

ZL 104

Passive Line Array with 7° Beam Direction Downwards

Description

The ZL 104 is a line array with a defined beam direction 7° downwards and a long range to ensure even acoustic irradiation across large rooms, reproducing speech clearly and providing optimum coverage of the listening area.

Featuring twelve highly efficient, very linear 2.5" full-range speakers with passive 4-way technology, a patented electronic delay and equalization of the individual speaker ways, the ZL 104 is ideal for reproducing speech and music in very high quality.

Thanks to its modular design, the ZL 104 can be combined with other models from the ZL series to create longer arrays. We recommend using the SUB 20 or SUB 40 subwoofers to supplement the low frequency range.



Key Features

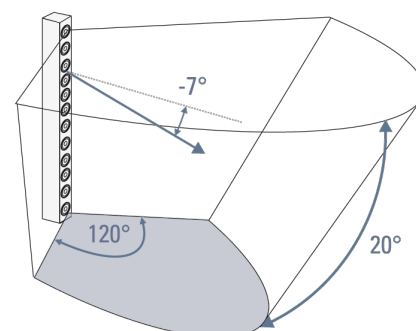
- Passive line array with beam direction 7° downwards
- Very linear frequency response
- 12×2.5" full-range speaker with phase plug
- Power capacity 360 watts
- 8 ohm or 100 V version
- Modular aluminium cabinet

Fields of Application

- Churches
- Concert halls, theatres
- Exhibitions, trade fairs
- Gastronomy, hotels
- Large rooms, halls
- Mobile systems
- Speech reinforcement
- Surround Systems

Directional characteristics

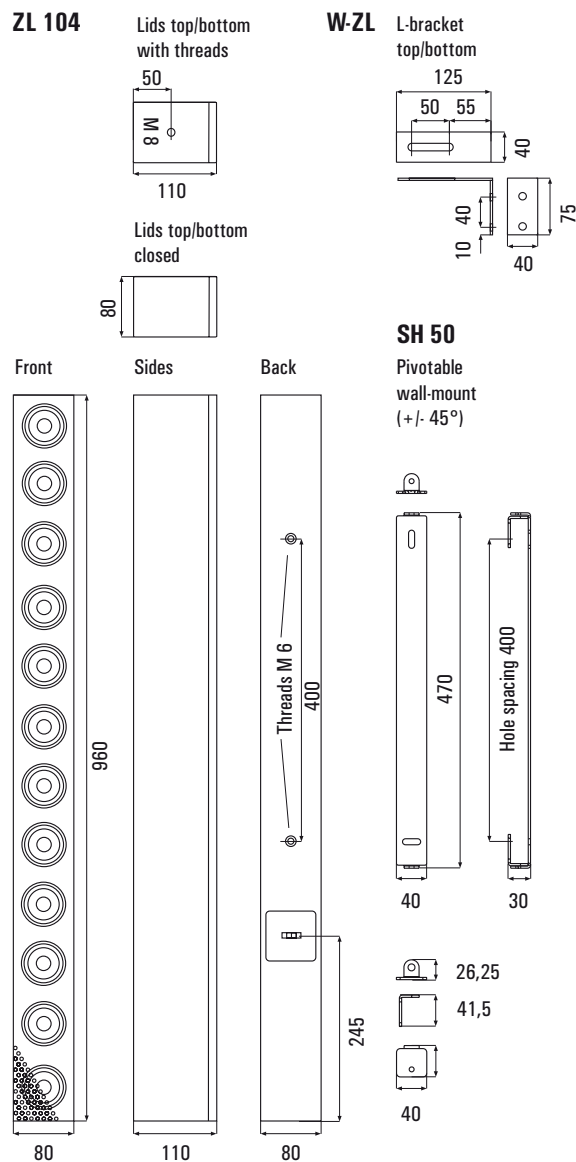
- Vertical beam width 20° asymmetric
- Main directional axis 7° facing downwards
- Horizontal beam width 120°
- Acoustic centre 70 cm from bottom



ZL 104

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Dimensions



Technical Data

Principle	Line array with passive 4-channel technology and asymmetric directional characteristics (Beam direction 7° downwards)
Components	12 × 2.5" long excursion full-range speakers with phase plug and neodymium magnet system
Frequency range	102...20.000 Hz (+/-3 dB) 65...22.000 Hz (-10 dB)
Impedance	8 ohms
Power capacity	180 watts RMS, 360 watts program
Sensitivity	92 dB (1 W @ 1 m)
Maximum SPL	115 dB @ 1 m 100 V version: 109 dB @ 1 m
Nominal dispersion (H × V)	120° × 20°, 7° downwards Acoustic center 70 cm from below
Dimensions (W × H × D)	80 × 960 × 103 mm
Weight	4.8 kg
Cabinet	Aluminium, powder coated, front metal grille, lid closed or optionally threaded inserts M 8 above/below, please specify bracket type with order
Connectors	Screw type terminals, pluggable
Warranty	5 years

Model	Order-No.	Version
ZL 104 White	1004-0001	RAL 9016
ZL 104 Black	1004-0002	RAL 9005
ZL 104 T White	1004-0003	100 V version,
ZL 104 T Black	1004-0004	Power 15/30/60 watts

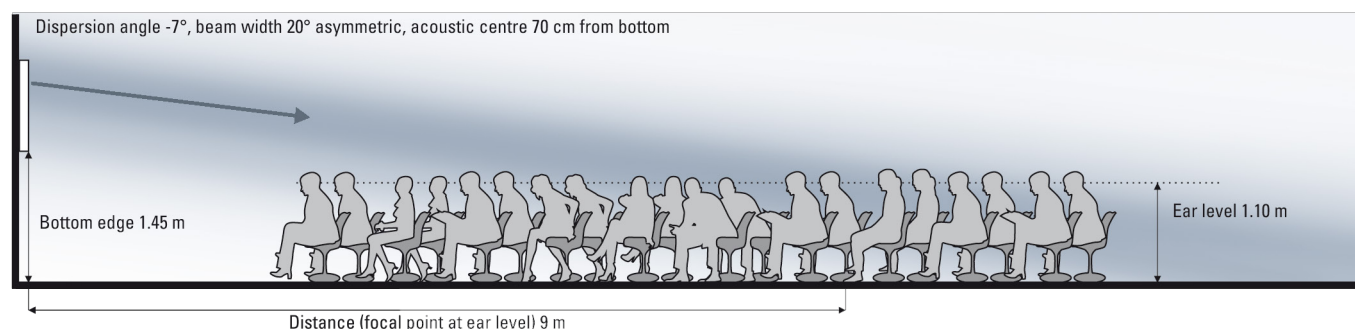
Other lenght and colours on request

Accessories	Order-No.	Version
W-ZL White	7110-0005	L-bracket (pair)
W-ZL Black	7110-0006	
SH 50 White	7110-0003	Wall mount
SH 50 Black	7110-0004	(+/- 45°)



ZL 104

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Calculated assembly height for ZL 104

Distance (focal point at ear level)	Distance to assembly height ZL 104 (bottom edge)	
	Listener seated	Listener standing
5.0 m	1.0 m	1.5 m
7.5 m	1.3 m	1.8 m
10.0 m	1.6 m	2.1 m
12.5 m	1.9 m	2.4 m
15.0 m	2.2 m	2.7 m
17.5 m	2.5 m	3.0 m
20.0 m	2.8 m	3.3 m

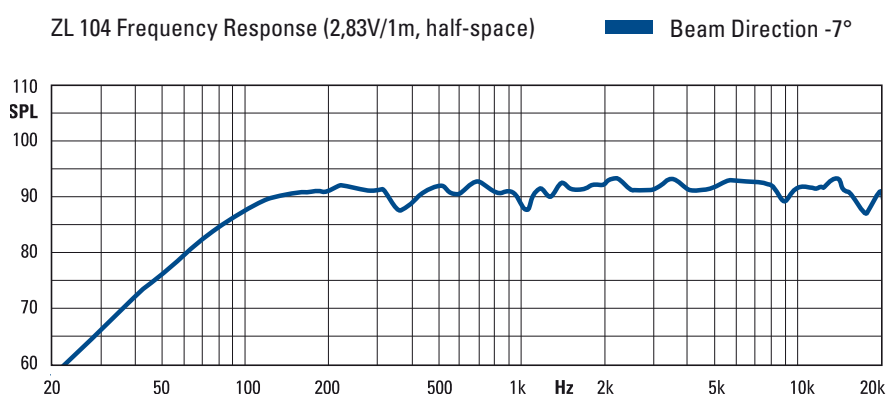
The assembly height for the loudspeaker line arrays ZL 104 is calculated as follows:

$$AH = 0.122 \times D - 0.75 + OH \text{ (m)}$$

AH = Assembly height (bottom edge ZL 104)

D = Distance (focal point at ear level)

Measuring Diagram

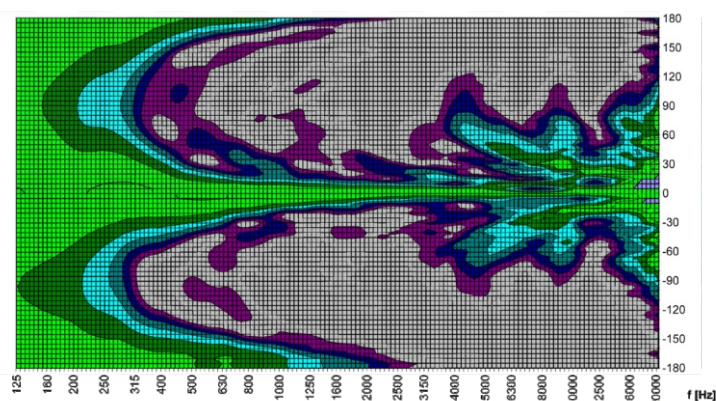


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Measuring Diagrams

ZL 104 vert. Direktivity Plot



Parameters: Cyclic Move: 5° ; Symmetry: no symmetry ; Freq.Smooth: 1/3 Oct ; Ang.Resol: 5° ; Rel. to: 0° Axis

ZL 104 Impedance

