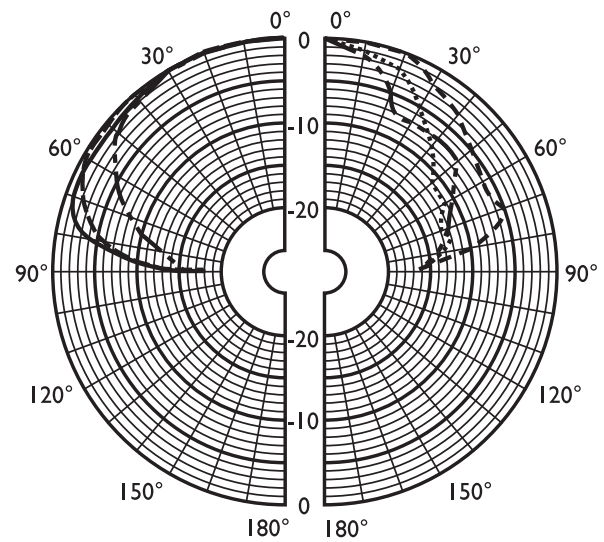
Dimensions in mm (in)



Circuit diagram



Frequency response

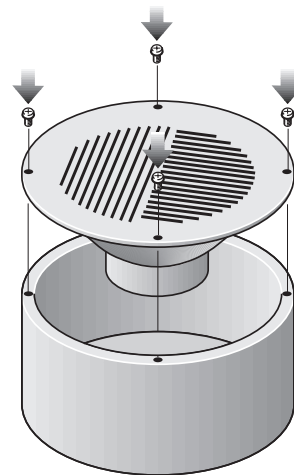


Polar diagram (measured with pink noise)

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	94	91	89	91	93	95	89
SPL max.	102	99	97	99	101	103	97
Q-factor	4.8	5	3	3.4	6.3	18	20
Efficiency	0.66	0.32	0.34	0.46	0.4	0.22	0.05
H. angle	150	140	180	160	140	55	45
V. angle	150	140	180	160	140	55	45

Acoustical performance specified per octave

LBC 3091/01 Surface Mounting Box



LBC 3090/01 and LBC 3091/01 assembly

Ordering Information

LBC 3090/01 Ceiling Loudspeaker	LBC3090/01
6 W dual cone economic flush-mounting ceiling loudspeaker for general purpose applications.	

Accessories

LBC 3091/01 Surface Mounting Box	LBC 3091/01
for securing the ceiling loudspeaker to walls or hard ceilings	

LBC 1256/00 EVAC Connection Adapter	LBC1256/00
3-pole screw connector, 100 pieces	

LBC 3080/01 Fire Dome	LBC 3080/01
metal fire dome for the LBC 3087/41, LBC 3090/01, LBC 3090/31, LHM 0606/00 and LHM 0606/10 ceiling loudspeakers	

LBC 3090/31 Ceiling Loudspeaker



4

Features

- ▶ Suitable for speech and music reproduction
- ▶ Increased sensitivity
- ▶ Flush-mounting in ceiling cavity
- ▶ Easy to install
- ▶ Simple power setting
- ▶ Protective dust cover
- ▶ Optional certified fire dome
- ▶ Unobtrusive in virtually all interiors
- ▶ Ball-proof
- ▶ Complies with international installation and safety regulations

Bosch loudspeakers offer a combination of quality, performance and innovation in public address. They are the result of over half a century's experience in professional audio, and meet virtually all sound reinforcement system requirements.

Functions

A flush-mounting ceiling loudspeaker is available for general purpose applications. This full-range loudspeaker offers a high sound pressure level and a wide frequency range, and is suitable for both speech and music reproduction in shops, department stores, schools, offices, sports halls, hotels and restaurants.

The loudspeaker assembly consists of a single-piece, 6 W dual-cone loudspeaker and frame, with a 100 V matching transformer mounted on the back. A circular metal grille is integrated with the front. The appearance and neutral white colour have been selected to be unobtrusive in virtually all interiors. A dust cover protects the rear.

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.

Region	Certification
Europe	CE
Safety	acc. to EN 60065
Ball-proof	acc. to DIN VDE 0710 part-13

Installation/Configuration Notes

Installation

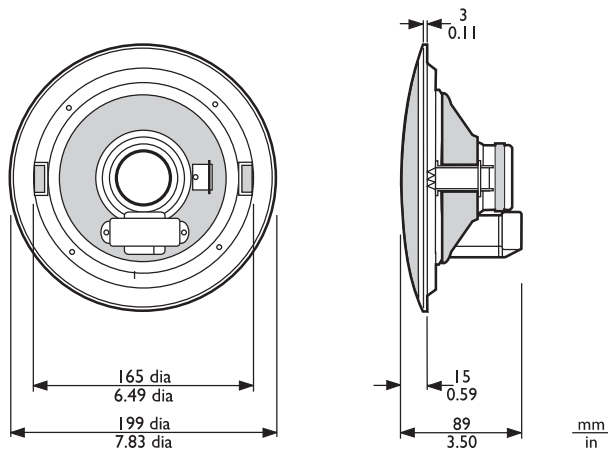
The assembly can be simply and quickly installed into a hole in the ceiling cavity and secured by two integral spring-loaded ceiling locking clamps (for ceilings and wall boards from 9 to 25 mm thick). A circular template for marking a 172 mm (6.7 in) diameter hole is included with the loudspeaker.

Terminal Block

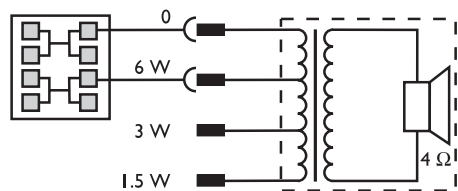
The unit has a two-way terminal block with push connections suitable for loop-through wiring. Three primary taps are provided on the matching transformer to allow selection of nominal full-power, half-power or quarter-power radiation (i.e. in 3 dB steps).

LBC 3080/01 Fire Dome

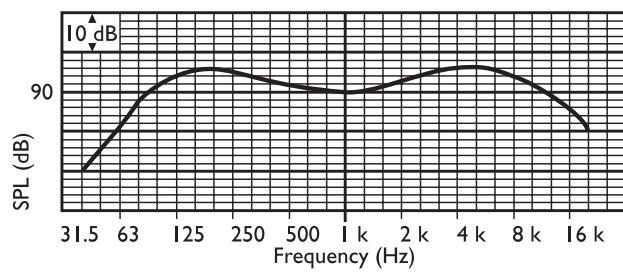
During a fire, the ceiling cavity can allow fire or smoke to spread throughout a building. To inhibit fire entering the cavity via the ceiling loudspeaker, it can be fitted with an LBC 3080/01 steel fire dome. This is mounted on the loudspeaker assembly using four self-tapping screws supplied with the fire dome. The fire-dome has knock-out holes for two grommets (supplied) and two cable glands (PG 13).



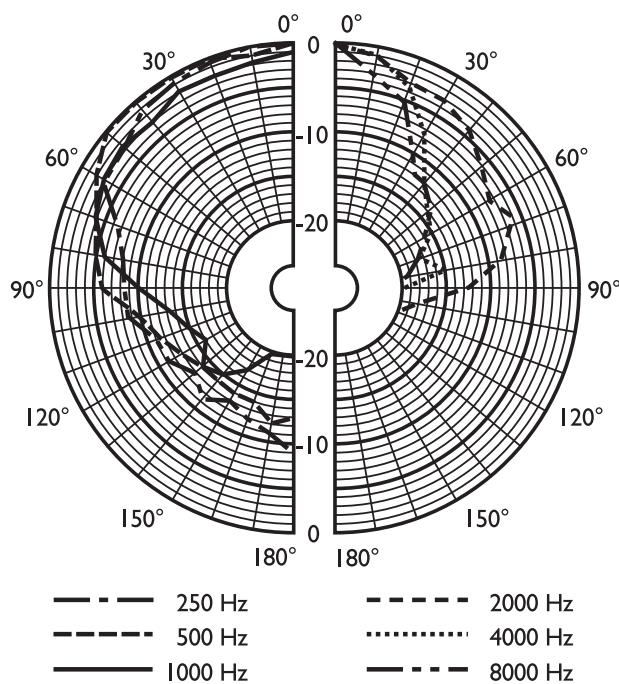
Dimensions in mm (in)



Circuit diagram



Frequency response



Polar diagram (measured with pink noise)

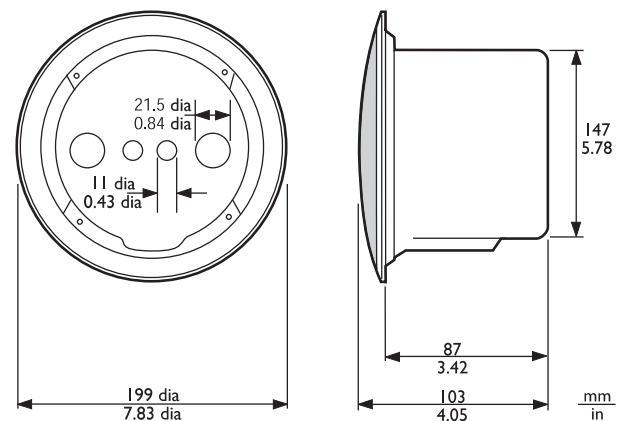
	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	94	91	88	91	93	96	92
SPL max.	102	99	96	99	101	104	100
Q-factor	4.8	5	3	3.4	6.3	18	20
Efficiency	0.66	0.32	0.27	0.47	0.4	0.28	0.1
H. angle	150	140	180	160	140	55	45
V. angle	150	140	180	160	140	55	45

Acoustical performance specified per octave

LBC 3080/01 Fire Dome



LBC 3080/01



LBC 3090/31 + LBC 3080/01 fire dome assembly dimensions in mm (in)

Parts Included

Quantity	Component
1	LBC 3090/31 Ceiling Loudspeaker
1	172 mm circular template

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Technical Specifications**Electrical***

Maximum power	9 W
Rated power	6 / 3 / 1.5 W
Sound pressure level at 6 W / 1 W (1 kHz, 1 m)	99 dB / 91 dB (SPL)
Sound pressure level at 6 W / 1 W (4 kHz, 1 m)	104 dB / 96 dB (SPL)
Effective frequency range (-10 dB)	70 Hz to 18 kHz
Opening angle at 1 kHz/4 kHz (-6 dB)	160° / 55°
Rated voltage	100 V
Rated impedance	1667 ohm
Connector	2-pole push-in terminal block

* Technical performance data acc. to IEC 60268-5

Mechanical

Diameter	199 mm (7.8 in)
Maximum depth	89 mm (3.5 in)
Mounting cut-out	172 mm (6.5 in)
Speaker diameter	152.4 mm (6 in)
Weight	990 g (2.2 lb)
Color	White (RAL 9010)
Magnet weight	150 g (5.3 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%

LBC 3080/01

Diameter	147 mm (5.8 in)
Maximum depth	87 mm (3.4 in)
Weight	360 g (0.8 lb)
Color	Flame red (RAL 3000)
Certified B15	acc. to DIN 4102

Ordering Information

LBC 3090/31 Ceiling Loudspeaker	LBC3090/31
6 W dual-cone loudspeaker and frame, with a 100 V matching transformer mounted on the back.	

Accessories

LBC 1256/00 EVAC Connection Adapter	LBC1256/00
3-pole screw connector, 100 pieces	
LBC 3080/01 Fire Dome	LBC 3080/01
metal fire dome for the LBC 3087/41, LBC 3090/01, LBC 3090/31, LHM 0606/00 and LHM 0606/10 ceiling loudspeakers	

LBC 3099/41 Ceiling Loudspeaker



Features

- ▶ Excellent speech and music reproduction
- ▶ High sound pressure level
- ▶ Ideal for high-ceiling applications
- ▶ Flush mounted in ceilings
- ▶ Clamp mounting
- ▶ Simple power setting
- ▶ Unobtrusive white metal grille
- ▶ Ball-proof
- ▶ Complies with international installation and safety regulations
- ▶ BS 5839-8 and EN 60849 compliant

The LBC 3099/41 is a flush-mounting ceiling loudspeaker for applications where extra power is required, such as rooms with high ceilings. It delivers a high sound pressure level and has a wide frequency range to ensure excellent speech intelligibility and good quality music reproduction. It is used in applications like shops, department stores, schools, offices, sports halls, hotels and restaurants.

Functions

The LBC 3099/41 has a single-piece, 24 W, dual-cone loudspeaker. A 100 V matching transformer is mounted on the back of the frame. An attractive metal grille is integrated with the front, and finished in an unobtrusive white color (RAL 9010).

Voice alarm loudspeaker

Voice alarm loudspeakers are specifically designed for use in buildings where performance of systems for verbal evacuation announcements is governed by regulations. The LBC 3099/41 is designed for use in voice alarm systems and is compliant with emergency standards.

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 has a ceramic terminal block, thermal fuse and heat resistant, high-temperature wiring.

It can also be fitted with an optional fire-dome LBC 3082/00 to increase protection of the cable termination.

4

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.

Region	Certification
Europe	CE
Safety	acc. to EN 60065
Emergency	acc. to BS 5839-8 / EN 60849
Ball-proof	acc. to DIN VDE 0710 part 13

Installation/Configuration Notes



LBC 3099/41 with LBC 3082/00 fire dome assembly

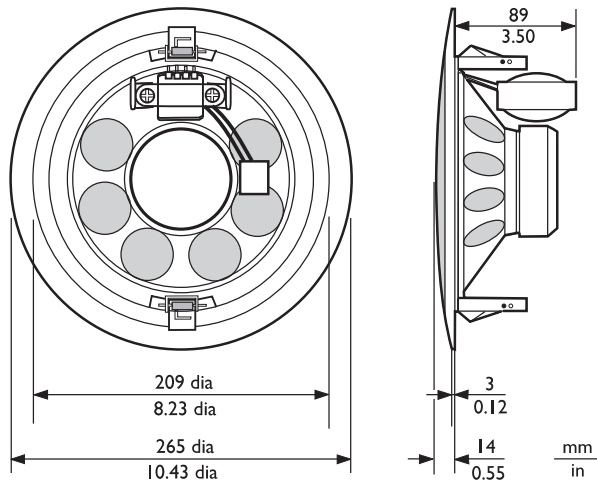
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The unit has two built-in spring-loaded locking clamps to secure it into a hole in suspended ceilings and wallboards from 9 to 25 mm (0.35 to 1.0 in) thick. A circular template for marking a 210 mm (8.3 in) diameter hole is included with the loudspeaker.

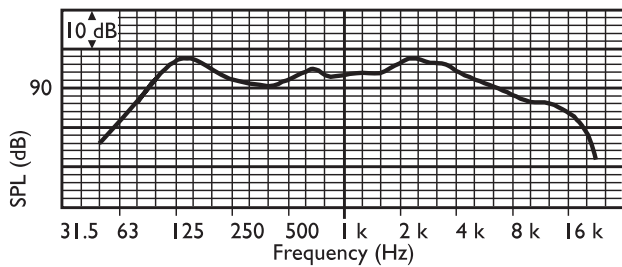
Terminal Block

The unit has a three-way terminal block with screw connections (including earth) suitable for loop-through wiring. Three primary taps are provided on the matching transformer to allow selection of nominal full-power, half-power or quarter-power radiation (in 3 dB steps).

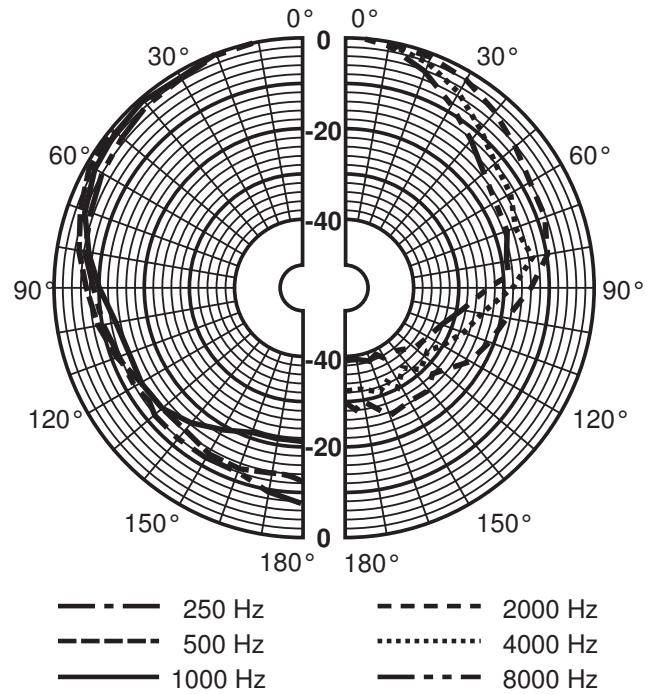
4



Dimensions in mm (in)



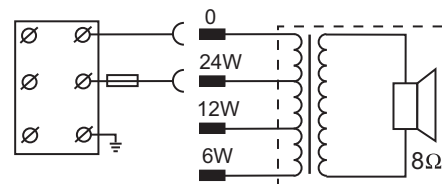
Frequency response



Polar diagram (measured with pink noise)

	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
SPL 1.1	94	92	90	92	94	93	86
SPL max.	108	106	104	106	108	107	100
Q-factor	3.7	4.5	2.8	5.2	8.9	17.4	34
Efficiency	0.85	0.44	0.63	0.38	0.36	0.14	0.02
H. angle	180	180	180	160	90	60	40
V. angle	180	180	180	160	90	60	40

Acoustical performance specified per octave



Circuit diagram

Parts Included

Quantity	Components
1	LBC 3099/41 Ceiling Loudspeaker
1	210 mm (8.3 in) circular template

Technical Specifications

Electrical*

Maximum power	36 W
Rated power (PHC)	24 / 12 / 6 W
Sound pressure level at 24 W / 1 W (1 kHz, 1 m)	106 dB / 92 dB (SPL)
Sound pressure level at 24 W / 1 W (4 kHz, 1 m)	107 dB / 93 dB (SPL)
Effective frequency range (-10 dB)	60 Hz to 18 kHz
Opening angle at 1 kHz/4 kHz (-6 dB)	160° / 60°
Rated voltage	100 V
Rated impedance	417 ohm
Connector	3-pole screw terminal block

* Technical performance data acc. to IEC 60268-5

Mechanical

Diameter	265 mm (10.4 in)
Maximum depth	89 mm (3.5 in)
Mounting cut-out	210 mm (8.3 in)
Speaker diameter	203.2 mm (8 in)
Weight	1.8 kg (4 lb)
Color	White (RAL 9010)
Magnet weight	283 g (10 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 3099/41 Ceiling Loudspeaker 24 W, dual-cone loudspeaker. A 100 V matching transformer is mounted on the back of the frame.	LBC3099/41
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Accessories

LBC 3082/00 Fire Dome metal fire dome for LBC 3099/41 ceiling loudspeaker	LBC 3082/00
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