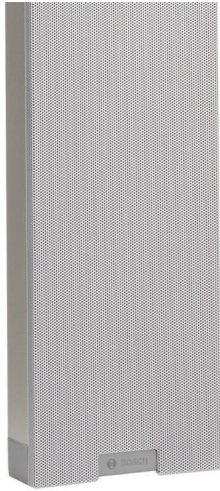


LBC3210/00 Line array loudspeaker, 60W, outdoor



This loudspeaker, with its excellent directivity and high power output, can handle large (reverberant) indoor environments like airport departure lounges, train stations and congress venues. It is also suitable for outdoor use, for instance in railway stations or sports stadiums. Its full frequency range makes it ideal for speech as well as music reproduction.

System overview

A time- and labor-saving mounting method has been developed for the LBC 3210/00. A chart is supplied with the loudspeaker, which shows the ideal installation height for the area the loudspeaker has to cover. Once the appropriate height has been determined for a given area, the loudspeaker is mounted at an angle marked on the mounting bracket. This simple procedure is very much simpler and more accurate than traditional trial and error installation methods. The LBC 3210/00 can be mounted on a wall or directly onto a floor stand LBC 1259/01 with an M10 threaded bolt without additional accessories.

- ▶ Extended listening area
- ▶ Excellent intelligibility of speech and music
- ▶ Uniform distribution of natural sound throughout the room
- ▶ Provision for inside mounting the optional line/loudspeaker supervision board
- ▶ EN 54-24 certified

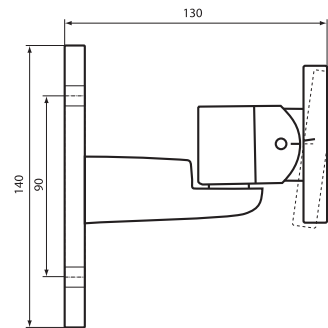


Fig. 1: Dimensions in mm of mounting bracket included (with marked angle)



Fig. 2: Detail mounting bracket

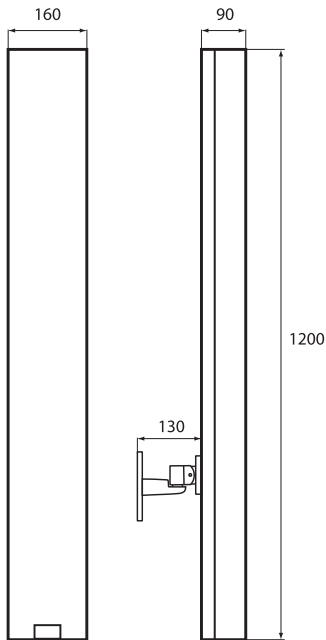


Fig. 3: Dimensions in mm



Fig. 4: Mounted on optional loudspeaker stand (LBC 1259/01)

Functions

Range of Application

The LBC 3210/00 is part of the XLA 3200 (eXtended Listening Area) range of line array loudspeakers. Advanced filtering and positioning of the loudspeaker drivers has resulted in greatly improved audio directivity. Each speaker driver produces a dedicated frequency range. The difference between a conventional column loudspeaker and this line array is noticeable in several ways. There is uniform sound distribution throughout the whole listening area: not too loud at the front, not too quiet at the back. All relevant frequencies are present everywhere in the listening area. Greater coverage is achieved, so more people can be reached with speech and music with a higher intelligibility level. All these important features will give the experience of a very natural sound quality in the whole listening area.

Easy Installation

The advanced filtering generates larger vertical opening angles for high frequencies, so there is less narrow 'beaming' of higher tones. Compared to conventional column loudspeakers, this line array has a more constant opening angle for all relevant frequencies. As an example, at 4 kHz the vertical opening angle is still 18°. Having more constant vertical opening angles makes installation easier, as the positioning of the loudspeakers is less critical because they cover a wider area. An excellent horizontal opening angle of 90° at 4 kHz means that a single loudspeaker can provide natural sound reproduction over an extensive listening area.

Suppressed Side Lobes

All conventional column loudspeakers produce a main lobe of sound, which is directed at listeners, and a number of unwanted side lobes. The LBC 3210/00 has highly suppressed side lobes in the vertical plane, typically at least 10 dB from the 250 Hz octave band at 90°, resulting in a much clearer, less 'colored' sound, even when close to the loudspeakers. This gives the line array loudspeaker superb intelligibility of both speech and music.

Sound Reproduction

The positioning and very high quality of the 4-inch drivers contribute significantly in making the LBC 3210/00 a very efficient line array. With a sound pressure level of 115 dB at 1 m at 60 W, loud and clear sound reproduction is possible even at considerable distances from the loudspeaker.

The high-quality loudspeaker drivers used in the LBC 3210/00 give excellent, natural sound reproduction of frequencies ranging from 190 Hz to 20 kHz. Together with the constant directivity this ensures that all important frequencies are heard in the listening area.

Emergency Compliant

The loudspeakers ceramic terminal block, thermal fuse and heat-resistant, high-temperature wiring, 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 within the same loudspeaker zone can still be used to inform people of the situation.

The line arrays have provision for mounting the optional line/loudspeaker supervision board.

A three-way ceramic terminal block with screw connections suitable for loop-through wiring is located in a compartment at the base of the loudspeaker column. There is also a switch which allows the selection of nominal full power (60 W), half power (30 W) or quarter power (15 W). The compartment has knock-out slots for accommodating cables.

Regulatory information

Quality assurance

All Bosch loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 60268-5 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.

Safety	according to IEC/EN 62368-1
Emergency	according to EN 54-24 according to BS 5839-8
Impact	according to EN 50102, IK 07
Water and dust protection	according to IEC/EN 60529, IP66
Wind-force	according to Bft 11

Installation/configuration notes

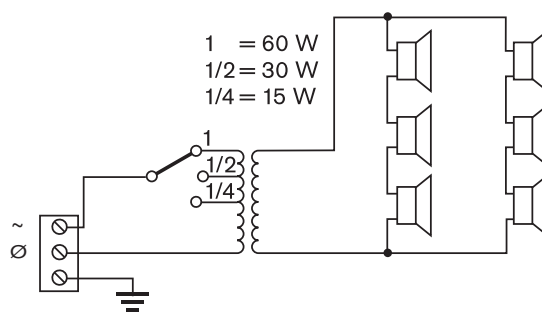


Fig. 5: Circuit diagram

Parts included

Quantity	Component
1	LBC 3210/00 Line array loudspeaker
1	Wall mounting bracket
1	Attachment piece
1	Installation chart

Technical specifications

Electrical*

Maximum power (W)	90 W
Rated power (W)	60 W
Transformer taps (W)	15 W; 30 W; 60 W
Sensitivity (1 W, 1 m, 1 kHz octave) (dB)	97 dB
Sensitivity (1 W, 4 m, 100 Hz - 10 kHz) (dB), acc. EN54-24	81 dB
Sound pressure level (rated power, 1 m, 1 kHz octave) (dB)	115 dB
Sound pressure level (rated power, 4 m, 100 Hz - 10 kHz) (dB), acc. EN54-24	98 dB
Frequency range (-10 dB) (Hz)	190 Hz – 20,000 Hz
Coverage angle HxV (-6dB, 500 Hz) (°)	360° x 60°
Coverage angle HxV (-6 dB, 1 kHz) (°)	170° x 55°
Coverage angle HxV (-6dB, 2 kHz) (°)	160° x 34°
Coverage angle HxV (-6 dB, 4 kHz) (°)	90° x 18°
Rated impedance 100 V line (Ω)	167 Ω @60 W
	333 Ω @30 W
	667 Ω @15 W

*Technical performance data acc. to IEC 60268-5

Note:

- The specification data was measured in an anechoic chamber, free-field.
- The reference plane is on the grille surface and perpendicular to the reference axis.
- The reference axis is perpendicular to the acoustic center point of the front grille surface.
- The horizontal plane contains the reference axis and is perpendicular to the reference plane.

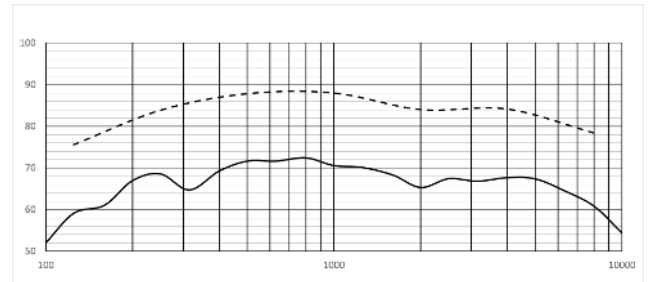


Fig. 6: Frequency response graph (– (1/3)rd octave dB SPL @1 W(100 Hz – 10 kHz), 4 m; -- (1/1)th octave dB SPL @1 W(100 Hz – 10 kHz), 1 m)

(1/3) rd octave band	dB SPL at 4 m
100	52
125	59.1
160	61.1
200	67
250	68.6
315	64.7
400	69.3
500	71.6
630	71.7
800	72.4
1000	70.6
1250	70.1
1600	68.3
2000	65.3
2500	67.4
3150	66.8
4000	67.7
5000	67.4
6300	64.5
8000	60.8
10000	54.3

(1/1) th octave band	dB SPL at 1 m
125	75.6
250	83.8
500	87.8
1000	88
2000	84
4000	84.1
8000	78.4

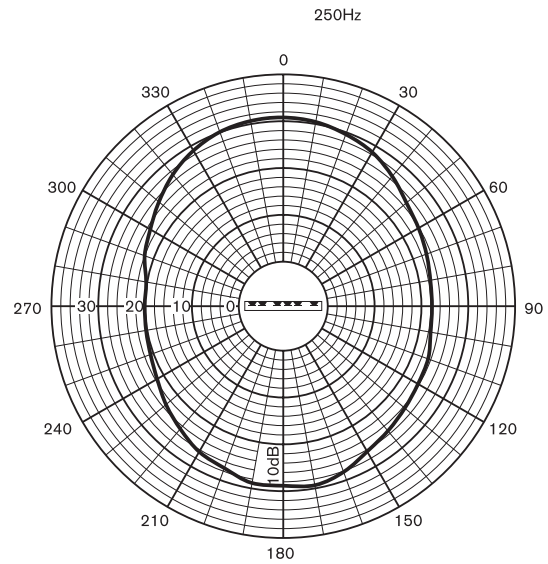


Fig. 8: Polar diagram vertical 250 Hz

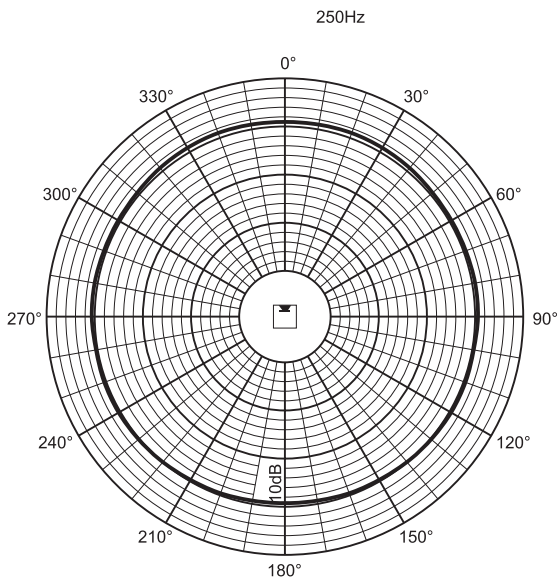


Fig. 7: Polar diagram horizontal 250 Hz

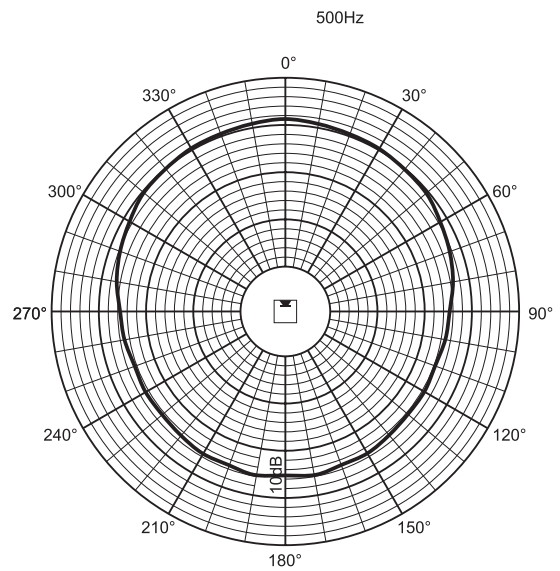


Fig. 9: Polar diagram horizontal 500 Hz

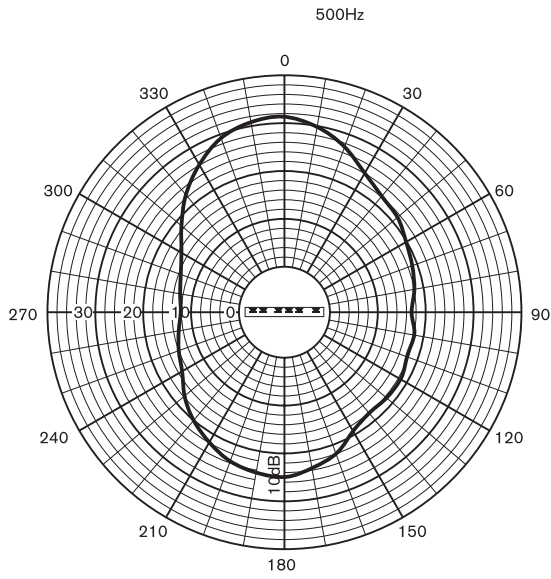


Fig. 10: Polar diagram vertical 500 Hz

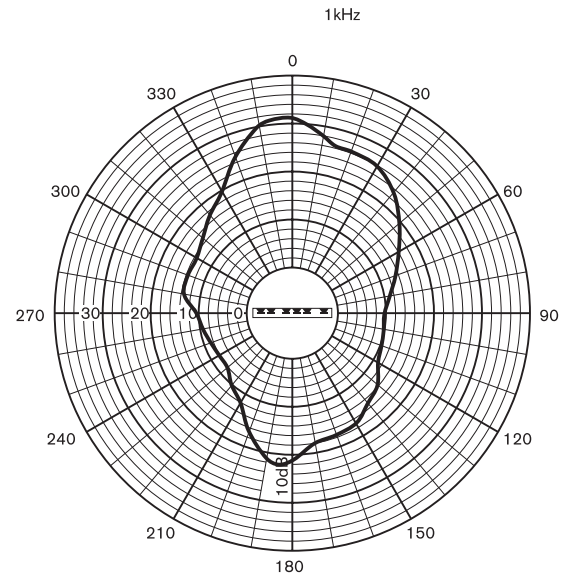


Fig. 12: Polar diagram vertical 1 kHz

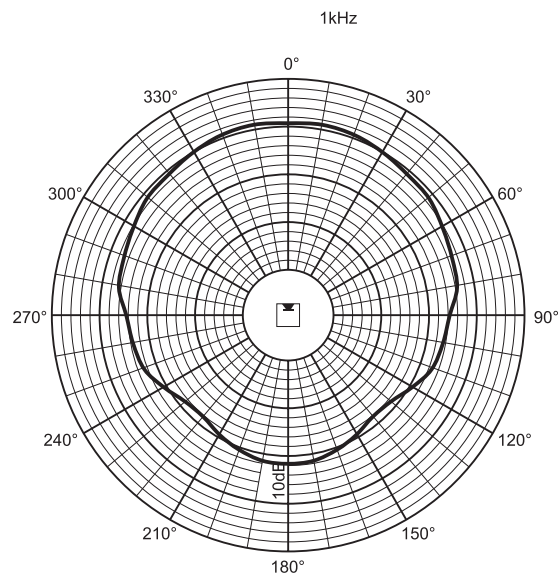


Fig. 11: Polar diagram horizontal 1 kHz

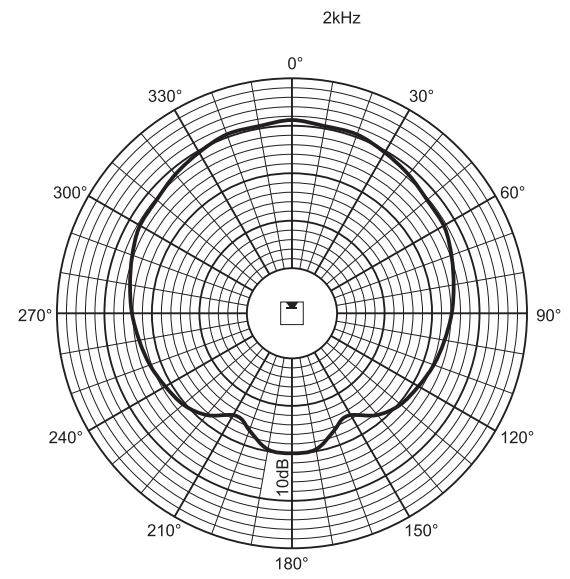


Fig. 13: Polar diagram horizontal 2 kHz

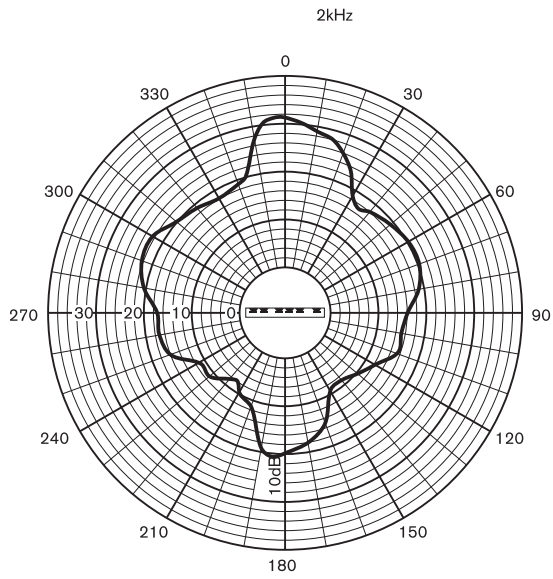


Fig. 14: Polar diagram vertical 2 kHz

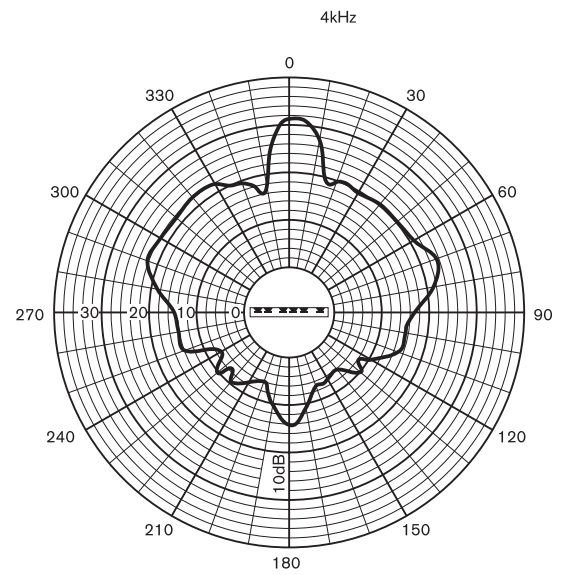


Fig. 16: Polar diagram vertical 4 kHz

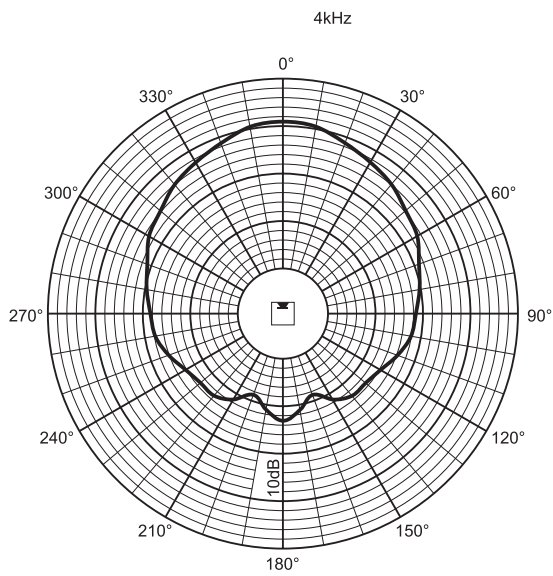


Fig. 15: Polar diagram horizontal 4 kHz

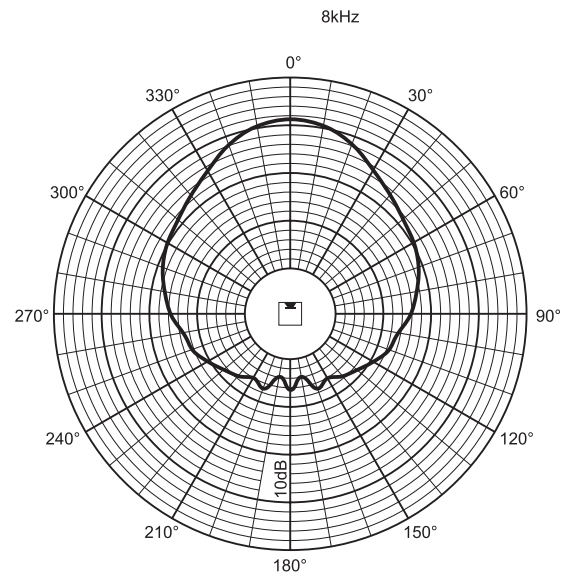


Fig. 17: Polar diagram horizontal 8 kHz

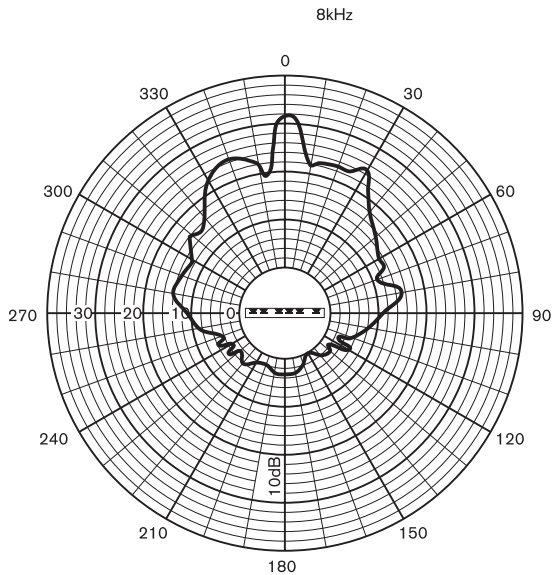



Fig. 18: Polar diagram vertical 8 kHz

Mechanical

Dimensions (H x W x D) (mm)	1,200 mm x 80 mm x 90 mm
Dimensions (H x W x D) (in)	47.24 in x 3.15 in x 3.54 in
Weight (kg)	6.4 kg
Weight (lb)	14.1 lb
Color (RAL)	RAL 9022 Pearl light gray
Connector type	Screw terminal block

Environmental

Operating temperature (°C)	-25 °C – 55 °C
Operating temperature (°F)	-13 °F – 131 °F
Storage temperature (°C)	-40 °C – 70 °C
Storage temperature (°F)	-40 °F – 158 °F
Transportation temperature (°C)	-40 °C – 70 °C
Transportation temperature (°F)	-40 °F – 158 °F
Operating relative humidity, non-condensing (%)	<95%

 1438
Bosch Security Systems BV Torenallee 49, 5617 BA Eindhoven, the Netherlands 12 1438-CPR-0254
EN 54-24:2008 Loudspeaker for voice alarm systems for fire detection and fire alarm systems for buildings Line Array 60 W LBC3210/00 Type B DoP: LP052913

Ordering information

LBC3210/00 Line array loudspeaker, 60W, outdoor
 Line array loudspeaker for large indoor and outdoor environments, 60 W, extended listening area, aluminum extruded enclosure, light gray, EN54-24 certified, swivel wall-mounting bracket included.
 Order number **LBC3210/00 | F.01U.506.001**

Accessories

LBC1259/01 Universal floorstand
 Universal floor stand lightweight aluminum construction, foldable, M10 x 12 reducer flange.
 Order number **LBC1259/01 | F.01U.162.979**



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