

LA1-UMx0E-1 Metal Column Loudspeakers

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BOSCH

Invented for life



- ▶ Good speech intelligibility and background music reproduction
- ▶ For applications where directivity is important
- ▶ Slim-line weatherproof design
- ▶ Swivel wall mounting bracket supplied as standard
- ▶ Robust aluminum construction

The LA1-UM20E-1 and LA1-UM40E-1 metal column loudspeakers deliver professional performance from a robust, yet aesthetically designed aluminum enclosure in a white finish.

It is an ideal loudspeaker column where sound beaming is required, for both indoor and outdoor use in passenger terminals, places of worship, conference venues, theme parks, swimming pools, factories, exhibition areas.

A swivel wall mounting bracket is supplied as standard, allowing accurate positioning.

Functions

Voice alarm

Voice alarm loudspeakers are specifically designed for use in applications, where the performance of PA systems is subject to official regulations. The LA1-UM20E-1 and LA1-UM40E-1 are designed for voice alarm systems.

Protection

Both loudspeaker columns have built-in protection to ensure that in the event of a fire damage 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.

Connections and safety

The loudspeaker columns have a ceramic terminal block, thermal fuse, and heat-resistant, high-temperature wiring. The column has a provision for internally mounting the optional line/loudspeaker supervision board.

Loudspeaker output power setting

Four primary taps are provided on the built-in matching transformer. Loudspeaker output power setting is done on the built-in transformer and connected to a rotary vary-tap switch located in the back of the enclosure to allow simple output power setting. An 8 ohms setting is also provided on the rotary vary-tap switch.

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 the speakers can withstand two

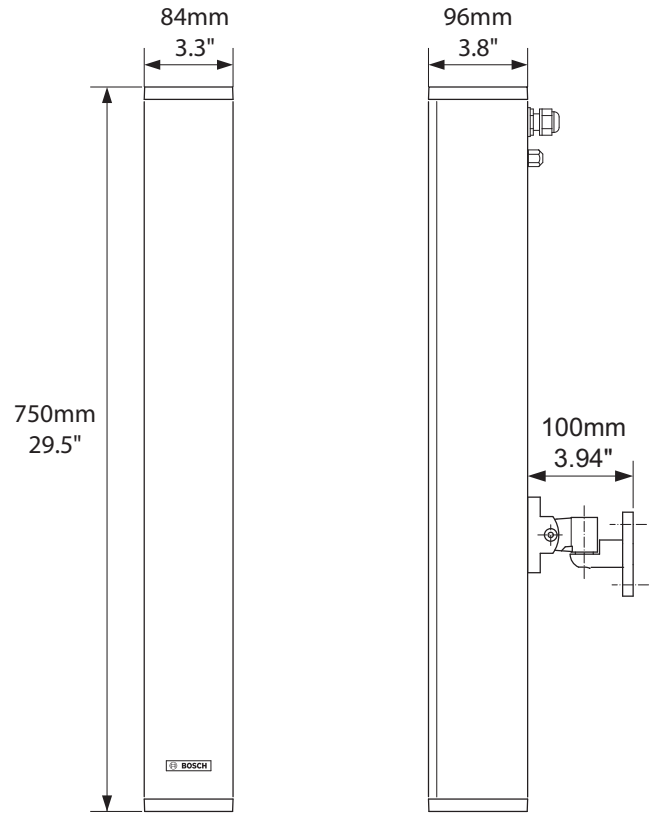
times their rated power for short durations. This ensures extra reliability under extreme conditions, leading to greater customer satisfaction, longer operating life, and much less chance of failure or performance deterioration.

Safety	acc. to EN 60065
Emergency	acc. to EN 54-24
	acc. to EN 60849
	acc. to BS 5839-8
Water and dust protection	acc. to EN 60529 IP 65
Wind-force	Acc. to NEN 6702:2007 + A1: 2008, Bft11

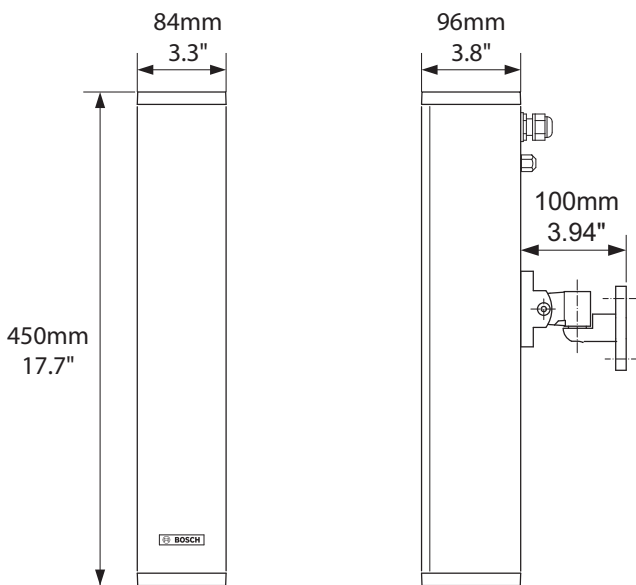
Region	Certification
Poland	CNBOP
Europe	CPD

Installation/configuration notes

The column loudspeakers can be wall mounted using the swivel wall bracket standard supplied, or directly onto a floor stand LBC 1259/01 with an M10 threaded bolt without additional accessories. The bracket is attached on a slider, which can be placed and secured in any desired position along the rear of the enclosure. Standard supplied with 2 m connection cable, but these can be replaced during installation with any other type of connection cable. The connection cable is fed out through a cable gland (PG 20) in the top rear of the enclosure. For loop through connection, a second hole (covered as standard supplied) is provided.



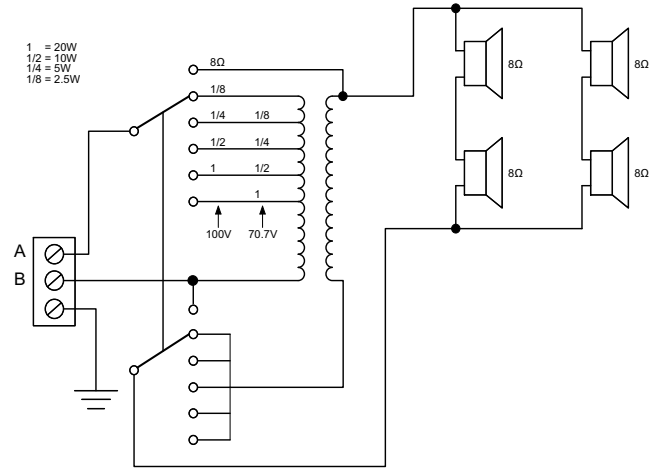
LA1-UM40E-1 Dimensions mm (in)



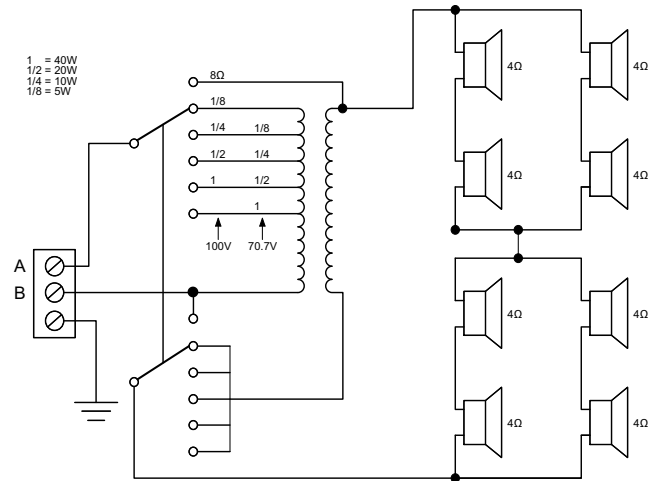
LA1-UM20E-1 Dimensions mm (in)



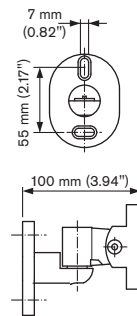
LA1-UM20E-1 / LA1-UM40E-1 Rear view



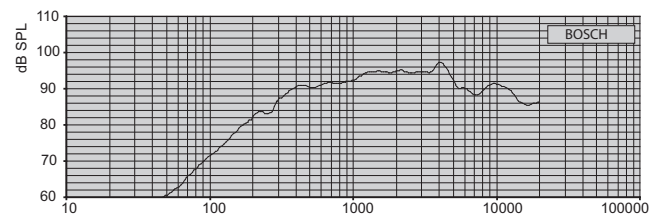
LA1-UM20E-1 Circuit diagram (A: Phase, B: Common)



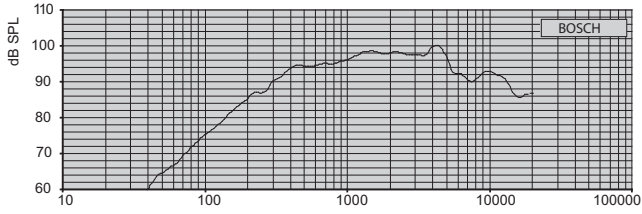
LA1-UM40E-1 Circuit diagram (A: Phase, B: Common)



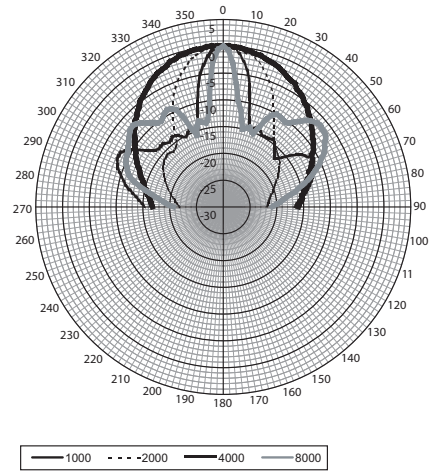
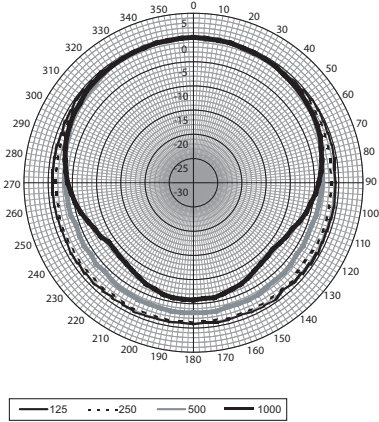
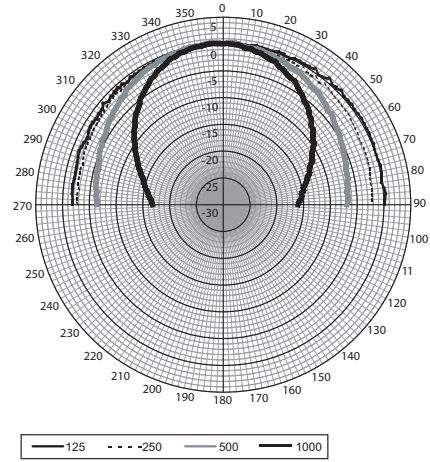
Details mounting bracket



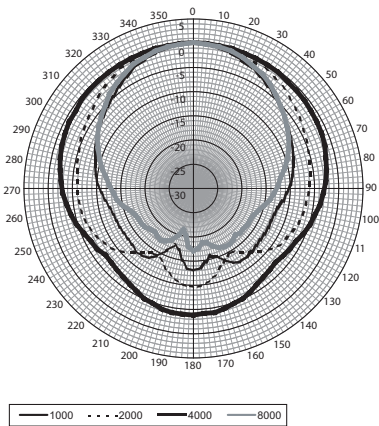
LA1-UM20E-1 Frequency response



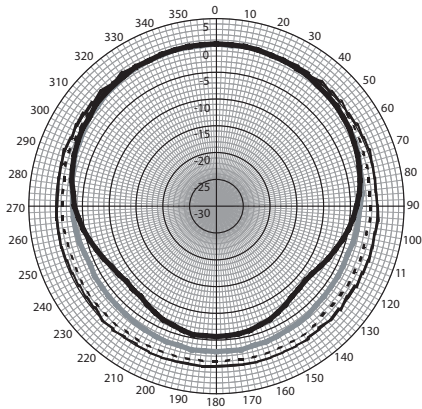
LA1-UM40E-1 Frequency response



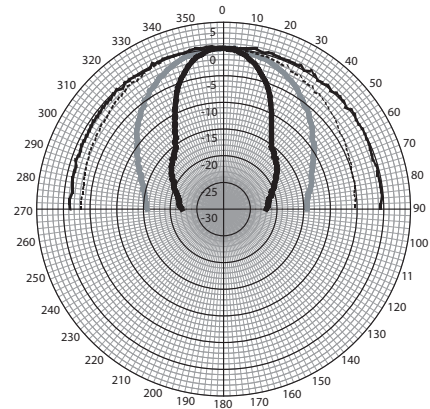
LA1-UM20E-1 Polar diagram (vertical)



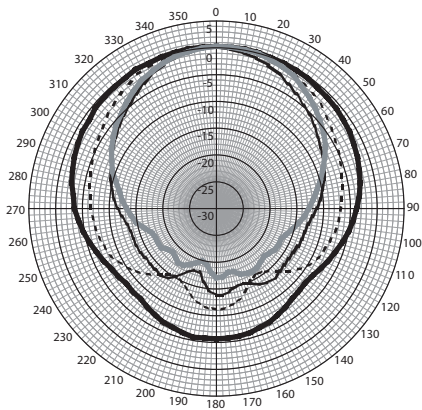
LA1-UM20E-1 Polar-diagram (horizontal)



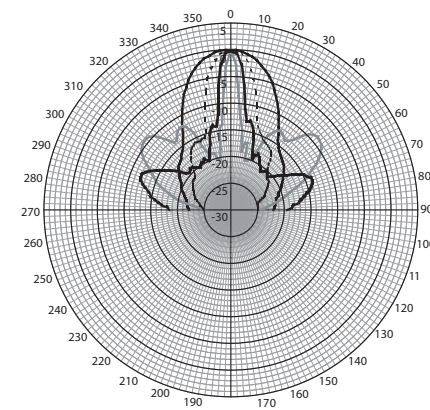
— 125 - - - -250 — 500 — 1000



— 125 - - - -250 — 500 — 1000



— 1000 - - - -2000 — 4000 — 8000



— 1000 - - - -2000 — 4000 — 8000

LA1-UM40E-1 Polar diagram (horizontal)

LA1-UM40E-1 Polar diagram (vertical)

Octave band sensitivity LA1-UM20E-1

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	75.9	-	-
250 Hz	82.9	-	-
500 Hz	88.7	-	-
1000 Hz	91.5	-	-
2000 Hz	93.9	-	-
4000 Hz	94.5	-	-
8000 Hz	89.6	-	-
A-weighted	-	89.7	101.5
Lin-weighted	-	89.6	101.6

Octave band opening angles LA1-UM20E-1

	Horizontal	Vertical	
125 Hz	360	>180	

250 Hz	360	>180	
500 Hz	360	160	
1000 Hz	210	80	
2000 Hz	148	43	
4000 Hz	94	22	
8000 Hz	95	10	

Octave band sensitivity LA1-UM40E-1

	Octave SPL 1W/1m	Total octave SPL 1W/1m	Total octave SPL Pmax/1m
125 Hz	78.5	-	-
250 Hz	86.7	-	-
500 Hz	92.2	-	-
1000 Hz	95.2	-	-
2000 Hz	97.4	-	-
4000 Hz	97.8	-	-
8000 Hz	90.7	-	-
A-weighted	-	93.0	107.6
Lin-weighted	-	92.3	107.5

Octave band opening angles LA1-UM40E-1

	Horizontal	Vertical	
125 Hz	360	>180	
250 Hz	360	>180	
500 Hz	360	82	
1000 Hz	210	40	
2000 Hz	146	22	
4000 Hz	92	12	
8000 Hz	97	6	

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

Parts included

Quantity	Components
1	LA1-UMx0E-1 Metal Column loudspeaker
1	Wall mounting bracket
1	Installation instruction

Technical specifications

Electrical*

Description	LA1-UM20E-1	LA1-UM40E-1
Maximum power	30 W	60 W
Rated power (PHC)	20 W	40 W
Power tapping	20 / 10 / 5 / 2.5 W	40 / 20 / 10 / 5 W
Sound pressure level at rated power / 1 W (1 kHz, 1 m)	105 / 92 dB (SPL)	111 / 95 dB (SPL)
Sound pressure level at rated power / 1 W (4 kHz, 1 m)	108 / 95 dB (SPL)	114 / 98 dB (SPL)
Effective frequency range (-10 dB)	240 Hz to 16 kHz	250 Hz to 16 kHz
Horizontal opening angle at 1 kHz / 4 kHz (-6 dB)	210°/ 94°	210°/ 92°
Vertical opening angle at 1 kHz / 4 kHz (-6 dB)	80°/ 22°	40°/ 12°
Rated input voltage	12.65/70/100 V	17.89/70/100 V
Rated impedance	8/251/500 ohm	8/125/250 ohm

* Technical performance data acc. to IEC 60268-5

Mechanical

	LA1-UM20E-1	LA1-UM40E-1
Dimensions (L x W x D)	450 x 84 x 96 mm (17.7 x 3.3 x 3.8 in)	750 x 84 x 96 mm (29.5 x 3.3 x 3.8 in)
Weight	2.9 kg (6.4 lb)	4.4 kg (9.7 lb)
Color	White (RAL 9010)	White (RAL 9010)
Material (housing and grille)	Extruded aluminum / steel	Extruded aluminum / steel
Connection	2 m (78.8 in) 3-wire cable	2 m (78.8 in) 3-wire cable
Connector (phase, common, earth)	3-pole screw block	3-pole screw block

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%

Other parameters are available in CNBOP test report nr 4789/BA/10.



1438

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1438-CPD-0203

EN 54-24:2008

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

Metal Column 20 W and 40 W
LA1-UM20E-1 and LA1-UM40E-1
Type B

Ordering information

LA1-UM20E-1 Metal Column Loudspeaker

20 W

Order number **LA1-UM20E-1**

LA1-UM40E-1 Metal Column Loudspeaker

40 W

Order number **LA1-UM40E-1**

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