

## Touring Speakers

# BERLIN TBV123-AN

Arrayable 2 Way 12" Constant Curvature Loudspeaker with Dendritic Waveguide, KLARK TEKNIK DSP Technology and ULTRANET Networking



- 2 way full range loudspeaker for touring, portable and installation applications
- Constant curvature Dendritic waveguide with 100° H x 15° V dispersion for seamless array coverage
- 2,500 Watt power featuring KLARK TEKNIK Class-D technology
- KLARK TEKNIK Digital Signal Processing for total system control
- ULTRANET digital audio networking connects to mixers and other sources
- Carbon fibre loaded 12" neodymium low frequency driver with inside/outside wound voice coils
- Dual aluminium dome 1" neodymium motor compression drivers
- Fully featured user interface with LCD display for ease of navigation
- PC remote control software downloadable at [turbosound.com](http://turbosound.com)
- 18 mm (¾") plywood enclosure with hard wearing semi matt black paint finish
- Integral suspension hardware for efficient array configuration and aiming
- Multiple M10 mount points allow eyebolt suspension in any orientation
- Dual angle pole mount for accurate audience coverage
- Rugged powder coated perforated steel mesh grille

The 2-way full range TBV123-AN is an arrayable 2,500 Watt 12" powered loudspeaker system that is ideally suited for touring, portable, and installed sound reinforcement applications. Designed to work individually without a controller, the TBV123-AN provides optimal performance for FOH, offstage fill, stereo in-fill or distributed fill applications in a wide range of venues – including nightclubs, concert halls, houses of worship, and more.



### Custom-Engineered Drivers

TURBOSOUND is recognised the world over for designing and building some of the most iconic loudspeakers and subwoofers. We take meticulous care and pride in maintaining that reputation by utilising only drivers designed specifically for each application – it's what sets us apart from the competition. The TBV123-AN loudspeaker features a carbon fibre loaded 12" neodymium low frequency driver, and dual aluminium dome 1" neodymium motor compression drivers mounted on a 100° horizontal by 15° vertical dispersion constant curvature Dendritic waveguide, which maximises the direct sound field while reducing reverberant energy.

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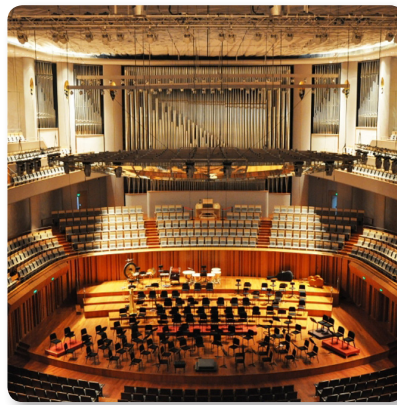
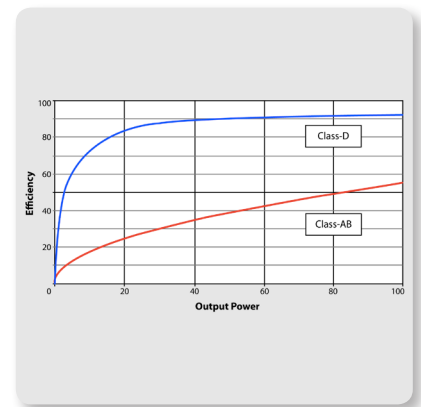
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- Durable handles for easy lifting and carrying
- Mains input and link output on Neutrik powerCON\* connectors
- 3-Year Warranty Program\*
- Designed and engineered in the U.K.

## Class-D – Massive Power, Perfect Sound

Equipped with a very efficient and lightweight KLARK TEKNIK Class-D power amplifier, the TBV123-AN provides an impressive 2,500 Watts of output power in a highly portable and lightweight package. Class-D amplification makes all the difference, offering the ultimate in energy efficiency and eliminating the need for heavy power supplies and large heat sinks.



## Onboard DSP

A high degree of control over the loudspeaker system's performance is managed by a sophisticated, but easy to use KLARK TEKNIK Digital Signal Processor (DSP), which provides dynamic EQ and transparent limiting for the utmost punch and definition at high output levels – and long-term reliability.

\*All third-party trademarks are the property of their respective owners. Their use neither constitutes a claim of the trademark nor affiliation of the trademark owners with MUSIC Group. Product names are mentioned solely as a reference for compatibility, effects and/or components. Warranty details can be found at music-group.com.

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### ULTRANET Connectivity

ULTRANET connectivity is provided by two locking etherCON\* connectors. Up to 16 independent channels of 24-bit digital audio and control data are transmitted via a single CAT5 cable between compatible digital devices – including mixers, I/O stage boxes, powered loudspeakers and personal monitoring systems. Simplified cable routing and ease of setup translate directly into significant time saved during installation.



### Intuitive User Interface

On the rear panel of the amplifier module, the user interface's LCD display and single rotary encoder provide intuitive access to: position compensation, user EQ control, subwoofer integration and signal routing features. In addition to the balanced XLR input, an XLR output is provided for daisy-chaining more active loudspeakers or for use with active subwoofers. An onboard USB port provides access for remote control of the TBV123-AN via a free PC computer software download from [turbosound.com](http://turbosound.com) – as well as convenient DSP firmware updates.

### Plywood Construction

Finished in a highly durable semi matt black paint, the cabinet is constructed from 18 mm ( $\frac{3}{4}$ " ) plywood with a rugged powder coated perforated steel mesh grille backed with reticulated foam, a convenient dual angle 35 mm pole/speaker stand mount for accurate audience coverage, and a durable handle for easy transport. The TBV123-AN includes integral suspension hardware for efficient array configuration and aiming, plus multiple internal M10 mount points that allow eyebolt suspension in any orientation.

Mains input and output link power connectors are Neutrik powerCON.



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### Touring-Grade Performance

Designed to provide exceptional performance for travelling musicians, houses of worship, banquet facilities, night clubs – and a host of other venues, the 2,500-Watt TBV123-AN puts touring-grade sound quality into a scalable loudspeaker system that is supremely portable and versatile.

### You Are Covered

We always strive to provide the best possible Customer Experience. Our products are made in our own MUSIC Group factory using state-of-the-art automation, enhanced production workflows and quality assurance labs with the most sophisticated test equipment available in the world. As a result, we have one of the lowest product failure rates in the industry, and we confidently back it up with a generous 5-Year Warranty program.



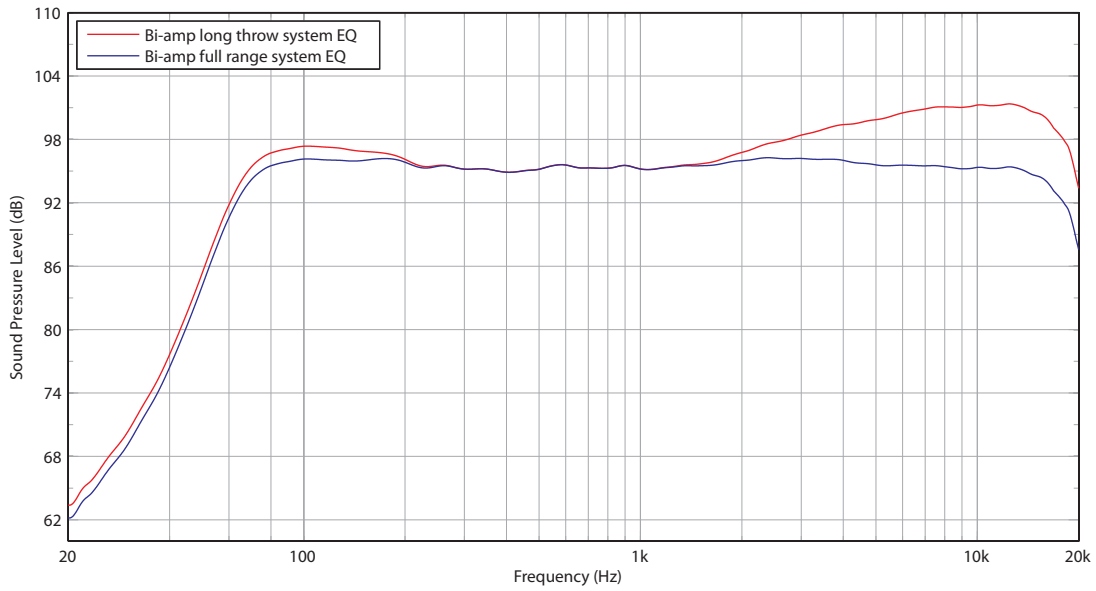
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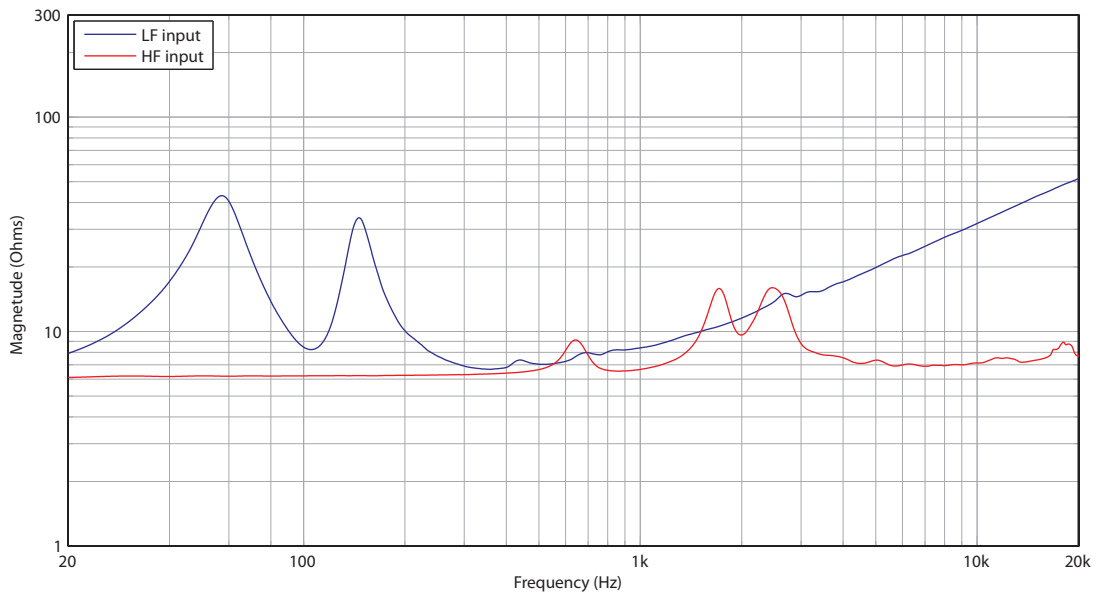
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### Frequency Response Sensitivity 1 W / 1 m



### Impedance



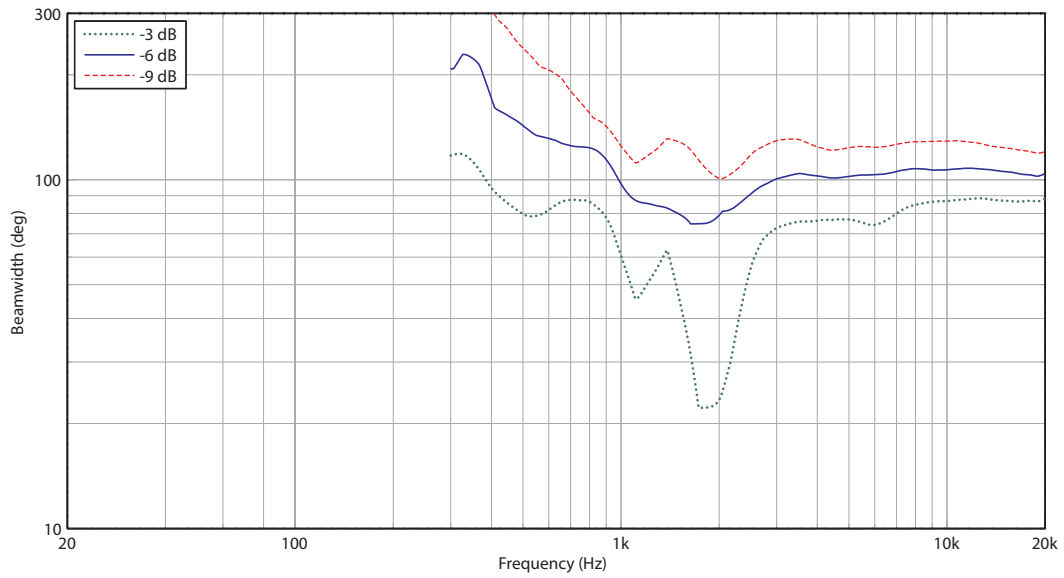
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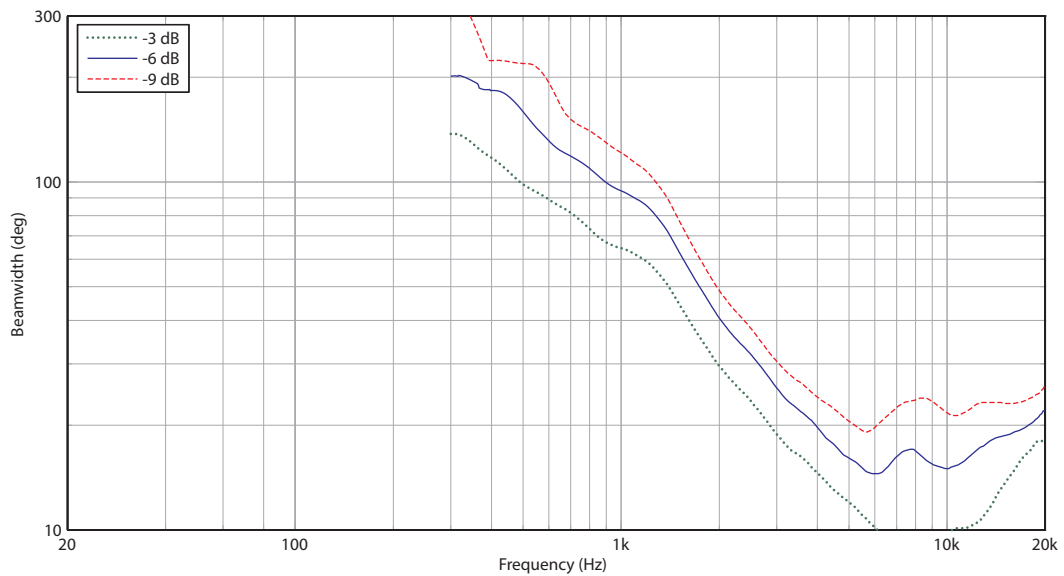
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### Horizontal Beamwidth



### Vertical Beamwidth



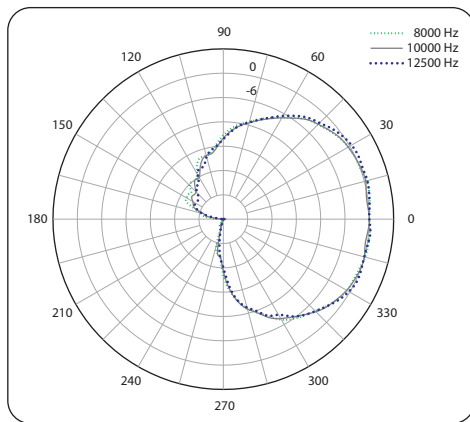
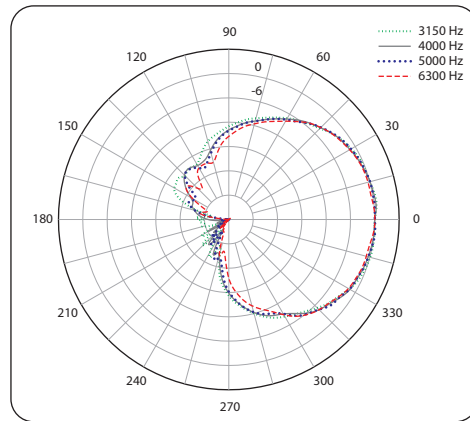
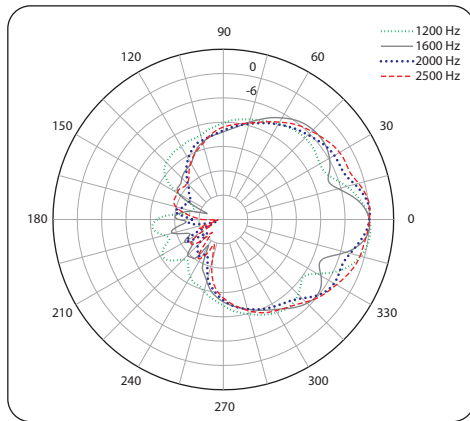
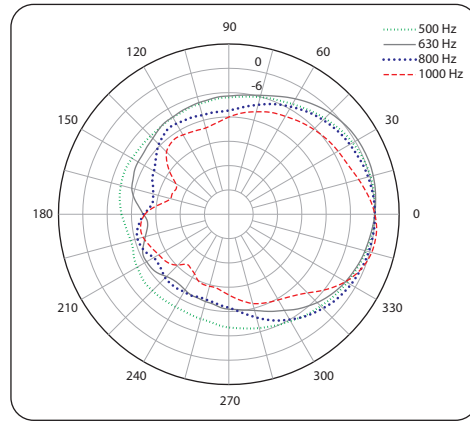
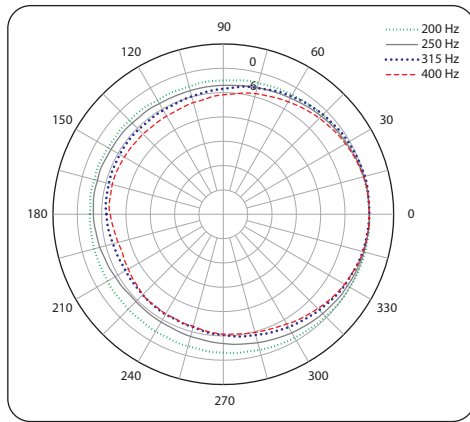
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### Horizontal Polar Plots

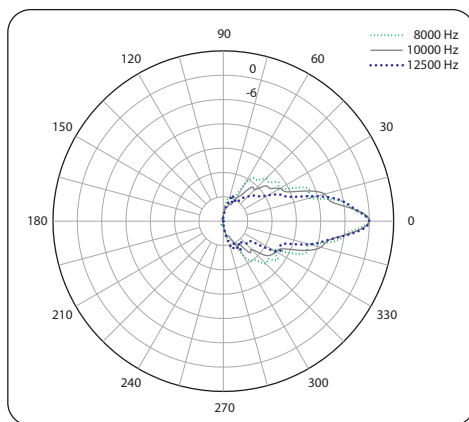
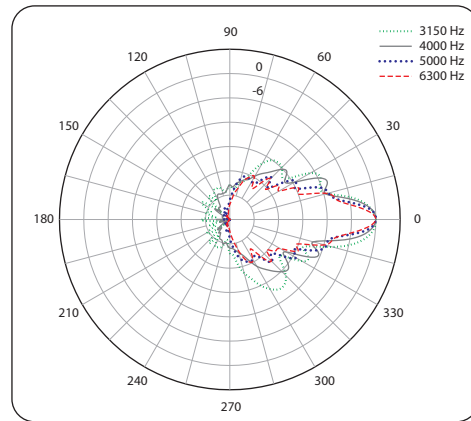
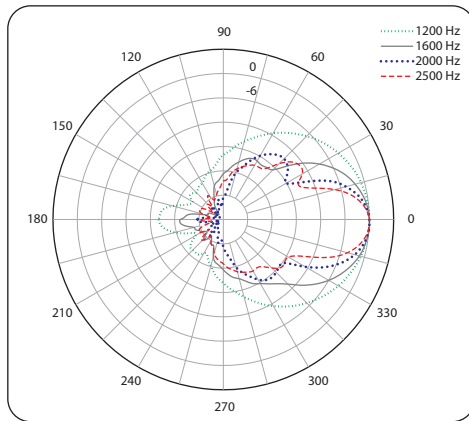
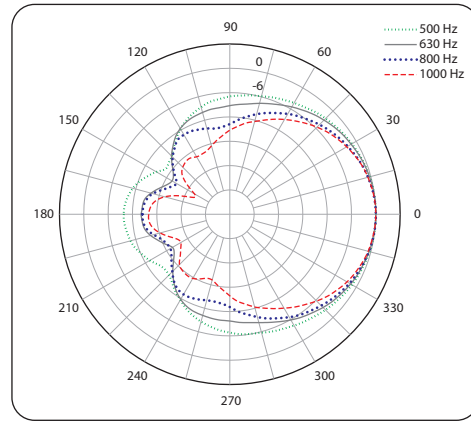
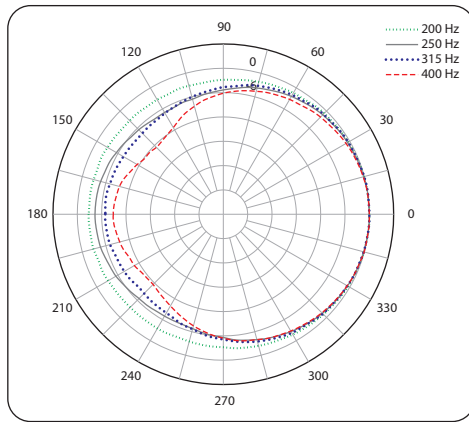


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### Vertical Polar Plots





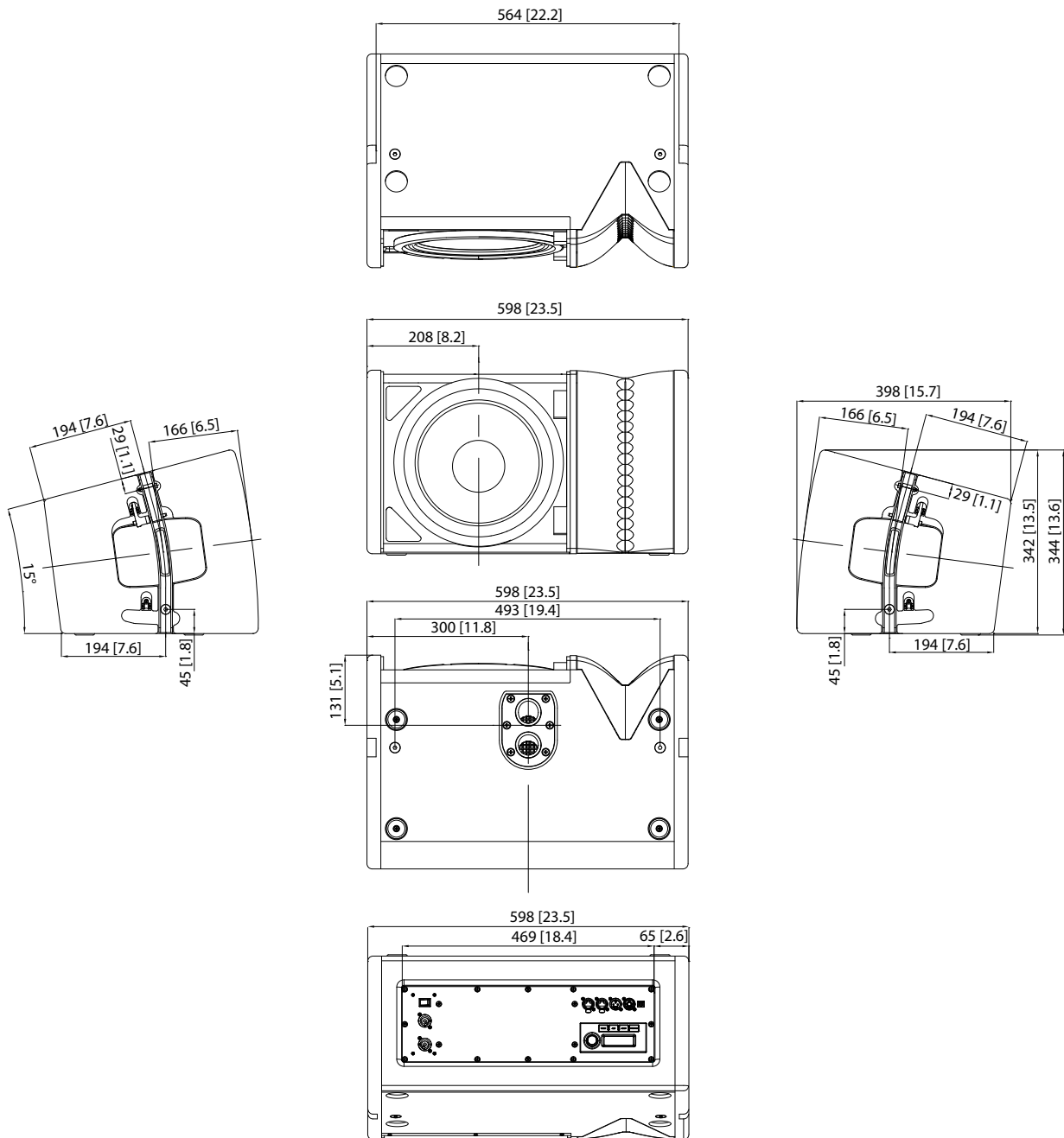
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### Dimensions



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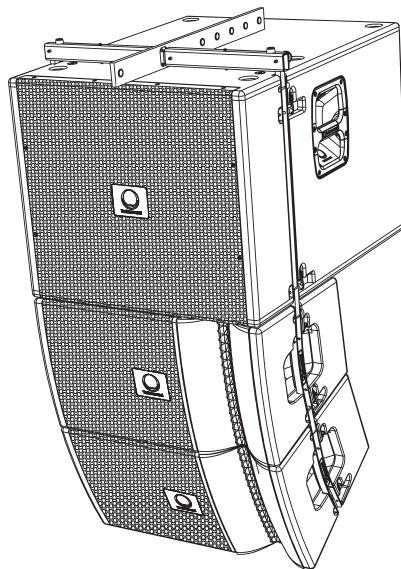
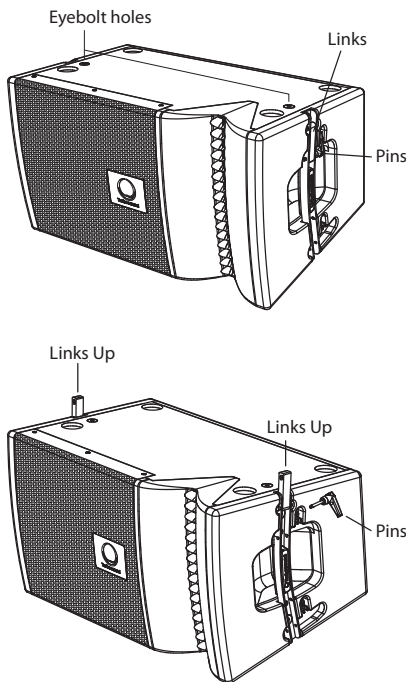
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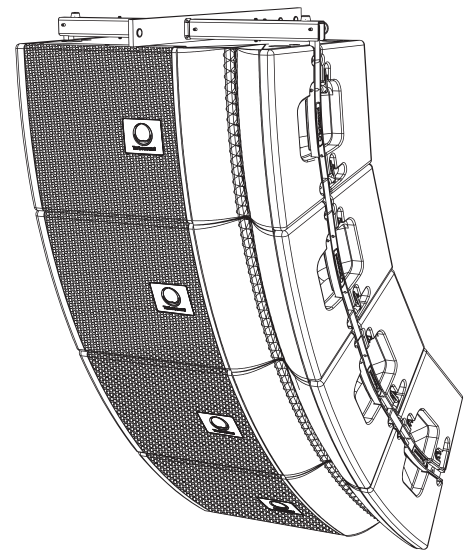
### Mounting and Rigging

**⚠ Safety Warning:** Only authorised and certified personnel shall design and install suspended or ground stack configurations, following the instructions and procedures in the TBV123-FB rigging manual supplied with the TBV123-FB flybar, or downloaded from turbosound.com. Failure to follow these instructions may lead to death or permanent injury. For maximum array sizes, weights and working load limits, please consult the TBV123-FB rigging manual.

The TBV123-AN cabinet has two retractable mounting links at the top, that allow it to be attached to a TBV123-FB flybar, or to another TBV123-AN cabinet, or to a TBV118L-AN subwoofer. Rigging pins are provided to secure the TBV123-AN cabinets, TBV118L-AN subwoofer, and TBV123-FB flybar together. Threaded eyebolt holes and pole mount holes are also present for more mounting options.



Mixed array with a TBV123-FB flybar, TBV118L-AN subwoofer, and 2 TBV123-AN cabinets



An array of 4 TBV123-AN cabinets with a TBV123-FB flybar

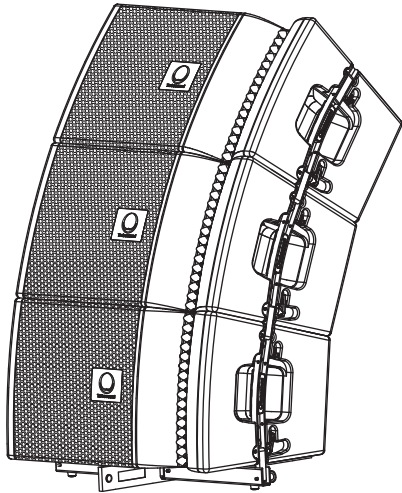
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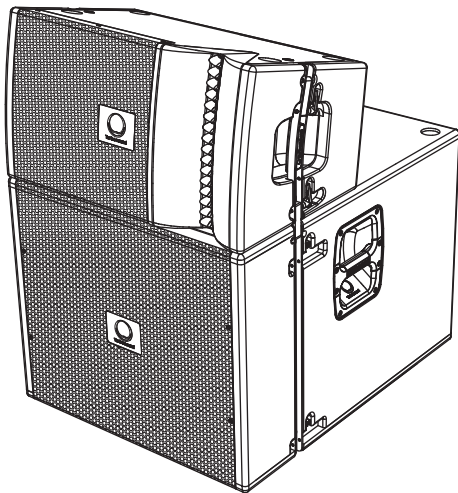
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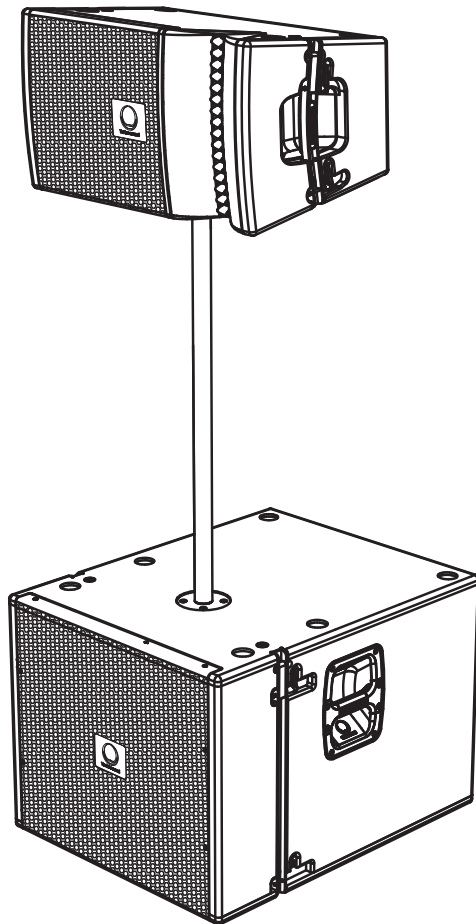
### Mounting and Rigging



TBV123-AN array ground stack with an inverted TBV123-FB flybar



TBV123-AN ground stack with a TBV118L-AN subwoofer



TBV123-AN cabinet pole-mounted with a TBV118L-AN subwoofer

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## Technical Specifications

### System

Frequency response	65 Hz – 20 kHz $\pm$ 3 dB 53 Hz – 20 kHz -10 dB
Nominal dispersion	100° H x 15° V @ -6 dB points
Maximum SPL	131 dB peak
Crossover type	Active
Transducers	1 x 12" (316 mm) LF driver 2 x 1" (25.4 mm) HF compression driver"
Limiter	Independent HF, LF, peak and rms

### Amplifier

Maximum output power*	2500 W
Type	Class-D
Protection	Short circuit, thermal

### Connectors

Input A / B	1 x combo jack/XLR, 1 x XLR
Sensitivity	-2 dBu
Input impedance	40 k $\Omega$ balanced
Maximum input level	+18 dBu
Ultranet input/link	2 x RJ45 / Neutrik etherCON
Mains Supply	Neutrik powerCON† 20A and Link 15A

### Controls

DSP	Rotary push-encoder and level control Buttons for Process, Setup, Exit, Enter
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### User DSP Functions

Factory EQ Presets	Positioning, Array mode, FBQ
Display	LCD 128 x 32, blue, backlit
Delay	0 - 300 ms
Equalisation	High and low shelving EQ 2 x parametric EQ
Limiter	Zero attack input limiter
Presets	20 total presets, 19 user-definable
Crossover	High pass L-R 24 dB/oct
Protection	Lock-out function for all settings

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## Technical Specifications

### Ultranet Digital Network

<b>Digital processing</b>	
A/D conversion	24-bit, 44.1 / 48 kHz sample rate

<b>System</b>	
Signal	16 channels
Latency	< 0.9 ms

<b>Cabling</b>	
Cables	Shielded CAT5
Cable length	max. 246 ft / 75 m recommended

### Power Supply

<b>Current consumption</b>	Input: 20A Max, Link output: 15A Max
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<b>Power consumption</b>	200 W @ 1/8 max power for individual product
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<b>Voltage</b>	
USA / Canada / Japan	100-120 V~, 50/60 Hz
UK / Australia / Europe / Korea / China	220-240 V~, 50/60 Hz

### Enclosure

<b>Dimensions (HWD)</b>	344 x 598 x 398 mm (13.6 x 23.5 x 15.7")
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<b>Net weight</b>	23.0 kg (50.7 lbs)
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<b>Construction</b>	18 mm (¾") plywood
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<b>Finish</b>	Semi matt black paint
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<b>Grille</b>	Powder coated perforated steel
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<b>Suspension hardware</b>	Integral Suspension System and M10 x 4 points
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### Accessories

<b>TBV123-FB</b>	Fly Bar
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<b>TBV123-RC2</b>	Road case for 2x TBV123-AN
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<b>TS-PC12-3</b>	Protective cover for 1x TBV123-AN
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<b>TPOLE 60-20</b>	60 cm Lightweight Steel Pole with M20 Screw Attachment
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<b>TPOLE 90-20</b>	90 cm Lightweight Steel Pole with M20 Screw Attachment
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<b>TPOLE 120-20</b>	120 cm Lightweight Steel Pole with M20 Screw Attachment
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\*Independent of limiters and driver protection circuits

†Neutrik and powerCON speakON are registered trademarks of Neutrik AG.

‡Only qualified personnel are allowed to modify the AC-Main cord and to adhere to all applicable national standards.

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## Architecture & Engineering Specifications

The speaker shall be of the full range, two-way powered type consisting of one 12" (316 mm) LF driver and two 1" (25.4 mm) HF compression drivers. Performance specifications of a typical production unit shall meet or exceed the following: frequency response, measured with swept sine wave input, shall be flat within  $\pm 3$  dB from 65 Hz to 20 kHz and within -10 dB from 53 Hz to 20 kHz. Nominal dispersion, at -6 dB points, shall average  $100^\circ$  H x  $15^\circ$  V. Maximum power output shall be 2,500 Watts. Maximum SPL (peak), measured at 1 metre with music program, shall be 131 dB. Dimensions: 344 mm high x 598 mm wide x 398 mm deep (13.6 x 23.5 x 15.7"). Net weight: 23.0 kg (50.7 lbs). The loudspeaker system shall be the TURBOSOUND TBV123-AN. No other loudspeaker shall be acceptable unless submitted data from an independent test laboratory verifies that the above combined performance / size specifications are equaled or exceeded.

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For service, support or more information contact the TURBOSOUND location nearest you:

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