# LC1 Modular Ceiling Loudspeaker Range

www.boschsecurity.com





- ▶ Excellent speech and music reproduction
- ► Easy installation with one grille size and one complete set of accessories
- ► Choice of different ceiling mounting methods
- ▶ Optional Pilot Tone indication
- ► EN 54-24, UL 2043. UL 1480 certified

The LC1 Modular Ceiling Loudspeaker range can be used for a wide variety of ceiling environments. They provide excellent speech and music in indoor public address applications. The range offers a choice of five loudspeakers distinguished by input power, opening angle and sound reproduction. It includes three 6 W single cone loudspeakers offering a choice of opening angle and two high performance 12 W and 24 W coaxial loudspeaker drivers. They all have the same grille size and can be used in combination with the same mounting accessories.

The loudspeakers are suitable for use in air-handling spaces when installed with the LC1-MFD enclosure. The loudspeaker frame includes provision for mounting the optional pilot-tone indication board or WLS board and has standard a light conductor to indicate the pilot-tone status.

## **Functions**

## Voice Alarm applications

Voice alarm loudspeakers are specifically designed for use in buildings where system performance for verbal evacuation announcements is governed by regulations. The LC1 Modular Ceiling Loudspeaker range is

designed for use in voice alarm systems and is EN 54-24 certified and compliant with British standard BS 5839-8.

#### **Protection**

The loudspeakers have built-in protection to ensure that fire damage to the loudspeakers does not cause failure of the connected circuit. In this way system integrity is maintained, ensuring loudspeakers in other areas can still be used to inform people of the situation.

The loudspeakers can also be used in combination with a metal fire-dome to increase protection of the cable termination.

#### **Connections**

The loudspeakers have a ceramic screw-terminal connection block, thermal fuse and heat-resistant, high-temperature wiring.

#### **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 self extinguishing according to UL 94 VO.

Safety	According to EN 60065
*Emergency	According to BS 5839-8
	According to EN 54-24
	According to EN 60849
UL listed	1480/2043
Ball-proof	According to DIN VDE 0710 part 13
** Water and dust protection	According to EN 60529 IP21
*** Water and dust protection	According to EN 60529 IP33
**** Salt mist	According to IEC-68-2-11 Ka

- \* Only in combination with the LC1-MFD.
- \*\* Only in combination with the LC1-MFD or LC1-CMR including LC1-CBB.
- \*\*\* and \*\*\*\* only LC1-WC06E8 with LC1-CMR including LC1-CBB.

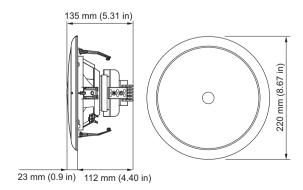


#### **Notice**

UL 1480 requires installation with the LC1-MFD or LC1-CSMB, or the LC1-CMR including LC1-CCB. LC1-UM06E8 and LC1-UM12E8 have UL 1480 F certification listed for use in Fire Alarm and/or Emergency Communication Systems.

Region	Certification
Europe	CPD
Poland	CNBOP
USA	UL

## Installation/configuration notes



LC1-UM24E Dimensions

#### Installation

The LC1 Modular Ceiling Loudspeaker range is very installation friendly. The loudspeaker consists of a frame with the loudspeaker driver and metal or ABS grille with integrated light conductor, matching transformer and ceramic screw terminal connection block. On the loudspeaker are provisions for mounting the optional pilot-tone indication board and optional line/loudspeaker surveillance board.

Power tapping on the 70 V / 100 V matching transformer allows selection of full-power, half-power, quarter-power and eight-power radiation.

#### **Ordering information**

Due to the modular concept of this system, it is important to order not only the ceiling loudspeaker LC1-xMxxE, but also the flush ceiling mounting accessory of your choice, as mentioned here below. The loudspeakers can be flush mounted into the ceiling by means of the "U" shaped Metal Mounting support bracket LC1-MMSB or the ABS Ceiling Mounting ring LC1-CMR with optional Back Box LC1-CBB.

In order to take full advantage of the modular architecture, all parts are separately packaged in the order in which they are required for installation.

# **LC1-MMSB Mounting Support Bracket**

The metal Mounting Support Bracket has two ceiling clamps, which are secured with thumb screws in the ceiling hole. The bracket is also provided with two 4 mm holes for mounting the bracket with two screws into thin (metal) ceilings. Two spring catchers (for accepting the V-shaped loudspeaker springs) are provided. The bracket provides a provision for attaching an optional safety steel cord.



LC1-MMSB Metal Mounting Support Bracket

## **LC1-CMR Mounting Ring**

The LC1-CMR is an alternative for the ceiling mounting support bracket. The ABS Mounting Ring has two screw driving clamps to fix the mounting ring into the ceiling board. Inside the ring, two spring catchers (for accepting the V-shaped loudspeaker springs) are provided.

# **LC1-CBB Back Box**

On top of the mounting ring, provisions are present to "click-on" the optional Back Box. The combination of Mounting Ring and Back Box prevents sound traveling via the ceiling cavity to adjacent areas, and fully protects the loudspeaker from dust, falling objects.

The Back Box has knock-out holes for two grommets (11 mm/0.80 in) and for two cable glands (20.5 mm/ 0.80 in)



LC1-CMR and LC1-CBB Ceiling Mounting Ring and Back Box assembly

#### LC1-CSMB Surface Mounting Box

This ABS Surface Mounting Box is available for securing the ceiling loudspeaker to walls or hard ceilings. The Surface Mounting Box has at the side two holes standard covered opposite positioned and four knock-out holes on the rear side. For optional single point suspension of the assembly of Ceiling Loudspeaker and Surface Mounting Box, a separate metal suspension kit, LC1-MSK is available.



LC1-CSMB Surface Mounting Box

# LC1-MSK Metal Suspension Kit

This kit contains a tri-angled metal plate to be attached by three screws (supplied) onto the rear of the Surface Mounting Box and includes three suspension chains, converged in an eye-hook.



LC1-MSK Metal Suspension Kit

#### LC1-MFD Metal Fire Dome

Ease of installation for individual loudspeaker and loudspeaker/fire-dome combinations. The Fire Dome mounting is fixed in the ceiling, prior to the ceiling speaker mounting. The Fire Dome has a dual connection entry, enabling loop-through cabling and provision for attaching an optional safety steel cord. Connections are made using an innovative ceramic screw terminal connection block on the metal fire dome with loop-through facility.

Suitable for use in air-handling spaces.



LC1-MFD Metal Fire Dome with innovative ceramic connector

## **LC1-PIB Pilot-tone Indication Board**

The loudspeakers have provision for optional mounting of the Pilot-tone Indication Board. This small PCB with LED can fixed into a holder, connected to a light conductor standard fitted. The presence of the pilot-tone can be visually checked by means of the flashing of the LED, integrated in the front grille rim. The required level of the pilot tone signal is 4 V rms @ 20 kHz and the load to the amplifier from these boards is negligible.



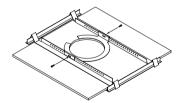
LC1-PIB fitted on the loudspeaker and showing the light conductor



Rear view LC1-WM06E8 showing the optional mounting for LC1-PIB and line/loudspeaker supervision board

## LM1-TB Tile bridge / C-ring

This accessory consists of a C-ring and two tile rails, to be used for reinforce the ceiling material and to spread out the pressure from the ceiling speaker clamps. The C-ring can be guided through the cut-out opening in the ceiling and placed on the back side of the hole before inserting the loudspeaker. The tile rails are suitable for 600 mm distance ceiling tile support rails.



LM1-TB Tile bridge / C-Ring

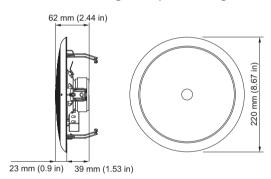
# Type number overview

LC1-WC06E8	Ceiling Loudspeaker (6 W)
LC1-WM06E8	Ceiling Loudspeaker (6 W)
LC1-UM06E8	Ceiling Loudspeaker (6 W)
LC1-UM12E8	Ceiling Loudspeaker (12 W)
LC1-UM24E8	Ceiling Loudspeaker (24 W)
LC1-MMSB	Mounting support bracket
LC1-CMR	Mounting Ring
LC1-CBB	Back Box

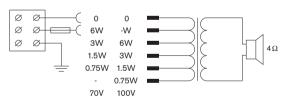
LC1-CSMB	Surface Mounting Box
LC1-MSK	Metal Suspension Kit
LC1-MFD	Metal Fire Dome
LC1-PIB	Pilot-Tone Indication Board
LM1-TB	Tile bridge / C-ring



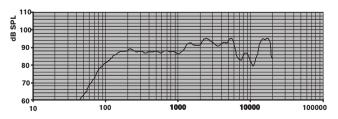
# LC1 Modular Ceiling Loudspeaker Range overview



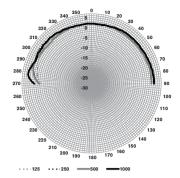
## LC1-WC06E8 Dimensions in mm (in)

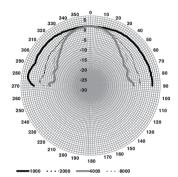


# LC1-WC06E8 Circuit diagram



LC1-WC06E8\_Frequency response





LC1-WC06E8 Polar diagrams

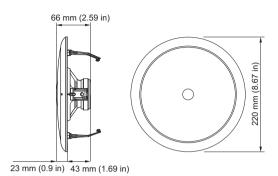
# Octave band sensitivity LC1-WC06E8

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	85.3	-	-
250 Hz	88.3	-	-
500 Hz	87.5	-	-
1000 Hz	88.4	-	-
2000 Hz	93.4	-	-
4000 Hz	93.8	-	-
8000 Hz	88.0	-	-
A-weighted	-	89.0	106.2
Lin-weighted	-	89.7	107.1

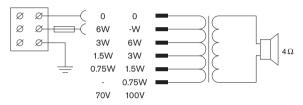
## Octave band opening angles LC1-WC06E8

Octave balla opening angles LOT WOODLO			
	Horizontal	Vertical	
125 Hz	180	180	
250 Hz	180	180	
500 Hz	180	180	
1000 Hz	180	180	
2000 Hz	180	180	
4000 Hz	75	75	
8000 Hz	96	96	

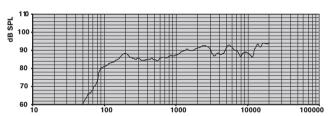
LC1-WC06E8 Acoustical performance specified per octave. \* (all measurements are done with a pink noise signal; the values are in dBSPL).



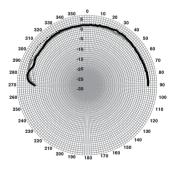
LC1-WM06E8 Dimensions in mm (in)



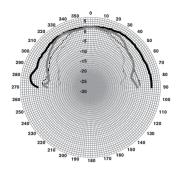
LC1-WM06E8 Circuit diagram



LC1-WM06E8 Frequency response



----125 ----250 ----500 ----1000



LC1-WM06E8 Polar diagrams

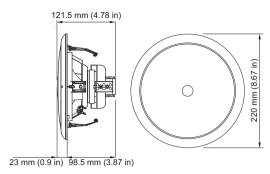
## Octave band sensitivity LC1-WM06E8

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	83.4	-	-
250 Hz	86.1	-	-
500 Hz	85.1	-	-
1000 Hz	87.8	-	-
2000 Hz	91.2	-	-
4000 Hz	89.7	-	-
8000 Hz	89.3	-	-
A-weighted	-	86.9	94.2
Lin-weighted	-	88.1	94.9

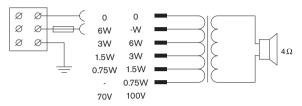
## Octave band opening angles LC1-WM06E8

	Horizontal	Vertical	
125 Hz	180	180	
250 Hz	180	180	
500 Hz	180	180	
1000 Hz	180	180	
2000 Hz	120	120	
4000 Hz	128	128	
8000 Hz	75	75	

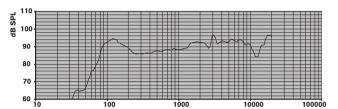
LC1-WM06E8 Acoustical performance specified per octave. \* (all measurements are done with a pink noise signal; the values are in dBSPL).



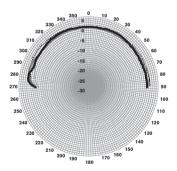
LC1-UM06E8 Dimensions in mm (in)

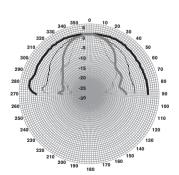


LC1-UM06E8 Circuit diagram



LC1-UM06E8 Frequency response





LC1-UM06E8 Polar diagrams

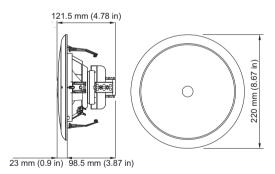
## Octave band sensitivity LC1-UM06E8

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	93.4	-	-
250 Hz	88.4	-	-
500 Hz	86.3	-	-
1000 Hz	88.5	-	-
2000 Hz	91.4	-	-
4000 Hz	93.9	-	-
8000 Hz	92.6	-	-
A-weighted	-	88.9	95.8
Lin-weighted	-	90.4	96.5

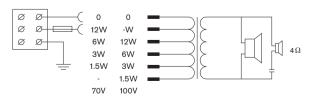
# Octave band opening angles LC1-UM06E8

	Horizontal	Vertical	
125 Hz	180	180	
250 Hz	180	180	
500 Hz	180	180	
1000 Hz	180	180	
2000 Hz	108	108	
4000 Hz	62	62	
8000 Hz	38	38	

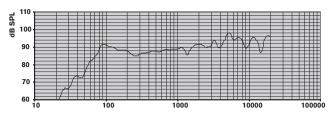
LC1-UM06E8 Acoustical performance specified per octave. \* (all measurements are done with a pink noise signal; the values are in dBSPL).



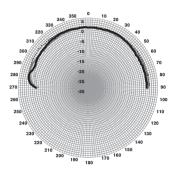
LC1-UM12E8 Dimensions in mm (in)



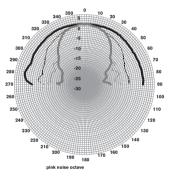
LC1-UM12E8 Circuit diagram



LC1-UM12E8 Frequency response







LC1-UM12E8 Polar diagrams

# Octave band sensitivity LC1-UM12E8

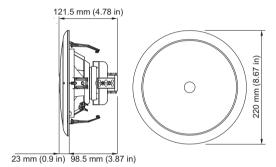
	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	89.4	-	-
250 Hz	87.3	-	-
500 Hz	86.5	-	-
1000 Hz	88.6	-	-
2000 Hz	90.0	-	-
4000 Hz	94.0	-	-
8000 Hz	93.7	-	-
A-weighted	-	88.9	99.3
Lin-weighted	-	90.3	100.2

# Octave band opening angles LC1-UM12E8

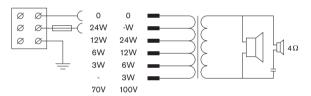
	Horizontal	Vertical	
125 Hz	180	180	

250 Hz	180	180	
500 Hz	180	180	
1000 Hz	180	180	
2000 Hz	108	108	
4000 Hz	64	64	
8000 Hz	62	62	

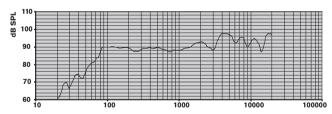
LC1-UM12E8 Acoustical performance specified per octave. \* (all measurements are done with a pink noise signal; the values are in dBSPL).



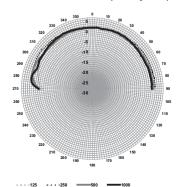
LC1-UM24E8 Dimensions in mm (in)

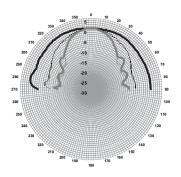


LC1-UM24E8 Circuit diagram



LC1-UM24E8 Frequency response





LC1-UM24E8 Polar diagrams

## Octave band sensitivity LC1-UM24E8

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	89.9	-	-
250 Hz	88.3	-	-
500 Hz	89.0	-	-
1000 Hz	88.6	-	-
2000 Hz	91.5	-	-
4000 Hz	95.6	-	-
8000 Hz	93.8	-	-
A-weighted	-	90.0	103.1
Lin-weighted	-	91.3	103.8

# Octave band opening angles LC1-UM24E8

	Horizontal	Vertical	
125 Hz	180	180	
250 Hz	180	180	
500 Hz	180	180	
1000 Hz	180	180	
2000 Hz	106	106	
4000 Hz	58	58	
8000 Hz	57	57	

LC1-UM24E8 Acoustical performance specified per octave. \* (all measurements are done with a pink noise signal; the values are in dBSPL).

# **Parts included**

Quantity	Components
1	LC1 Ceiling Loudspeaker
1	Installation instruction

Technical specifications			
Electrical*			
	LC1-WC06E8		
Description	Ceiling loudspeaker		
Maximum power	9 W		
Rated power	6 W (6/3/1.5/ 0.75 W)		
Sound Pressure Level at rated power / 1 W (1 kHz, 1 m)	96 dB / 88 dB		
Opening angle at 1 kHz / 4 kHz (-6 dB)	180°/75°		
Effective frequency range (-10 dB)	85 Hz to 20 kHz		
Rated voltage	70 V / 100 V		
Rated impedance	835 / 1667 Ohm		
Connector	3-pole screw- terminal block		
	LC1-WM06E8	LC1-UM06E8	
Description	Ceiling loudspeaker	Ceiling loudspeake	
Maximum power	9 W	9 W	
Rated power	6 W (6/3/1.5/ 0.75 W)	6 W (6/3/1.5/ 0.75 W)	
Sound Pressure Level at rated power / 1 W (1 kHz, 1 m)	96 dB / 88 dB	97 dB / 89 dB	
Opening angle at 1 kHz / 4 kHz (-6 dB)	180°/128°	180°/62°	
Effective frequency range (-10 dB)	85 Hz to 20 kHz	70 Hz to 20 kHz	
Rated voltage	70 V / 100 V	70 V / 100 V	
Rated impedance	835 / 1667 Ohm	835 / 1667 Ohm	
Connector	3-pole screw- terminal block	3-pole screw- terminal block	
	LC1-UM12E8	LC1-UM24E8	
Description	Ceiling loudspeaker	Ceiling loudspeaker	
Maximum power	18 W	36 W	
Rated power	12 W (12 / 6 / 3 / 1.5 W)	24 W (24 / 12 / 6 / 3 W)	
Sound Pressure Level at rated power / 1 W (1 kHz, 1 m)	100 dB / 89 dB	103 dB / 89 dB	
Opening angle at 1 kHz / 4 kHz (-6 dB)	180°/64°	180° / 58°	

Effective frequency range (-10 dB)	55 Hz to 20 kHz	55 Hz to 20 kHz
Rated voltage	70 V / 100 V	70 V / 100 V
Rated impedance	418/833 Ohm	208 / 417 Ohm
Connector	3-pole screw- terminal block	3-pole screw- terminal block

<sup>\*</sup> Technical performance data acc. to IEC 60268-5

# Mechanical

Mechanica		
	LC1-WC06E8	
Description	Ceiling loudspeaker	
Diameter	220 mm (8.67 in)	
Maximum depth*	125 mm (4.92 in)	
Color	White (RAL 9010)	
Material (frame / front grille)	ABS	
Weight	820 g (1.81 lb)	
	LC1-WM06E8	LC1-UM06E8
Description	Ceiling loudspeaker	Ceiling loudspeaker
Diameter	220 mm (8.67 in)	220 mm (8.67 in)
Maximum depth*	125 mm (4.92 in)	125 mm (4.92 in)
Color	White (RAL 9010)	White (RAL 9010)
Material (frame / front grille)	Steel	Steel
Weight	1.18 kg (2.6 lb)	1.16 kg (2.56 lb)
	LC1-UM12E8	LC1-UM24E8
Description	Ceiling loudspeaker	Ceiling loudspeaker
Diameter	220 mm (8.67 in)	220 mm (8.67 in)
Maximum depth*	125 mm (4.92 in)	125 mm (4.927 in)
Color	White (RAL 9010)	White (RAL 9010)
Material (frame / front grille)	Steel	Steel
Weight	1.3 kg (2.86 lb)	1.75 kg (3.86 lb)
	LC1-MMSB	LC1-CMR
Description	Mounting Support Bracket	Ceiling Mounting Ring
Dimensions	215 x 125 x 56 m m (8.47 x 4.92 x 2.2 in)	215 x 70 mm (8.47 x 2.75 in)
Mounting cut-out	190 mm (7.48 in)	200 mm (7.88 in)

Max. ceiling thickness	50 mm (1.97 in)	25 mm (0.98 in)
Material	Steel	ABS
Color	Zinc plated	White (RAL 9010)
Weight	390 g (0.70 lb)	210 g (0.46 lb)
	LC1-CBB	LC1-CSMB
Description	Back Box	Surface Mounting Box
Dimensions	196 x 70 mm (7.72 x 2.75 in)	220 x 128 mm (8.67 x 5.04 in)
Material	ABS	ABS
Color	White (RAL 9010)	White (RAL 9010)
Weight	174 g (0.38 lb)	690 g (1.52 lb)
	LC1-MFD	LC1-PIB
Description	Metal Fire Dome (including ceramic connector)	Pilot-tone Indication Board
Dimensions	215 x 155 mm (8.47 x 6.1 in)	20 x 30 mm (0.78 x 1.18 in)
Mounting cut-out	190 mm (7.48 in)	n.a.
	Cut-out template included	n.a
Material	Steel	n.a.
Color	Flame red (RAL 3000)	n.a.
Certified B15	According to DIN4102-8	n.a.
Weight	1 kg (2.20 lb)	3 g (0.006 lb)
	LM1-TB	LC1-MSK
Description	Tile Bridge / C-Ring	Metal Suspension Kit
Dimensions		
Chain length	n.a	320 mm (12.59 in)
Tile rails	643 x 34 mm (25.33 x 1.34 in)	n.a
C-Ring	250 x 30 mm (9.85 x 1.18 in)	n.a
Material	Steel	Steel
Color	Zinc plated	Zinc plated
Weight	939 g (2.07 lb)	174 g (0.38 lb)

<sup>\*</sup> including LC1-MMSB

#### **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%



Bosch Security Systems BV Torenallee 49, 5617 BA Eindhoven, The Netherlands 1438-CPD-0194

EN 54-24:2008

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

Ceiling Loudspeakers 6 W, 12 W, 24 W and accessories LC1-WM06E8\_LC1-UMxxE8 and LC1-MED LC1-CMR, LC1-CBB, LC1-CSMB, LC1-MSK Type A

# **Ordering information**

# LC1-WC06E8 Ceiling Loudspeker 6 W

Ceiling loudspeaker, 6 W. ABS circular grille, 4-inch driver, without flush ceiling-mounting accessory, EN54-24 certified, white RAL 9010.

Order number LC1-WC06E8

## LC1-WM06E8 Ceiling Loudspeaker 6 W

Ceiling loudspeaker, 6 W, integrated circular metal grille, 4-inch driver, without flush ceiling-mounting accessory, EN54-24 certified, white RAL 9010. Order number LC1-WM06E8

#### LC1-UM06E8 Ceiling Loudspeaker 6 W

Ceiling loudspeaker, 6 W, integrated circular metal grille, 6-inch driver, without flush ceiling-mounting accessory, EN54-24 certified, white RAL 9010. Order number LC1-UM06E8

## LC1-UM12E8 Ceiling Loudspeaker 12 W

Ceiling loudspeaker, 12 W, integrated circular metal grille, 6-inch coax (two-way system) driver, without flush ceiling-mounting accessory, EN54-24 certified, white RAL 9010.

Order number LC1-UM12E8

## LC1-UM24E8 Ceiling Loudspeaker 24 W

Ceiling loudspeaker, 24 W, integrated circular metal grille, 6-inch coax (two-way system) driver, without flush ceiling-mounting accessory, EN54-24 certified, white RAL 9010.

Order number LC1-UM24E8

#### **Accessories**

## **LC1-MMSB Mounting Support Bracket**

Metal mounting support bracket with two ceiling clamps for securing LC1 ceiling loudspeakers in the ceiling.

Order number LC1-MMSB

## **LC1-CMR Mounting Ring**

Ceiling mounting ring with screw driving ceiling clamps for securing the LC1 ceiling loudspeakers in the ceiling, EN54-24 certified, white RAL 9010. Order number LC1-CMR

## LC1-CBB Back Box

Back box for mounting onto the LC1-CMR, fully protects the LC1 loudspeaker from dust and dripping water, makes the unit vermin proof and prevents sound traveling via the ceiling cavity to adjacent areas, EN54-24 certified, white RAL 9010.

Order number LC1-CBB

#### LC1-MFD Metal Fire Dome

Metal fire dome for use with the LC1 ceiling loudspeakers, including ceramic terminal connector with cable loop-through facility, EN54-24 certified, flame red RAL 3000.

Order number LC1-MFD

#### **LC1-CSMB Surface Mounting Box**

Surface mounting box, ABS, for securing LC1 ceiling loudspeaker to walls or hard ceilings.

Order number LC1-CSMB

#### LC1-MSK Metal Suspension Kit

Metal suspension kit for single-point suspension of LC1 ceiling loudspeaker and LC1-CSMB surface mounting box assembly.

Order number LC1-MSK

#### LC1-PIB Pilot Tone Indication Board

Pilot-tone indication board for mounting in LC1 ceiling loudspeakers, enables optional visualization of presence of pilot tone (set of six pieces).

Order number LC1-PIB

# LM1-TB Tile Bridge / C-Ring

Tile bridge/C-ring, an installation accessory for reinforcing the ceiling material and distributing the pressure from the ceiling speaker clamps (set of two pieces).

Order number LM1-TB

#### Represented by:

#### Americas:

Bosch Security Systems, Inc. 12000 Portland Avenue South Burnsville MN 55337, USA Phone: +1-800-392-3497 Fax: +1-800-955-6831 audiosupport@us.bosch.com www.boschsecurity.com

#### Europe, Middle East, Africa:

Bosch Security Systems B.V. P.O. Box 80002 5617 BA Eindhoven, The Netherlands Phone: + 31 40 2577 284 Fax: +31 40 2577 330 emea.securitysystems@bosch.com www.boschsecurity.com

#### Asia-Pacific:

Robert Bosch (SEA) Pte Ltd, Security 11 Bishan Street 21 Singapore 573943 Phone: +65 6571 2808 Fax: +65 6571 2699 apr.securitysystems@bosch.com www.boschsecurity.asia

#### China:

Bosch (Shanghai) Security Systems Ltd. 201 Building, No. 333 Fuquan Road North IBP Changning District, Shanghai 200335 China Phone +86 21 22181111 Fax: +86 21 22182398 www.boschsecurity.com.cn

#### America Latina:

Robert Bosch Ltda Security Systems Division Via Anhanguera, Km 98 CFP 13065-900 Campinas, Sao Paulo, Brazil Phone: +55 19 2103 2860 Fax: +55 19 2103 2862 latam.boschsecurity@bosch.com www.boschsecurity.com