VT4889ADP-DA

Full-Size Powered Three-Way High Directivity Line Array Element, Integrated Audio System

VERTEC® DP Series System with DPDA (Drive Pack Digital Audio Input Module)

Application:

The VT4889ADP-DA Full Size Powered Three-Way Line Array Element is designed to deliver high-quality reinforcement of music and speech in a variety of applications including concert audio, corporate A/V and theatrical presentations of all types for both portable users and performance venue installations.

Key Features:

- JBL DrivePack® DP-3 electronics package with robust high efficiency Class-I power
- Modular bay fitted with DPDA input module; accepts other optional versions
- World-wide AC line voltages automatically selected for 50 or 60 Hz
- Advanced technology components: Differential Drive®, Neodymium Magnet, Dual Voice Coil, Direct Cooled™ cone transducers for low weight and high output
- Industry's smallest, lightest, most powerful 1.5" exit, 3" diaphragm high frequency compression driver
- Proprietary waveguides couple to create precision HF vertical slot aperture
- Radiation Boundary Integrator® (RBI): Patented technology integrates output of individual bandpass elements
- JBL PlyMax® engineered wood materials provide rigid, yet lightweight enclosure
- Rugged DuraFlex™ exterior finish; weatherized loudspeaker cones
- Patented integrated S.A.F.E.™ suspension system with premium heat-treated alloys
- For use in stand-alone arrays or in combination with other VERTEC system models

The VT4889ADP-DA is a versatile, powered lightweight 3-Way Line Array Element housing two 15" woofers, four 8" midrange radiators, and three high frequency compression drivers that combine to provide a high power-to-weight ratio. JBL DrivePack DP-3 power and DSP electronics package, designed in cooperation with Harman Professional development partners, includes patented high efficiency Class-I power amplifier technology and onboard BSS OmnidriveHD digital signal processing that communicates readiness and operational status to the user, while monitoring fault detection of components and electronics. The VT4889ADP-DA combines time-tested acoustical physics with JBL's innovative transducer research and design capabilities in a premium-grade integrated audio system package.

The PlyMax® enclosure features foam-backed perforated steel low-frequency grilles, dense protective foam inserts for midrange apertures, fine steel mesh grille to protect high-frequency apertures, and weather-resistant cones. Rugged DuraFlex™ exterior finish.

VERTEC suspension systems are engineered for maximum support strength and flexibility. The VT4889ADP-DA's suspension hardware (same as used in the VT4880ADP-DA powered subwoofer) relies on quick-release pins and end-mounted metal frames to couple adjacent units together in rigid arrays. Suspension frames are made from premium-grade chromoly alloy steel, with plated surfaces; hinge pins are plated and quick-release pin restraining lanyards are stainless steel to resist corrosion. Enclosure ships with integral front and rear hinge bar set (VT4889-RIG).

Available protective grille cover/wheel board and padded soft cover to ensure handy transport for rough road conditions, purchased separately as VT4889ADP-ACC.



Specifications:

Frequency Range (-10 dB):	40 Hz – 18 kHz
Frequency Response (±3 dB):	45 Hz – 16 kHz
Horizontal Coverage Angle (-6 dB):	90 deg. nominal (250 Hz – 16 kHz)
Vertical Coverage Angle (-6 dB):	Varies with array size and configuration
Maximum Peak Output[1]:	143 dB SPL, 1 m
Transducer Sections	
Low Frequency:	Two 2265H, 380 mm (15 in) dia., 76 mm (3 in) dual coil, neodymium Differential Drive®, Direct Cooled™
Bandpass Nominal Impedance:	4 ohms (LF woofers wired in parallel)
Mid Frequency:	Four 2169H, 203 mm (8 in) dia., 76 mm (3 in) dual coil, neodymium Differential Drive®, Direct Cooled™
Bandpass Nominal Impedance:	8 ohms (drivers wired in series-parallel)
High Frequency:	Three 2435H, 76 mm (3 in) diameter beryllium diaphragm, 38 mm (1.5 in) throat diameter neodymium compression drivers
Bandpass Nominal Impedance:	16 ohms (HF drivers wired in series)
System	
DP3 Internal Amplification Output (at load):	6000 W Peak, 3000 W Continuous
DP3 Output Topology:	3-Channel, Class-I
Signal Processing:	BSS OmniDrive HD processing provides precision bandpass filters, limiting, pre-equalization filters and automatic self-test functions.
System Management:	LevelMax™ multi-state limiters provide electrical, mechanical and thermal protection
Signal Input:	Analog F-XLR Active 20k Ohms Balanced AES F-XLR, 110 ohms
Signal Loop-Through:	M-XLR (analog pass-through) M-XLR (buffered AES)
Controls:	Via Harman HiQnet System Architect software
AC Power Operating Range:	Auto Select 90-132/VAC 50/60 Hz
AC Line Voltage:	50/60 Hz, Auto-Detect; 120V/240V (-15%, +10%)
AC Input Connector: AC Power Loop-thru:	Neutrik PowerCon (NAC3MPA) Neutrik PowerCon (NAC3MPB)
AC Current Requirement:	6A per system at 120V, 3A per system at 240V
Enclosure	
Box Construction:	Wedge frustum 5 degree side angle enclosure. PlyMax® engineered wood composite structure, DuraFlex finish, 8 handles
Suspension System:	Patented S.A.F.E.™ hardware, integral hinge bars nest in suspension frames on enclosure sides. Quick release pins with restraining lanyards. Set of 4 hinge bars included. Suspend with VT4889-AF or VT4889-SF Array Frame.
Grille:	Separate LF and HF, black perforated steel. LF grilles foam backed
Dimensions (W x H x D):	1215 mm x 494 mm x 692 mm (47.8 in x 19.4 in x 27.2 in)
Net Weight:	93.1 kg (205 lb)
Shipping Weight:	106.7 kg (235 lb)

[1]Measured maximum SPL in Free Field conditions with IEC shaped noise.

JBL continually engages in research related to product improvement. Some materials, production methods and design refinements are introduced into existing products without notice as a routine expression of that philosophy. For this reason, any current JBL product may differ in some respect from its published description, but will always equal or exceed the original design specifications unless otherwise stated.

INPUT MODULE CHARACTERISTICS AND OPTIONS

Features

Description	DPDA
	(DrivePack Digital Audio)
HiQNet Compliant	Yes
Network Communication	100MB Ethernet
Internal Switch	Embedded 2 port switch
Network Connections	Ethercon/RJ-45, CAT5/6
Supported Audio format	AES3 Digital, Analog balanced
Level Controls	Network Controllable
Remote Load Monitoring	Yes
User Accessible Delays	Yes
Noise Generator	Pink, White, Sine
Sine Wave Generator	Continuous, Burst
Error Reporting	Yes, via software
Digital Speaker Setting Presets	50, user assignable
Polarity Reverse	Yes, via software
Firmware upgrades via network	Yes
Mute	Remote via Network

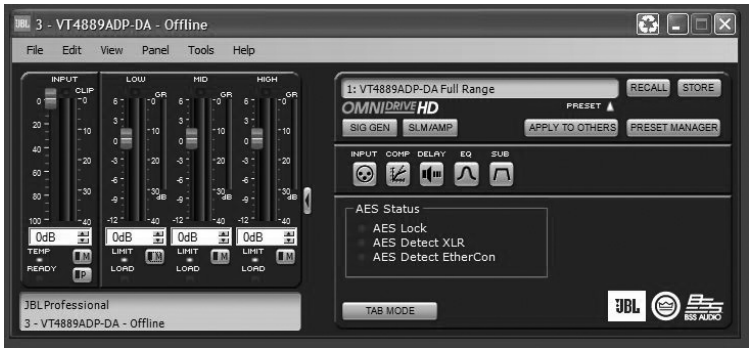
Specifications

Analog Audio Input Connectors	XLR, Female
Input Type	Electronically Balanced, RF Filtered
Signal Loop-through	XLR, male, passive pass-through
Input Impedance	20k Ohms Balanced
AES/EBU Audio Input Connectors	XLR, female & Ethercon/RJ45 for CAT5 UTP Structured Wiring
Input Type	Digitally Balanced
Signal Loop-through	XLR, Male, 110 ohm, buffered Ethercon/RJ45 (labeled as output)
Input Impedance	110 ohms, balanced
Sampling Frequency	Auto sensing, 48 KHz, 96 Khz.
Polarity	(+) voltage on XLR pin 2 yields (+) LF pressure
Max Analog Input Level	+26 dBu RMS / +29 dBu Peak
Max AES/EBU digital Input Level	10 V pk-pk
Frequency Response	20 Hz – 20k Hz ± 0.5 dB
DSP Processing	24 Bit conversion, 32 bit FPP BSS Omnidrive HD with FIR filters, LevelMax Limiting
Latency	Analog 675us AES 48kHz 1.92ms AES 96kHz 1.75ms
Dynamic Range (20-20 KHz)	> 103 dB (A Weighted)
THD+N (20-20 KHz), rated power	< 0.05%
User Programmable Signal Delay	> 2 seconds
Input Module Controls	Enable ALT Preset – Mechanical Encoder for array ID and box position
Rear Panel Indicators	Cross-patch, AES Lock, Fault, Clip, Signal, Thermal, Ready, Data, Alt Preset Select, Network link: In/Out

JBL DrivePack® Software Device Panel

With HiQnet-compatible input modules installed, JBL DrivePack systems can be remotely controlled and monitored using HiQnet System Architect™ software. A Windows-based application, it provides an intuitive, unified platform for system configuration and operation of JBL DrivePack-equipped systems, and other HiQnet compliant audio devices in the signal chain.

HiQnet System Architect enables the unified layout of on-screen product control surfaces, and simple preset configuration of an entire system made up of HiQnet-compliant products across multiple brands and product classes. Advanced remote control and diagnostic capabilities, custom control panel creation, unified event logging and error reporting for the entire system, and the recall of presets on all connected HiQnet devices are included. In addition, the application enables a user to copy / paste like parameter values from, and to, multiple products across the HiQnet network. Use with current version of HiQnet System Architect network configuration and control software, available for download at www.harmanpro.com.



JBL DrivePack® enclosures are equipped with a modular input bay that accepts either DPDA, DPIP, DPAN or DPCN input modules. Speaker-dependent processing such as crossover filtering and component equalization, time alignment and protection are not user-configurable. Options are available for connectivity, audio signal path and control functionality.

DPDA (HiQnet Network Input Module with AES Digital Audio)

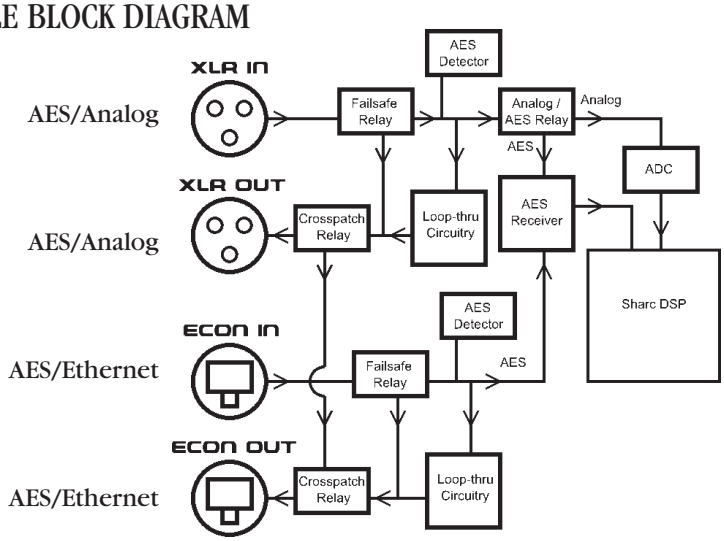


The DPDA module adds AES/EBU digital audio input capability with analog audio backup, BSS Omnidrive HD digital signal processing and LevelMax multi-stage limiting. Its 100 Mb Ethernet networking (with daisy-chain capability), allows for Remote Control and Monitoring via HiQnet System Architect™ software. A rotary mechanical encoder allows for array identification and box positioning.

Available monitoring functions include: audio input type, AES lock, input signal level, clip and gain reduction; ready / temp status; individual channel load status, signal level, clip and gain reduction; event logging and user alert messaging. Available remote control functions include: input type (analog or AES), input connector (XLR or Ethercon), input level, input polarity and mute; input compressor attack/release, ratio and makeup gain; individual channel gain and mute. Twenty, type-selectable input filters (10 System and 10 Guest filters) are available for system equalization along with user-adjustable input delay of up to 2 seconds and sub filter access (user-adjustable low pass filter for subwoofer systems; high pass filter for full-range systems). Signal generator functions (sine wave, swept tone, pink or white noise) are available to facilitate system testing and up to fifty presets can be stored internally. In addition, Master Control Panels and Master Monitor Panels allow for convenient grouping of control and monitoring functions for multiple DPDA equipped DrivePack enclosures, providing a powerful control/monitoring interface for large format line array or subwoofer systems. See JBL DPDA specification sheet for more information on DPDA input modules.

HiQnet™

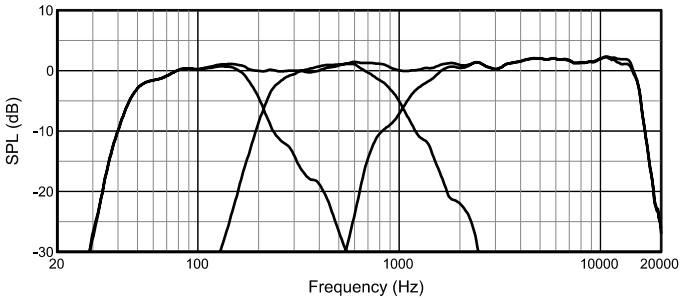
DPDA INPUT MODULE BLOCK DIAGRAM



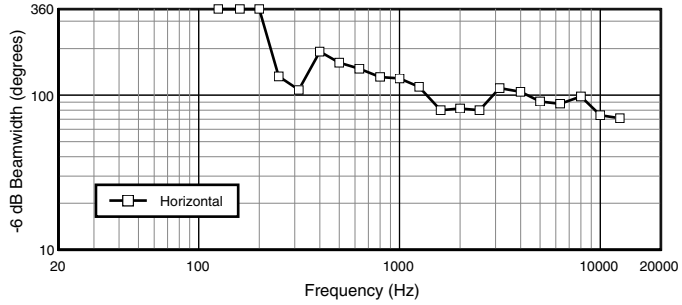
DPIP (Optional non-networked dbx Input Module with basic functionality)



The standard DPIP input module features analog audio inputs and sophisticated onboard digital signal processing technology. Precision bandpass filtering, limiting, time alignment, component equalization and automatic self-test functions ensure optimized performance. Rear panel controls include a 32-position detented rotary attenuator calibrated in 0.5 dB steps, providing a 16 dB range of control. The “Enable Subwoofer Filter” button is a momentary-contact switch that enables or disables an 80 Hz filter. For subwoofer systems, the low-pass frequency is set to 80 Hz when selected or 100 Hz when deselected. For full-range systems, the high-pass frequency is raised to 80 Hz when the “Enable Subwoofer Filter” button is selected.



Normalized Frequency Response
(Individual bandpasses with composite overlay)



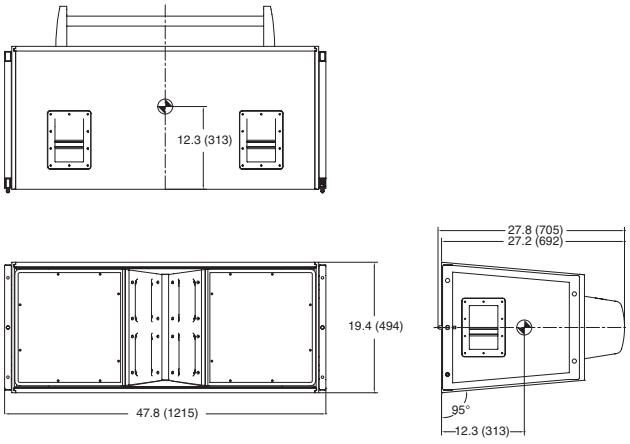
Horizontal Beamwidth, Single Element and Typical Array

VT4889ADP-DA Acoustical Measurements

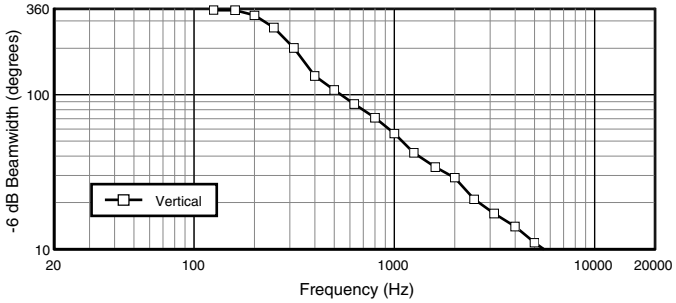
The frequency response measurement shows individual bandpass responses with composite response overlay. The Vertical Beamwidth results range from a single box up to an 8-box array with 10° splay angles between adjacent array elements.

All measurements provided herewith are derived from data gathered with a calibrated measurement microphone centered on-axis of the box or array, with polar data points taken symmetrically around the measurement axis.

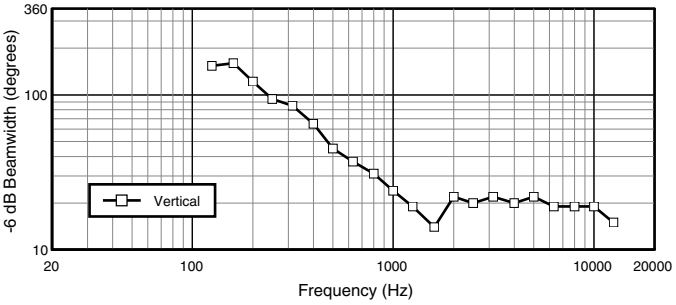
All polars were taken as groundplane measurements at a distance of 20 meters, with data gathered on 5-degree intervals from 0-355° using the MLSSA measurement system.



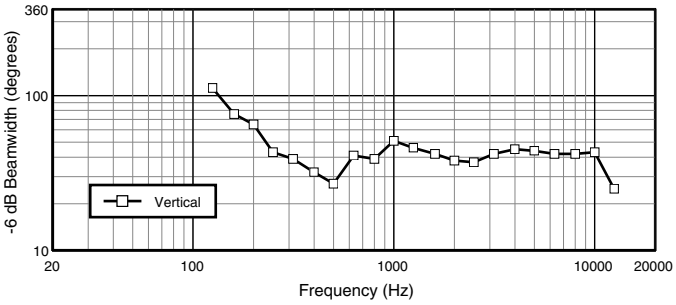
System Dimensions (WxHxD): 1215 mm x 494 mm x 692 mm
Including attached suspension hardware



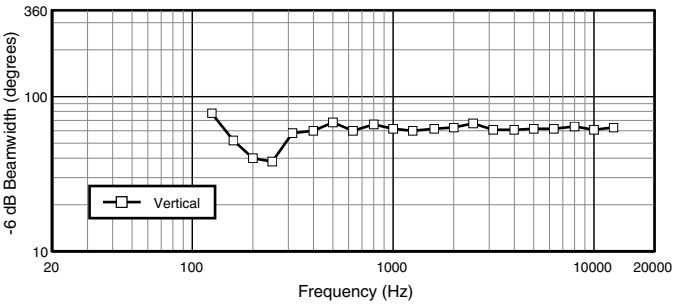
Vertical Beamwidth, Single Line Array Element



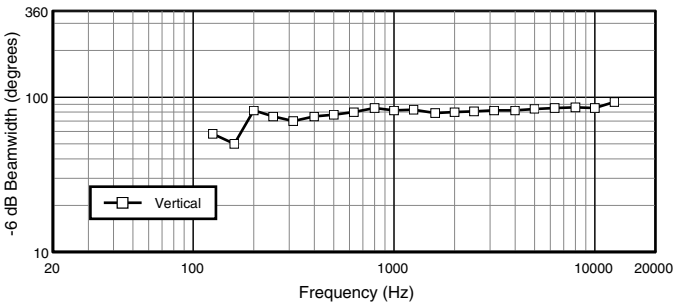
Vertical Beamwidth, Two Element Array
(10° splay between cabinets)



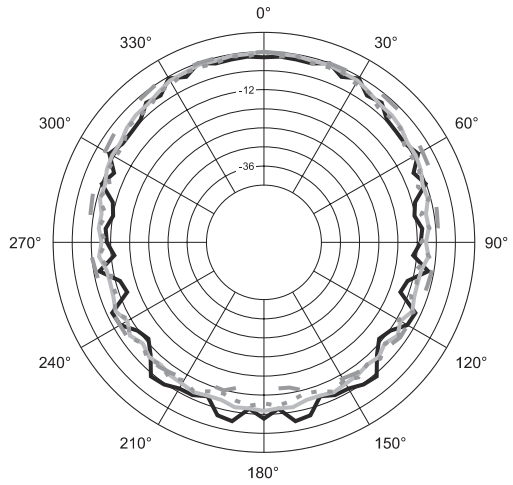
Vertical Beamwidth, Four Element Array
(10° splay between cabinets)

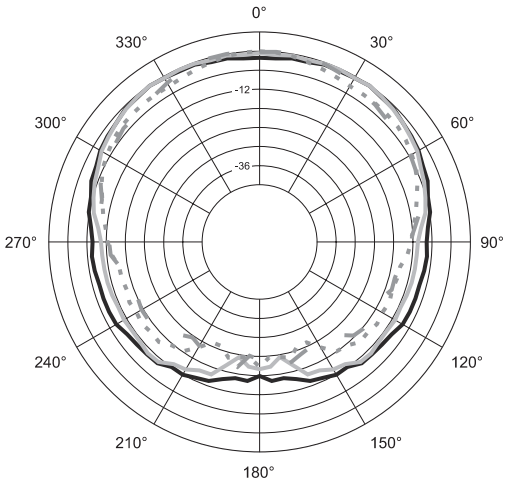


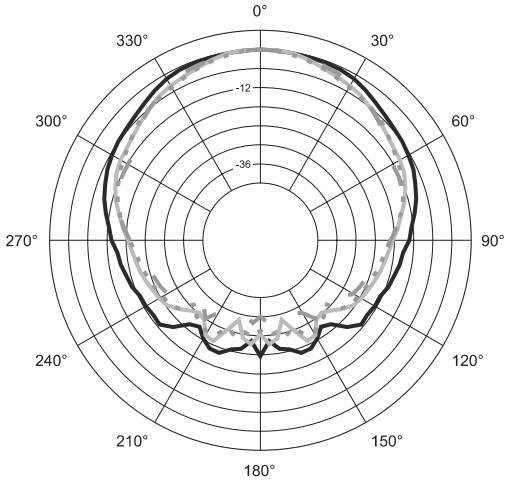
Vertical Beamwidth, Six Element Array
(10° splay between cabinets)

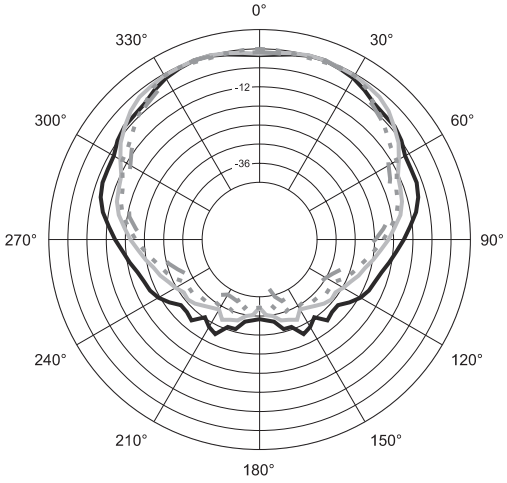


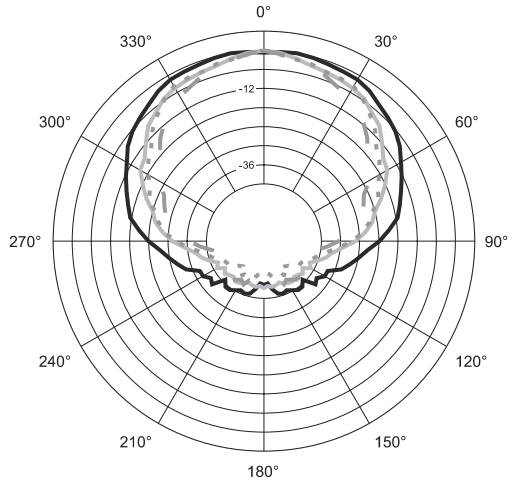
Vertical Beamwidth, Eight Element Array
(10° splay between cabinets)





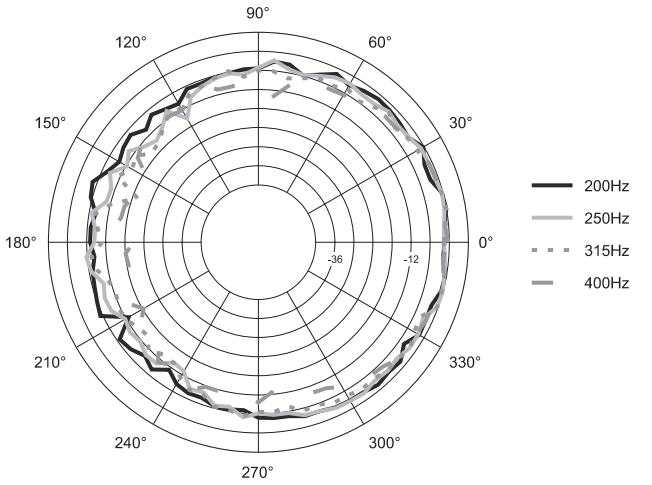


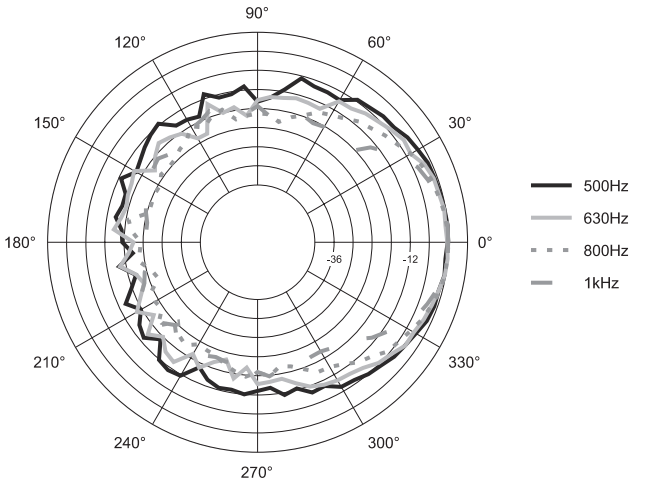


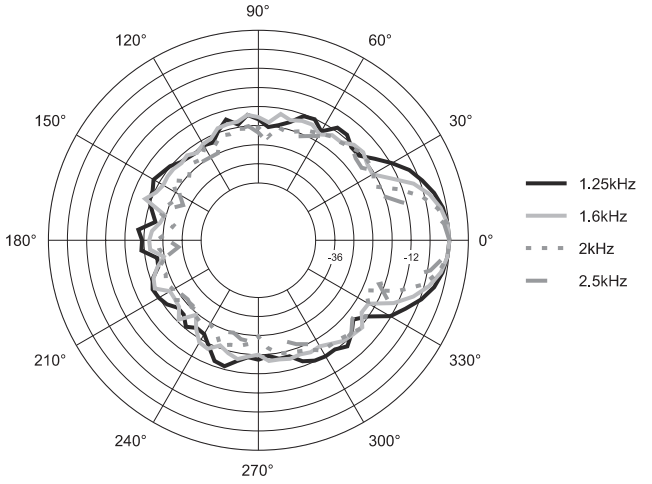


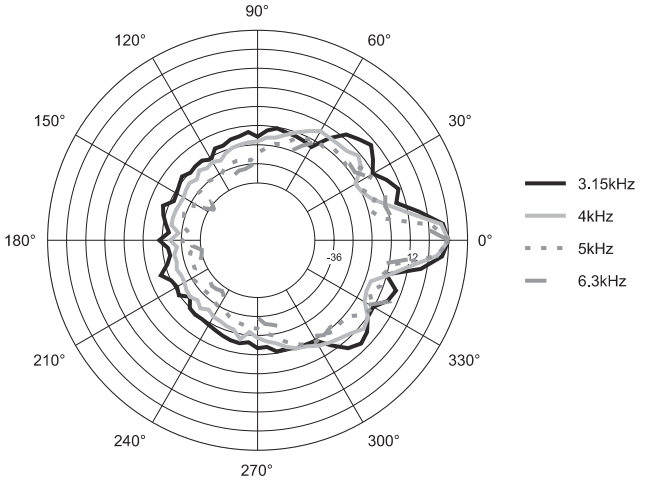
Horizontal 1/3 Octave Polars (Single VT4889ADP-DA Array Element)

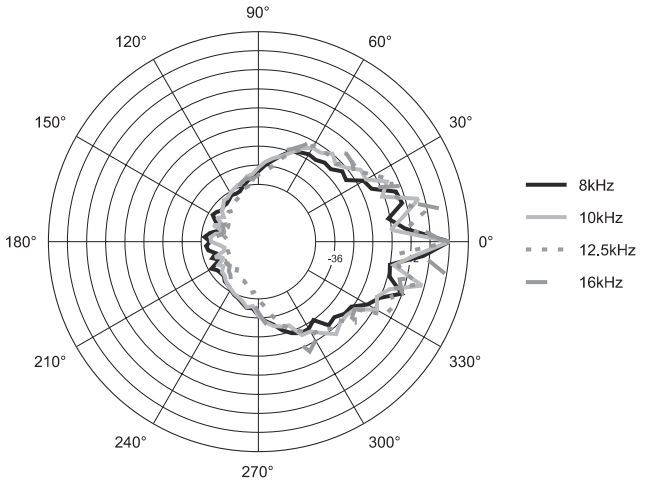
Data taken as groundplane measurements at a distance of 20 meters, gathered on 5-degree intervals from 0-355° using the MLSSA measurement system.





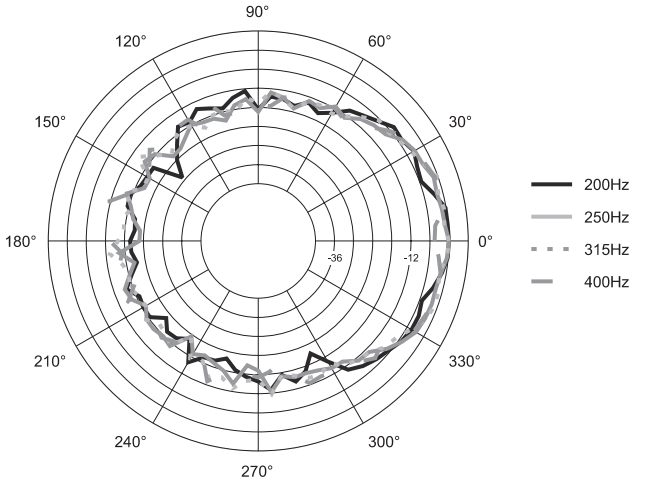


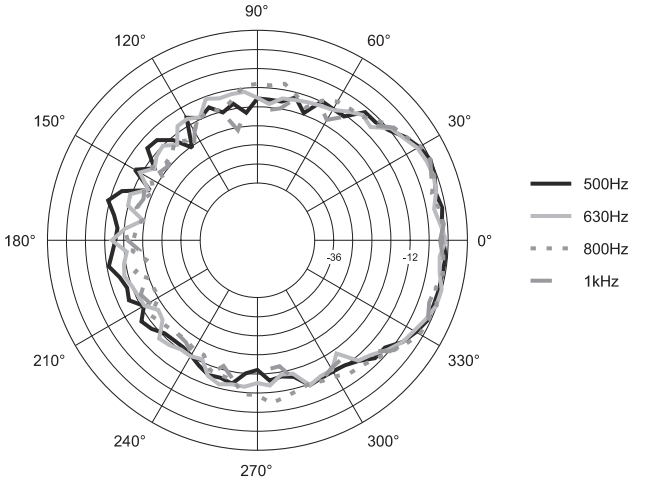


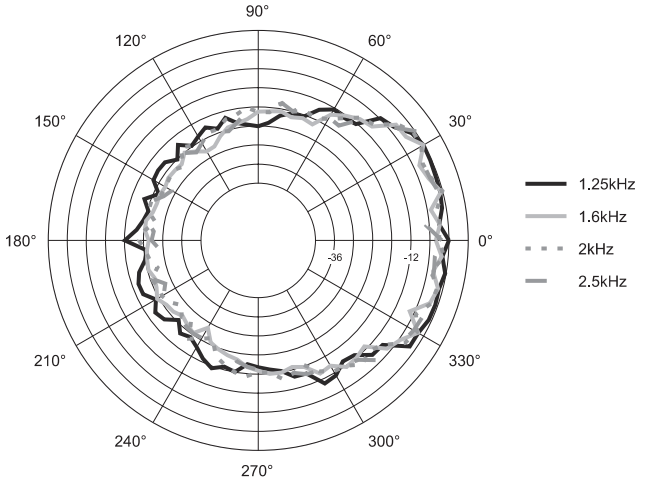


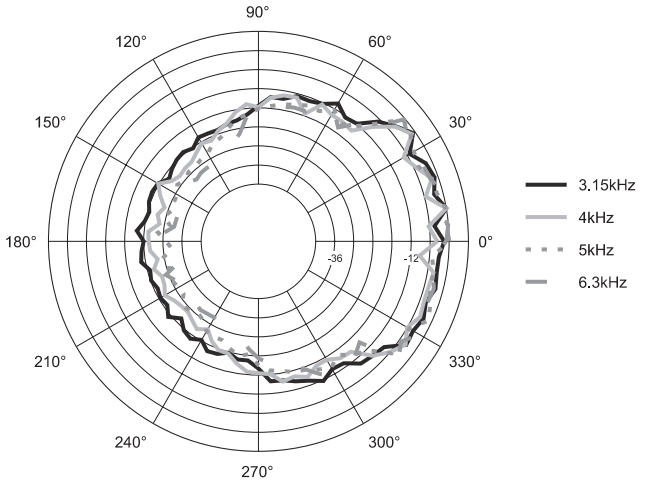
Vertical 1/3 Octave Polars (Single VT4889ADP-DA Array Element)

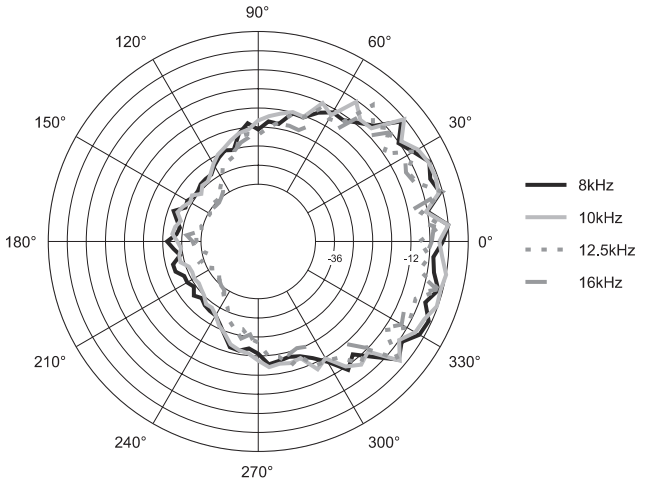
Data taken as groundplane measurements at a distance of 20 meters, gathered on 5-degree intervals from 0-355° using the MLSSA measurement system.











Vertical 1/3 Octave Polars (8-Box Array of VT4889ADP-DA Enclosures)

Data taken as groundplane measurements at a distance of 20 meters, gathered on 5-degree intervals from 0-355° using the MLSSA measurement system.

▶ VT4889ADP-DA Full-Size Powered Three-Way High Directivity Line Array Element

VERTEC System Arrays

The VT4889ADP-DA is an Articulating Line Array™ element designed for use in vertically-oriented, multi-box systems. A nominal horizontal coverage pattern of 90° is maintained, while setting the individual box angles allows the creation of arrays with varying vertical coverage angles. Vertical coverage of an array is a function of the number of boxes used and the splay angles chosen.

VT4889ADP-DA enclosures can be suspended from VT4889-AF or VT4889-SF array frames. Due to the use of JBL's patented S.A.F.E.™ suspension hardware system, rigid arrays can be constructed that can be tilted either upwards or downwards at radical angles. Front hinge bars are tightly coupled, while rear hinge bars are used to set angles from zero to ten degrees for adjacent enclosures. No "gaps" appear on the array's front baffle due to trapezoidal box shape. No "straps" are required on the rear of the array.



The JBL DrivePack DP-3 with DPDA input moduleis attached to the back panel of a modified VT4889-1, creating the model VT4889ADP-DA. Robust Crown amplification and onboard BSS digital signal processing are combined to create a compact, powerful integrated audio system.

VT4889-AF (Array Frame)

This array suspension frame is crafted of 6061 heat-treated aluminum and includes 11 (eleven) shackle attachment holes, set on 4" centers. Each hole has an I.D. (inner diameter) of 1" (25.4 mm) and is fitted with bronze bushings for long life. Fitted with SAE Grade 8 bolts, 7075 Grade aluminum receiver blocks and steel quick release pins with stainless steel restraining lanyards. The VT4889-AF can also be used to ground stack up to 6 (six) enclosures. Weight: 100 lbs (45 kg).



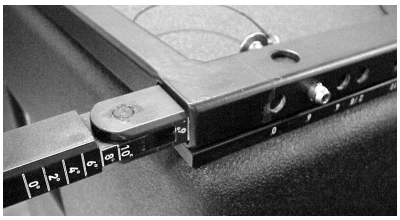
VT4889-SF (Short Frame)

This array suspension frame is crafted in similar fashion to the VT4889-AF. The VT4889-AF is primarily intended for use with smaller clusters or distributed satellite arrays. Optional anchor for use on bottom of large arrays. Can also be used to ground stack up to 4 enclosures. Weight: 52 lbs. (24 kg).



VT4889-RIG

VT4889-RIG comprises a set of four separate hinge bars for the VT4889ADP, two each of the front hinge bar and two each of the longer rear hinge bar. Crafted of premium-grade chromoly steel alloy with plated hinge pins, ships with product. Weight: 9.5 lbs. (4.3 kg).



VT4889ADP-ACC

The VT4889ADP-ACC includes items necessary for the proper transport and protection of one VT4889ADP-DA or VT4889ADP. The accessory kit includes: (1) VT4889-Dolly and (1) VT4889ADP-Cover with rigid foam blocks and protective metal plates for DrivePack.

Important Note: The VT4889ADP-ACC is sold as a separate item. One kit should be ordered with each VT4889ADP-DA or VT4889ADP to ensure safe and reliable transport of each system in portable use.



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