



Product Description

The VQ 100 is a full range, three-way loudspeaker system designed for applications which require high output capability with class leading pattern control. The VQ 100 features a wide and exceptionally well defined dispersion characteristic.

For a variety of uses, a single VQ 100 can produce more power and clarity over its 100 degree beamwidth area than many arrayed solutions using multiple cabinets, a great advantage when considering your building aesthetics.

With low frequency extension to 90Hz, the VQ 100 can be combined with various subwoofers for extended bandwidth.

The VQ 100 can be configured for use in Bi-Amp or Tri-Amp mode, in conjunction with a suitable digital signal processor (DSP).

Horn design involves balancing compromise.....until now.

Key performance parameters that can be controlled by the designer include: frequency response (both on and off-axis), horizontal and vertical beamwidth, directivity index, electrical impedance, harmonic distortion, and low frequency cut-off. Our unique approach in keeping what is effectively a Dual Concentric™ behind a single horn gives us many performance advantages. Performance of the VQ 100 in terms of accuracy & sound quality is second to none.

The VQ 100 incorporates a unique driver technology to radiate a coherent single point source for superior dispersion control when coupled to a PSW™ (Point Source Waveguide). This advanced design aligns the acoustical centres of the transducers providing a single coherent wavefront emanating from the throat. The PSW™ waveguide achieves an optimum balance of extremely well controlled coverage, smooth frequency response, and natural sound character.

The low frequency section, two (12") low frequency transducers, offers high power handling and low power compression for high continuous SPL capability. A newly designed LF loading design provides the highest possible sensitivity for low/mid frequency output.

The VQ 100 is part of an expanding line up of VQ products, addressing the requirement for compact dimensions without compromising performance in any way.

Features

- "PSW™ Waveguide" - Point source design (Patent applied for).
- Excellent Phase Coherence
- Perfect time alignment without the associated problems of multi source interference
- Compact Dimensions
- Class leading directivity characteristics
- Extremely high sensitivity, therefore high SPL's can be achieved with a very modest amount of amplifier power
- Exceptional transient response

Applications

- Large Houses of Worship
- Large Corporate AV applications
- Stadiums & other Sports facilities
- Dance Clubs
- Live sound – concert halls, theatres, open-air venues

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VQ 100

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TECHNICAL SPECIFICATIONS

System	VQ 100	
System Type	3-Way Full Range - Point Source	
Frequency Response (-3dB) ⁽¹⁾	115Hz - 23kHz	
Frequency Range (-10dB) ⁽¹⁾	90Hz - 27kHz	
Operating Modes	Bi-Amp (LF, MF/HF) User Configurable Tri-Amp (LF, MF, HF) User Configurable	
System Sensitivity & Operating Freq. (1W @1m) ⁽²⁾		
Bi-Amp		
LF (80Hz - 450Hz)	105dB (2.0V @ 4 Ohms)	
Passive MF/HF (450Hz - 23kHz)	110dB (2.83V @ 8 Ohms)	
Tri-Amp		
LF (80Hz - 450Hz)	105dB (2.0V @ 4 Ohms)	
MF (450Hz - 7kHz)	111dB (2.83V @ 8 Ohms)	
HF (7kHz - 23kHz)	111dB (2.83V @ 8 Ohms)	
Dispersion (-6dB)	100 degrees conical	
Driver Complement		
LF	2 x 300mm (12.00") Low Frequency Transducers, Semi Horn Loaded	
MF/HF	Dual Concentric™ Compression driver loaded into a single PSW™ Waveguide	
Directivity Factor (Q)	8.5 averaged 1kHz to 10kHz	
Directivity Index (DI)	9.3 averaged 1kHz to 10kHz	
Rated Maximum SPL ⁽²⁾	Average	Peak
LF	135dB	141dB
MF	134dB	140dB
HF	133dB	139dB
Passive MF/HF	134dB	140dB
Power Handling ⁽³⁾	Average	Programme
LF @ 4 Ohms	1000W (63.3V)	2000W
MF @ 8 Ohms	200W (40V)	400W
HF @ 8 Ohms	90W (27V)	180W
Passive MF/HF @ 8 Ohms	200W (40V)	400W
Recommended Amplifier Power		
LF	2000W into 4 Ohms	
MF	400W into 8 Ohms	
HF	200W into 8 Ohms	
Passive MF/HF	400W into 8 Ohms	

Nominal Impedance		
LF	4 Ohms (4.1 Ohms Minimum)	
MF	8 Ohms (6.0 Ohms Minimum)	
HF	8 Ohms (8.6 Ohms Minimum)	
Distortion	2nd Harmonic	3rd Harmonic
110dB SPL		
250Hz	2.188	0.737
2kHz	2.131	0.133
5kHz	1.103	0.171
115dB SPL		
250Hz	2.226	0.742
2kHz	3.643	0.203
5kHz	1.977	0.431
120dB SPL		
250Hz	2.339	0.752
2kHz	6.273	0.441
5kHz	3.463	1.125
125dB SPL		
250Hz	2.550	0.747
2kHz	10.556	1.157
5kHz	6.053	3.602

Construction

Enclosure	18mm (0.71") birch plywood. Internally braced.
Grille	Powder coated perforated steel grille
Finish	Textured black or white paint (custom colours on request)
Connectors	Barrier Strip and Speakon connector
Fittings	8 x Recessed carrying handles 12 x M10 flying inserts
Dimensions	925mm x 694mm x 515mm (36.42" x 27.32" x 20.28")
Net Weight	65kg (143 lbs)

Notes:

- (1) Average over stated bandwidth. Measured at 3 metres on axis, then referred to 1 metre
- (2) Unweighted pink noise input, measured at 3 metres in an anechoic chamber, then referred to 1 metre
- (3) Accelerated Life Test (EIA RS426-B)

A full range of measurements, performance data, CLF and Ease™ Data can be downloaded from www.tannoy.com

Full independent verification of published specifications carried out by NWA Labs, California can also be obtained from the downloads section of www.tannoy.com

Tannoy operates a policy of continuous research and development. The introduction of new materials or manufacturing methods will always equal or exceed the published specifications, which Tannoy reserves the right to alter without prior notice. Please verify the latest specifications when dealing with critical applications.

Ordering Information

PART NUMBER	MODEL NAME	COLOUR	PACKED QUANTITY
8001 4820	VQ 100	BLACK	1
8001 4821	VQ 100	WHITE	1

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TCGI (ROW sales)
TCGA (Americas sales)
Tannoy Middle East

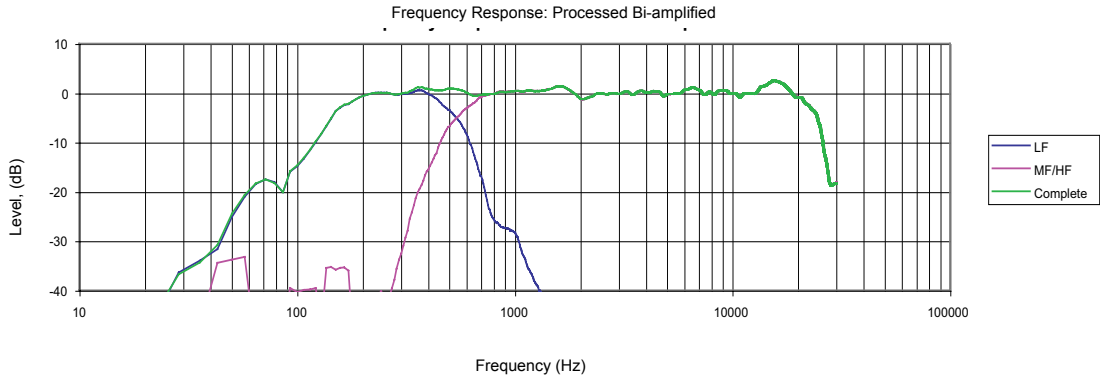
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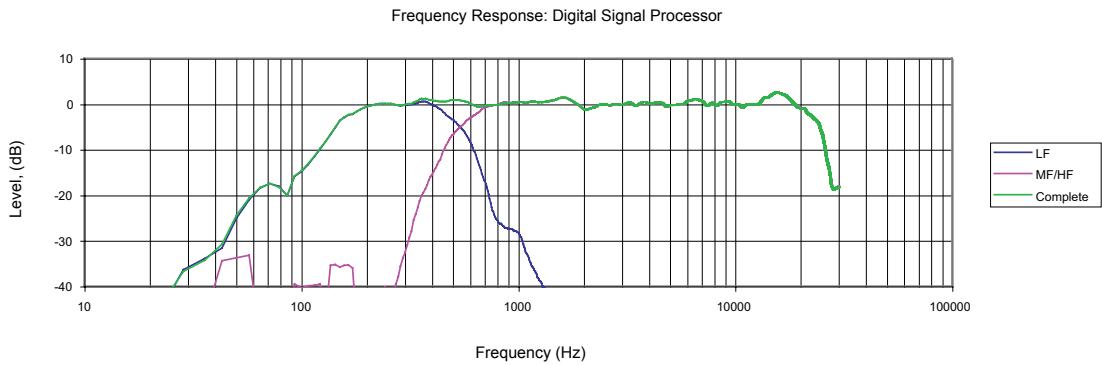
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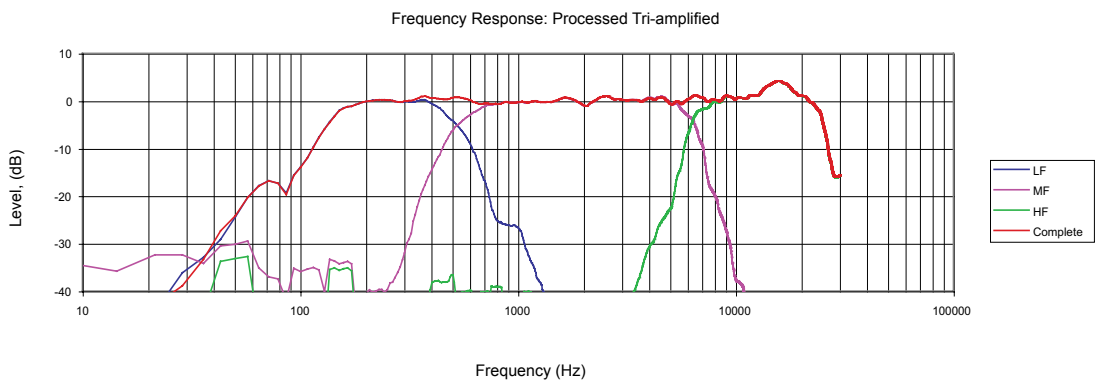
PERFORMANCE MEASUREMENTS



ANECHOIC FREQUENCY RESPONSE (BI-AMP MODE)



ELECTRICAL TRANSFER FUNCTION FOR OPTIMAL OPERATION (BI-AMP MODE)



ANECHOIC FREQUENCY RESPONSE (TRI-AMP MODE)

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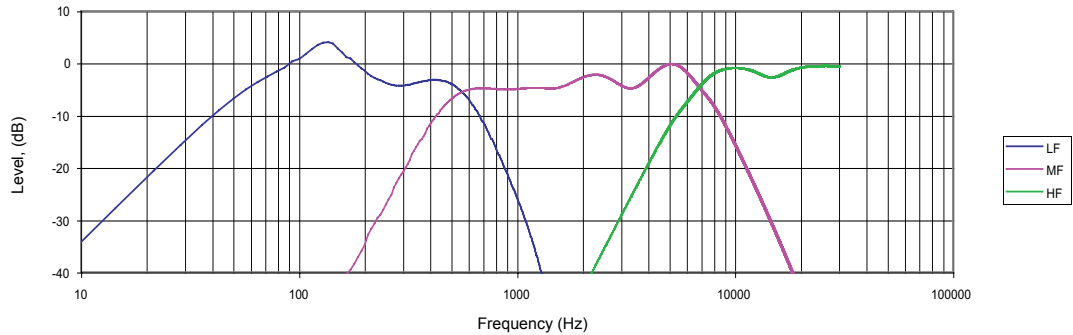
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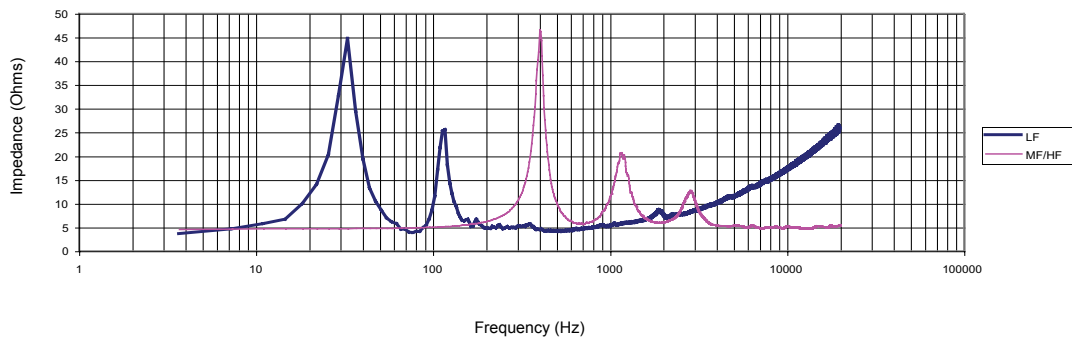
PERFORMANCE MEASUREMENTS

Frequency Response: Digital Signal Processor



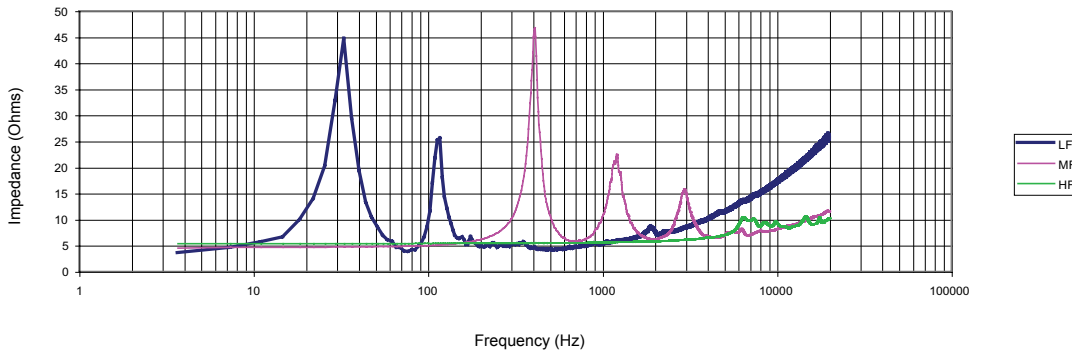
**ELECTRICAL TRANSFER FUNCTION
FOR OPTIMAL OPERATION
(TRI-AMP MODE)**

Impedance vs frequency



**IMPEDANCE
(BI-AMP MODE)**

Impedance vs frequency



IMPEDANCE (TRI-AMP MODE)

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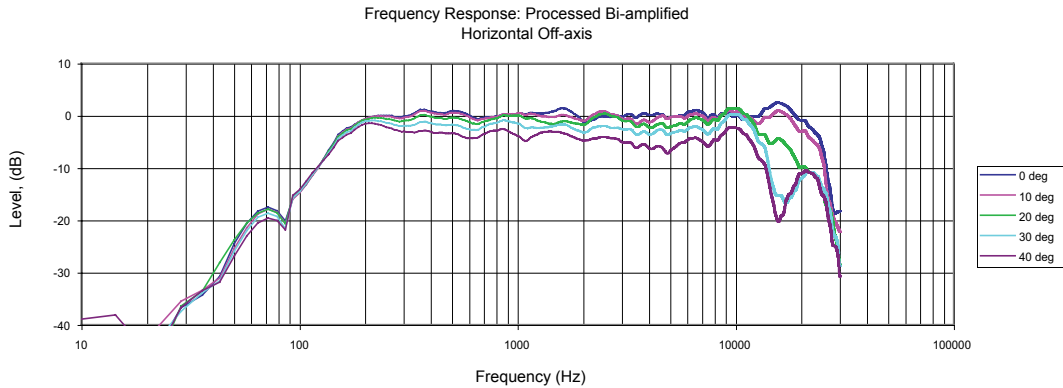
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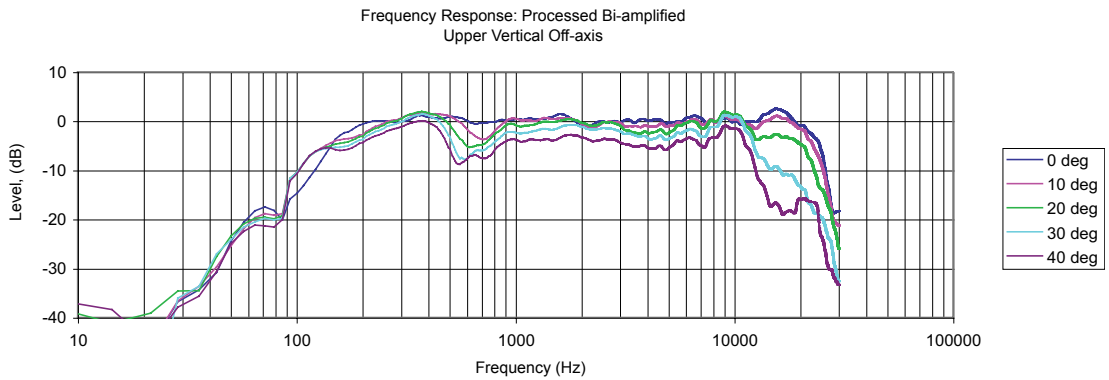
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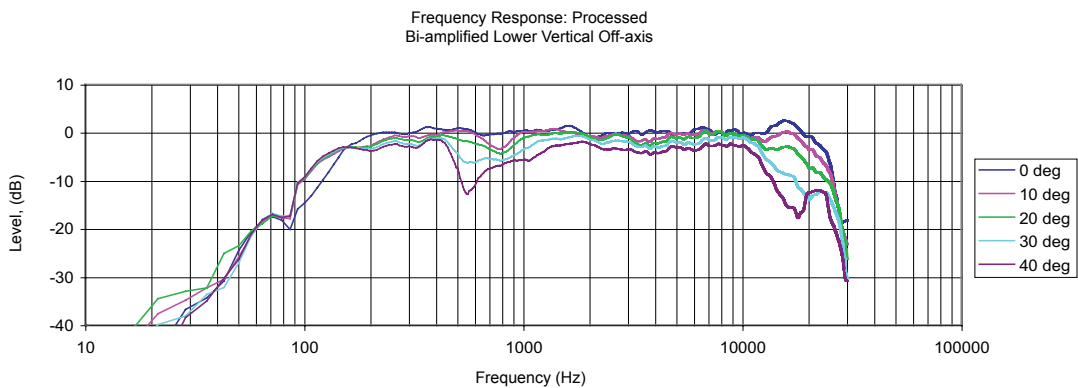
PERFORMANCE MEASUREMENTS



**HORIZONTAL OFF AXIS
RESPONSE (BI-AMP MODE)**



**VERTICAL UPPER
OFF AXIS RESPONSE
(BI-AMP MODE)**



**VERTICAL LOWER OFF AXIS
RESPONSE (BI-AMP MODE)**

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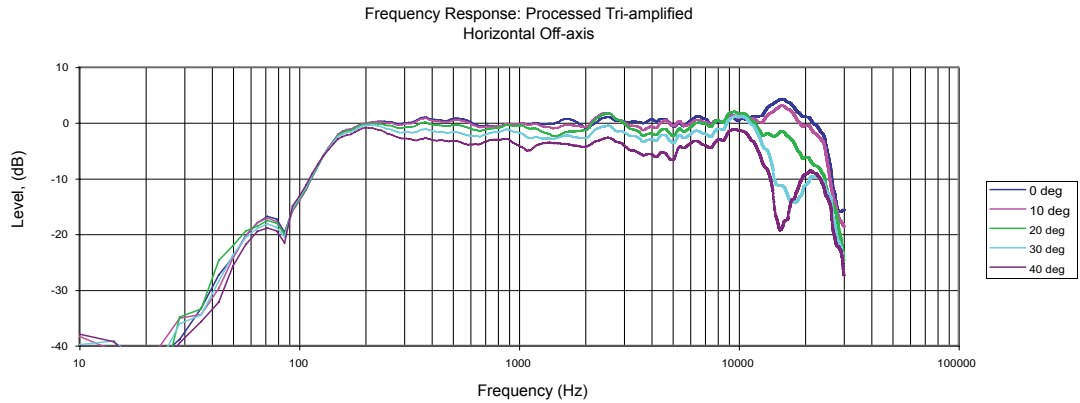
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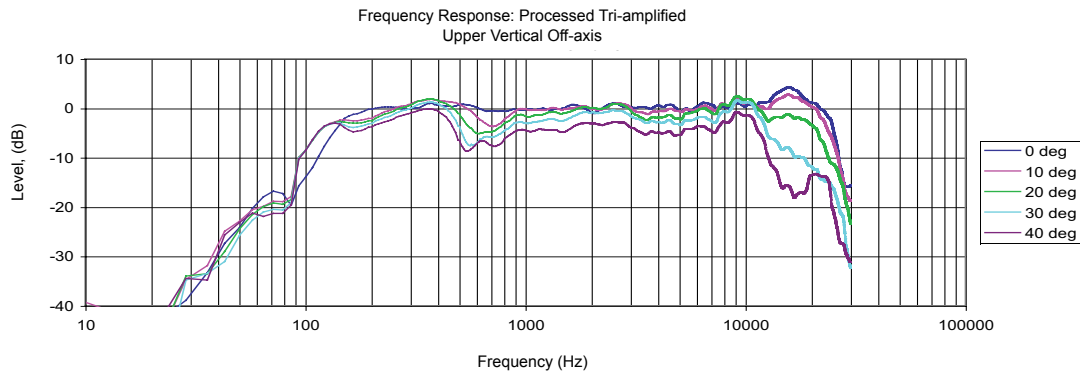
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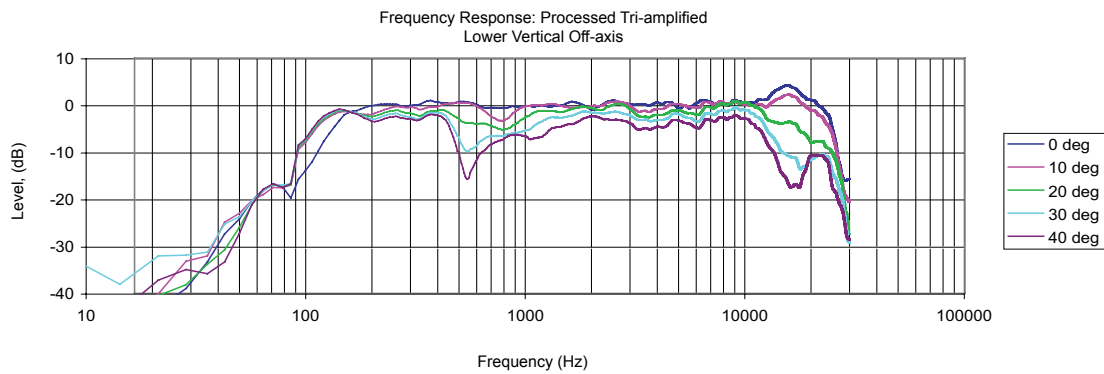
PERFORMANCE MEASUREMENTS



**HORIZONTAL OFF AXIS
RESPONSE (TRI-AMP MODE)**



**VERTICAL UPPER
OFF AXIS RESPONSE
(TRI-AMP MODE)**



**VERTICAL LOWER
OFF AXIS RESPONSE
(TRI-AMP MODE)**

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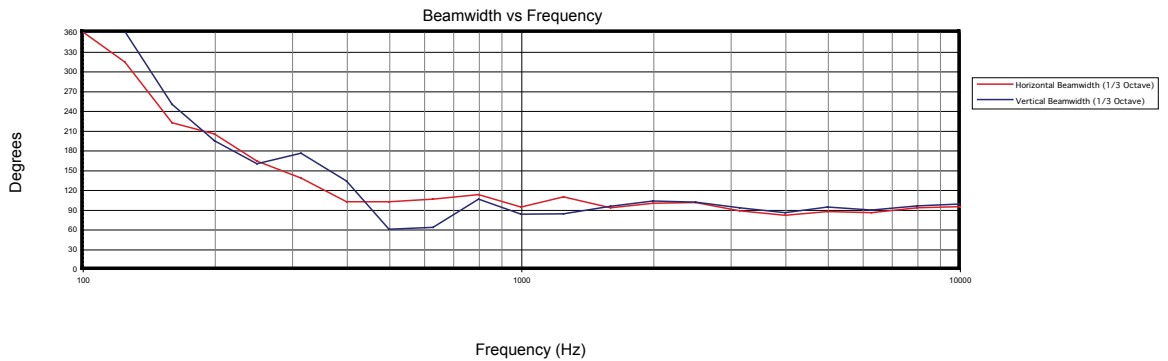
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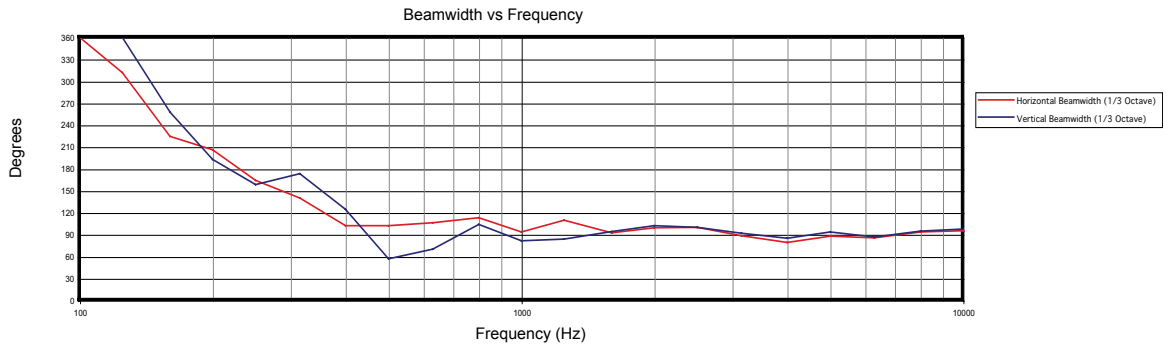
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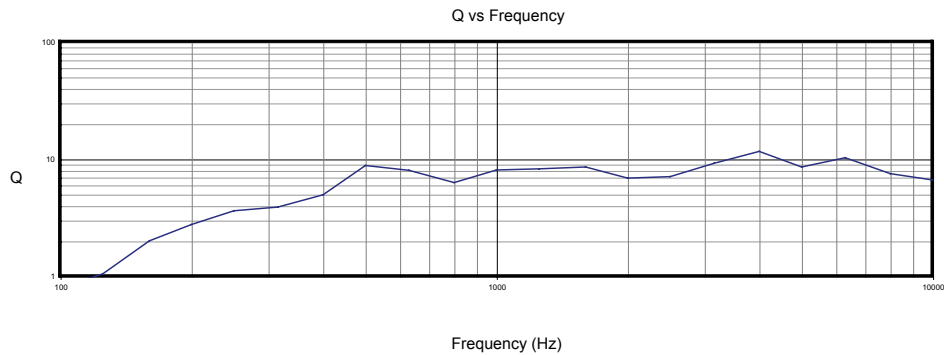
PERFORMANCE MEASUREMENTS



BEAMWIDTH (BI-AMP MODE)



BEAMWIDTH (TRI-AMP MODE)



Q VS FREQUENCY (BI-AMP MODE)

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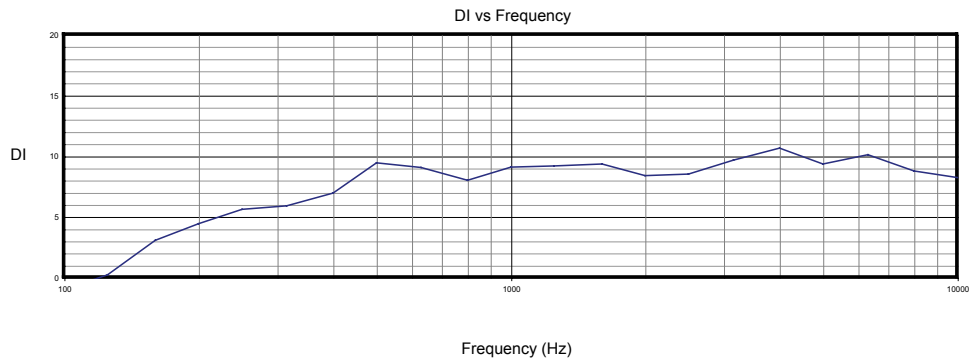
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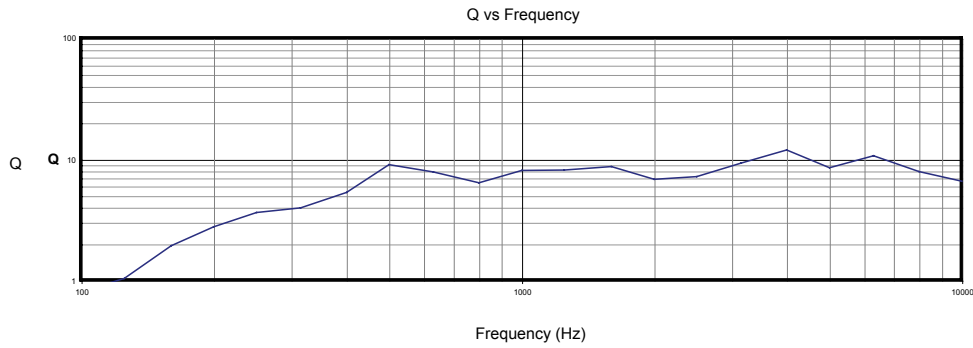
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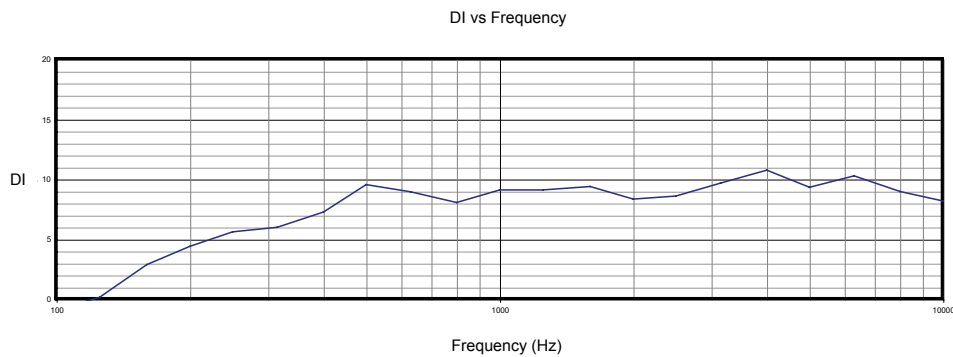
PERFORMANCE MEASUREMENTS



**DIRECTIVITY INDEX
(BI-AMP MODE)**



**Q VS FREQUENCY
(TRI-AMP MODE)**



**DIRECTIVITY INDEX
(TRI-AMP MODE)**

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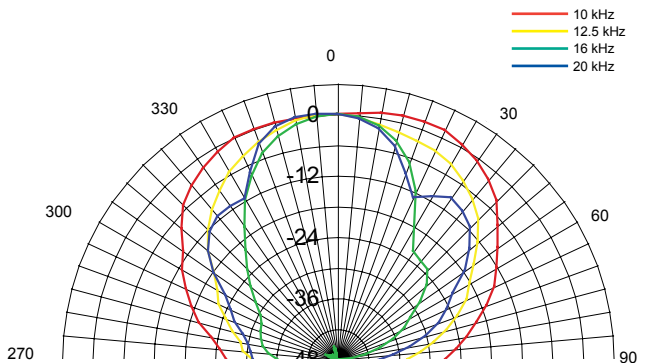
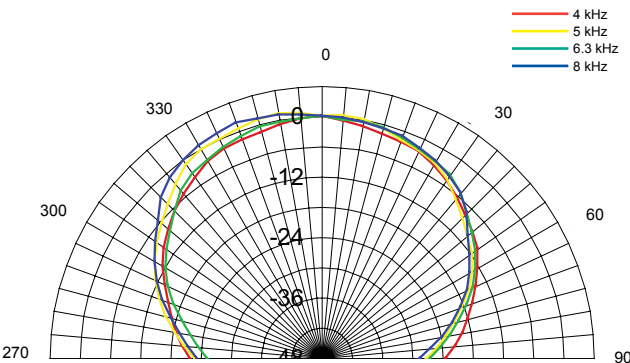
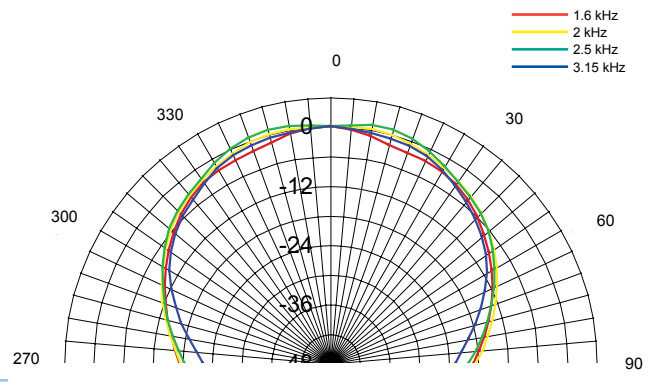
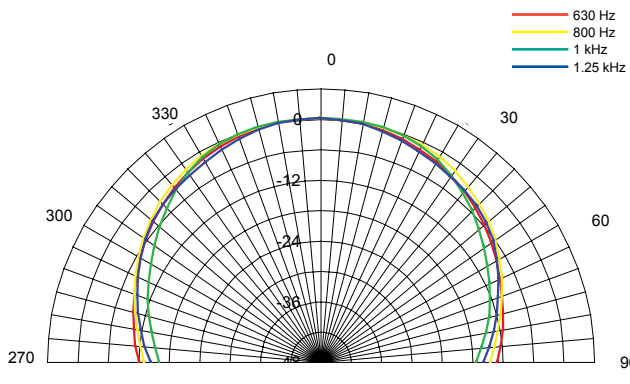
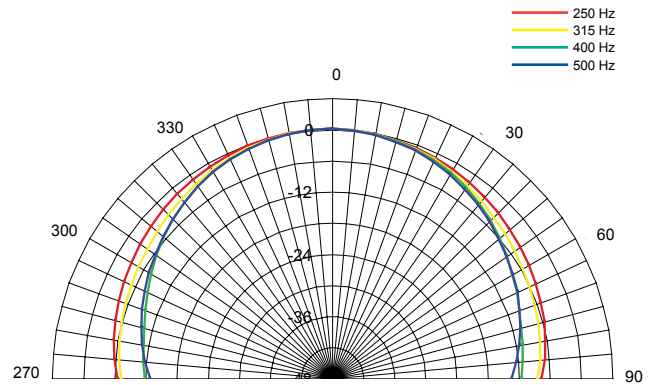
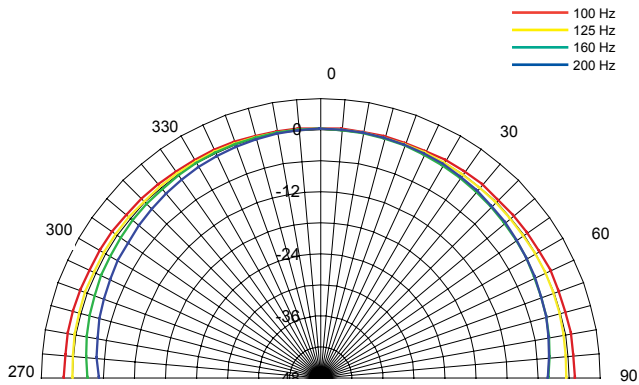
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VQ 100

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PERFORMANCE MEASUREMENTS POLAR PLOTS (1/3 OCTAVE) HORIZONTAL



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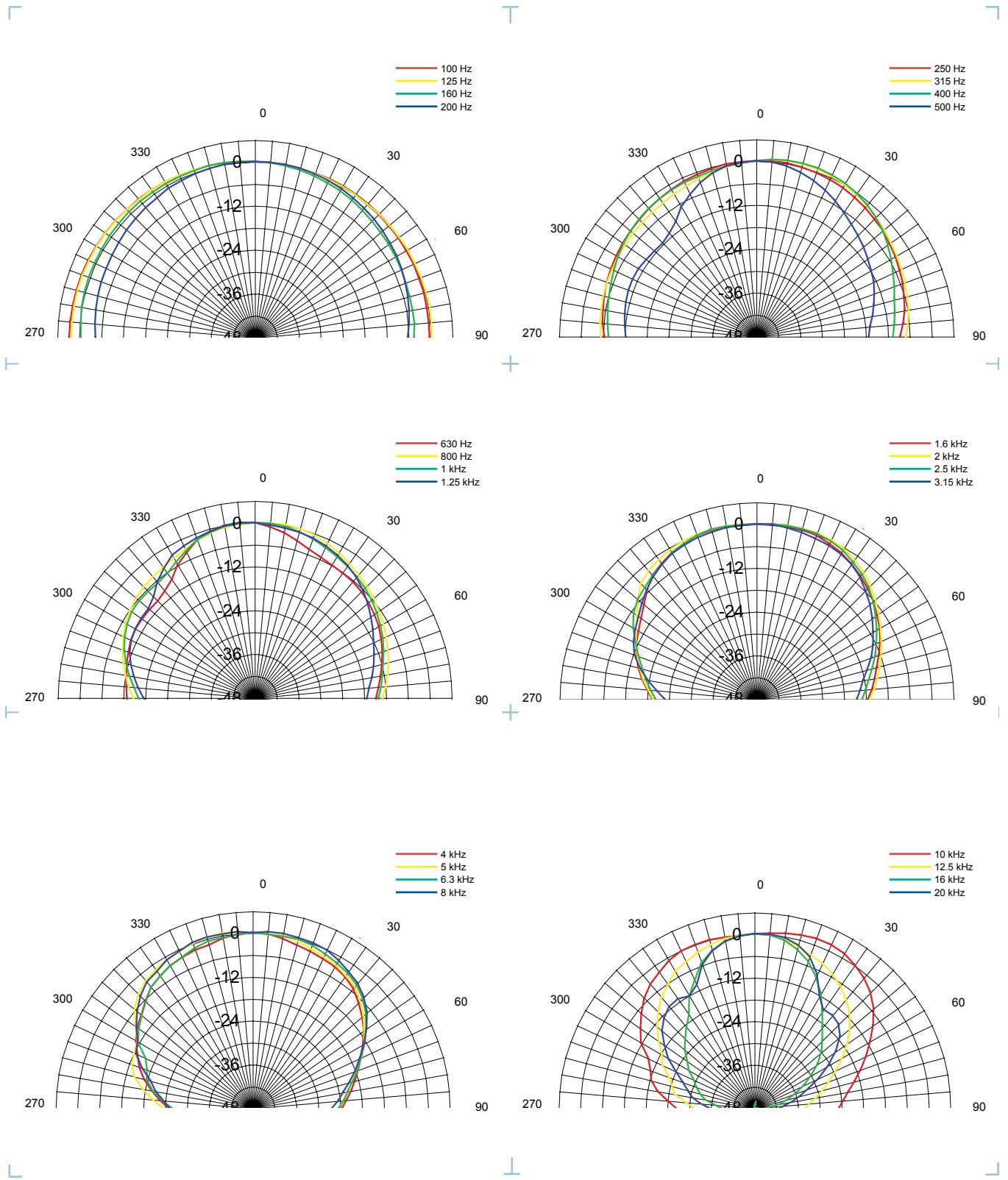
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VQ 100

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PERFORMANCE MEASUREMENTS POLAR PLOTS (1/3 OCTAVE) VERTICAL



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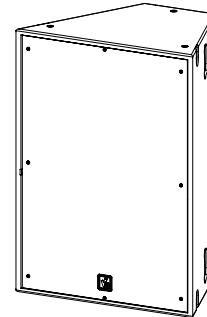
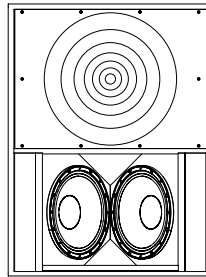
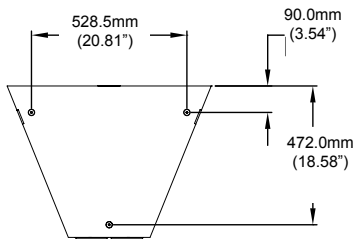
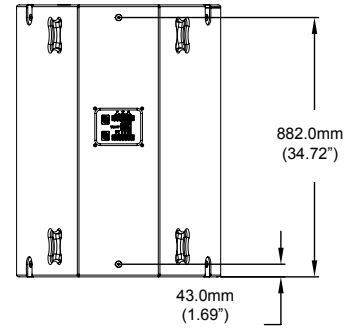
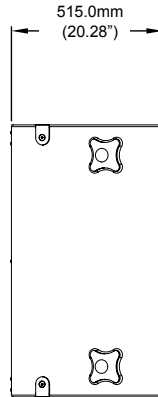
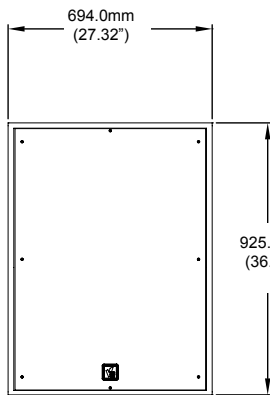
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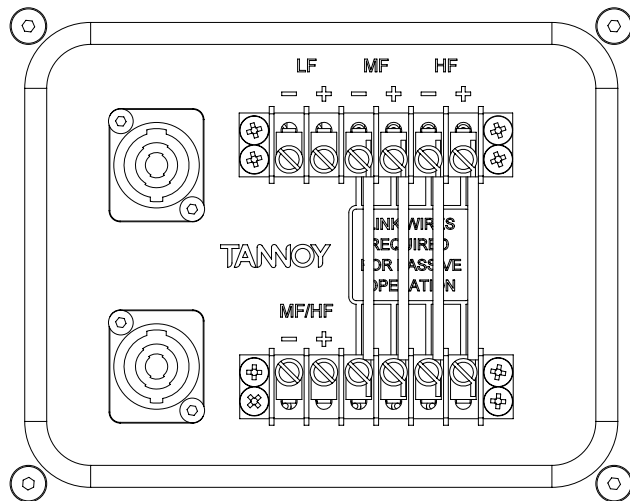
VQ 100

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DIMENSIONAL SKETCHES



INPUT PANEL



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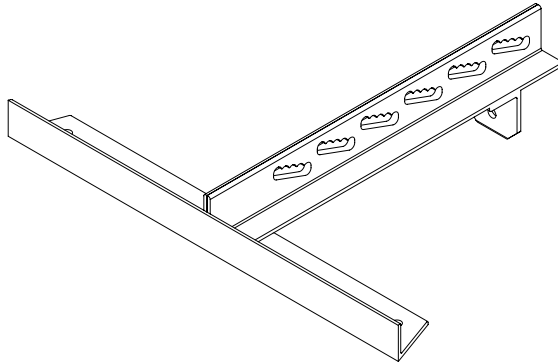
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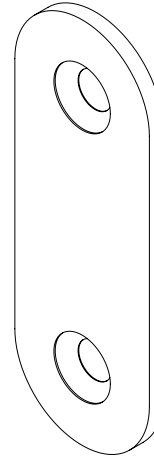
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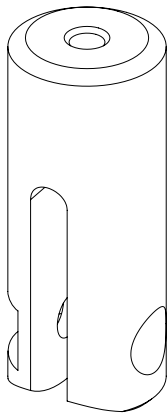
OPTIONAL ACCESSORIES



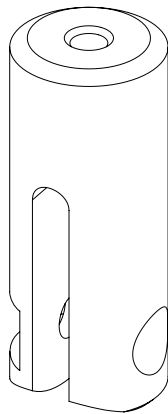
VQ FLYING BRACKET
(SINGLE POINT HANGING BRACKET)



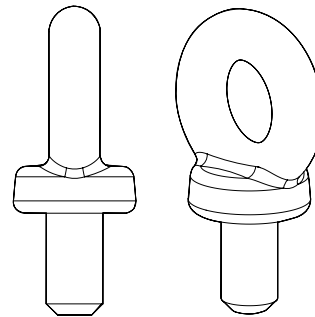
VQ LINK (LINK PLATE)



VQ ROD END 12mm



VQ ROD END 1/2in UNC



VEB FORGED EYEBOLT

Ordering Information

PART NUMBER	MODEL NAME	COLOUR	PACKED QUANTITY
8001 5250	VQ Flying Bracket (Single Point Hanging Bracket)	BLACK	1
7900 1055	VQ Link (Link Plate)	BLACK	3
8001 5260	VQ Rod End 12	BLACK	1
8001 5261	VQ Rod End 1/2in UNC	BLACK	1
8001 2820	VEB Forged Eyebolt	-	3

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Architectural specifications

The loudspeaker shall consist of a Dual Concentric™ Compression driver with a 3.5" Midrange voice coil and a 2" High Frequency voice coil, both mounted in a common subsystem with a common 2" exit. This Dual Concentric™ compression driver shall be coupled to a PSW™ (Point Source Waveguide) constant directivity horn operating over the frequency range of 450Hz to 23kHz. The low frequency section consists of two 300mm (12") woofers, and shall be mounted in a semi-horn loaded enclosure to provide significant off axis attenuation below 450Hz. The loudspeaker shall be user configurable for either Bi-Amp or Tri-Amp operation via the rear input panel. The loudspeaker shall be trapezoidal in shape.

Performance of the loudspeaker, using the recommended electronic control shall meet or exceed the following criteria:

The Low Frequency section shall produce a sound pressure level of 105dB SPL on axis at 1 meter with a power input of 1 Watt, and shall be capable of producing a peak output of 141dB SPL on axis at 1 meter. In Bi-amp mode the Mid/High section shall produce a sound pressure level of 110dB SPL on axis at 1 meter with a power input of 1 Watt, and shall be capable of producing a peak output of 140dB SPL on axis at 1 meter. In Tri-amp mode the Mid frequency section shall produce a sound pressure level of 111dB SPL on axis at 1 meter with a power input of 1 Watt, and shall be capable of producing a peak output of 140dB SPL on axis at 1 meter. The High Frequency section shall produce a sound pressure level of 110dB SPL on axis at 1 meter with a power input of 1 Watt, and shall be capable of producing a peak output of 139dB SPL on axis at 1 meter. The Low Frequency section shall handle 1000 Watts of amplifier power and shall have a nominal impedance of 4 Ohms. In Bi-amp mode the Mid/High section shall handle 400 Watts of amplifier power and shall have a nominal impedance of 8 Ohms. In Tri-amp mode the Mid frequency section shall handle 400 Watts of amplifier power and shall have a nominal impedance of 8 Ohms. The High Frequency section shall handle 180 Watts of amplifier power and shall have a nominal impedance of 8 Ohms. The dispersion of the loudspeaker shall be 100 degrees conical (-6dB). The enclosure shall be of birch plywood construction and internally braced. The enclosure shall be fitted with eight integral carrying handles, and twelve M10 inserts for flying hardware. The enclosure shall not exceed the following dimensions (H x W x D): 925mm x 694mm x 515mm (36.42" x 27.32" x 20.28").

The loudspeaker shall be the Tannoy...VQ 100.



VQ 100

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NOTES

Tannoy (Direct UK)
TCGI (ROW sales)
TCGA (Americas sales)
Tannoy Middle East

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