



# LC1 Modular Ceiling Loudspeaker Range

LC1



**BOSCH**

en Product Information & Installation Manual



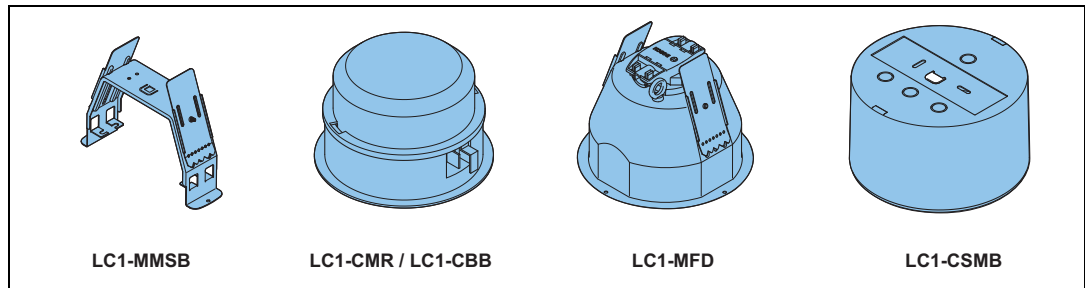
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# 1 System Overview

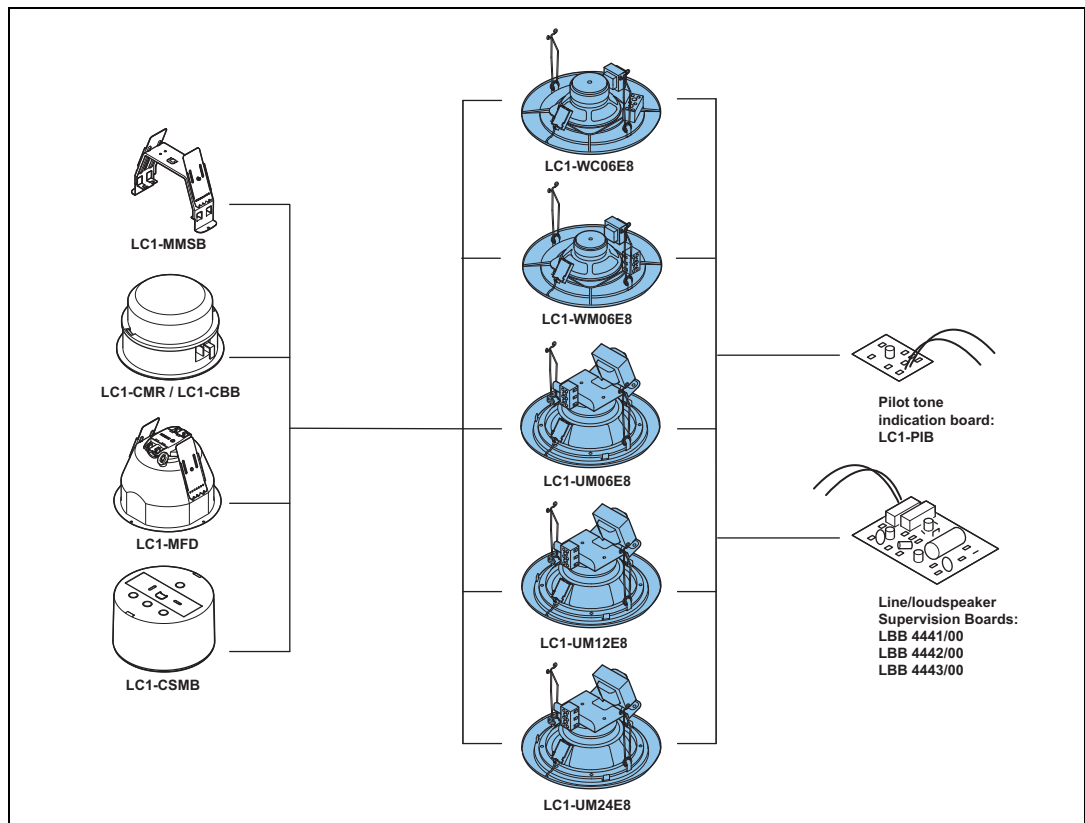
## 1.1 Housings



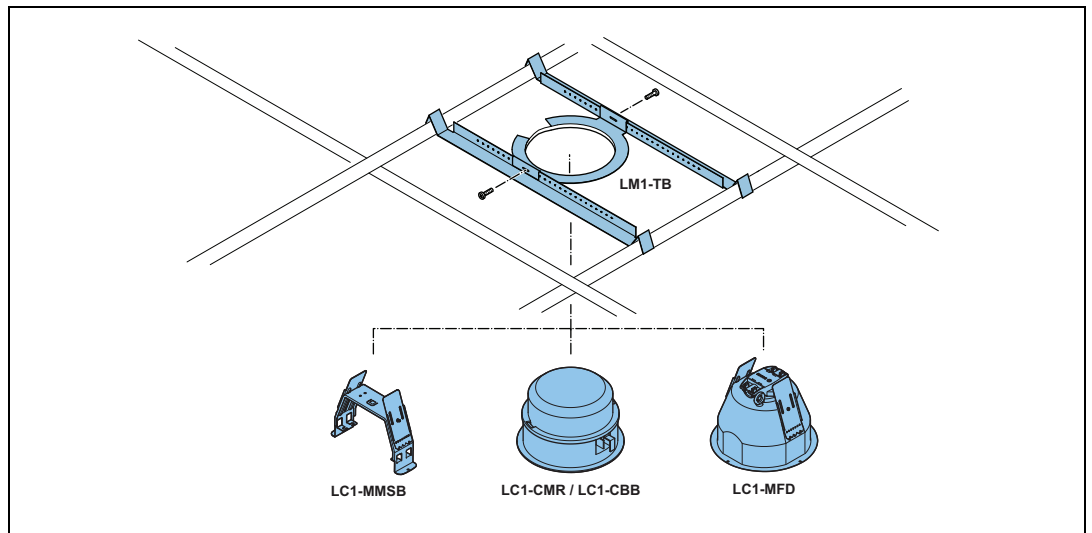
**NOTICE!**

To be compliant with UL-1480 the loudspeaker must be installed with the LC1-CMR including LC1-CBB or LC1-MFD or LC1-CSMB.

## 1.2 Loudspeakers



### 1.3 Accessories



## 2 Installation

### 2.1 LC1-MMSB

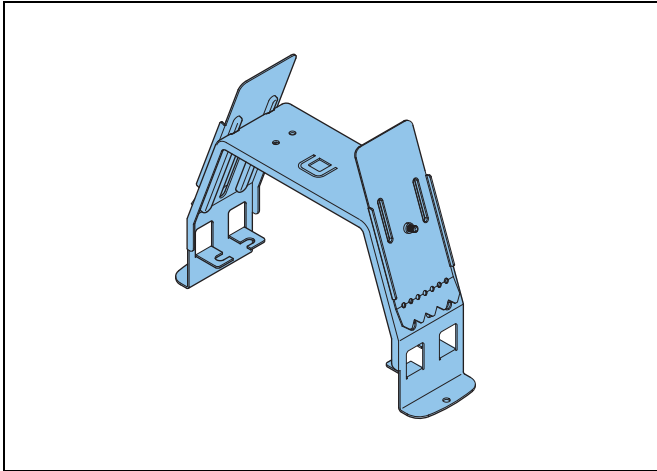


Fig. 1

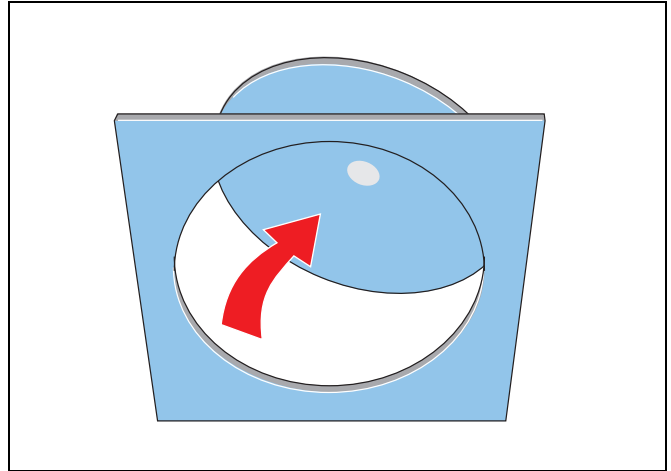


Fig. 2

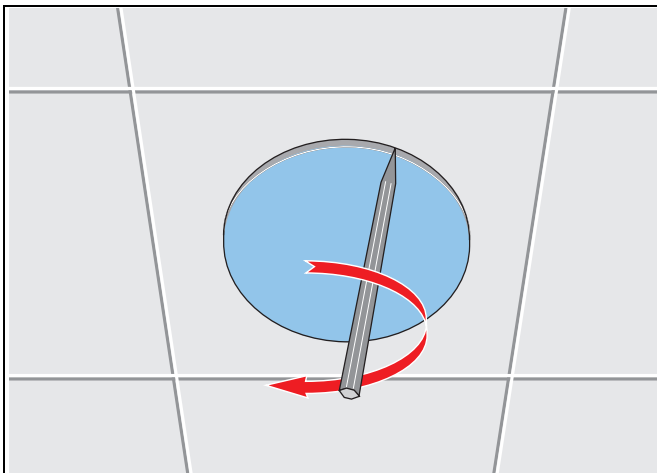


Fig. 3

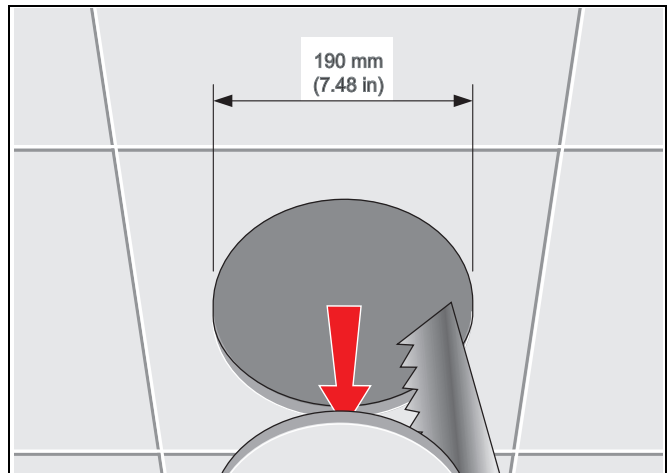


Fig. 4

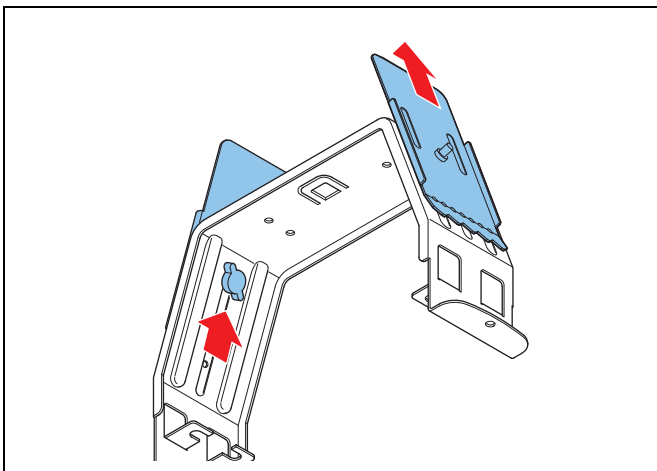


Fig. 5

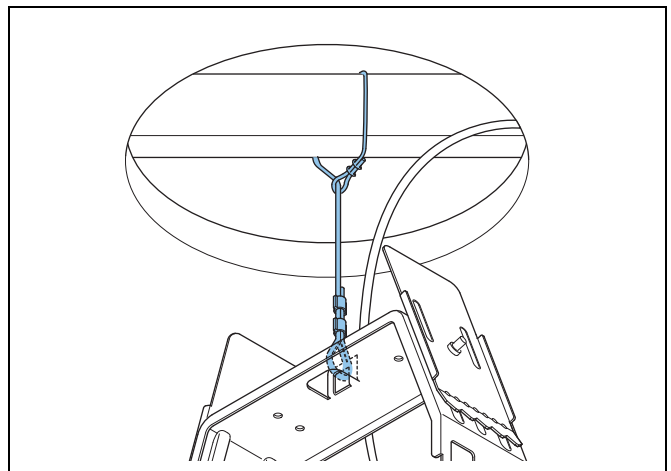


Fig. 6  
Optional

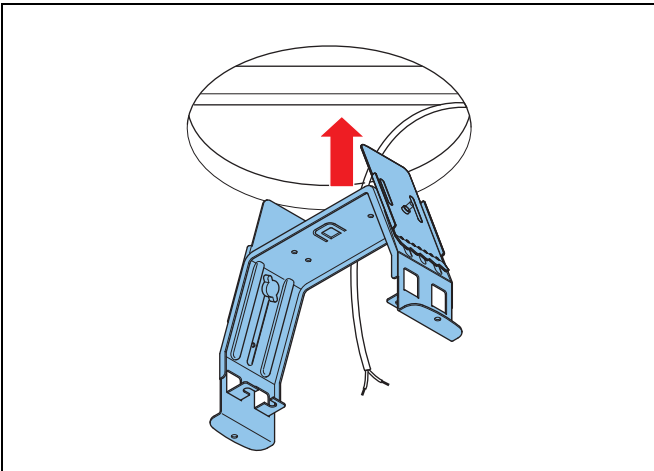


Fig. 7

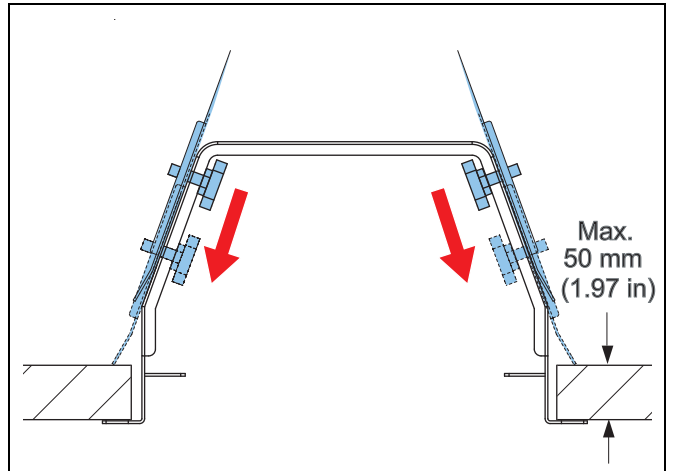


Fig. 8

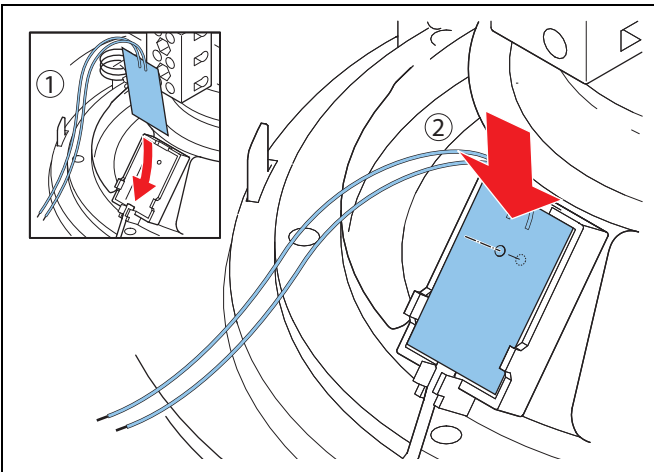


Fig. 9  
Optional  
Pilot tone indication board: LC1-PIB  
**Notice!** Push until you hear a click.

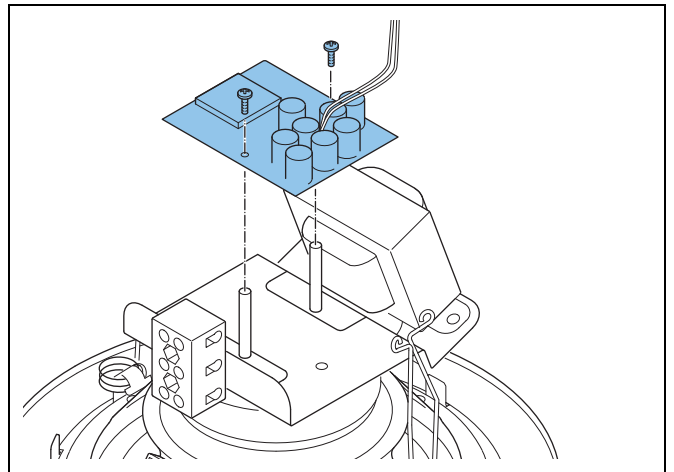


Fig. 10  
Optional  
Line/Loudspeaker supervision boards:  
LBB 4441/00, LBB 4442/00, LBB 4443/00

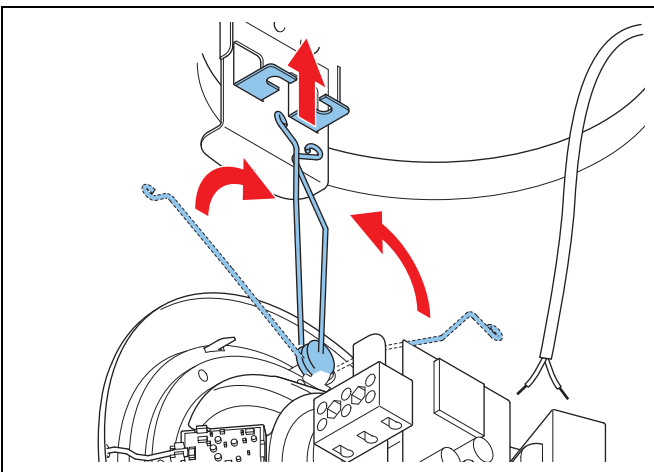


Fig. 11

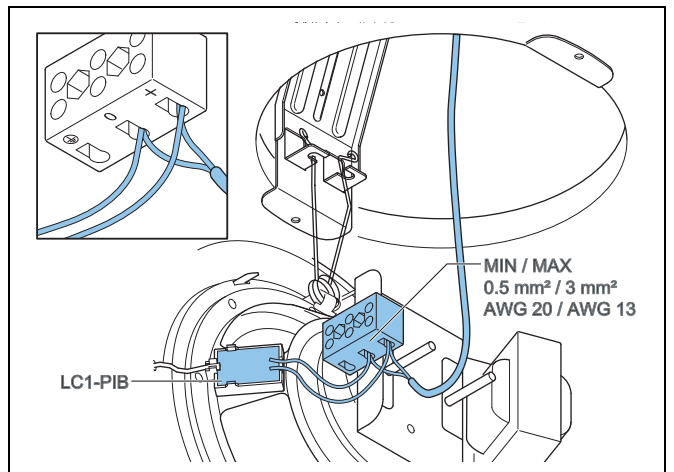


Fig. 12

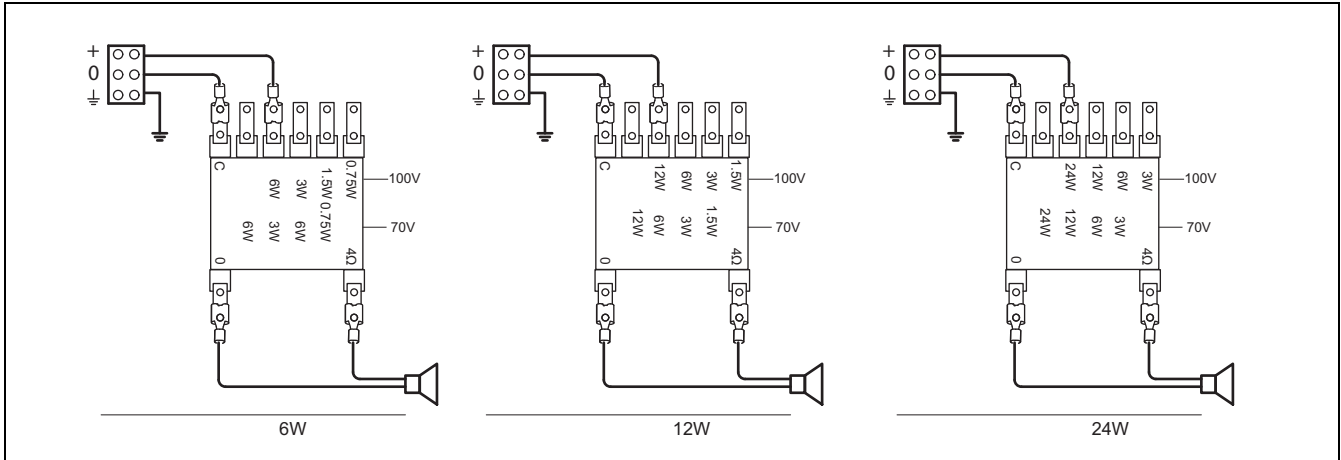


Fig. 13

**Notice!** Standard connected to rated power at 100V

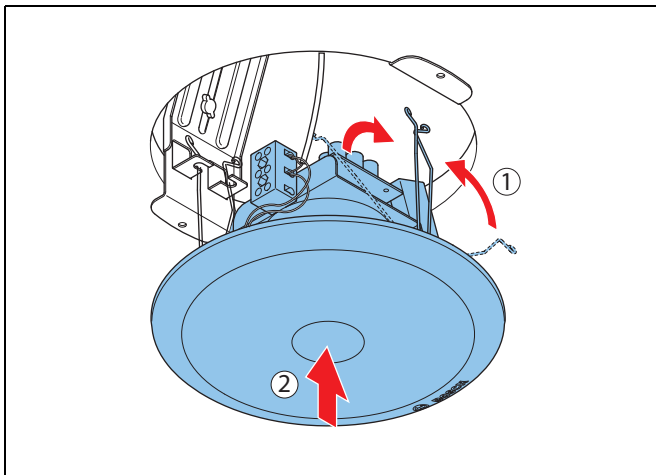


Fig. 14

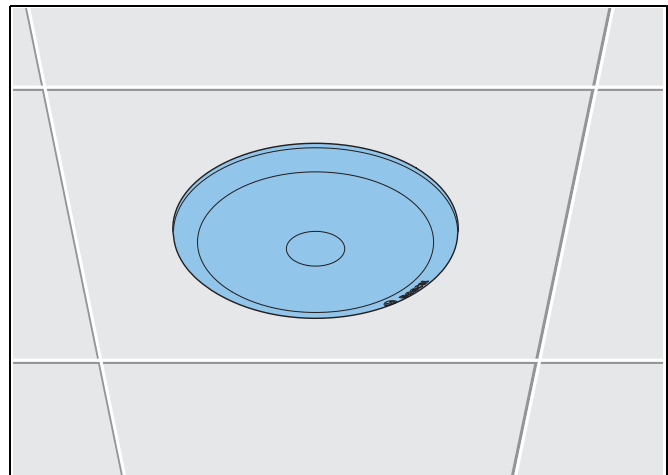


Fig. 15



## 2.2 LC1-CMR/LC1-CBB

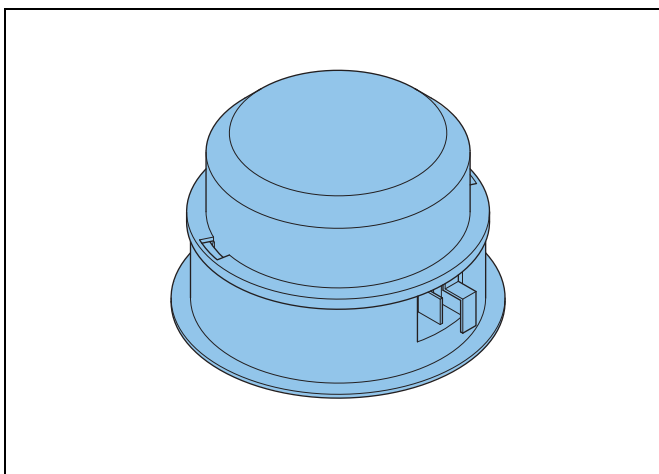


Fig. 1

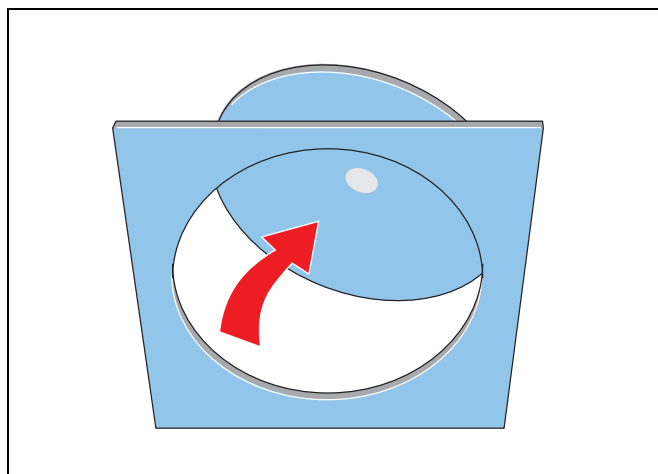


Fig. 2

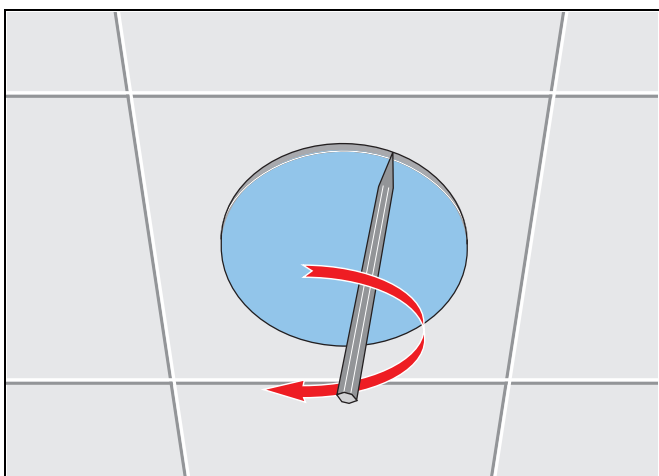


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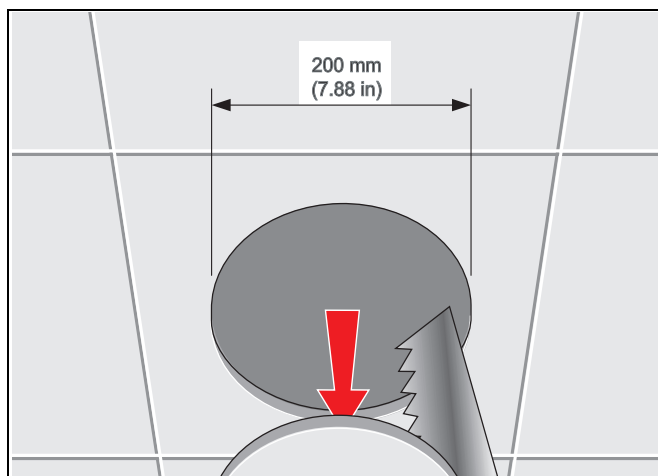


Fig. 4

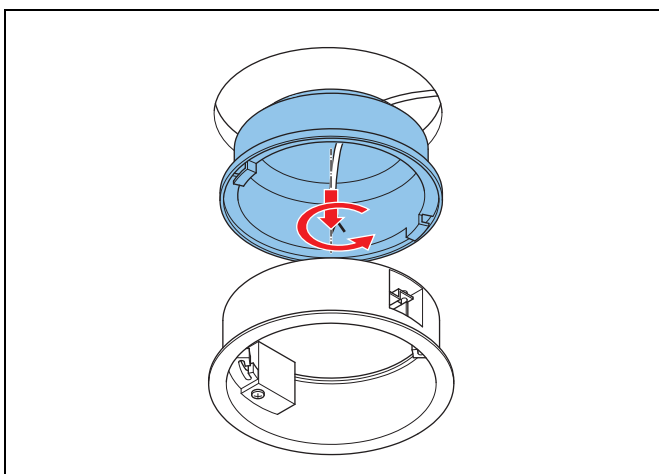


Fig. 5  
Optional

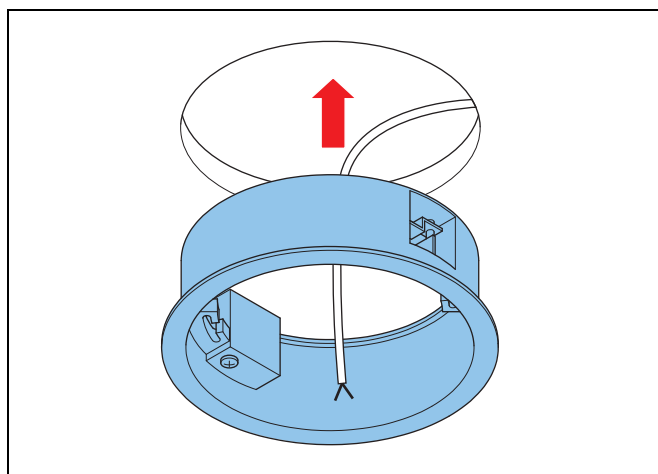


Fig. 6

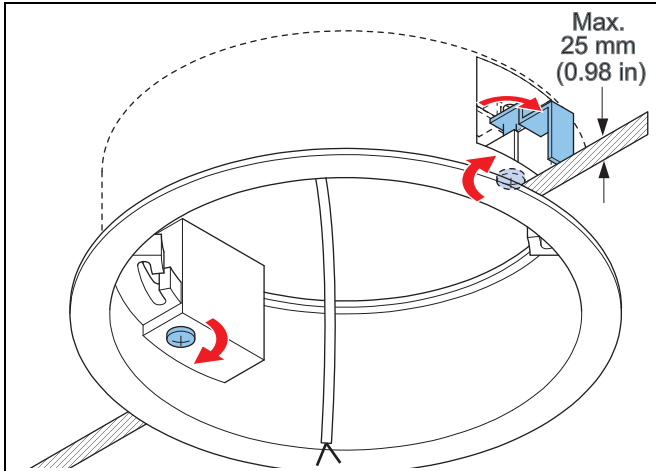


Fig. 7

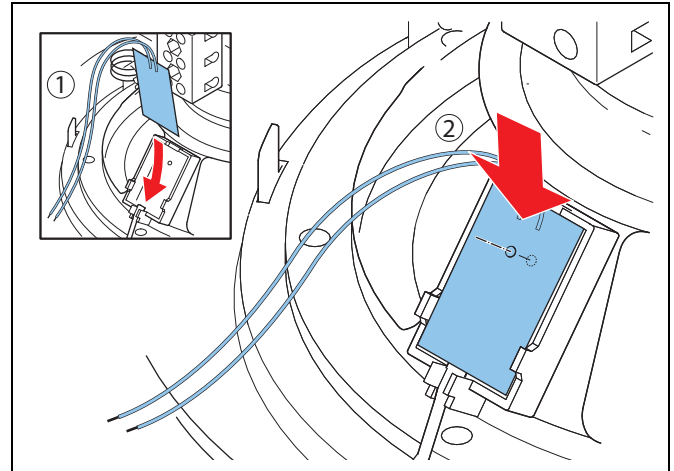


Fig. 8

Optional  
Pilot tone indication board: LC1-PIB  
**Notice!** Push until you hear a click.

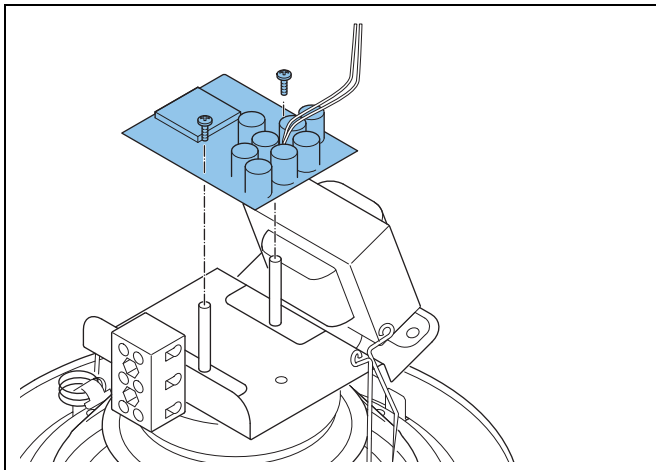


Fig. 9

Optional  
Line/Loudspeaker supervision boards:  
LBB 4441/00, LBB 4442/00, LBB 4443/00

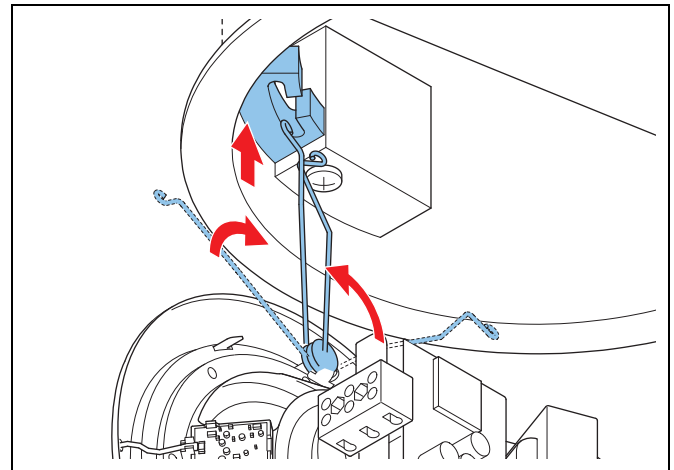


Fig. 10

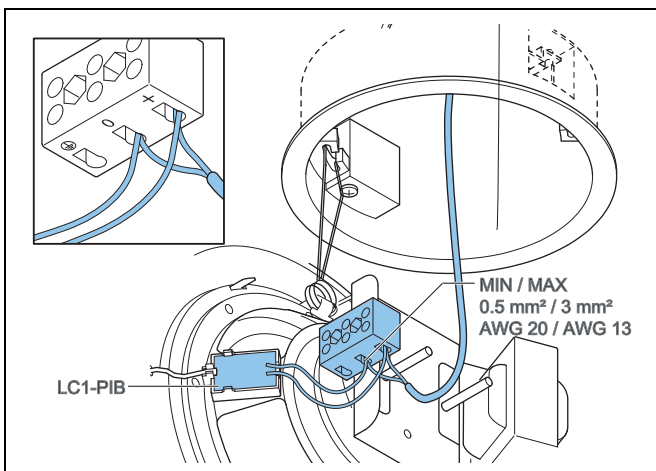


Fig. 11

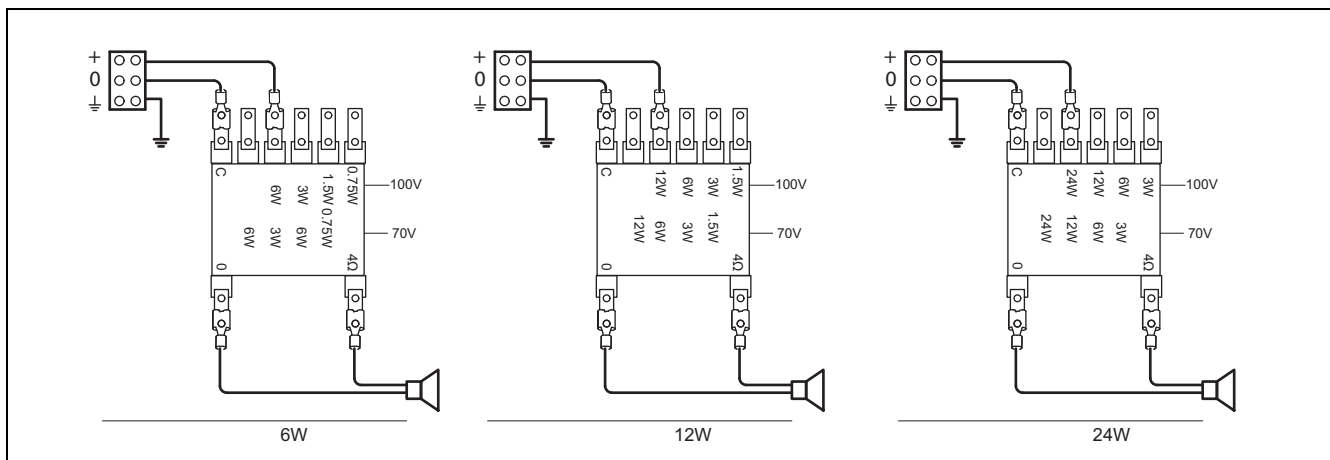


Fig. 12

**Notice!** Standard connected to rated power at 100V

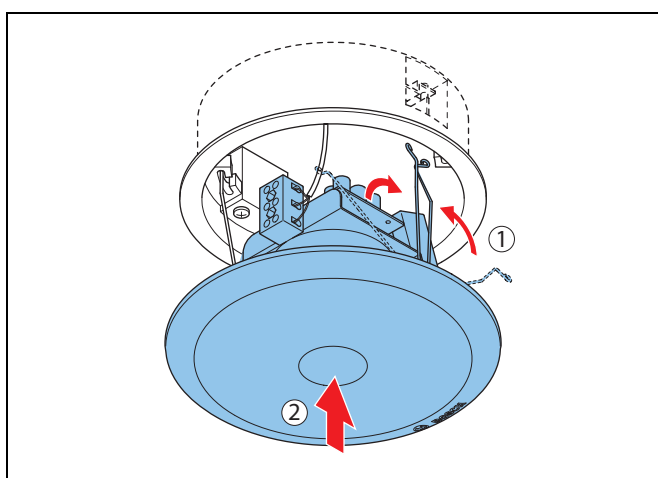


Fig. 13

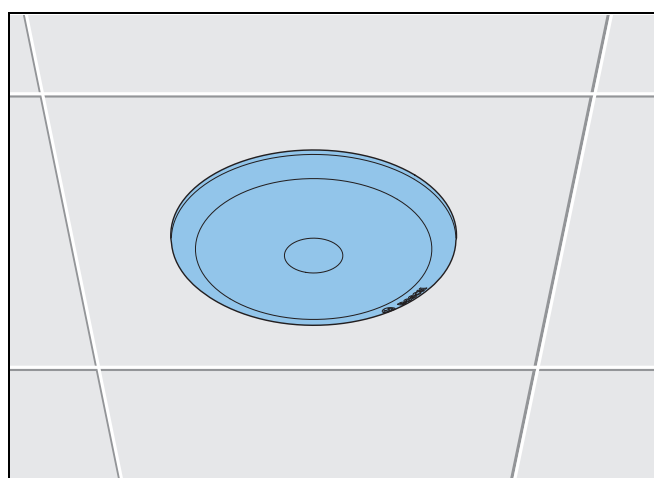


Fig. 14

### 2.3 LC1-MFD

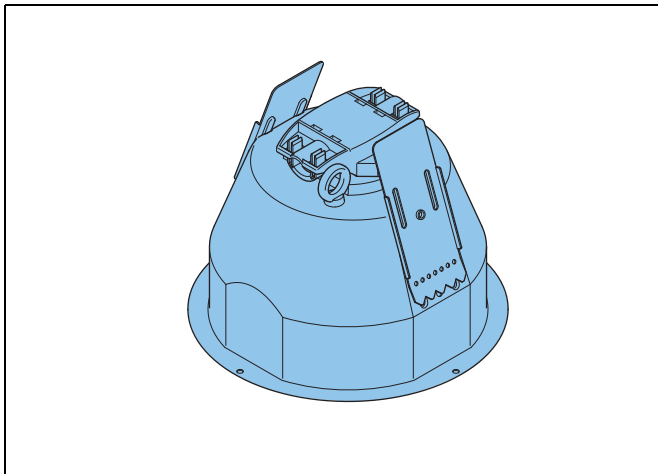


Fig. 1

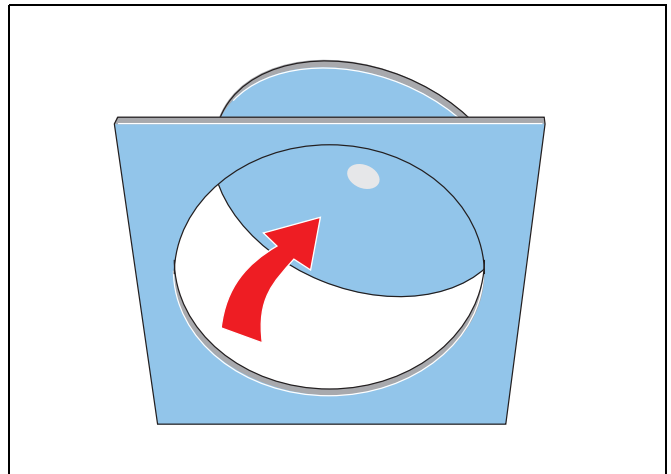


Fig. 2

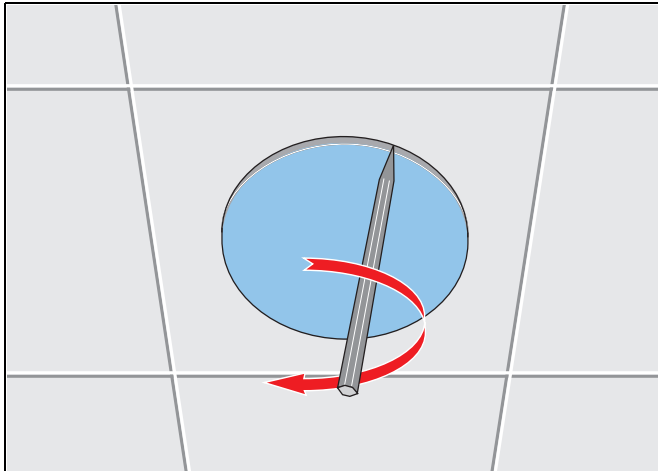


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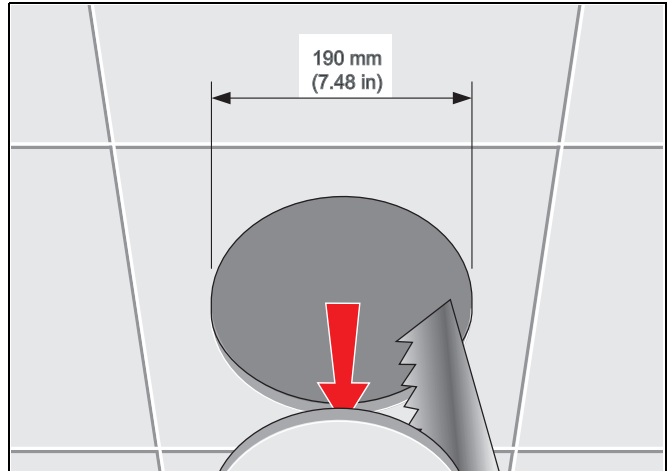


Fig. 4

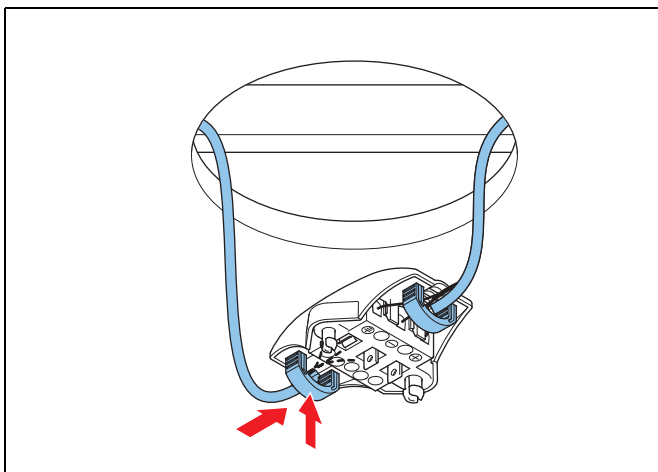


Fig. 5

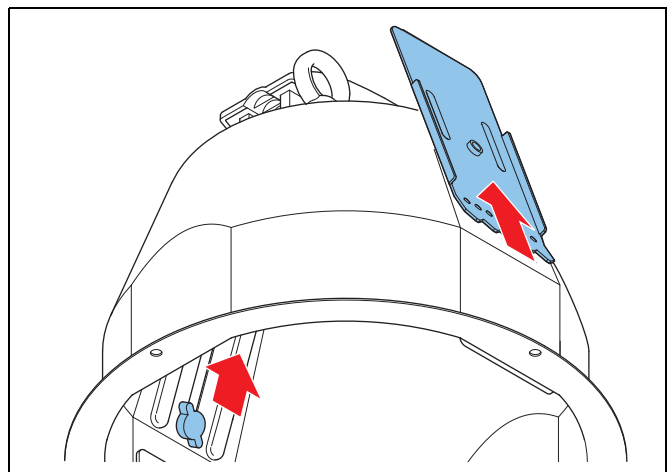


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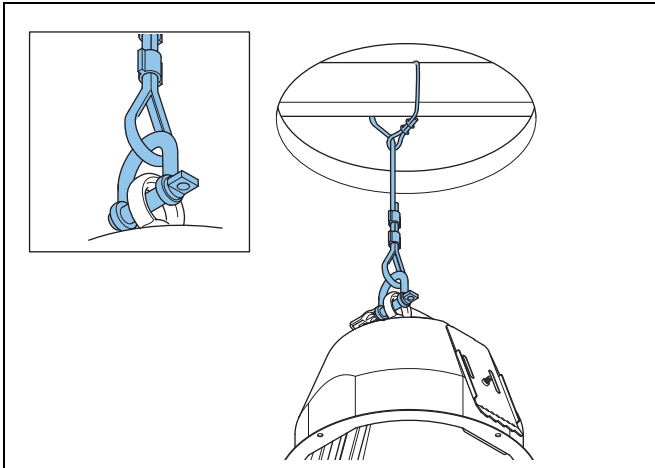


Fig. 7  
Optional

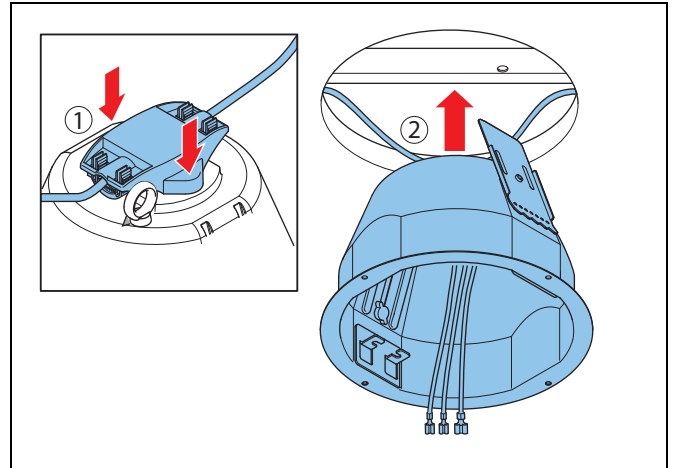


Fig. 8  
**Notice! Push until you hear a click.**

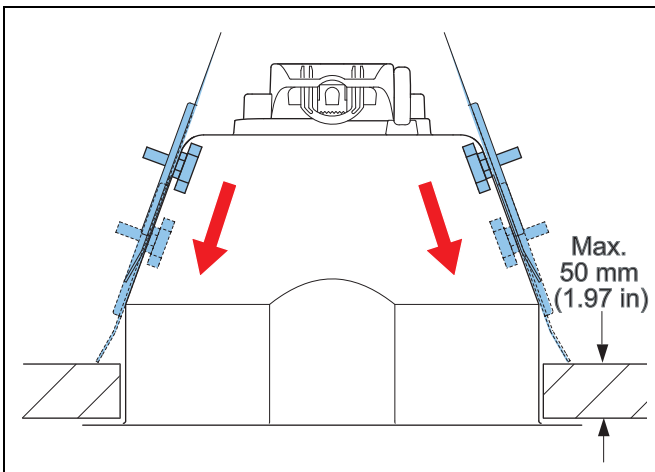


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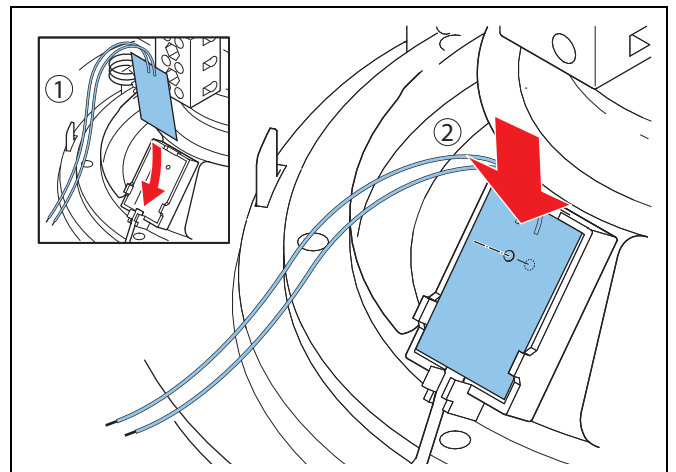


Fig. 10  
Optional  
Pilot tone indication board: LC1-PIB  
**Notice! Push until you hear a click.**

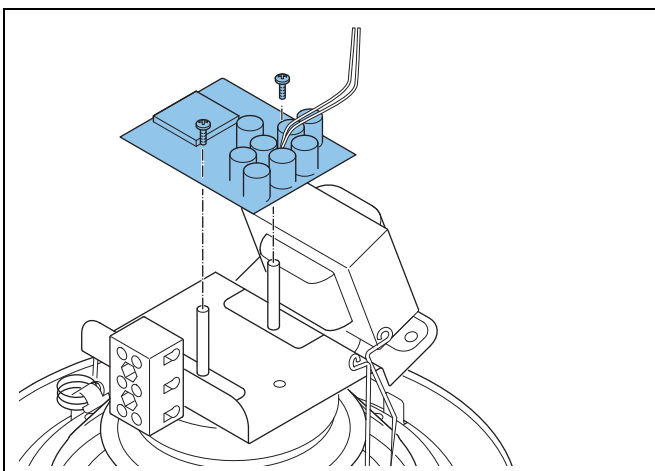


Fig. 11  
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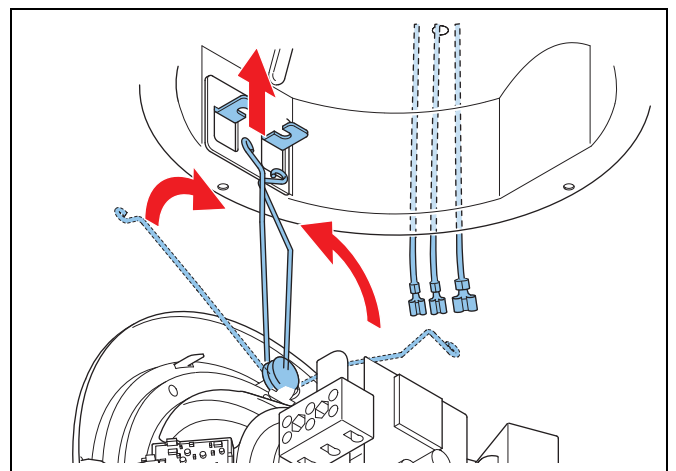


Fig. 12

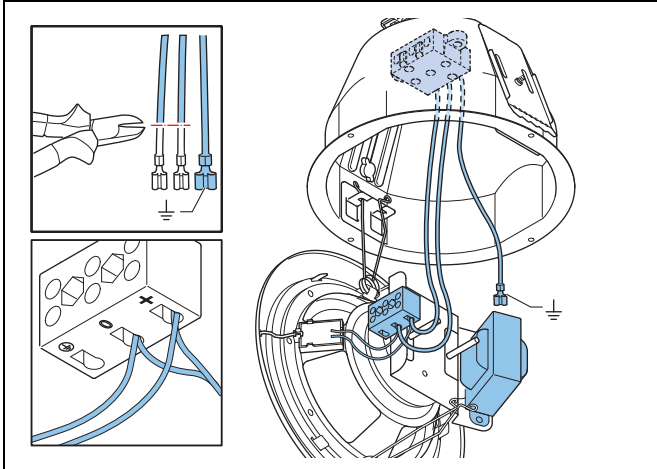


Fig. 13  
Optional

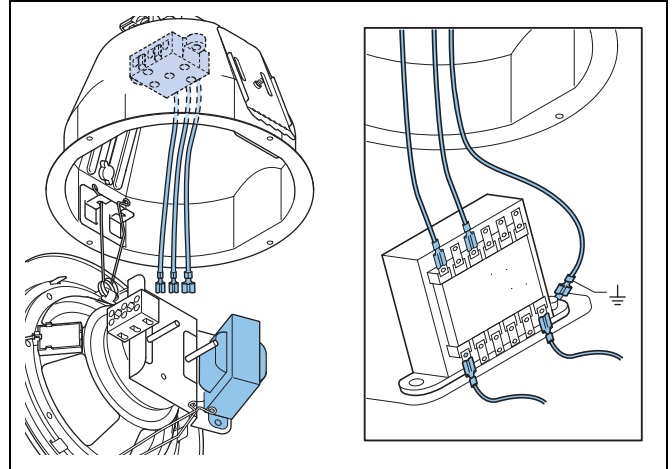


Fig. 14

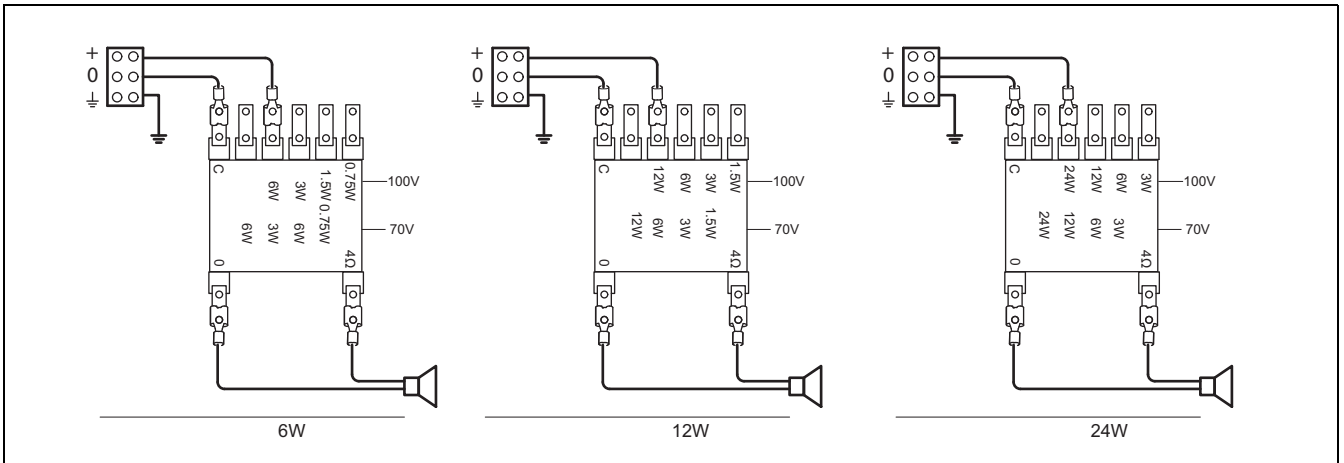


Fig. 15  
**Notice!** Standard connected to rated power at 100V

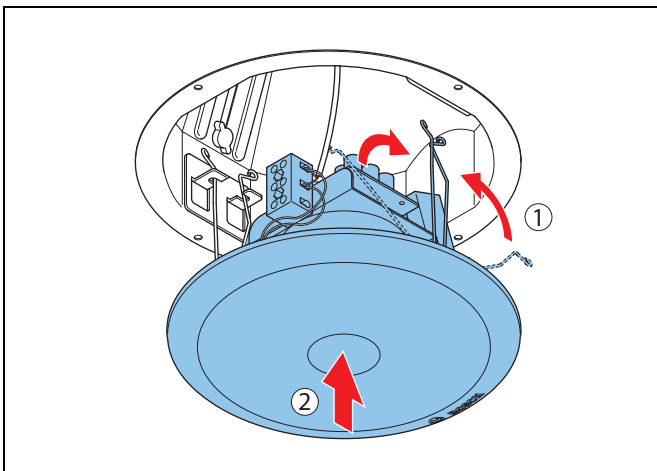


Fig. 16

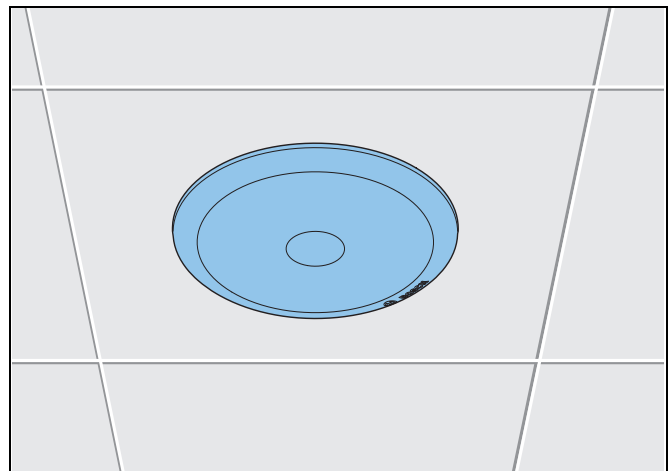


Fig. 17

## 2.4 LC1-CSMB

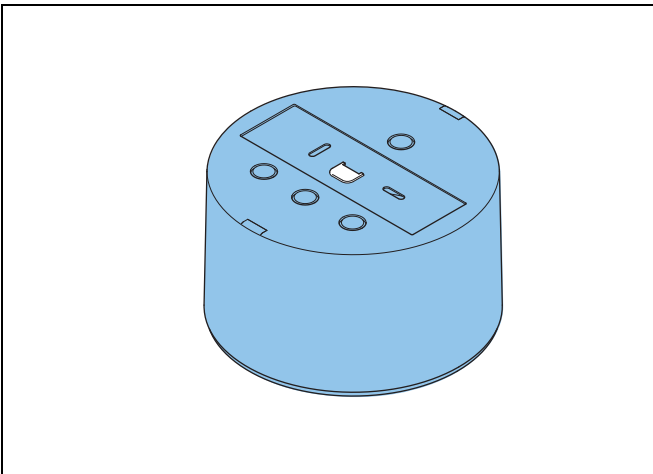


Fig. 1

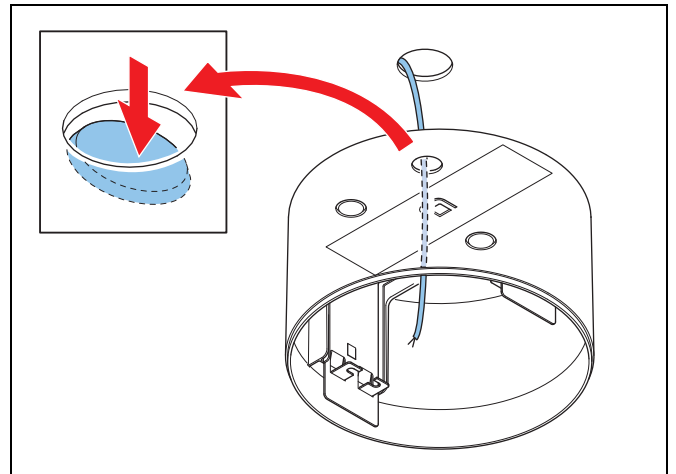


Fig. 2

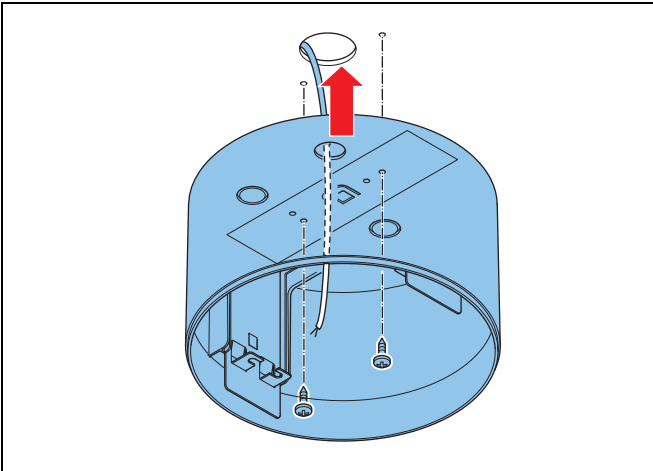


Fig. 3

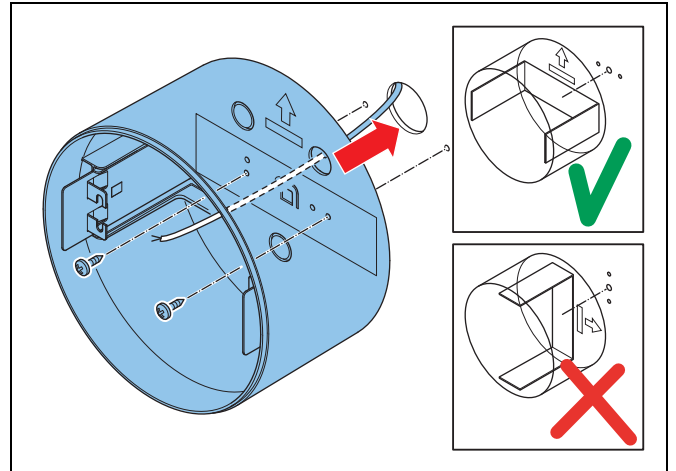


Fig. 4

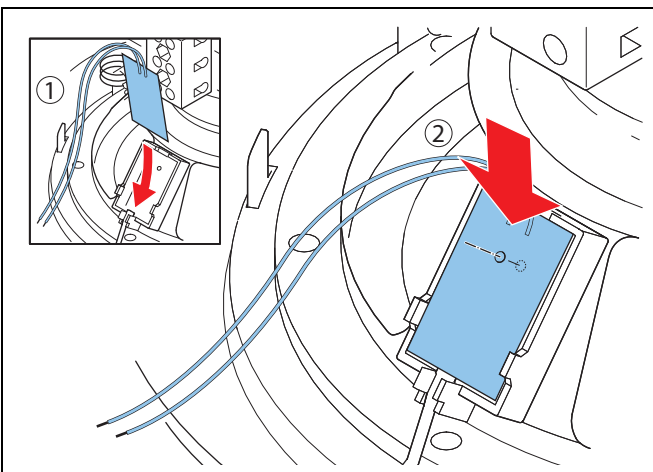


Fig. 5

Optional

Pilot tone indication board: LC1-PIB

**Notice!** Push until you hear a click.

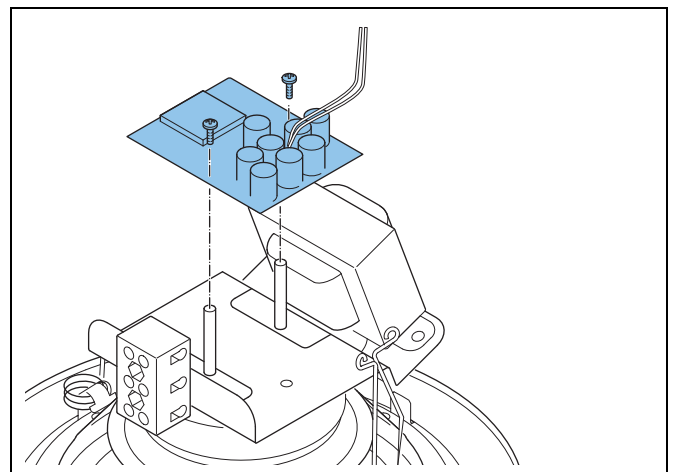


Fig. 6

Optional

Line/Loudspeaker supervision boards:

LBB 4441/00, LBB 4442/00, LBB 4443/00

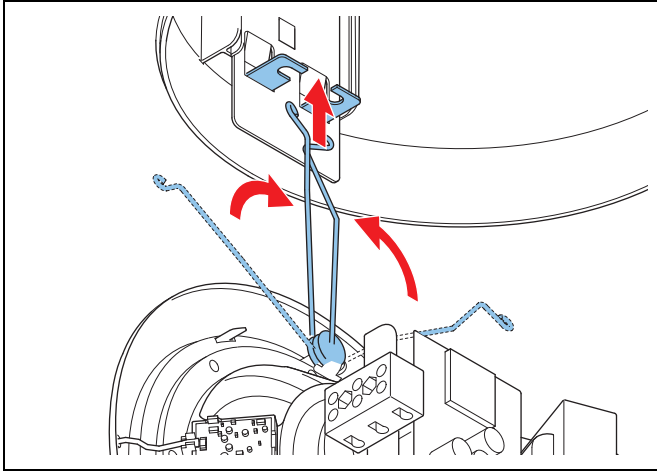


Fig. 7

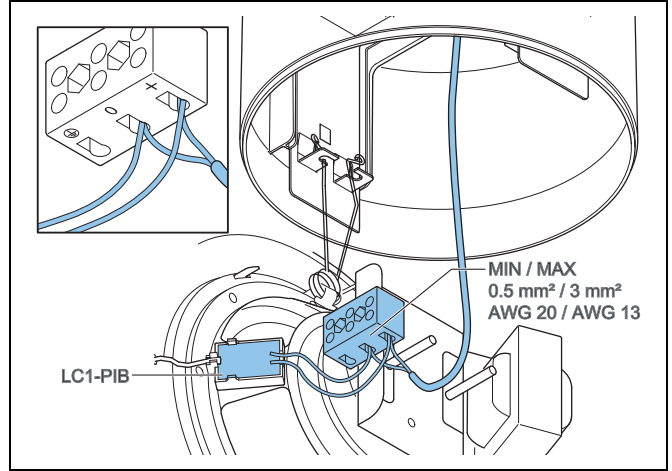


Fig. 8

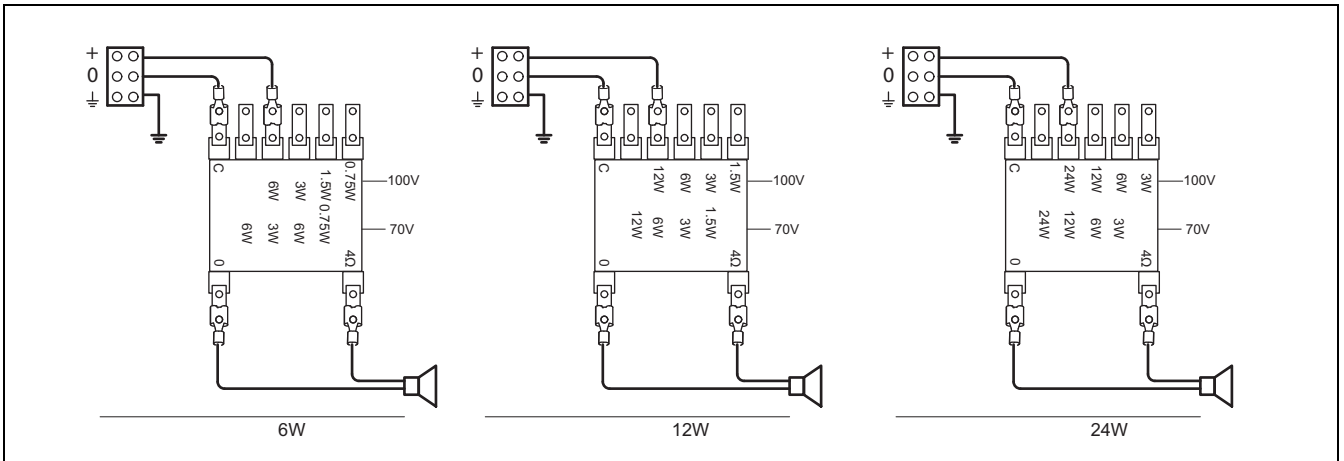


Fig. 9

**Notice!** Standard connected to rated power at 100V

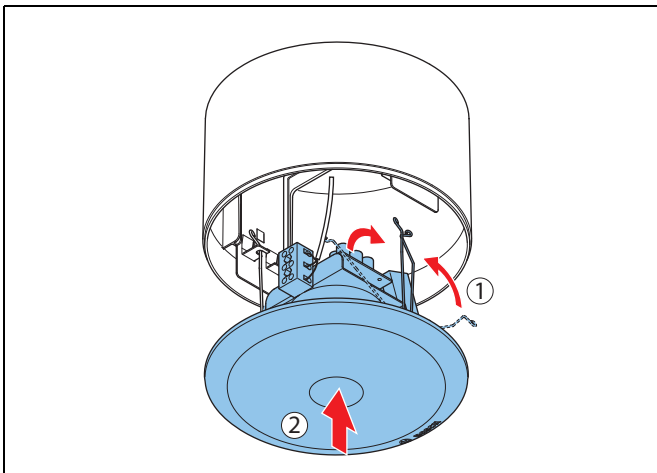


Fig. 10

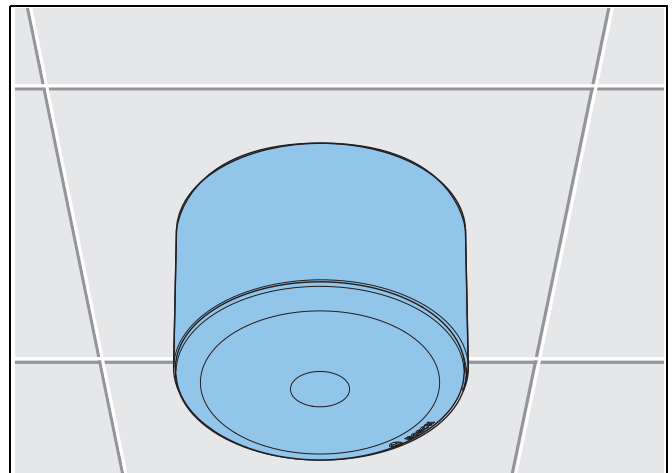


Fig. 11



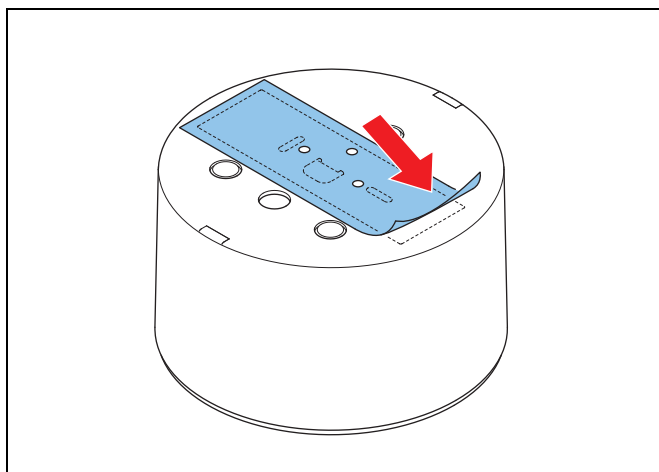


Fig. 12  
Optional

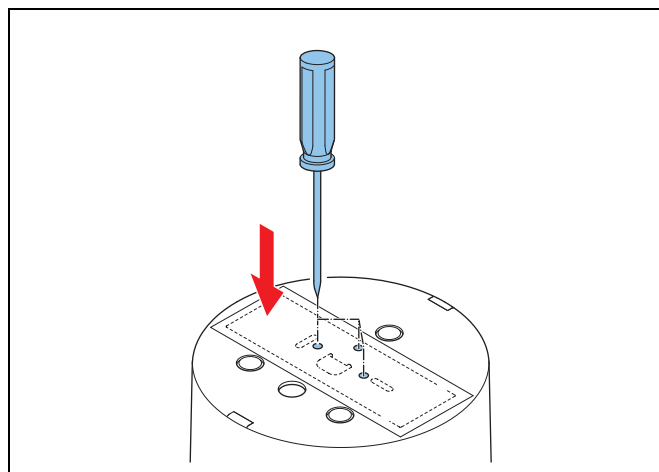


Fig. 13  
Optional

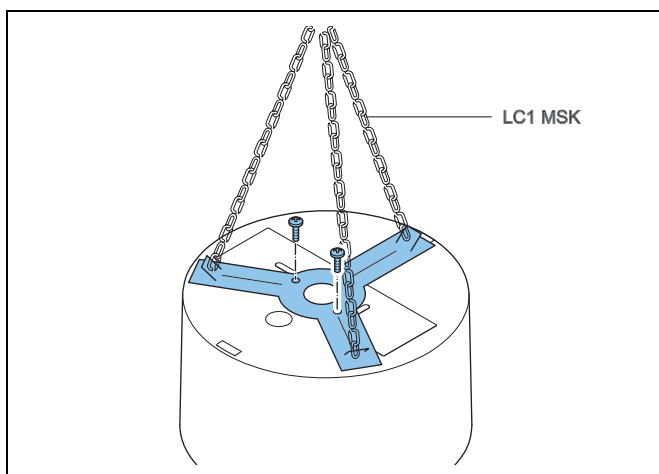


Fig. 14  
Optional

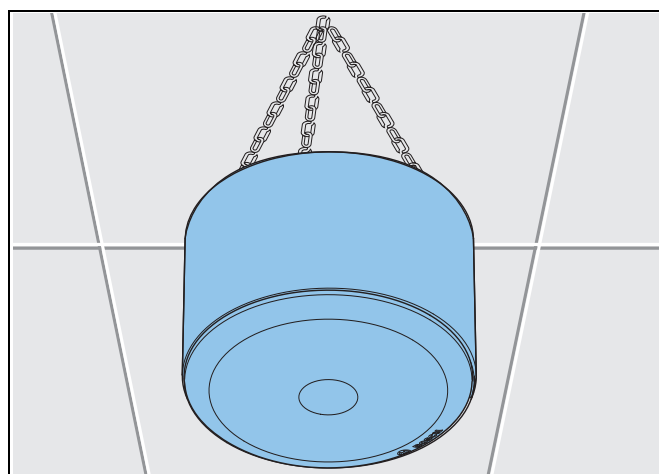


Fig. 15  
Optional

## 3 Technical Data

### 3.1 Electrical

	<b>LC1-WC06E8</b>	<b>LC1-WM06E8</b>	<b>LC1-UM06E8</b>
Description	Ceiling loudspeaker	Ceiling loudspeaker	Ceiling loudspeaker
Maximum power	9 W	9 W	9 W
Rated power	6 W (6-3-1.5-0.75 W)	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	96 dB / 88 dB	97 dB / 89 dB
Opening angle at 1 kHz / 4 kHz (-6 dB)	180/75°	180/128°	180/62°
Effective frequency range (-10 dB)	85 Hz to 20 kHz	85 Hz to 20 kHz	70 Hz to 20 kHz
Rated voltage	70/100 V	70/100 V	70/100 V
Rated impedance	835/1667 Ohm	835/1667 Ohm	835/1667 Ohm
Connector	3 pole screw terminal block	3 pole screw terminal block	3 pole screw terminal block
	<b>LC1-UM12E8</b>	<b>LC1-UM24E8</b>	
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	70/100 V	70/100 V	
Rated impedance	418/833 Ohm	208/417 Ohm	
Connector	3 pole screw terminal block	3 pole screw terminal block	

Technical performance according to IEC 60268-5

## 3.2 Mechanical

	<b>LC1-WC06E8</b>	<b>LC1-WM06E8</b>	<b>LC1-UM06E8</b>
Description	Ceiling loudspeaker	Ceiling loudspeaker	Ceiling loudspeaker
Diameter	220 mm (8.67 in)	220 mm (8.67 in)	220 mm (8.67 in)
Maximum depth (including LC1-MMSB)	125 mm (4.92 in)	125 mm (4.92 in)	125 mm (4.92 in)
Mounting cut-out	190 mm (7.48 in)	190 mm (7.48 in)	190 mm (7.48 in)
Color	White (RAL 9010)	White (RAL 9010)	White (RAL 9010)
Material (frame and front grille)	ABS	Steel	Steel
Weight	0.82 kg (1.80 lb)	1.18 kg (2.60 lb)	1.16 kg (2.56 lb)
	<b>LC1-UM12E8</b>	<b>LC1-UM24E8</b>	
Description	Ceiling loudspeaker	Ceiling loudspeaker	
Diameter	220 mm (8.67 in)	220 mm (8.67 in)	
Maximum depth (including LC1-MMSB)	125 mm (4.92 in)	125 mm (4.92 in)	
Mounting cut-out	190 mm (7.48 in)	190 mm (7.48 in)	
Color	White (RAL 9010)	White (RAL 9010)	
Material (frame and front grille)	Steel	Steel	
Weight	1.30 kg (2.86 lb)	1.75 kg (3.86 lb)	
	<b>LC1-MMSB</b>	<b>LC1-CMR</b>	<b>LC1-CBB</b>
Description	Mounting support bracket	Ceiling mounting ring	Back box
Dimensions	215 x 125 x 56 mm (8.47 x 4.92 x 2.2 in)	215 x 70 mm (8.47 x 2.75 in)	196 x 70 mm (7.72 x 2.75 in)
Mounting cut-out	190 mm (7.48 in)	200 mm (7.88 in)	-
Color	Zinc plated	White (RAL 9010)	White (RAL 9010)
Material	Steel	ABS	ABS
Weight	0.32 kg (0.70 lb)	0.21 kg (0.46 lb)	0.17 kg (0.38 lb)
	<b>LC1-MFD</b>	<b>LC1-CSMB</b>	<b>LC1-MSK</b>
Description	Metal fire-dome	Surface mounting box	Metal suspension kit
Dimensions	215 x 155 mm (8.47 x 6.1 in)	220 x 128 mm (8.67 x 5.04 in)	320 mm (12.59 in) (chain length)
Mounting cut-out	190 mm (7.48 in)	-	-
Color	Flame red (RAL 3000)	White (RAL 9010)	Zinc plated
Material	Steel	ABS	Steel
Weight	1.00 kg (2.20 lb)	0.69 kg (1.52 lb)	0.17 kg (0.38 lb)

	<b>LC1-TB</b>	<b>LC1-PIB</b>
Description	Tile bridge/C-ring	Pilot tone indication board
Dimensions	Tile bridge: 643 x 34 mm (25.33 x 1.34 in) C-ring: 250 x 30 mm (9.85 x 1.18 in)	20 x 30 mm (0.78 x 1.18 in)
Mounting cut-out	-	-
Color	Zinc plated	-
Material	Steel	-
Weight	0.94 kg (2.07 lb)	0.003 kg (0.006 lb)

### 3.3 Environmental conditions

	<b>LC1-WC06E8</b>	<b>LC1-WM06E8</b>	<b>LC1-UM06E8</b>
Description	Ceiling loudspeaker	Ceiling loudspeaker	Ceiling loudspeaker
Operation temperature	-25 °C to +55 °C (-13 °F to +131 °F)	-25 °C to +55 °C (-13 °F to +131 °F)	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)	-40 °C to +70 °C (-40 °F to +158 °F)	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	< 95%	< 95%	< 95%

	<b>LC1-UM12E8</b>	<b>LC1-UM24E8</b>
Description	Ceiling loudspeaker	Ceiling loudspeaker
Operation temperature	-25 °C to +55 °C (-13 °F to +131 °F)	-25 °C to +55 °C (-13 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	< 95%	< 95%

### 3.4 Standards

	<b>LC1-WC06E8</b>	<b>LC1-WM06E8</b>	<b>LC1-UM06E8</b>
Description	Ceiling loudspeaker	Ceiling loudspeaker	Ceiling loudspeaker
Safety	EN 60065	EN 60065	EN 60065
Emergency*	BS5839 part 8, EN 60849, EN 54-24	BS5839 part 8, EN 60849, EN 54-24	BS5839 part 8, EN 60849, EN 54-24
Water and dust protection**	EN 60529 IP 33	-	-
Salt mist***	IEC 68-2-11Ka	-	-
Chlorine resistant	IEC 60068/2-60	-	-

\* only in combination with the LC1-MFD Fire Dome or LC1-CMR including LC1-CBB

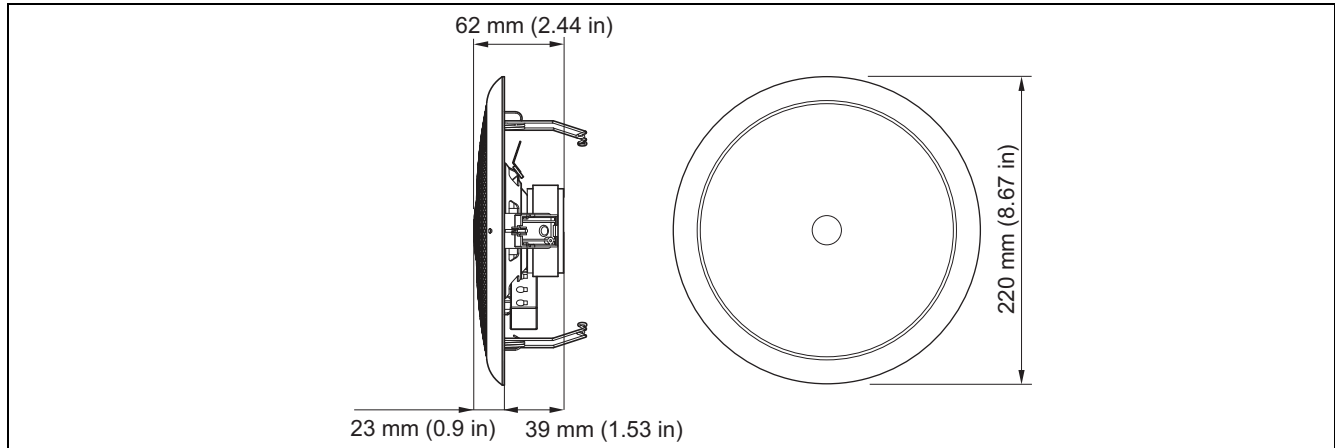
\*\* only in combination with the LC1-MFD Fire Dome or LC1-CMR including LC1-CBB

\*\*\*only in combination with LC1-CMR including LC1-CBB

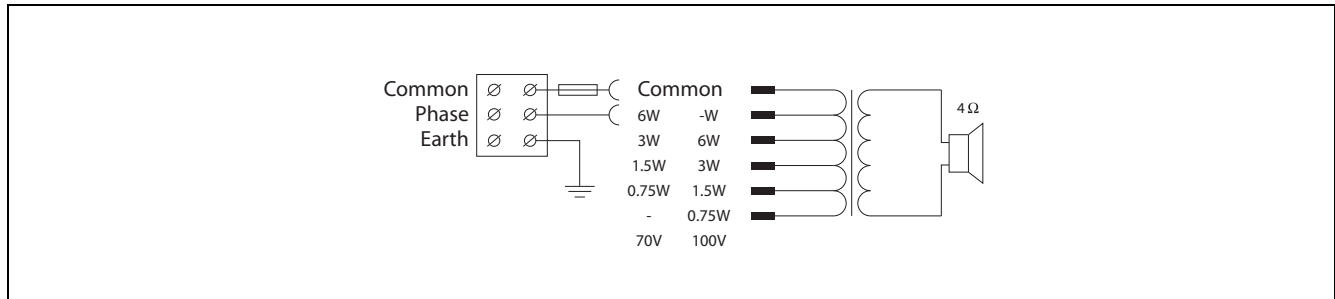
	<b>LC1-UM12E8</b>	<b>LC1-UM24E8</b>
Description	Ceiling loudspeaker	Ceiling loudspeaker
Safety	EN 60065	EN 60065
Emergency	BS5839 part 8, EN 60849, EN 54-24	BS5839 part 8, EN 60849, EN 54-24

### 3.5 Additional technical data

#### 3.5.1 LC1-WC06E8



Dimensions

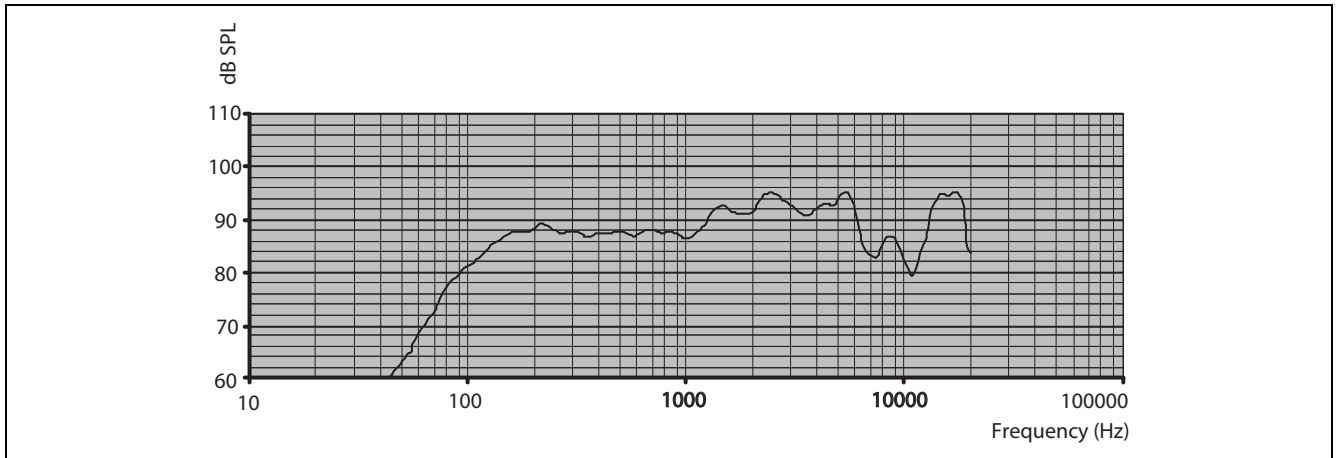


Circuit diagram

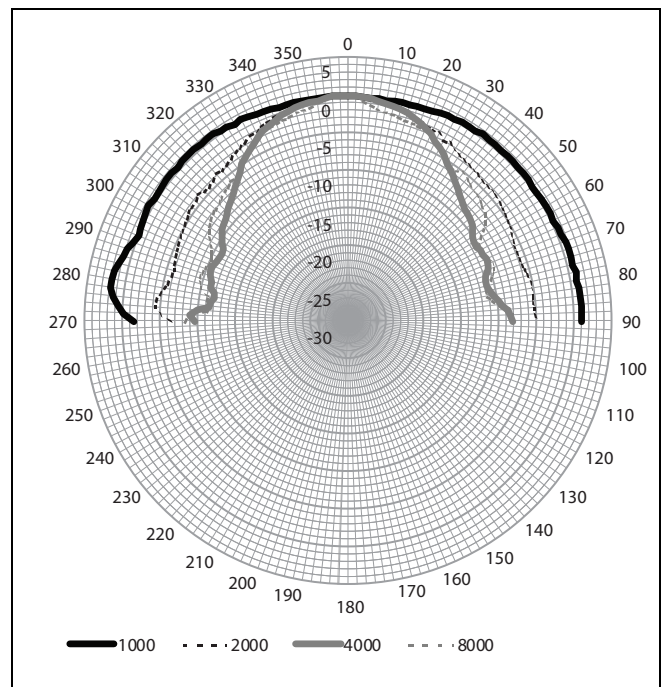
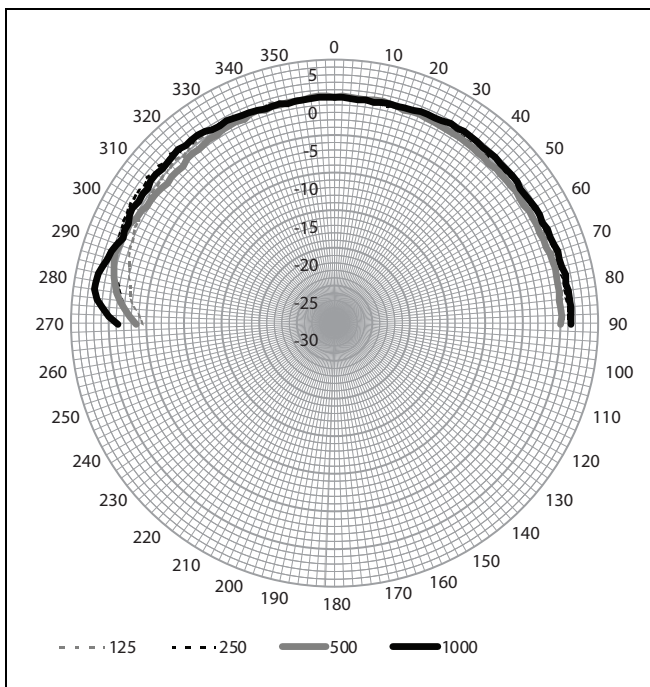
<b>Octave band sensitivity</b>									
All measurements are done with a pink noise signal. The values are in dB SPL									
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	A-weighted	lin-weighted
Octave SPL 1W/1m	85.3	88.3	87.5	88.4	93.4	93.8	88.0		
Total octave SPL 1W/1m								89.0	89.7
Total octave SPL Pmax/1m								106.2	107.1

<b>Octave band opening angles</b>									
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz		
Horizontal opening angle	180	180	180	180	180	75	96		
Vertical opening angle	180	180	180	180	180	75	96		

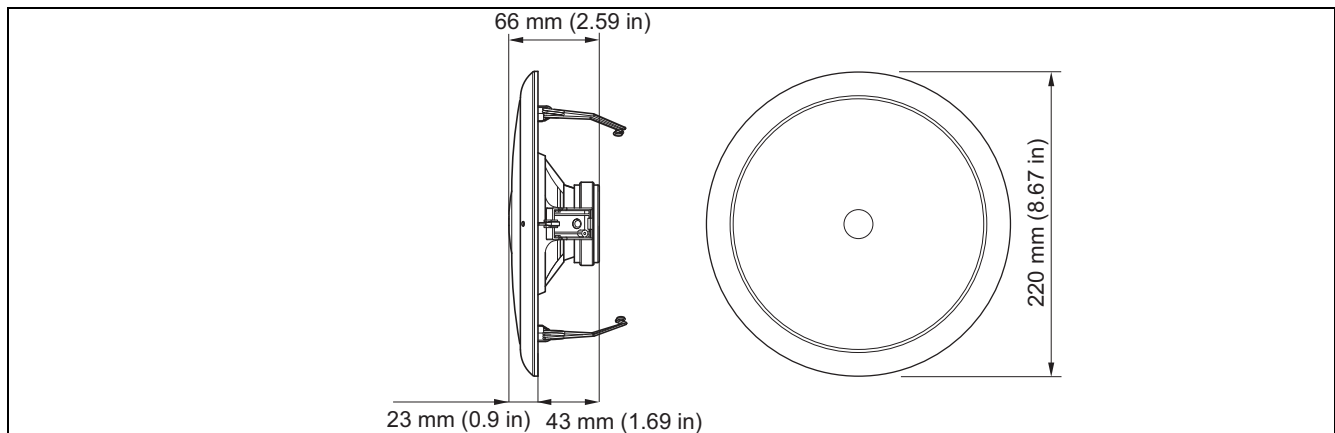


Frequency response

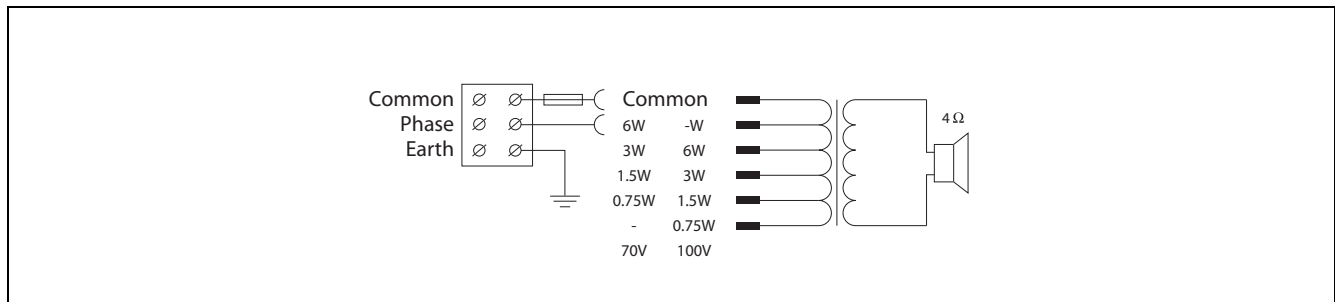


Polar diagrams

### 3.5.2 LC1-WM06E8



Dimensions

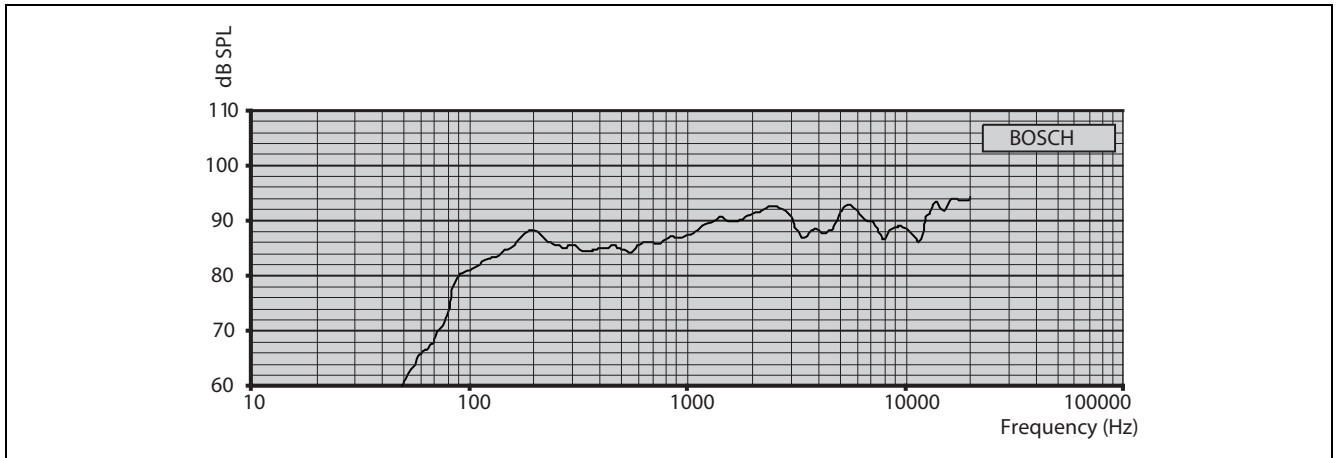


Circuit diagram

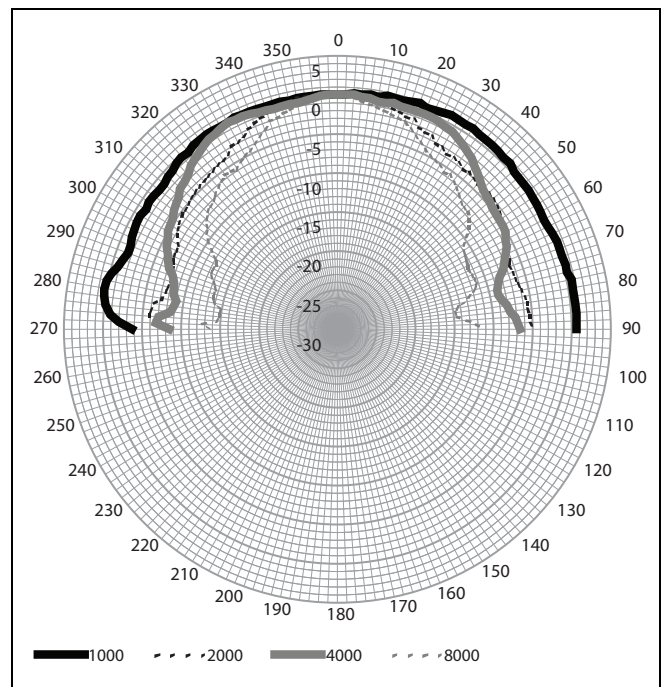
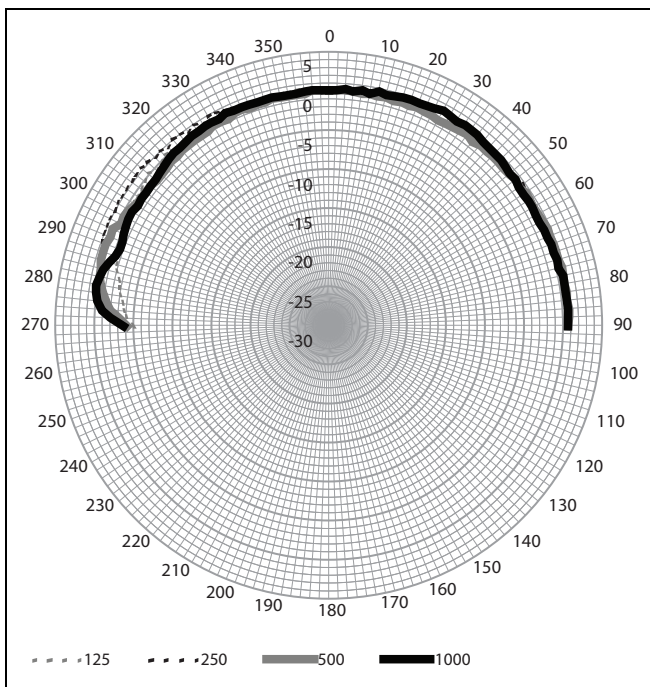
Octave band sensitivity									
All measurements are done with a pink noise signal. The values are in dBSPL									
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	A-weighted	lin-weighted
Octave SPL 1W/1m	83.4	86.1	85.1	87.8	91.2	89.7	89.3		
Total octave SPL 1W/1m								86.9	88.1
Total octave SPL Pmax/1m								94.2	94.9

Octave band opening angles									
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz		
Horizontal opening angle	180	180	180	180	120	128	75		
Vertical opening angle	180	180	180	180	120	128	75		



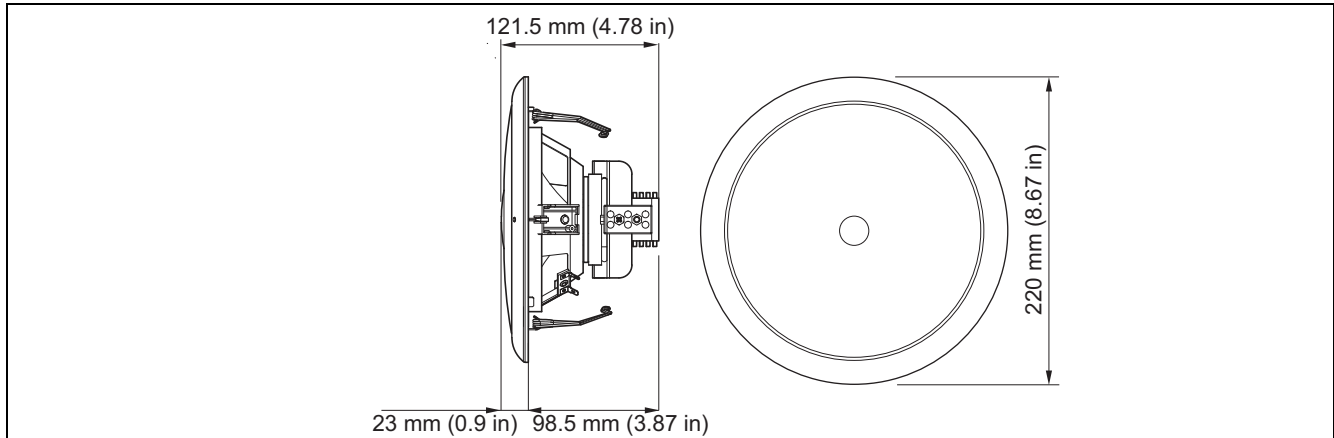


Frequency response

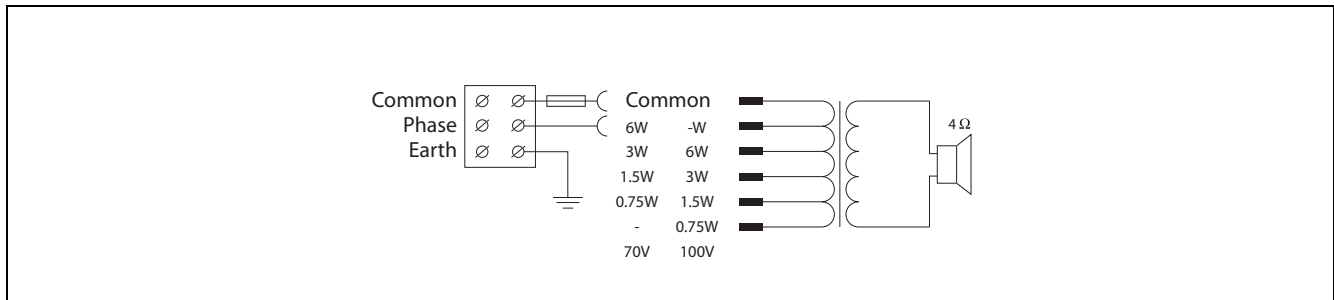


Polar diagrams

**3.5.3 LC1-UM06E8**



Dimension



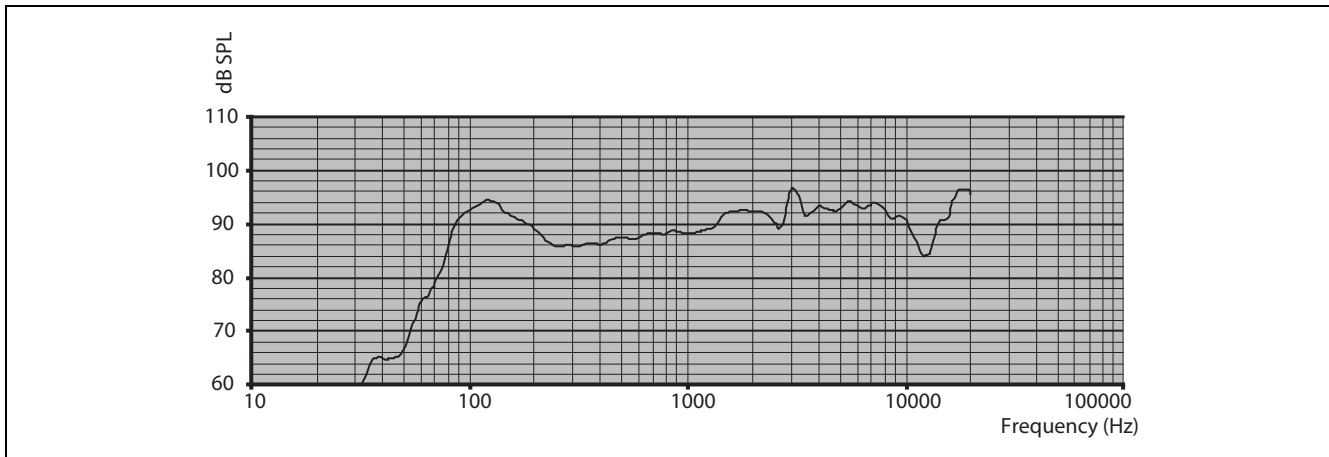
Circuit diagram

**Octave band sensitivity** All measurements are done with a pink noise signal. The values are in dB SPL

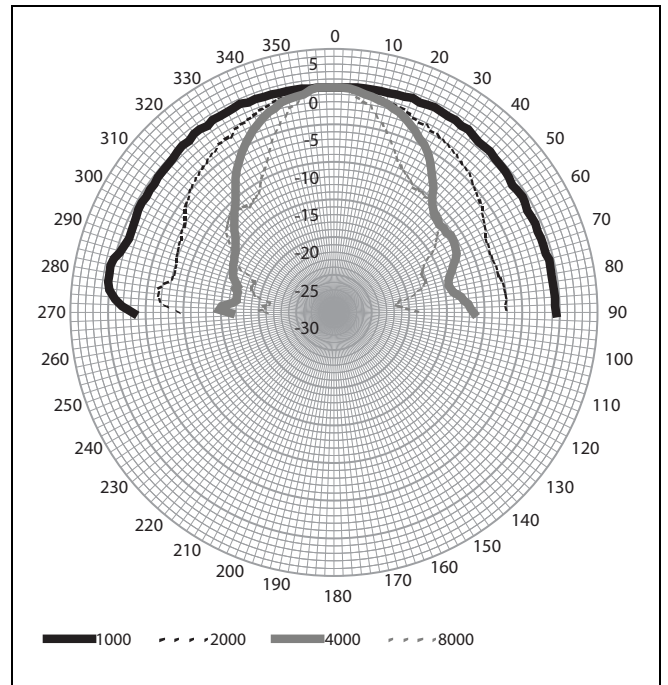
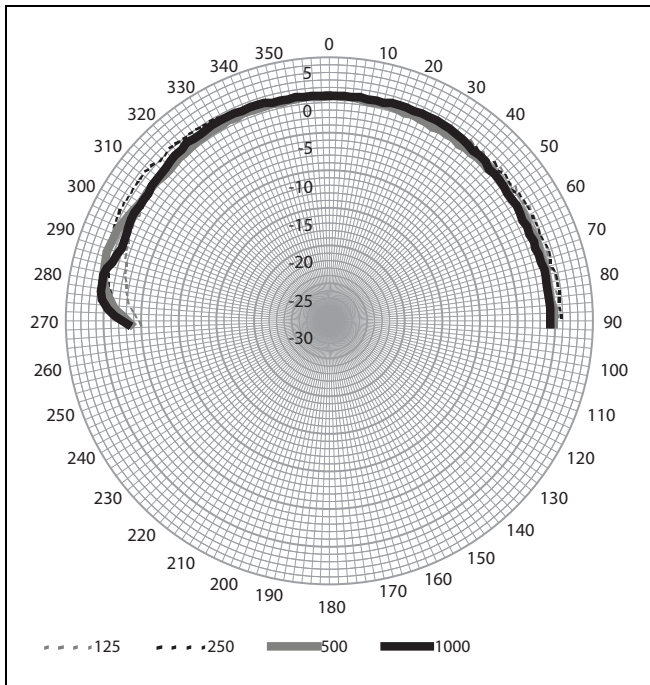
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	A-weighted	lin-weighted
Octave SPL 1W/1m	93.4	88.4	86.3	88.5	91.4	93.9	92.6		
Total octave SPL 1W/1m								88.9	90.4
Total octave SPL Pmax/1m								95.8	96.5

**Octave band opening angles**

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

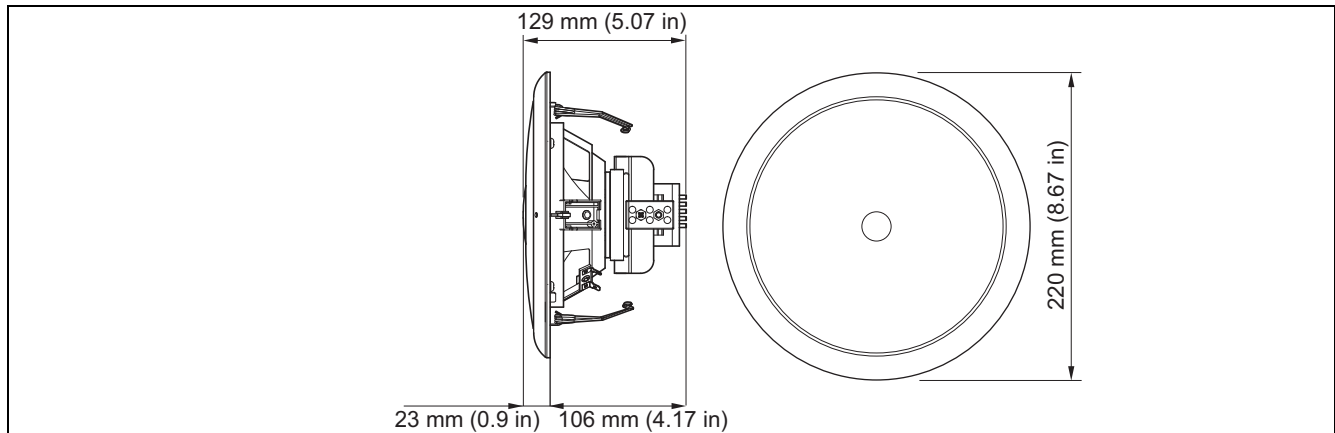


Frequency reponse

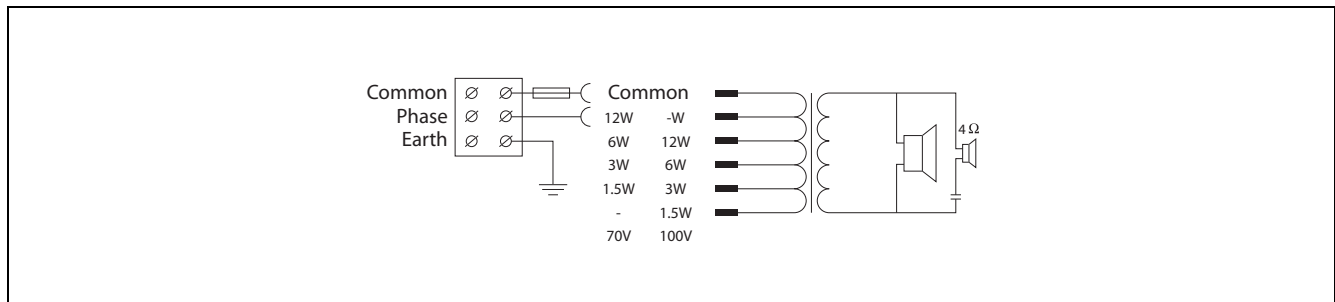


Polar diagrams

**3.5.4 LC1-UM12E8**



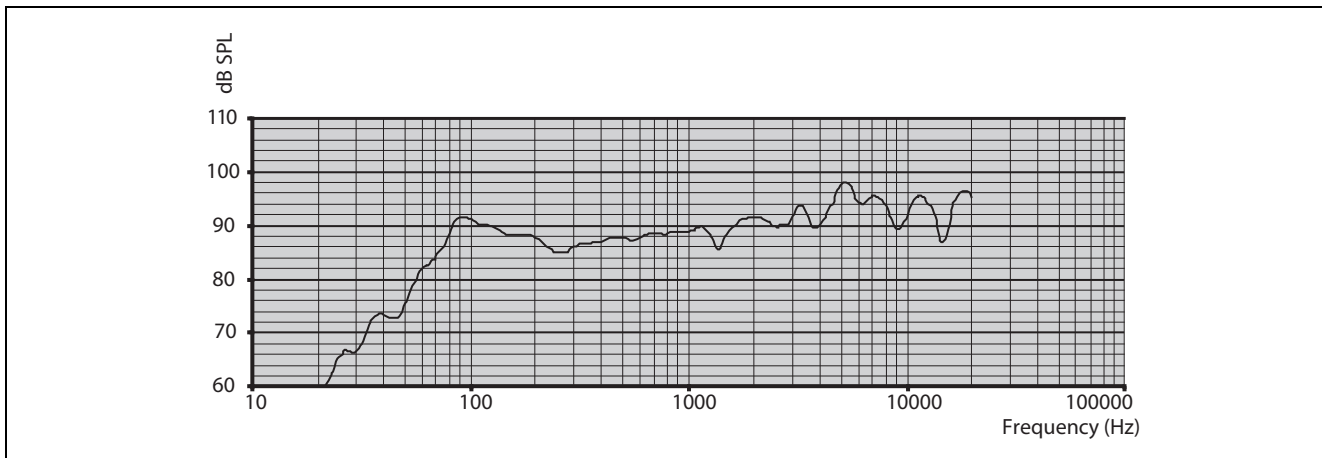
Dimensions



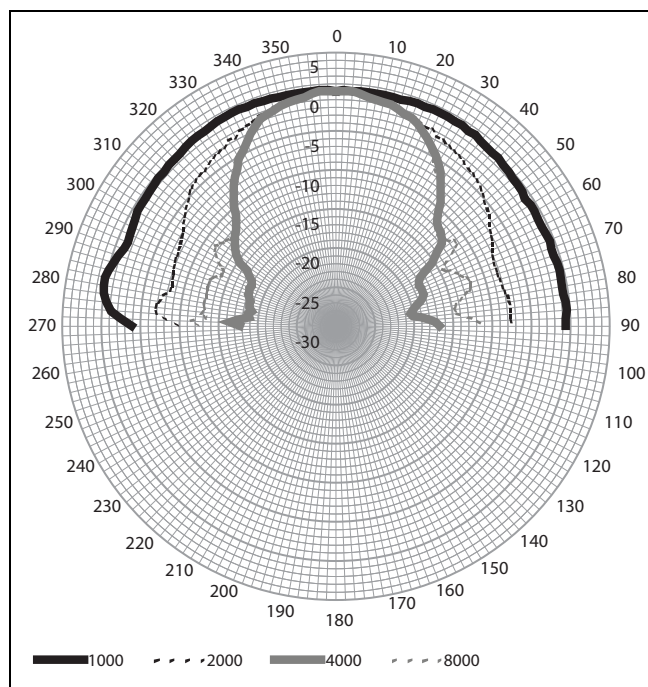
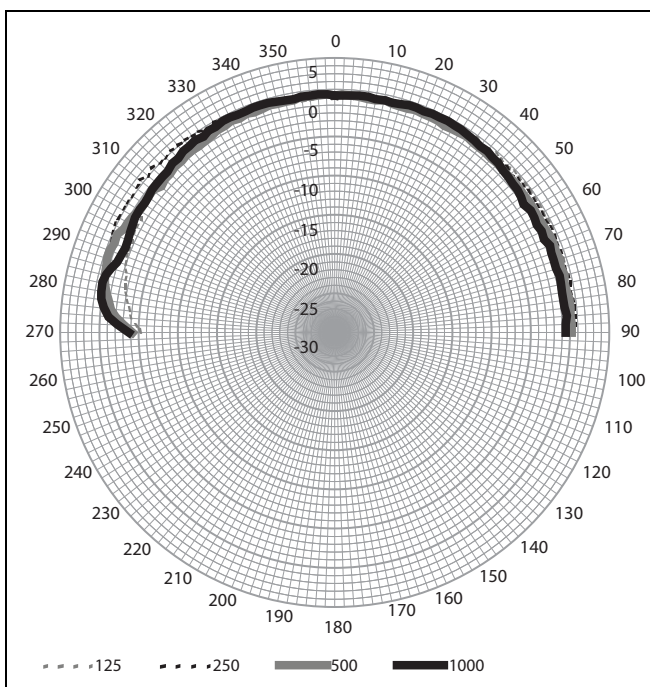
Circuit diagram

<b>Octave band sensitivity</b>									
All measurements are done with a pink noise signal. The values are in dBSPL									
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	A-weighted	lin-weighted
Octave SPL 1W/1m	89.4	87.3	86.5	88.6	90.0	94.0	93.7		
Total octave SPL 1W/1m								88.9	90.3
Total octave SPL Pmax/1m								99.3	100.2

<b>Octave band opening angles</b>									
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz		
Horizontal opening angle	180	180	180	180	108	64	62		
Vertical opening angle	180	180	180	180	108	64	62		

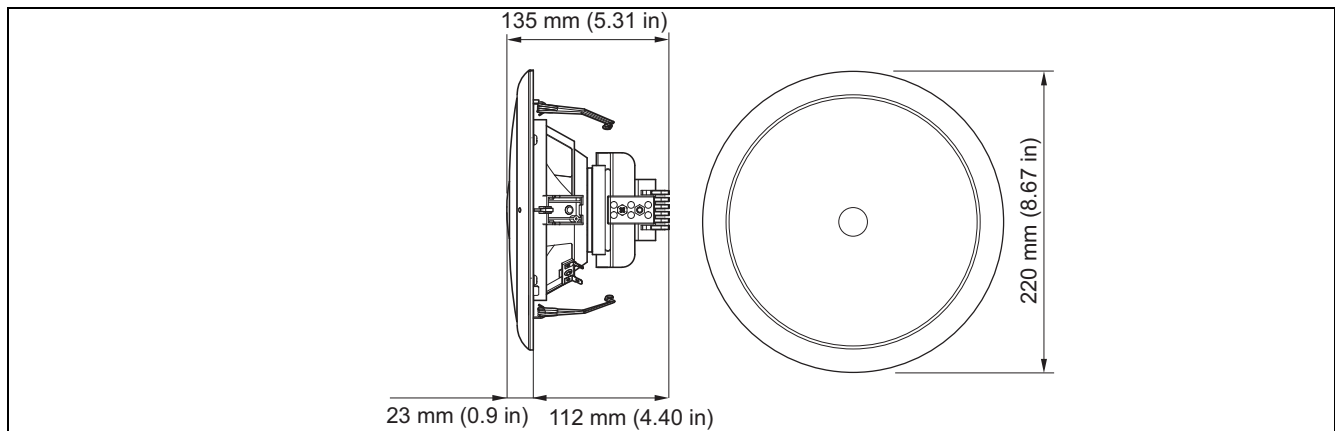


Frequency response

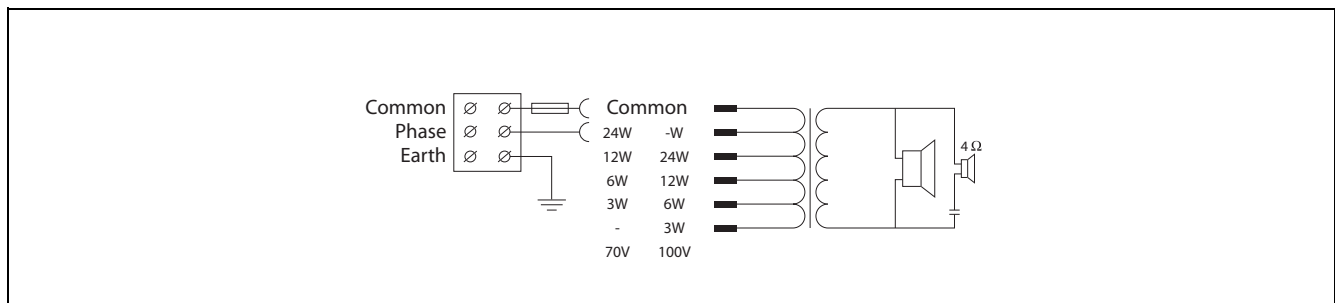


Polar diagrams

**3.5.5 LC1-UM24E8**



Dimensions

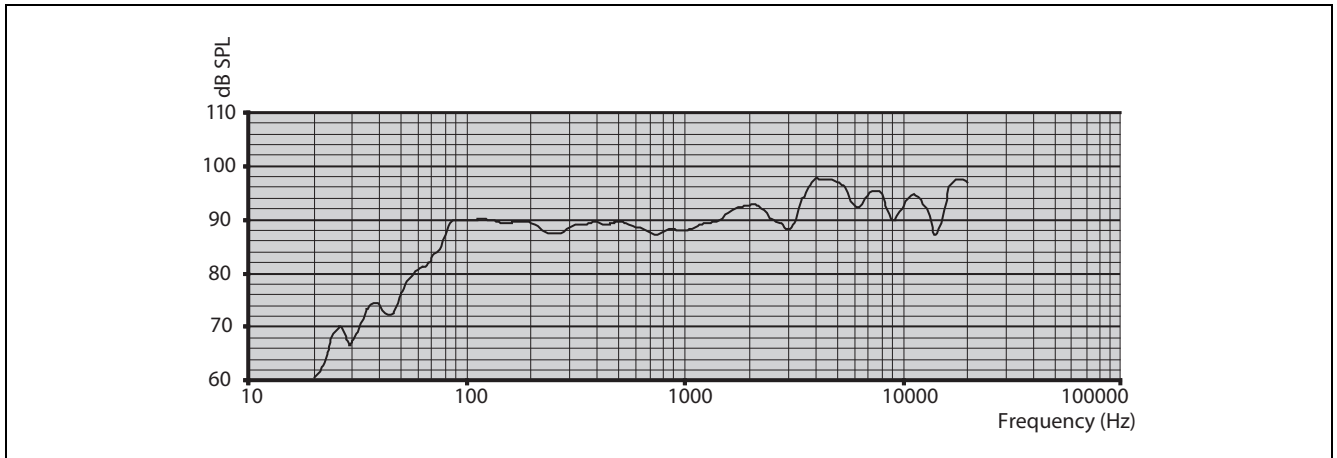


Circuit diagram

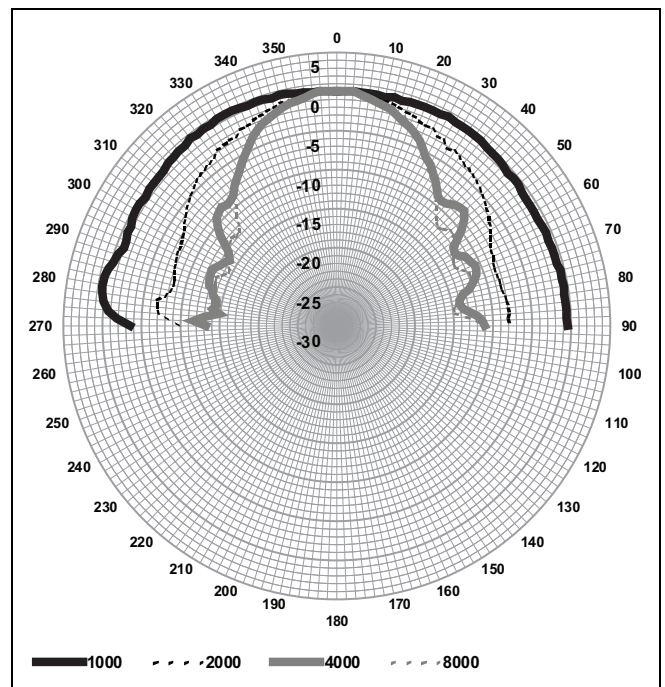
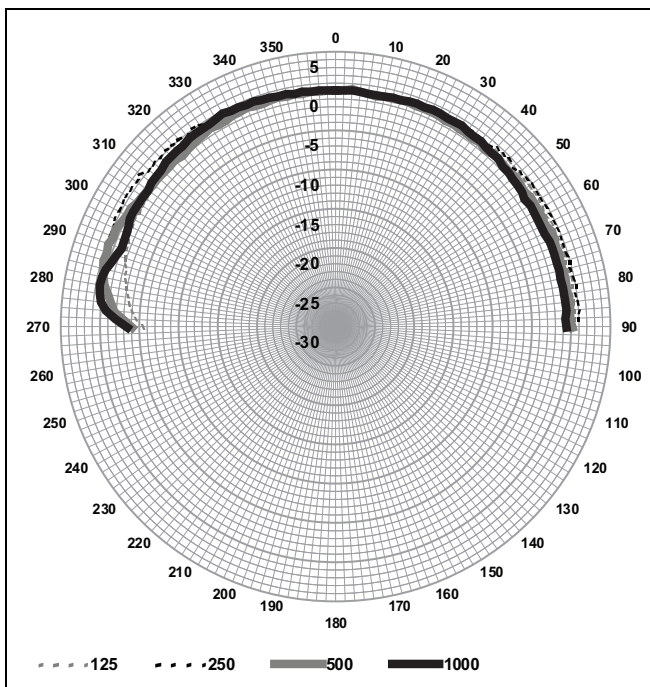
<b>Octave band sensitivity</b>									
All measurements are done with a pink noise signal. The values are in dB SPL									
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	A-weighted	lin-weighted
Octave SPL 1W/1m	89.9	88.3	89.0	88.6	91.5	95.6	93.8		
Total octave SPL 1W/1m								90.0	91.3
Total octave SPL Pmax/1m								103.1	103.8

<b>Octave band opening angles</b>									
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz		
Horizontal opening angle	180	180	180	180	106	58	57		
Vertical opening angle	180	180	180	180	106	58	57		




Frequency response



Polar diagrams

## 3.6 EC declaration of conformity

 1438
Bosch Security Systems BV Torenallee 49, 5617 BA Eindhoven  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, LC1-MFD, LC1-MMSB, LC1-CMR, LC1-CBB, LC1-CSMB, LC1-MSK. Type A





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**[www.boschsecurity.com](http://www.boschsecurity.com)**

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