FA282

Dual 8 inch Coaxial Loudspeaker



Overview

The FA282 is a portable, 3-way coaxial loudspeaker that is well suited for a variety of sound reinforcement applications. Its neodymium coaxial transducer and 90° x 60° horn provide broad coverage that is beneficial in both stage monitor and mains operation, and its dedicated neodymium low frequency transducer provides additional low frequency directivity and mid bass impact. Its multi-faceted, enclosure includes a pole mount socket, plust 40° and 50° rear angles for stage monitor use. The compact enclosure is vertically-oriented, but when rotated horizontally the FA282's low profile also makes it very useful as a high output front fill system on the edge of a stage apron.

Fulcrum Acoustic's **TQ**™ processing is an integral part of the FA282 design. Sound, innovative acoustical design combined with state of the art digital processing leads to exceptional clarity and precise transient response, even at high sound pressure levels. The required digital signal processing can be provided by one of many supported platforms. Free air and stage monitor presets are available for all platforms.

The FA282's versatility, high performance, aesthetic appeal, and cost effective operation makes it a compelling choice for A/V rental companies, live performance venues, corporate A/V, nightclub PA, theatrical productions, and more.

Performance Specifications[1]

Operating Mode
Single-amplified w/ DSP

Operating Range [2]
48 Hz to 20 kHz

Nominal Beamwidth (rotatable)
90° x 60°

Transducers
LF: 8.0" ceramic magnet woofer, 2.0" voice coil
HF/LF: Coaxial 1.7" titanium diaphragm compression driver; 8.0" woofer, 2.0" voice coil; single neodymium magnet

Power Handling @ Nominal Impedance [3]
63 V / 500 W @ 8 Ω

Nominal Sensitivity @ Input Voltage [4] (whole space)
100 dB @ 2.83 V

Nominal Maximum SPL (peak / continuous)
133 dB / 127 dB

Equalized Sensitivity @ Input Voltage [5]
95 dB @ 2.83 V

Equalized Maximum SPL [6] (peak / continuous)
128 dB / 122 dB

Recommended Power Amplifier
500 W to 1000 W @ 8 Ω

Physical Specifications

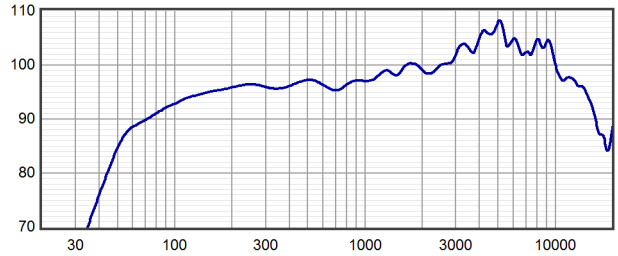
Connections
(2) Neutrik NL4 Speakon
Pin 1+/-: Full Range
Pin 2+/-: NC

Mounting / Suspension Points
(1) 35 mm / 1.38 inch pole socket

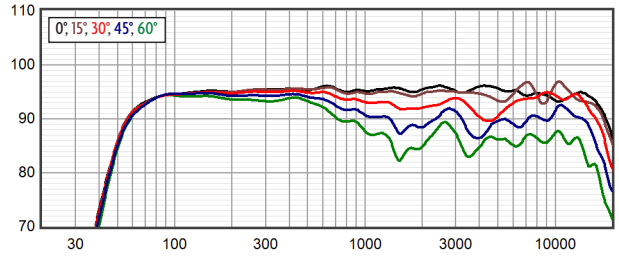
Dimensions / Weight
See page 5

Finish
Black painted enclosure w/ matte black grille

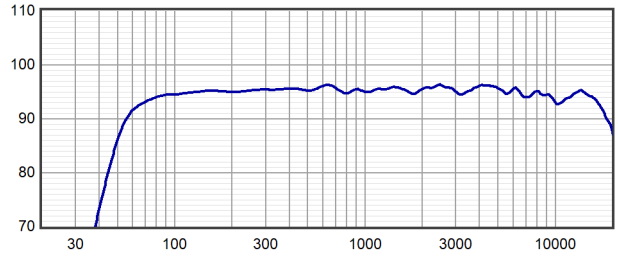
Axial Sensitivity (dB SPL, 2.83 V @ 1 m)[7, 8]



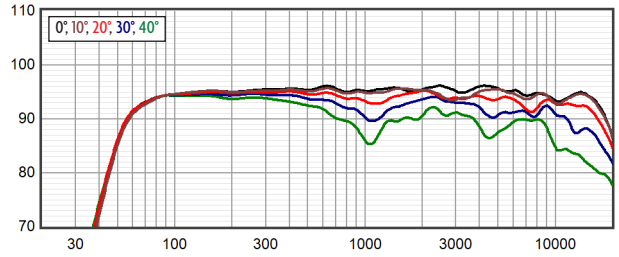
Horizontal Off Axis Response[7, 11]



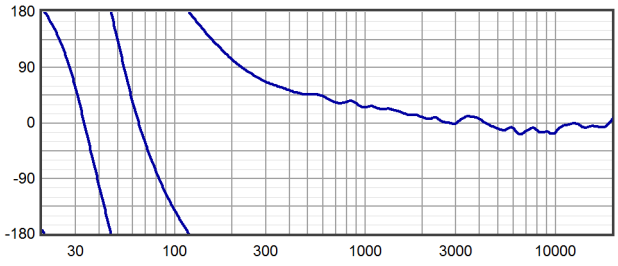
Axial Processed Response (dB)[7, 9]



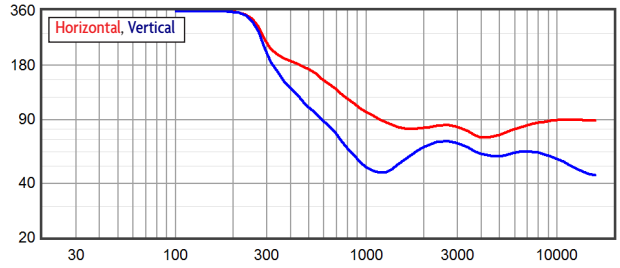
Vertical Off Axis Response[7, 11]



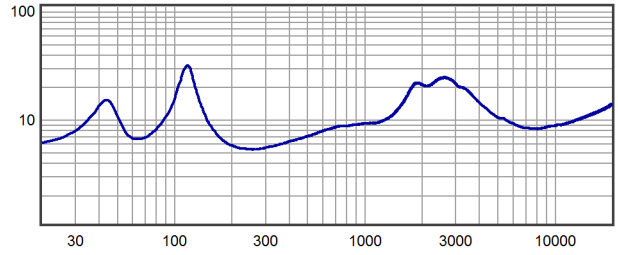
Axial Processed Phase Response (degrees)[7, 10]



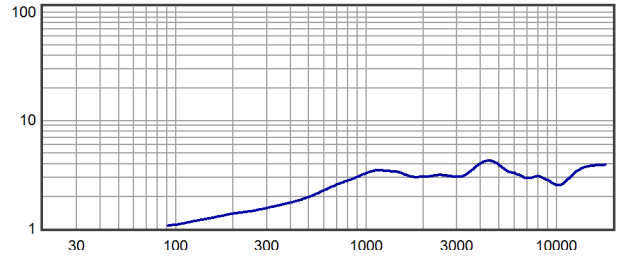
Beamwidth[7, 12]



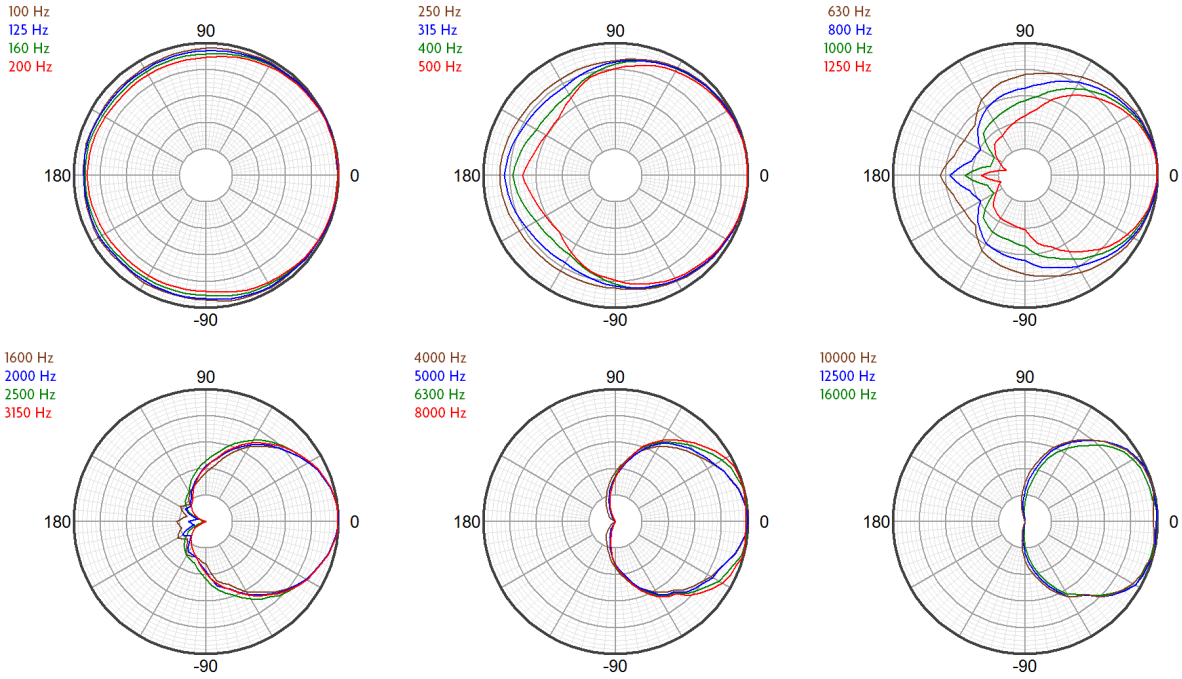
Impedance (ohms)



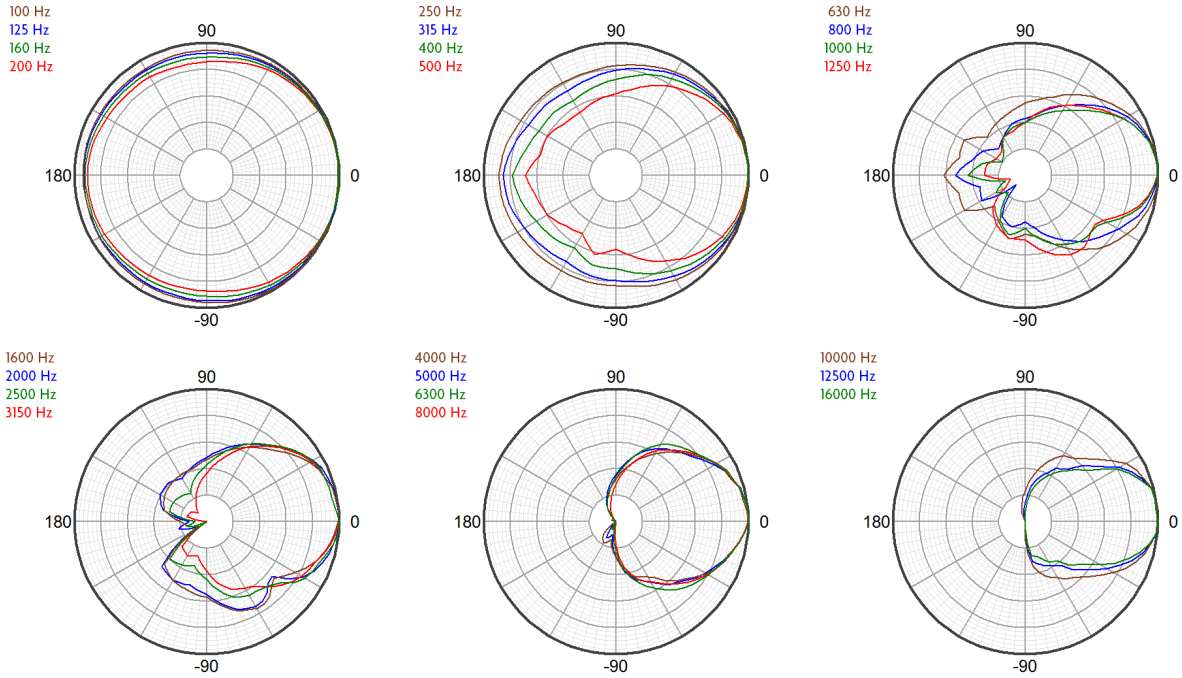
Directivity Index (dB)[13]



Horizontal Polar Response (30 dB Scale, 6 dB per Major Division)



Vertical Polar Response (30 dB Scale, 6 dB per Major Division)



Technologies

The FA282 includes a neodymium based coaxial driver, which allows the compression driver diaphragm to be positioned very close to the woofer voice coil. This allows the system to maintain coherent summation and consistent off axis response through a 3-way passive crossover, allowing it to be driven with a single amplifier channel.

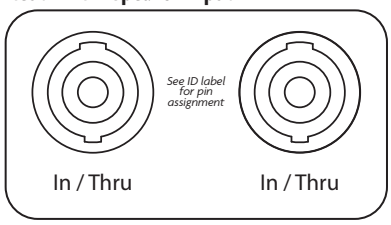
The compression driver's 1.75 inch diameter diaphragm operates to a relatively low frequency. This allows the high frequency horn to smooth the polar response of the low frequency section in the frequency range where the horn would otherwise cause shadowing. The coaxial woofer's large radiating surface works in conjunction with the HF horn to improve directional control at the low frequency limit of the horn's operating range, increasing directional control beyond what can be accomplished by the horn alone.

The two low frequency devices both operate down to the lowest frequencies, resulting in mutual coupling that provides unusually high efficiency and impact in the critical 80 Hz to 500 Hz range.

The FA282's unique **TQPassive**™ internal crossover is designed to work in conjunction with **TQ**™ processing. It provides the high efficiency, excellent damping, and precise directional control normally associated with bi-amplified operation, but it does not require a second amplifier and processor channel. There are no resistive components in the crossover to heat up, so its response remains consistent even at high levels.

Connections

Neutrik NL4 Speakon Input



Mechanical Specification Drawings

2D and 3D DWG dimensional drawings are available for download at www.fulcrum-acoustic.com/resources

Notes

[1] **Performance Specifications** *All acoustic specifications rounded to nearest whole number. External DSP with Fulcrum Acoustic-provided settings is required to achieve the specified performance.*

[2] **Operating Range** *The frequency range within which the processed response is within 10 dB of the average.*

[3] **Power Handling** *Based on the AES power handling of the transducers.*

[4] **Nominal Sensitivity** *The 1-meter-referenced SPL produced by a 1 watt band limited pink noise signal, with no processing applied.*

[5] **Equalized Sensitivity** *The 1-meter-referenced SPL produced when an EIA-426-B signal is applied to an equalized loudspeaker system, at a level which produces a total power of 1 watt, in sum, to the loudspeaker subsections.*

[6] **Equalized Maximum SPL** *The 1-meter-referenced SPL produced when an EIA-426-B signal is applied to an equalized loudspeaker system, at a level which drives at least one subsection to its rated power.*

[7] **Resolution** *All response graphs are subjected to 1/6 octave cepstral smoothing with a gaussian weighting function.*

[8] **Axial Sensitivity** *The SPL plotted against frequency for a 1 watt swept sine wave, referenced to 1 m with no signal processing.*

[9] **Axial Processed Response** *The axial magnitude response with recommended signal processing applied.*

[10] **Axial Processed Phase Response** *The axial phase response with recommended signal processing applied, and latency removed.*

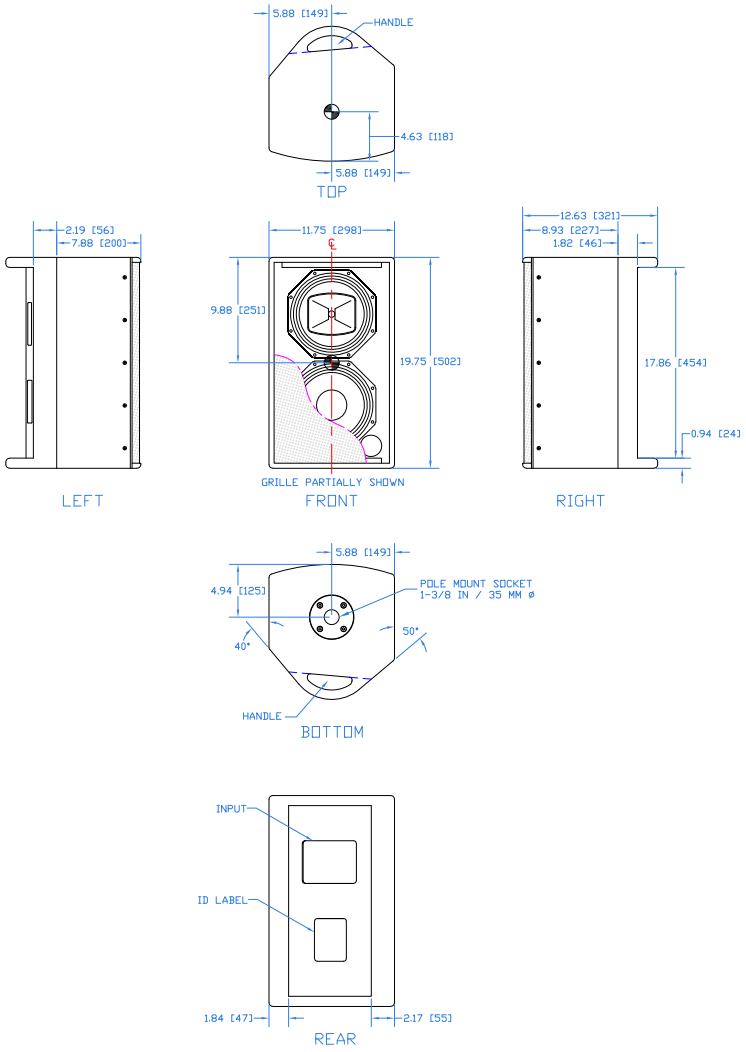
[11] **Horizontal / Vertical Off Axis Responses** *The magnitude response at various angles off axis, with recommended signal proceessing applied.*

[12] **Beamwidth** *The angle between the -6 dB points in a loudspeaker's polar response.*

[13] **Directivity Index (D_i)** *The ratio of the on-axis sound pressure squared to the spherical average of the sound pressure squared at a particular frequency expressed in dB. To convert the directivity index to directivity factor (Q) use the formula* $10^{Di/10}$.

Notes:
1. Net Weight = Approx. 33.0 lb / 15.0 kg
2. Symbol ◓ = CoG

REVISIONS		
REV	DESCRIPTION	APPR / DATE
1	NEW ISSUE	RAF 4/7/26



THIRD ANGLE PROJECTION	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCE IN INCHES .X±.1 .XX±.015 .XXX±.005 FRACTIONS ±1/32 ANGLES ±1/2° (X.XX) = REF DIMS NO TOLERANCE IMPLIED TSC = THEORETICAL SHARP CORNER DIMENSIONS ACROSS CENTERLINES TO BE SYMETRICAL	STATUS RELEASED	FULCRUM ACOUSTIC, LLC 1 MAIN STREET, WHITINSVILLE, MA 01588 USA
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