



C Series CL-1 and CS-1 Speaker System

Features

- Self-Powered
- High performance
- Compact
- Portable

Application

- DJ - Band
- Conferences /Meeting Rooms
- Bars/Restaurant's

Description

The CL-1 is a compact line array element with a specially designed wide-band constant-point horn waveguide combined with the woofer, to achieve a horizontal 100-degree constant-point control that does not change with frequency from 900hz onwards

The CS-1 is an 18" long-stroke neodymium magnet subwoofer driver.

CS-1 equipped with a high-performance 96khz high sampling frequency DSP, 2000+400+400 watts (8Ω) high-power class D power amplifier module from Powersoft.

The CL/CS are made from multi-layer birch plywood, is painted strong and environmental coating & with a mesh metal grille with foam backing to protect the driver. There is a M20 pole thread installed and 2 x speakon NL4. Rigging and CL can be stowed in the CS for transport

By HZ Audio

AV Products Australia
PO Box R592
Royal Exchange 1225
Phone: +61 2 9241 1884
Web: www.avpau.com
E-mail: slaes@avpau.com

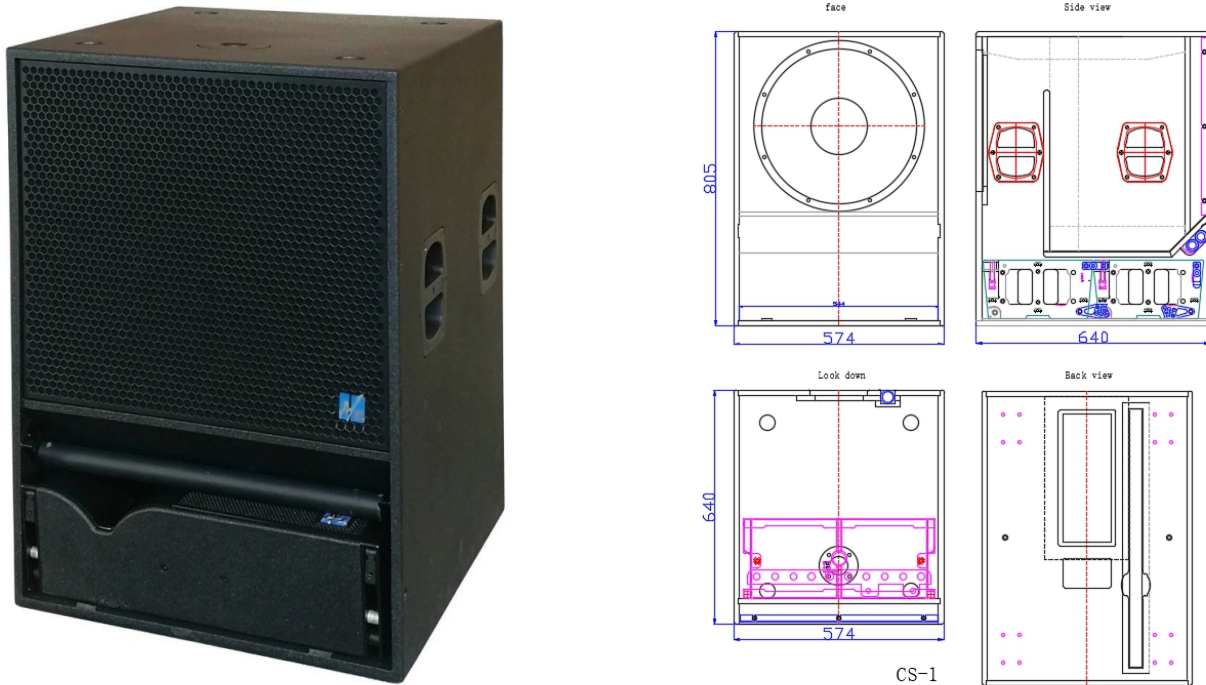
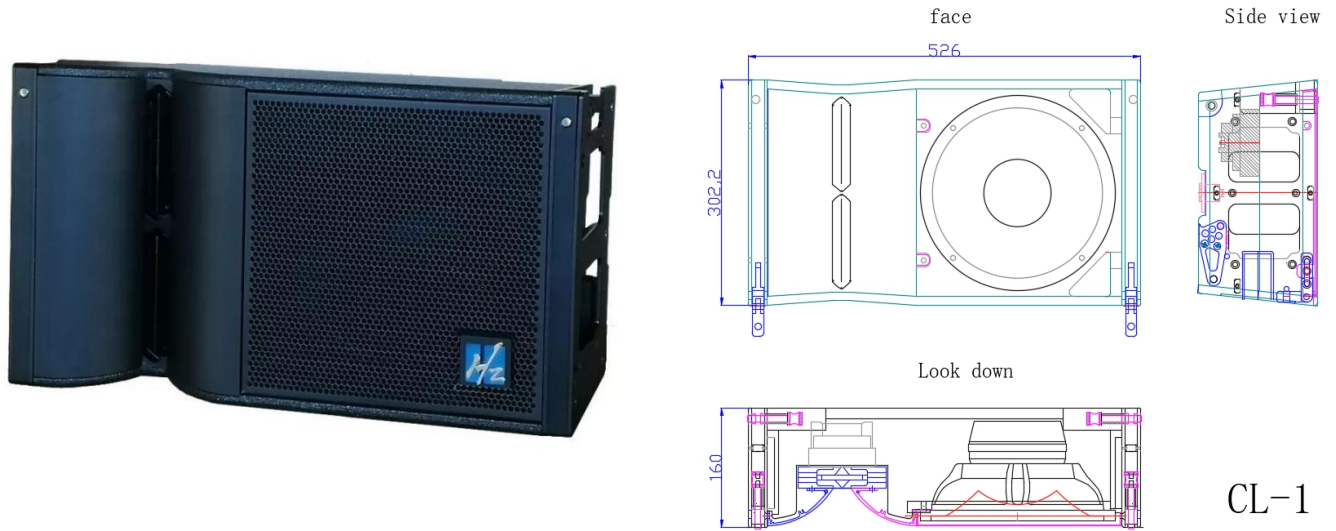


Specification – CL-1

| | |
|----------------------|------------------------------------|
| Frequency Response | 80Hz – 18khz (+/- 6dB) |
| Sensitivity | 103dB (1W@1m) |
| Nominal Impudence | 8ohms |
| Power Handling | 450Watt (AES) |
| Continuous & Max SPL | 129dB 132dB |
| Driver LF | 10' with 75mm Voice Coil Neodymium |
| Driver HF | 2 x 44mm Neodymium |
| Construction | Birch Ply |
| Finish | Textured black paint |
| Input Connector | Speakon NL4x2 |
| Net Weight | 16.0kg |

Specification – CS-1 and DSP Amplifier (Powersoft)

| | |
|----------------------|------------------------------------|
| Frequency Response | 30Hz – 800hz (+/- 6dB) |
| Sensitivity | 101dB (1W@1m) |
| Nominal Impudence | 8ohms |
| Power Handling | 1200Watt (AES) |
| Continuous & Max SPL | 129dB 135dB |
| Driver | 18' with 75mm Voice Coil Neodymium |
| Construction | Birch Ply |
| Finish | Textured black paint |
| Input Connector | Speakon NL4x2 |
| Net Weight | 52.0kg |



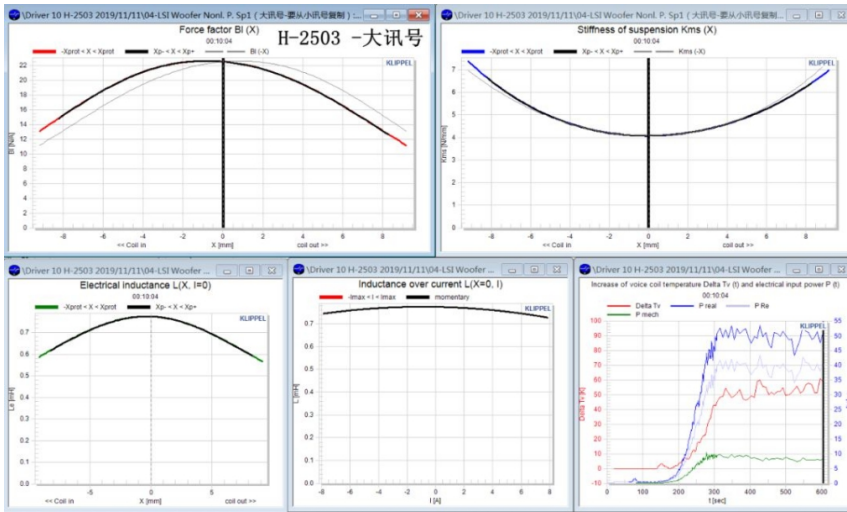
HZ Acoustics begins with technology, is loyal to the art & attributed to philosophy.

C is for compact, L is a line array, 1 represents the first model of the series.
S stands for low frequency, so CS-1 is the low frequency auxiliary speaker of this system.

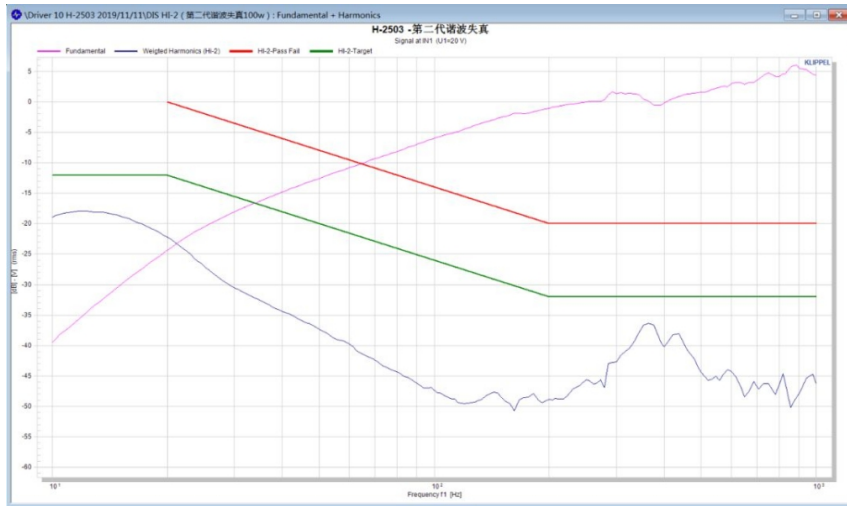
CL-1 is a mid/high frequency element of this line array speaker system.

CL-1 is a light & compact portable line array element for which HZ specially developed a high-energy neodymium 10-inch driver with 75mm diameter voice coil in order to ensure sufficient energy & high output. They also specially designed a 44mm diameter voice coil compression driver that also uses a high-grade neodymium magnet to ensure there is sufficient dynamics to maintain low distortion.

The amplitude and vibration mode of the drivers are directly related to the density of the sound and the density of the sound is directly related to the transmission distance and the frequency uniformity within the range of the transmission distance. So during the development of the CL-1 HZ's analysis explored and experimented on the components through various precision testing methods such as laser scanning to optimize the design. This generated large amounts of data so the parameters could be set & the design requirements established.



This is the vibration mode of the paper cone collected by laser scanning, not simulated



An excellent speaker must have strict operating parameters & without the collection of accurate data there can't be good performance so HZ have optimised the design for very low distortion to guarantee for the excellent performance of the entire system.

The CL line array system is positioned for small scale venues, the speakers have been developed and designed according to very high standards.

Each horn has a specific radiation angle but radiation angle of many horns changes with the frequency generally, the higher the frequency, the narrower the angle. This means as you deviate from the horn's positive axis the high frequency you hear falls off.

A constant-directivity horn is designed for a specific frequency band so the radiation pattern does not change with the in the target frequency band. The result is it forms a uniform frequency response within the listening area.

For the CL-1 compact line array a wide-band constant-directivity horn waveguide was designed by HZ & combined with the 10" woofer. This achieved a 100-degree horizontal constant-point control pattern that does not change with frequency from 900hz upwards, thereby obtaining very uniform sound field distribution.

Each material has its own unique resonant frequency & quality materials and appropriate materials can suppress resonances to the maximum within in the audio range. The material used for CL-1 CD horn is a special metal for die-casting.

The beauty an alloy is the change in the basic metal caused by the type and quantity of added elements. These materials apply theoretical science, and are rarely recorded and published in the audio manufacturing industry. HZ Audio obtained a large amount of empirical data through a large number of experiments to determine the shape & composition of the horn. The excellent outcome comes from their attention to detail.



HZ Audio has a world class laboratory and equipment to design and achieve results. Basic experimental research produces large amount of data & when that was combined with 30 years of experience it led to the development of their own unique waveguide technology.

The line array uses waveguide technology to minimize the interference between the speakers after the array is formed.

In the horn design of the CL-1 the distance, width and frequency balance within the horizontal plane are measured and the best and most comprehensive combination was obtained.

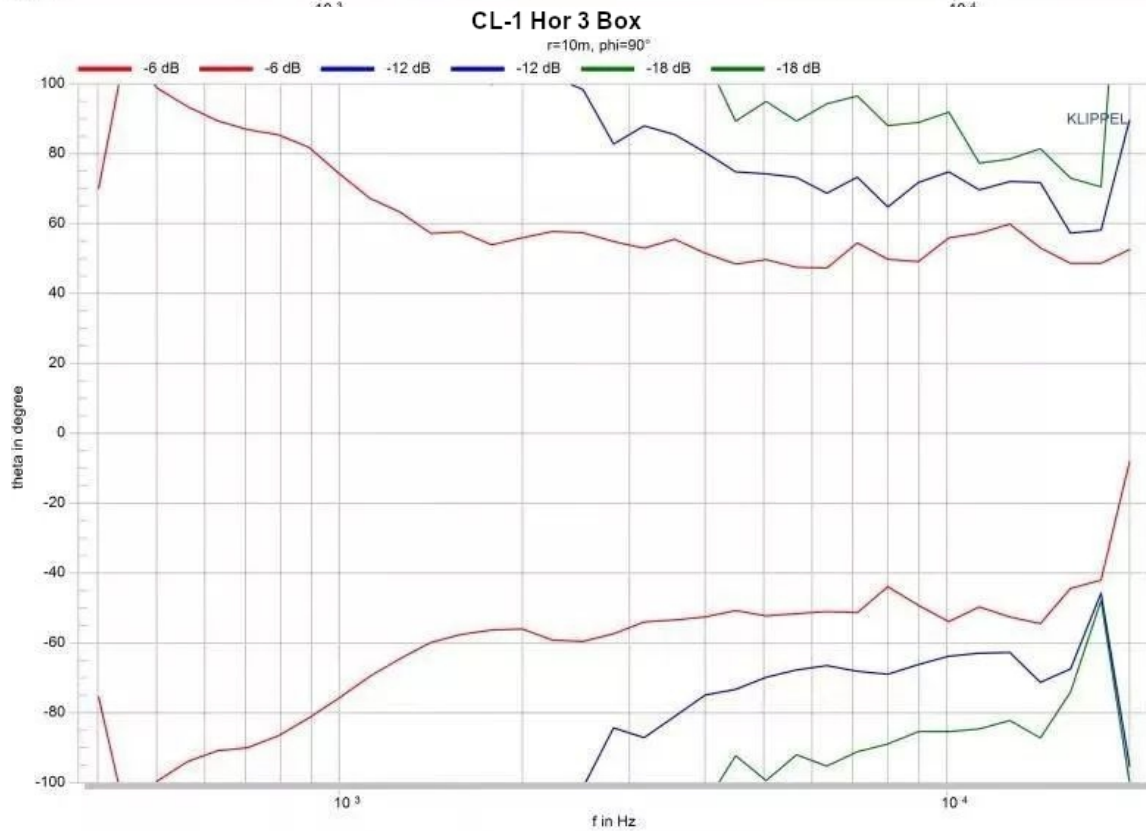
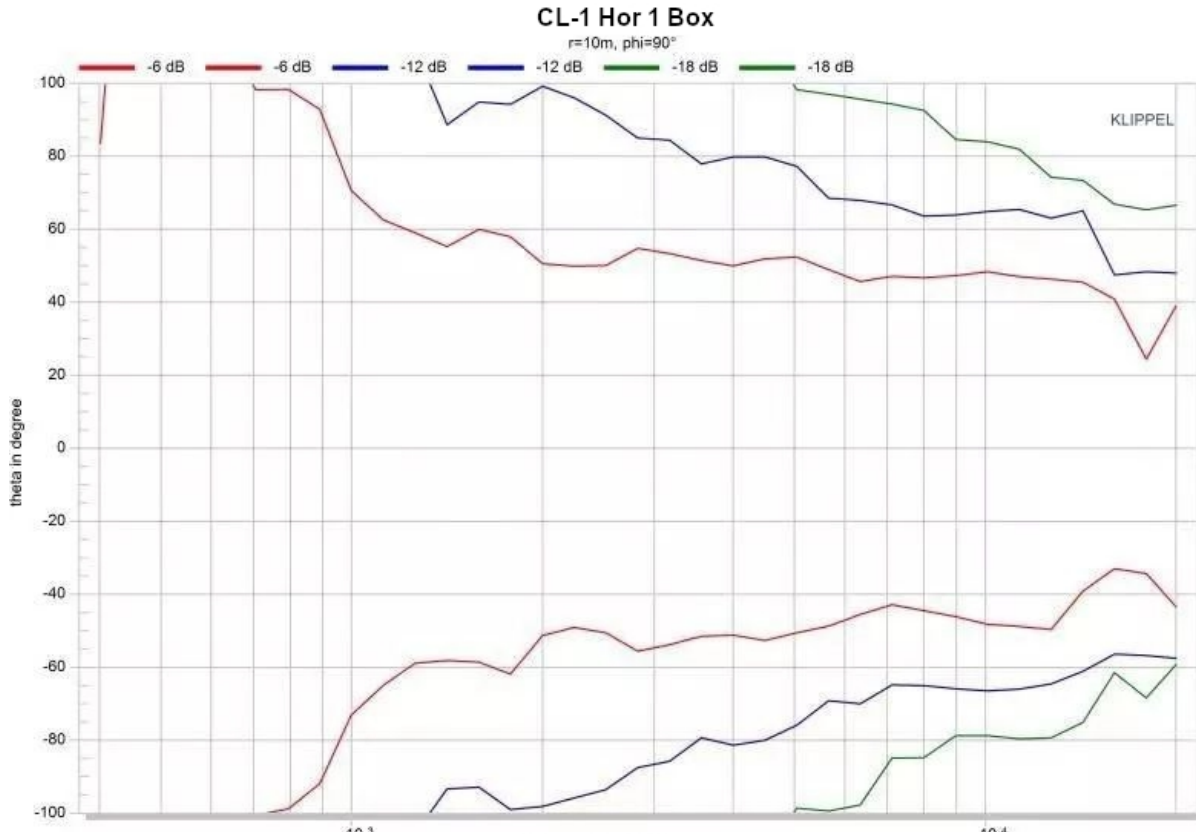
This not only achieves a compact horn but also achieves effective coverage control. Within this coverage range the frequency balance is consistent with the axis (see the figure below for test results), so as to ensure intelligibility and clarity that is required for each seat in the auditorium.



This is The directivity test data of CL-1 waveguide Vertical



This is The directivity test data of CL-1 waveguide Horizontal



(The result of 3 boxes shows the control extending to lower limits as the radiation pattern is still 100 degrees. The CL-1 system achieves constant directivity, the radiation pattern does not change with frequency & a uniform sound field is obtained within the coverage area)

The CS-1 uses an 18" long-stroke neodymium driver that is specially designed for the large folded bass horn of the CS-1. It can also be used for storing the 2xCL-1 boxes for transportation and storage.

The CS-1 is equipped with a high-performance Powersoft 96khz sampling frequency DSP engine and 3 Class D amplifier module. Sub 2000watt + 2 x 400watt for the Mid/High.

