

LC4 Ceiling Loudspeaker Range

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Invented for life



- ▶ Innovative CosCone full range driver
- ▶ Excellent speech and music reproduction
- ▶ Unrivalled opening angle for all octave frequencies
- ▶ Paintable grille
- ▶ EN 54-24 and BS5839 compliant

The LC4 Ceiling Loudspeaker Range can be used for a wide variety of ceiling environments. They provide excellent speech and music in indoor public address applications. New CosCone driver technology, used in this range, stands for delivering outstanding sound quality from a small sized unit. It ensures a wide and equal spread of all octave frequencies and eliminates high-frequency beaming. Fewer loudspeakers are needed to cover a given area, and the noticeable “fading” that can occur as a listener walks from one loudspeaker to another area is eliminated.

The LC4-UCxxE ceiling loudspeaker is a light and compact unit with an unobtrusive, neutral designed front grille. The range offers a choice of three loudspeakers distinguished by input power of: 6 W, 12 W and 24 W with the same wide opening angle, ensuring a wide and equal spread of the important frequency octaves for speech intelligibility and music clarity. The LC4 range also includes a back-box and metal fire-dome.

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	According to EN 60065
Water and dust protected *	According to EN 60529 IP 21
EVAC compliant *	According to BS 5839 part 8 According to EN 54-24

* With LC4-CBB back-box or LC4-MFD fire-dome

Installation/Configuration Notes

The LC4 range is very installation friendly. A cutting template is supplied with each unit, and the loudspeaker is secured in ceilings up to 50 mm (2 in) thick using two integral screw driven clamps.

Connections are made using a screw terminal block on the frame, where each incoming and outgoing conductor of the same potential can be connected to a separate screw on a terminal block.

Power tapping on both 70 V and 100 V allows selection of full-power, half-power, quarter-power, eighth-power radiation and 8 Ohm.

A selector at the front of the frame simplifies the required selection of the power setting.

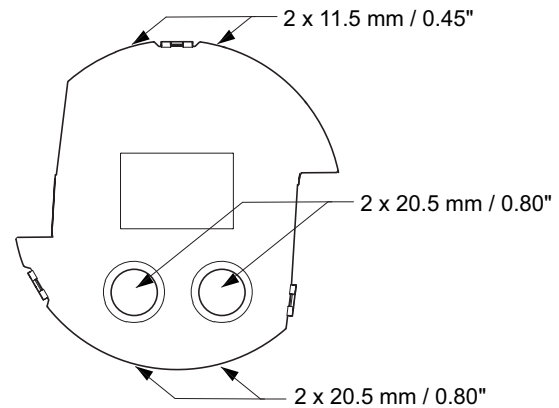
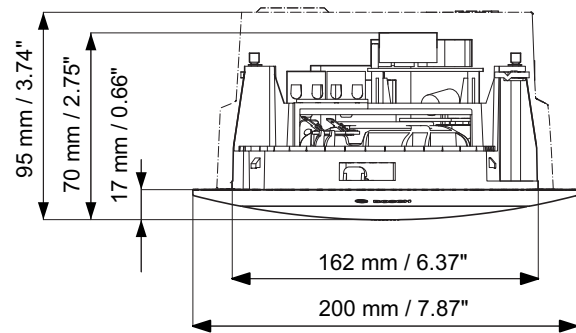
The loudspeaker grille, standard supplied, can be secured to the loudspeaker unit with a quick bayonet fitting after installation of the loudspeaker into the ceiling.

The optional back-box (LC4-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 (11.5 mm) and for two cable glands (20.5 mm) aside and on the top.

Ease of installation for individual loudspeaker and loudspeaker / fire-dome combinations. The metal fire-dome (LC4-MFD) mounting is fixed in the ceiling prior to the ceiling speaker mounting. The fire-dome is provided with a safety cord allowing the installer to temporarily hang the loudspeaker in the fire-dome, while connecting. Connections are made using an innovative ceramic screw terminal connector on top of the metal fire-dome with loop-through facility.

Both the loudspeaker and back-box have provision for mounting the optional line/supervision board. The loudspeaker has a provision also for adding a capacitor in case the loudspeaker is used in systems with DC supervision.



Mechanical diagram LC4-UCxxE and LC4-CBB



Rear view LC4-UCxxE including optional mounting the line supervision board



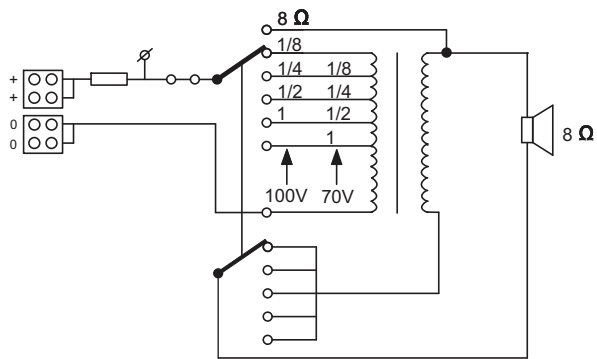
Rear view LC4-UCxxE including LC4-CBB



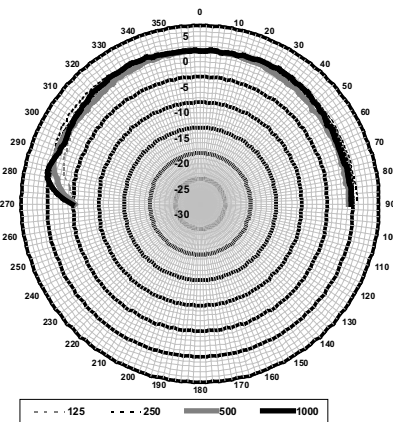
Rear view LC4-UCxxE including LC4-MFD, showing the ceramic connector



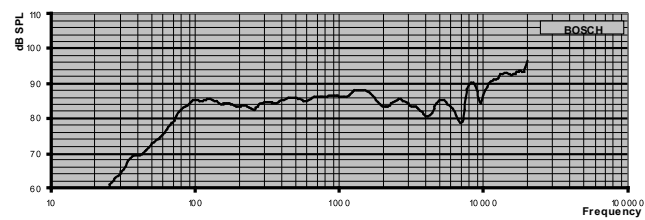
LC4 ceiling loudspeaker range overview



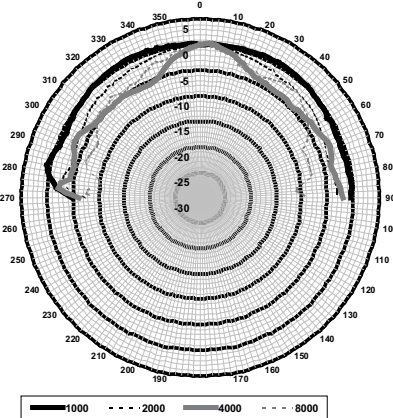
Circuit diagram LC4-UCxxE



LC4-UCxxE horizontal/vertical polar diagram (low frequency). Normalized at 0-degrees axis.



Frequency response LC4-UCxxE



LC4-UCxxE horizontal/vertical polar diagram (low frequency). Normalized at 0-degrees axis.

Octave band sensitivity LC4-UC06E *

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	85.9	-	-
250 Hz	83.5	-	-
500 Hz	86.1	-	-
1000 Hz	86.6	-	-
2000 Hz	89.4	-	-
4000 Hz	90.1	-	-
8000 Hz	91.1	-	-
A-weighted	-	86.4	93.5
Lin-weighted	-	88.2	95.4

Octave band sensitivity LC4-UC12E *

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	85.9	-	-
250 Hz	83.7	-	-
500 Hz	86.1	-	-
1000 Hz	86.8	-	-
2000 Hz	89.4	-	-
4000 Hz	88.5	-	-
8000 Hz	90.5	-	-
A-weighted	-	85.9	95.1
Lin-weighted	-	88.0	97.4

Octave band sensitivity LC4-UC24E *

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	86.3	-	-
250 Hz	83.3	-	-
500 Hz	86.0	-	-
1000 Hz	86.5	-	-
2000 Hz	88.9	-	-
4000 Hz	88.3	-	-
8000 Hz	89.3	-	-
A-weighted	-	85.6	97.7
Lin-weighted	-	87.6	100.4

Octave band opening angles LC4-UCxxE *

	Horizontal	Vertical	
125 Hz	180	180	
250 Hz	180	180	
500 Hz	180	180	
1000 Hz	180	180	
2000 Hz	180	180	
4000 Hz	180	180	
8000 Hz	128	128	

Acoustical performance specified per octave

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

Parts Included

Quantity	Components
1	LC4-UCxxE Ceiling Loudspeaker
1	Installation Instruction
1	Ceiling cut-out template

Technical Specifications

Electrical *

	LC4-UC06E	LC4-UC12E
Description	Ceiling loudspeaker	
Maximum power	9 W	18 W
Rated power	6 W (6/3/1.5/0.75W)	12 W (12/6/3/1.5W)
Sound pressure level at 6 W power / 1 W (1 kHz, 1 m)	95 dB / 87 dB (SPL)	98 dB / 87 dB (SPL)
Opening angle at 1 kHz / 4kHz (-6 dB)	180° / 180°	180° / 180°
Effective frequency range (-10 dB)	65 Hz to 20 kHz	65 Hz to 20 kHz
Rated voltage	6.93 / 70 / 100 V	9.8 / 70 / 100 V
Rated impedance	8 / 835 / 1667 Ohm	8 / 418 / 833 Ohm
Electrical connection	4-way screw terminal block	

LC4-UC24E

Description	Ceiling loudspeaker
Maximum power	36 W
Rated power	24 W (24/12/6/3 W)
Sound pressure level at 6 W power / 1 W (1 kHz, 1 m)	101 dB / 87 dB (SPL)

Opening angle at 1 kHz / 4kHz (-6 dB)	180° / 180°
Effective frequency range (-10 dB)	65 Hz to 20 kHz
Rated voltage	13.9 / 70 / 100 V
Rated impedance	8 / 208 / 417 Ohm
Electrical connection	4-way screw terminal block

* Technical performance according to IEC 60268-5

Mechanical

	LC4-UC06E	LC3-UC12E	LC3-UC24E
Description	Ceiling Loudspeaker		
Diameter	200 mm (7.87 in)		
Mounting cut-out	162 mm (6.38 in)		
Min./Max. ceiling thickness	5 to 50 mm (0.19 to 1.97 in)		
Maximum depth	53 mm (2.08 in)		
Material (Loudspeaker unit)	ABS (V0)		
Material (front grille)	Steel mesh with ABS (V0) rim		
Weight	800 g (1.77 lb)	840 g (1.86 lb)	990 g (2.18 lb)
Color (loudspeaker unit)	Black (RAL 9011)		
Color (front grille)	White (RAL 9003)		

	LC4-CBB	LC4-MFD
Description	Back-Box	Metal Fire-dome
Diameter	160 mm (6.29 in)	197 / 175 mm (7.75 / 6.88 in)
Maximum depth	78 mm (3.07 in)	156 mm (6.14 in)
Mounting cut-out	n.a.	178 mm (7.00 in)
Min./Max. ceiling thickness	n.a.	5 to 50 mm (0.19 to 1.97 in)
Material	ABS (V0)	Steel
Weight	160 g (0.35 lb)	998 g (2.20 lb)
Color	Black (RAL 9011)	Flame red (RAL 3000)

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

LC4-UC06E Ceiling Loudspeaker 6 W

6 W

Order number **LC4-UC06E**

LC4-UC12E Ceiling Loudspeaker 12 W

12 W

Order number **LC4-UC12E**

LC4-UC24E Ceiling Loudspeaker 24 W

24 W

Order number **LC4-UC24E**

Accessories

LC4-CBB Back-box

For LC4 loudspeakers.

Order number **LC4-CBB**

LC4-MFD Metal Fire-dome

For LC4 loudspeakers.

Order number **LC4-MFD**

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