

VERTCON SERIES

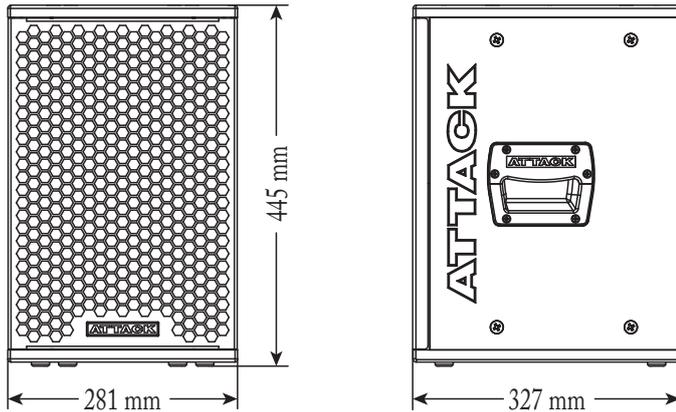


DATASHEET

F108D Ultra Compact High Power
Loudspeaker

ATTACK
AUDIO SYSTEM
|| HEARTHEDIFFERENCE ||

Dimensions	445mm x 281mm x 327mm (HxWxD)
Weight	20 kg
Enclosure	MadeFibra®
Finish	Textured black polyester
Protective Grille	Hex-stamped steel Black textured paint coating
Audio connection	Female XLR and Male XLR loop thru
AC connection	IP65-3P with Looping Output NBR14.136 - 20A Output



The F108D is a self powered, ultracompact and high performance two-way loudspeaker. It provides high power, low distortion and consistent polar response. The extended headroom for high frequency ensures flat response for a wide range from 70 Hz to 20 kHz. The high headroom factor provides detailed resolution for signals with delicate transients throughout the coverage area. Member of the Vertcon family, it was designed for small and medium areas with high performance and exceptional coverage.

The relationship between power, efficiency, size and ease of use makes the F108D a surprising and remarkable experience in performance, and it can be used in theaters, churches, clubs, sports gyms and shows.

The high frequency section is composed of a compression driver with an 1-inch throat, 1.77-inch voice coil with a polyester diaphragm, coupled to a constant directivity horn with 90° horizontal coverage and 50° vertical coverage. It uses a dedicated amplification channel and a digital signal processing system that corrects the frequency and phase response in order to perfectly match the bass section.

The low frequency section has a loudspeaker with an 8-inch cone and a 3-inch voice coil assembled in a bass reflex enclosure. It has a dedicated amplification channel and a proper digital processing system with specific

adjustments that enable an extended frequency response in this section.

Being a self powered system, the F108D incorporates two high-power class-D amplification channels, with a dedicated limiter that protects and extends transducers life at very high power levels and prevents non-linear operating situations. The amplification and processing system is mounted in an individual unit that allows for an extremely easy in-field exchange. The amplifier and processor are powered by a switching mode supply that boasts a PFC circuit capable of providing constant power from 100 to 240 V AC.

The enclosure is built with a special humidity resistant fiberboard "Madefibra®" coated with highly robust polyester painting that ensures great durability. A hex-stamped steel protective grille, coated with electrostatic paint, protects the transducers. Rubber feet at the inferior side protect the enclosure against damage. It has a support for 1.5-inch (38 millimeter) diameter tripod pedestal and points for flown mode installation.

The SPM F108D, that is a multiple function support with mobility for many angles of installation, and SPY F108D, that is a flown mode installation accessory, are available. Up to 4 units are allowed in the flown mode installation.

KEY FEATURES

- Exceptional relationship between power, efficiency, size.
- Exceptional fidelity.
- Extraordinary frequency and phase response, with greater tonal precision and image.
- Horn with constant directivity providing uniform response throughout the coverage area.
- Perfect phase coherence enabling coupling with other Vertcon line products (it has 2.8ms of latency).

APPLICATIONS

- Concert halls.
- Theatrical sound reinforcement.
- Portable and installed AV systems.
- Corporate events.
- Churches and clubs.
- Installation in cinemas.
- Frontfill and under galleries.

Acoustical

Operating frequency range ¹	60 Hz - 20 kHz
Frequency response ²	70 Hz - 20 kHz -6 dB
Phase response	100 Hz - 18 kHz $\pm 30^\circ$
Maximum linear average SPL ³	
Free field	112 dB (Z) / 110 dB (A) @ 1m
Ground plane	117 dB (Z) / 115 dB (A) @ 1m
Maximum linear peak SPL ⁴	
Free field	124 dB (Z) / 122 dB (A) @ 1m
Ground plane	129 dB (Z) / 127 dB (A) @ 1m

Coverage

Horizontal	90°
Vertical	50°

Transducers

LOW frequency	8" Speaker/Nominal impedance 8 Ω /Voice coil diameter 3"
HIGH frequency	Compression driver/Nominal impedance 8 Ω /Voice coil diameter 1.77"/Diaphragm diameter 1.77"/Throat 1"

Audio input

Type	Differential, electronically balanced
Connectors	Female XLR and Male XLR loop thru
Input impedance	10 k Ω Unbal and 20 k Ω Bal
Connection	Pin 2: signal +/Pin 3: signal -/Pin 1: ground
CMRR	>50 dB, typically 70 dB (50 Hz - 500 Hz)
Nominal input sensitivity	+4 dBu (1.23 V rms-1.74 Vp) constant is typically the beginning of signal limitation with noise or music
Maximum input level	+20 dBu

Amplifier

Type	Class D
THD - IMD	<0.05%

AC Power

Power supply type	PFC pre-regulator and Flyback converter
Connectors	IP65-3P with Looping Output, NBR14.136-20A Output
Operating range	100-240 V AC rms, maximum 275 V AC rms, minimum starting voltage 100 V AC rms
Standby current consumption (mA rms)	320mA@100 V AC / 250mA@127 V AC / 210mA@220 V AC
Maximum continuous current consumption for long periods (A rms)(>10seg) ⁵	1.6A@100 V AC / 1.25A@127 V AC / 0.8A@220 V AC

General information

Indicators	Led On/Led Signal/Led Limiter/Led CSD
Protections	Overvoltage, undervoltage, short-circuit, temperature, DC, individual limiter per channel, audio starting fader
Ventilation	Micro ultra silent fan with speed control as a function of the temperature

NOTES

¹ Recommended maximum operating frequency response. The frequency response depends on the acoustics conditions of the environment.

² Measured with 1/3 octave frequency resolution in semi-anechoic chamber at four meters of distance. Frequency response with maximum variation of ± 3 dB.

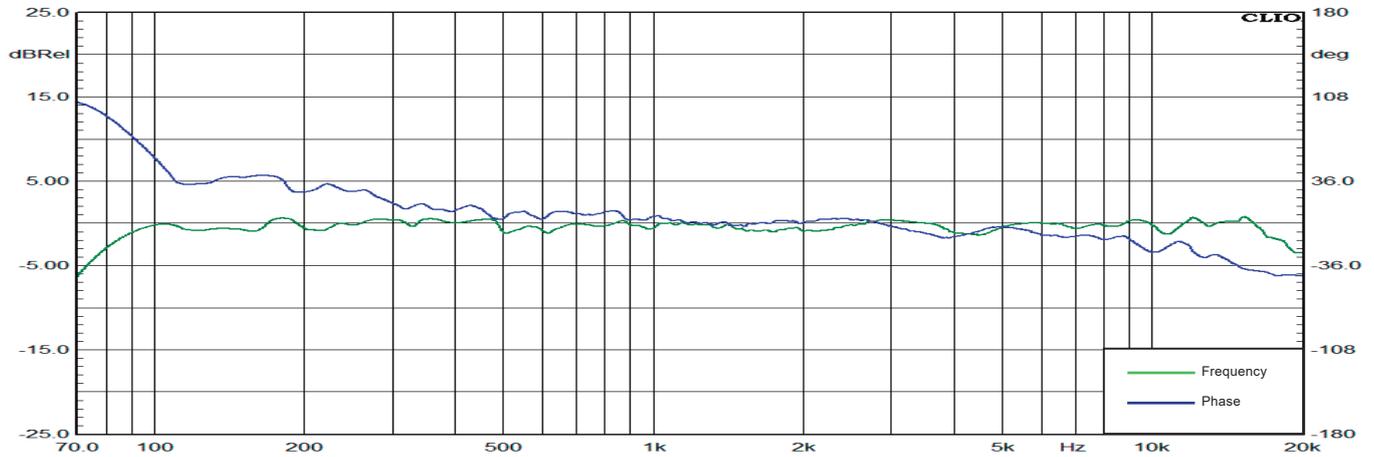
³ Measured with pink noise (FC=12dB), linear average SPL maintained for at least one hour, microphone on the axis. The average SPL value (measured with Z-weighted curve) in free field is used in the GLL file for use in prediction in the Ease Focus and Ease softwares.

⁴ Measured with pink noise (FC=12dB), linear peak SPL maintained for at least one hour, microphone on the axis.

⁵ The AC power cable must have a gauge compatible with the current transmission capacity required by the loudspeaker in continuous current consumption regime, otherwise it will not deliver the specified power to the transducers. Maximum current value measured with pink noise (FC=12dB).

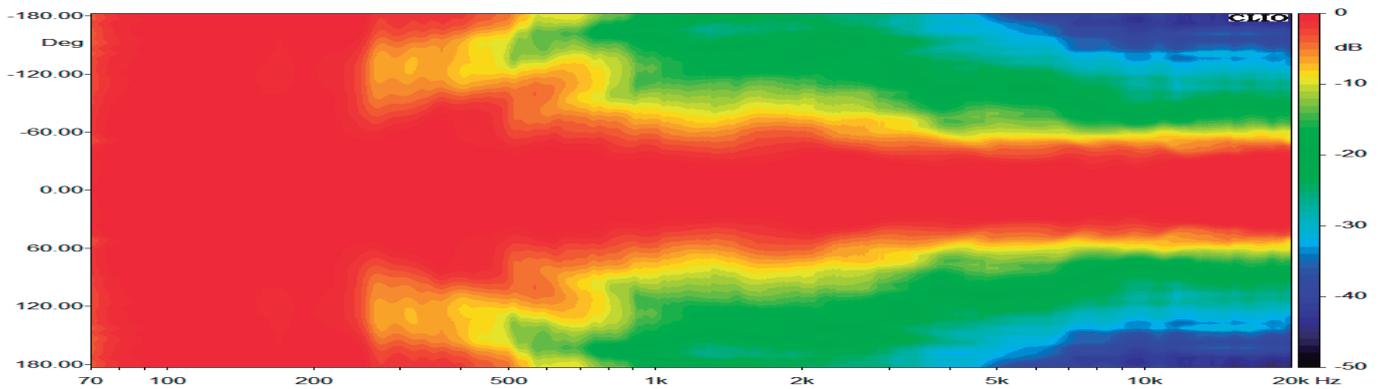
ACOUSTIC CHARACTERISTICS

Frequency and phase response



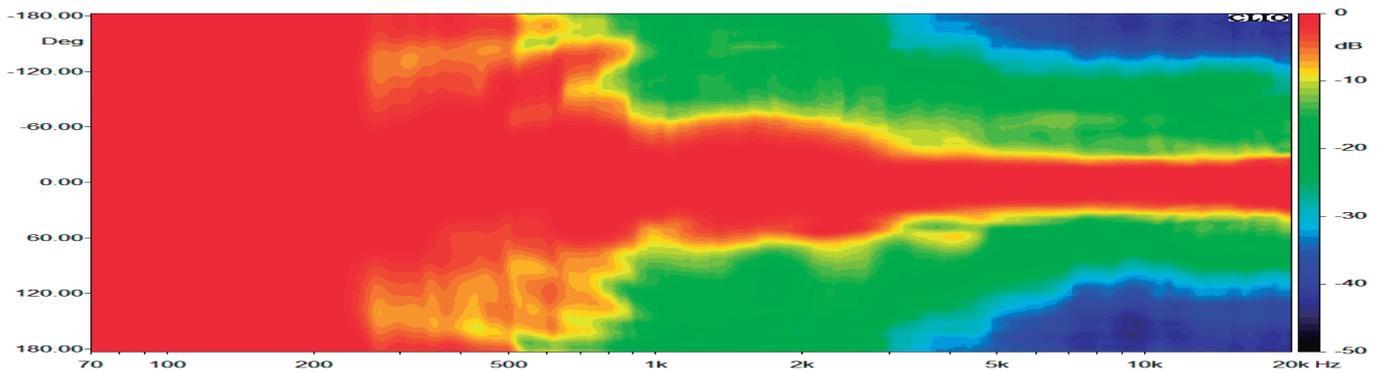
Measured in semi-anechoic chamber, on axis and 1/3 octave resolution

Horizontal directivity



Measured in semi-anechoic chamber, on axis and 1/3 octave resolution

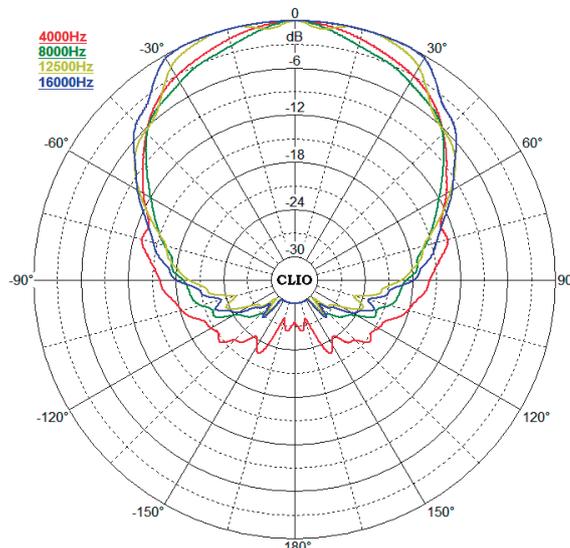
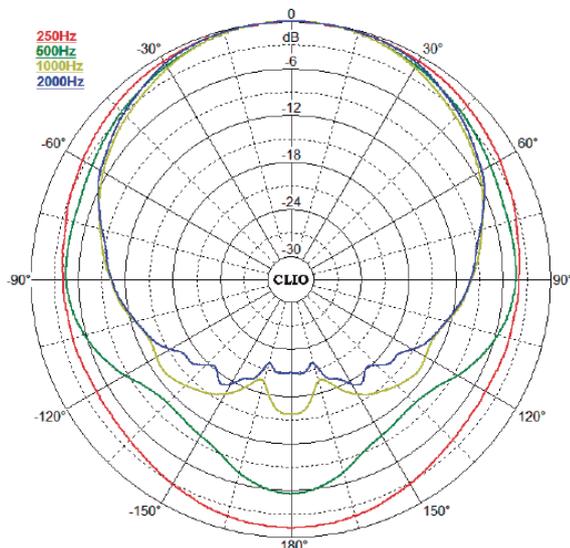
Vertical directivity



Measured in semi-anechoic chamber, on axis and 1/3 octave resolution

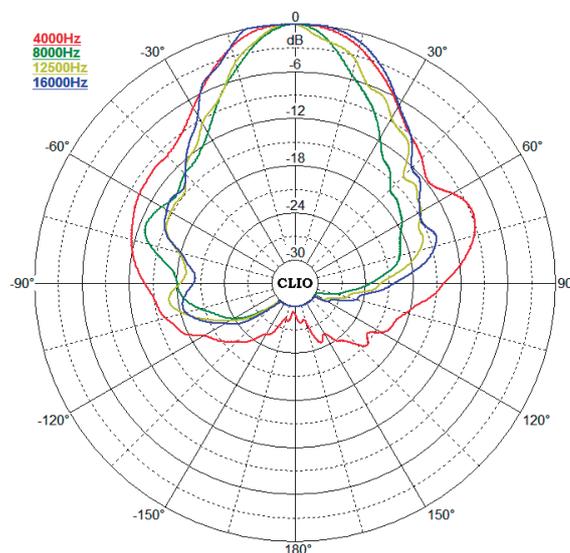
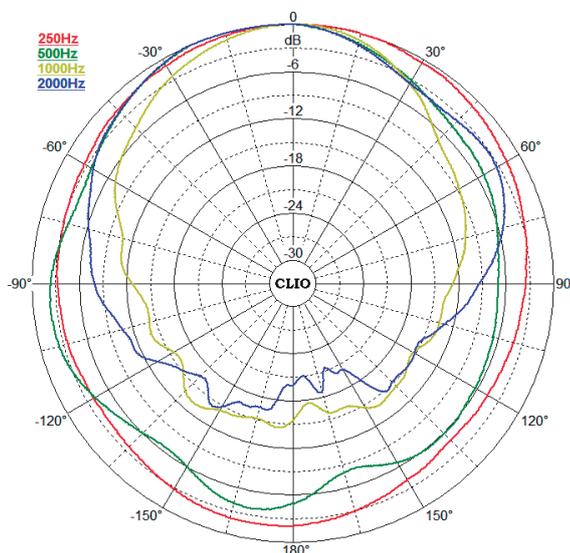
ACOUSTIC CHARACTERISTICS

Polar diagram - Horizontal



Measured in semi-anechoic chamber, on axis and 1/3 octave resolution

Polar diagram - Vertical



Measured in semi-anechoic chamber, on axis and 1/3 octave resolution