## Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

- Arrayable 2 way
  full range loudspeaker for
  installation applications

- Rotatable Dendritic waveguide with
  90° H x 40° V dispersion

- 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 15" low
  frequency driver with inside/
  outside wound coil

- Titanium dome 1.4" neodymium
  motor compression driver

- Fully featured user interface with
  LCD display for ease of navigation

- PC remote control software
  downloadable at turbosound.com

- Multiple array configurations for
  extended coverage

- Trapezoidal cabinet shape
  enables visually unobtrusive
  loudspeaker arrays

- Multiple internal rigging points
  allow bracket mount and suspension
  in any orientation

- 15 mm (⅝") birch plywood enclosure
  with hard wearing semi matt white
  paint finish
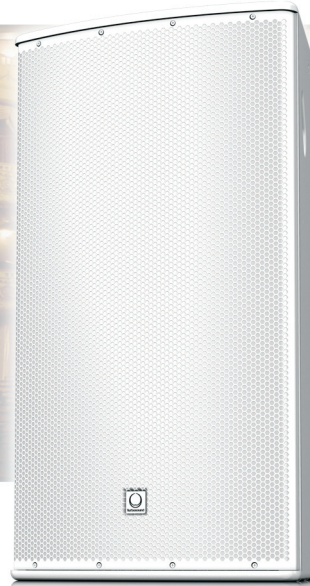
The 2-way full range TCS152/64-AN-WH is a 2,500 Watt 15" powered arrayable loudspeaker system that is ideally suited for a wide range of speech and music sound reinforcement applications. Designed to work individually without a controller or in arrays, the TCS152/64-AN-WH provides optimal FOH performance, and offers the flexibility to accommodate venue-specific requirements and install applications.

The TCS152/64-AN-WH features a carbon fibre loaded 15" low frequency driver with an inside/outside wound low mass voice coil for improved power handling. The titanium dome 1.4" neodymium motor compression driver is mounted on a rotatable 60° horizontal by 40° vertical proprietary Dendritic waveguide, which features multiple hornlets with identical path lengths to provide a flat constant-phase wavefront. When the waveguide is rotated 90° from the standard position a 40° horizontal by 60° vertical dispersion is achieved, making the TCS152/64-AN-WH ideal for an even broader range of applications.

Output power for the TCS152/64-AN-WH is provided by means of an efficient and lightweight KLARK TEKNIK 2,500-Watt Class-D power amplifier. A sophisticated, but easy to use KLARK TEKNIK Digital Signal Processor (DSP) provides dynamic EQ for impressive full range response at low volume levels and transparent limiting for clarity at high output levels – and for long-term reliability.

**Turbosound**

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

- Architecturally styled powder coated perforated steel mesh grille
- Mains input on Neutrik powerCON* connector
- 3-Year Warranty Program*
- Designed and engineered in England

On the rear panel of the amplifier module, the user interface's LCD display and single rotary encoder provide intuitive access to: array, position, user EQ control, and signal routing features. In addition to the two combination balanced XLR/jack inputs, an XLR output is provided for daisy-chaining more active loudspeakers or for use with an active subwoofer. An onboard USB port provides access for remote control of the TCS152/64-AN-WH via PC computer, as well as DSP firmware updates.

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.

Finished in a highly durable semi matt white paint, the trapezoidal cabinet is constructed from 15 mm (⅝") birch plywood – and includes a rugged powder coated perforated steel mesh grille. Multiple rigging points allow bracket mount suspension in any orientation, or mounting with dedicated brackets – available separately. A dedicated range of fly plates and coupler kits are also available separately for constructing tightly packed custom full-range and subwoofer enclosure arrays for aesthetically pleasing and venue specific coverage requirements. Mains power input is provided via a Neutrik powerCON* connector.
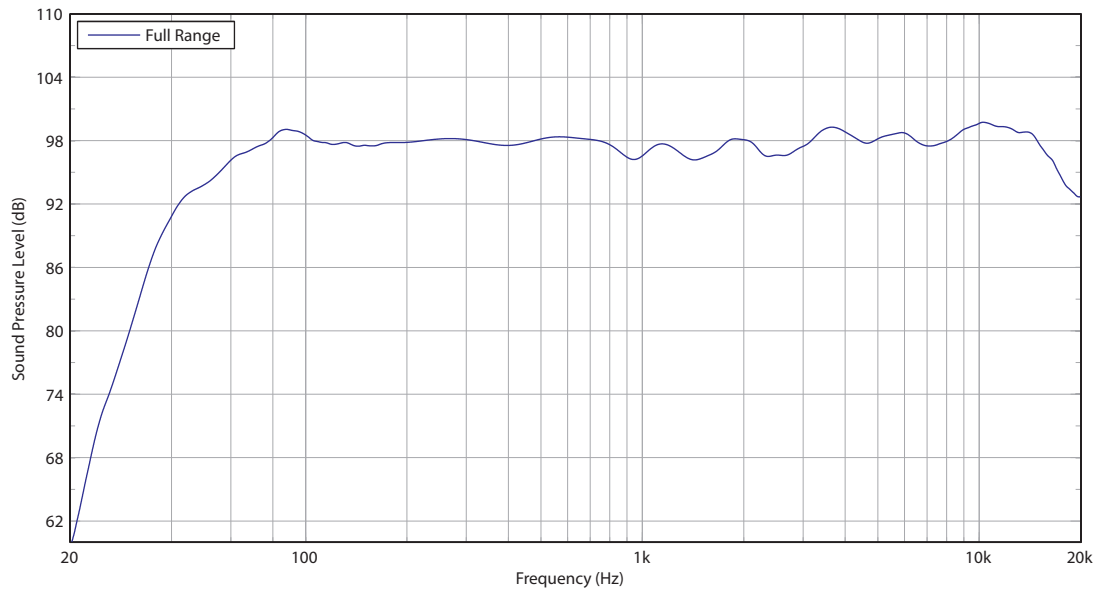
Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

## 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 3-Year Warranty program.

Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)
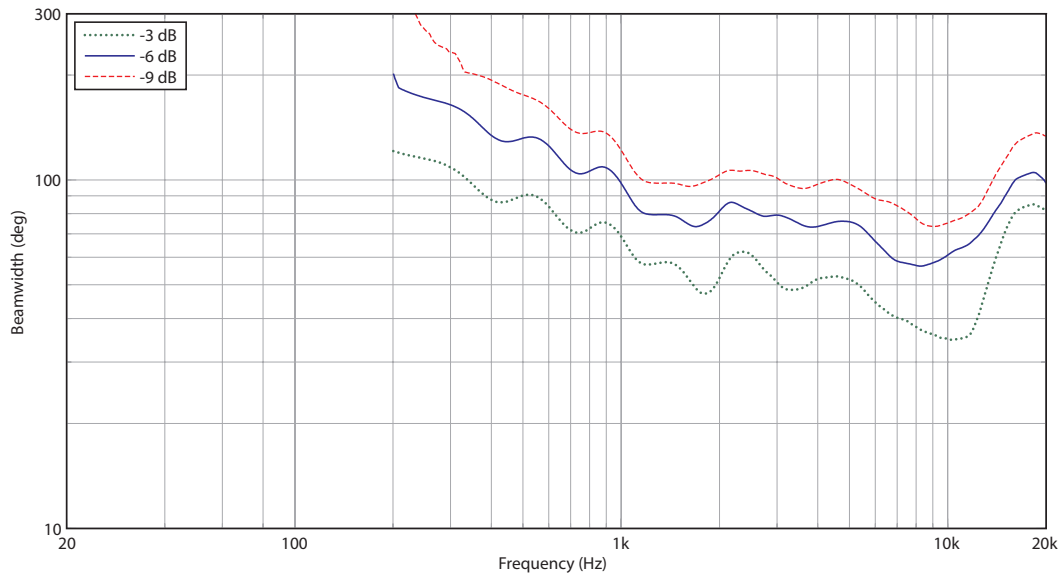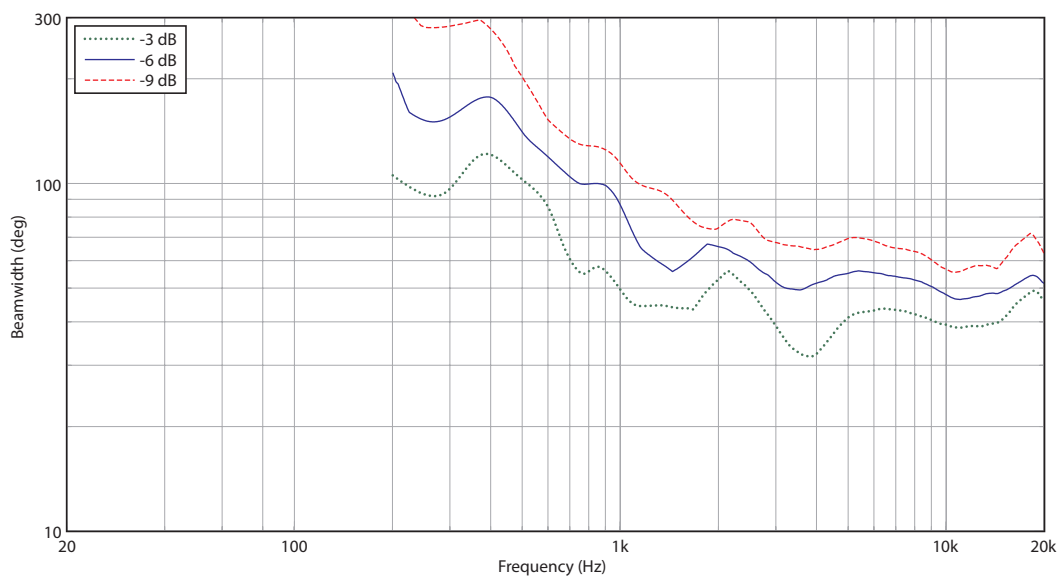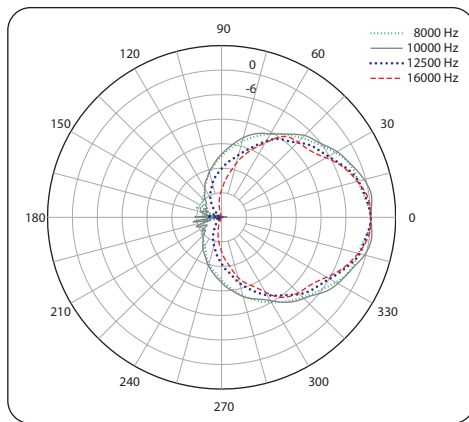
## Frequency Response Sensitivity 1 W / 1 m

Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

## Horizontal Beamwidth
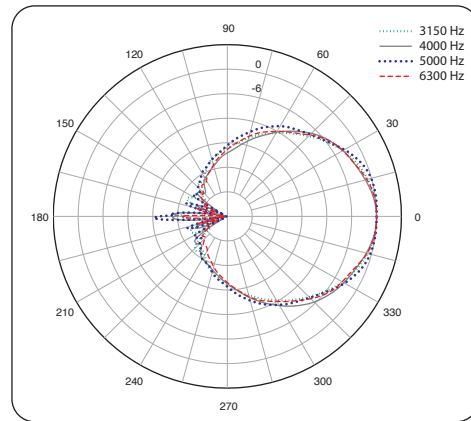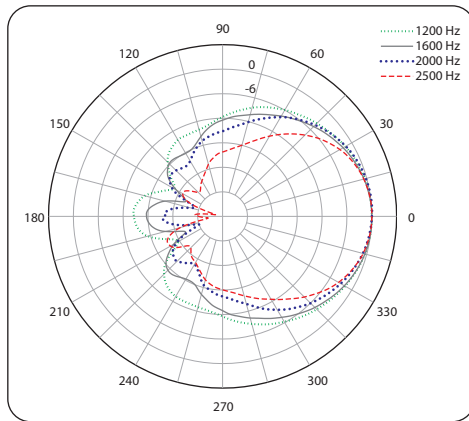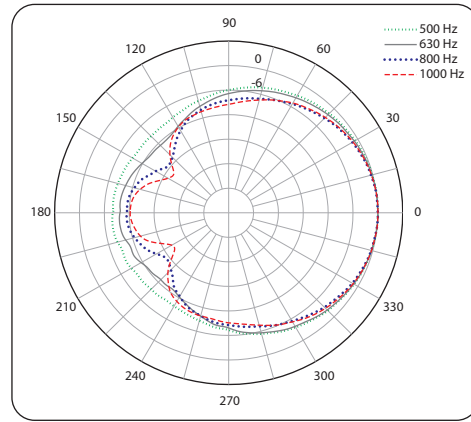


## Vertical Beamwidth

Turbosound

# ATHENS
## TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)
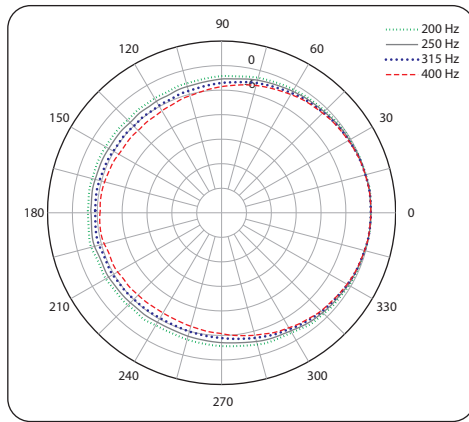
## Horizontal Polar Plots

Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
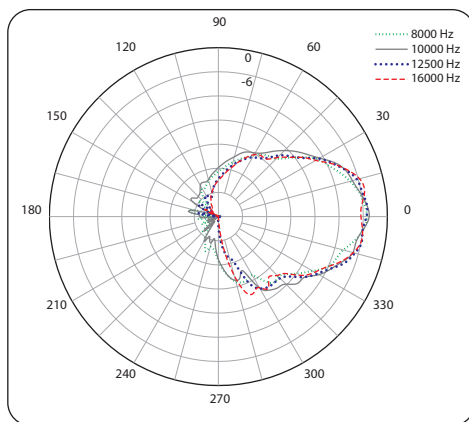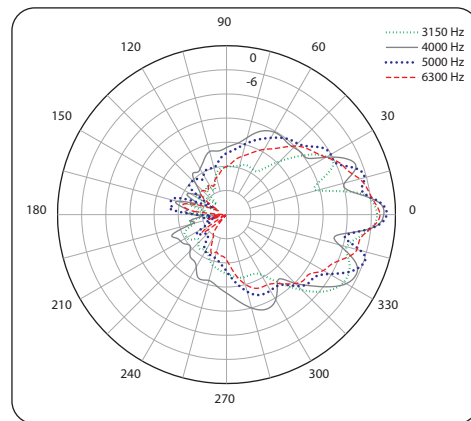90° H x 40° V Dispersion (White)
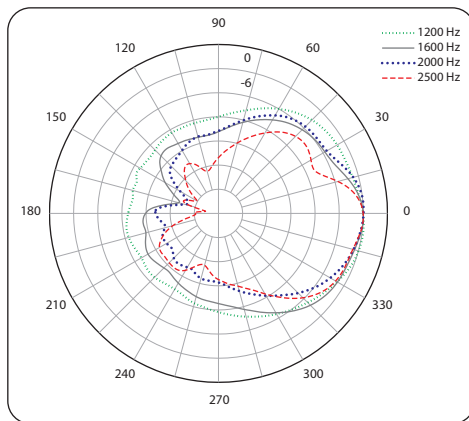
## Vertical Polar Plots

Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

## Dimensions

CL

212.0 [8.3]

451.0 [17.8]

40°

246.7 [9.7]

TOP

CL

BOTTOM

473.0 [18.6]

834.0 [32.8]

FRONT

196.6 [7.7]

45.0 [1.8]

45.0 [1.8]

196.6 [7.7]

SIDE

CL

60.0 [2.4]

174.6 [6.9]

87.3 [3.4]
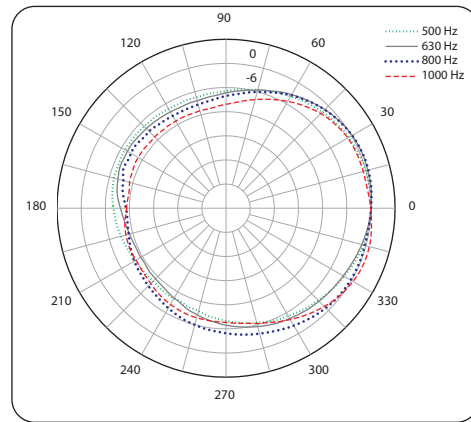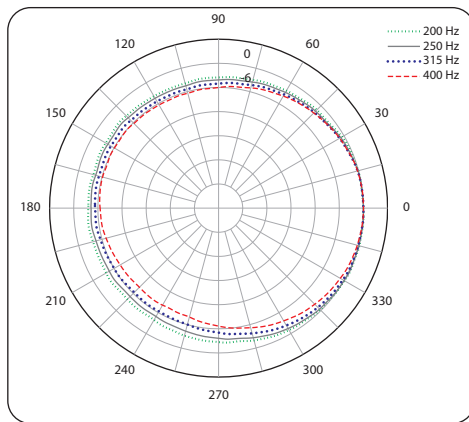
221.0 [8.7]

60.0 [2.4]

BACK

Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
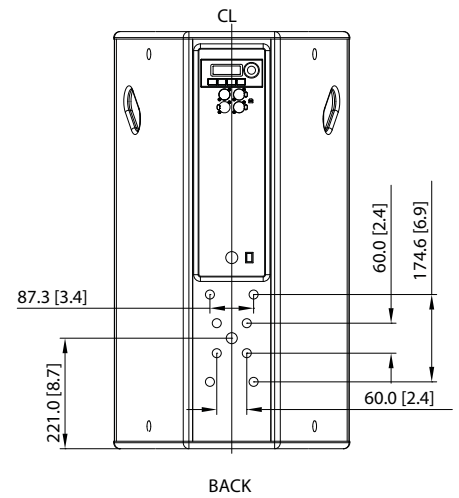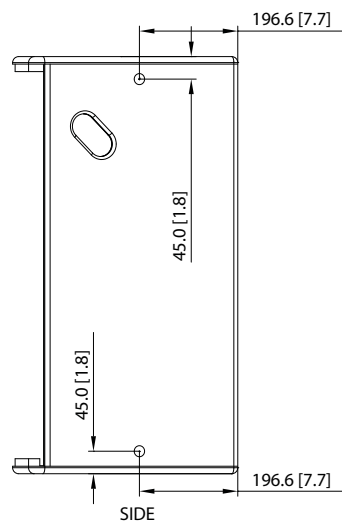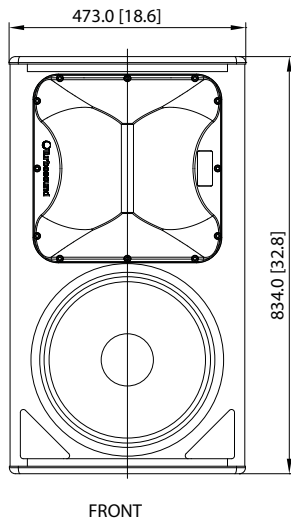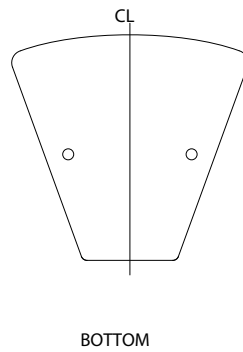Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

## Mounting and Rigging

The cabinet is fitted with M8 x 8 and M10 x 9 internally-threaded rigging points that allow it to be rigged with optional shoulder eyebolts and mounted in many different configurations in permanent installations. The simplest method of rigging is to use the two M10 rigging points on the top, and a single pull-back rigging point in the centre of the rear panel. Adjustment of the length of the rear cable allows the cabinet to be angled for optimum room coverage. Cabinets may also be hung upside down if required.

The cabinet is compatible with industry standard wall and ceiling brackets which use 60 mm x 60 mm hole spacing.

An array of two or more cabinets can be configured using optional TURBOSOUND flyplates and inter-cabinet couplers. These are fixed to the cabinet sides through the M10 rigging points, and assembled together in a 'daisy chain' fashion to build up the required array. The horns of each cabinet may be rotated through 90 degrees to optimise the coverage.



Suspension using M10 shoulder eyebolts on top and one at the rear.

Horizontal clusters using fly plates and inter-cabinet couplers on top and bottom.
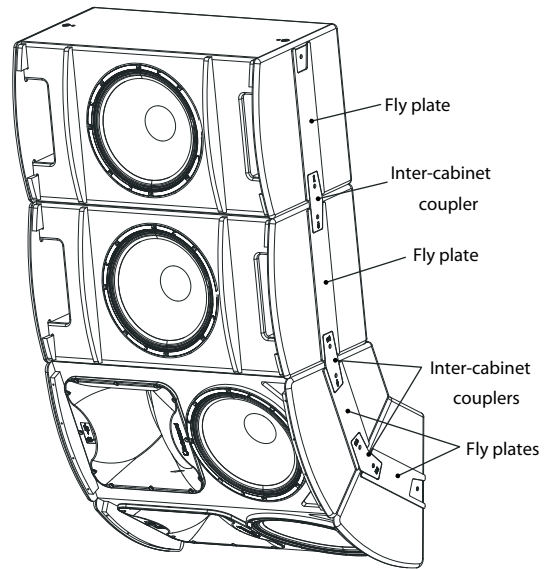
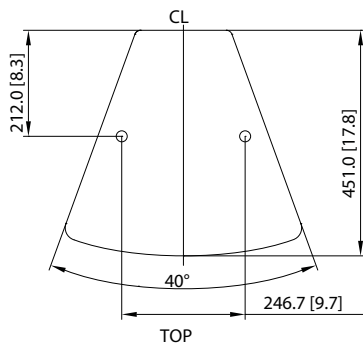Vertical array using fly plates and inter-cabinet couplers on left and right.

Turbosound

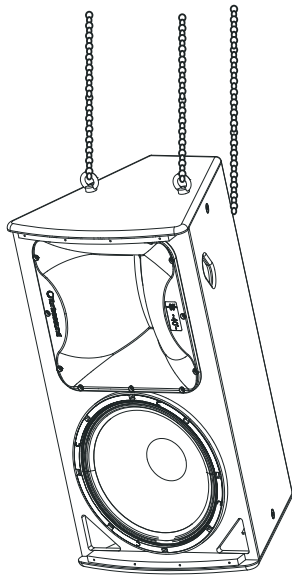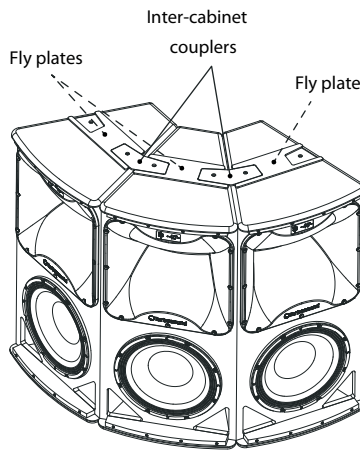Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

## Technical Specifications

### System

| | |
|---|---|
| Frequency response | 41 Hz – 18 kHz ±3 dB |
| | 35 Hz – 20 kHz -10 dB |
| Nominal dispersion | 60° H x 40° V @ -6 dB points, rotatable |
| Maximum SPL | 133 dB peak |
| Crossover type | Active |
| Transducers | 1 x 15" (394 mm) LF Driver |
| | 1 x 1.4" (36 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/link | 1 x Combo Jack/XLR 1 x XLR |
| Sensitivity | +4dBu or +14 dBu software switchable |
| Input impedance | 40 kΩ balanced |
| Maximum input level | +22 dBu |
| Ultranet input/link | 2 x RJ45 |
| Mains supply | Neutrik powerCON 20A† |

### Controls

| | |
|---|---|
| DSP | Rotary push-encoder and level control |
| | Buttons for Process, Setup, Exit, Enter |

### User DSP Functions

| | |
|---|---|
| Factory EQ presets | Positioning, Sound 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 |

### Ultranet Digital Network

| | |
|---|---|
| **Digital processing** | |
| A/D conversion | 24-bit,44.1/48kHz sample rate |
| Converter type | 24-bit,delta-sigma |
| **System** | |
| Signal | 16 channels |
| Latency | < 0.9 ms |
| Frequency response | 20 Hz to 20 kHz (+0 / -3 dB) |
| Dynamic range | typical 92 dB |
| **Cabling** | |
| Cables | Shielded CAT5 |
| Cable length | max. 246 ft / 75 m recommended |

Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

## Power Supply

| | |
|---|---|
| **Power consumption** | 90 W @ ⅛ max power |
| **Voltage (fuses)**<br>USA / Canada | 120 V~, 60 Hz (T 15 A H 250 V) |
| UK / Australia / Europe | 220-240 V~, 50/60 Hz (T 10 A H 250 V) |
| Korea / China | 220-240 V~, 50/60 Hz (T 10 A H 250 V) |
| Japan | 100 V~, 50/60 Hz (T 15 A H 250 V) |

## Enclosure

| | |
|---|---|
| **Dimensions (H x W x D)** | 834 x 473 x 451 mm (32.8 x 18.6 x 17.8") |
| **Net weight** | 30.6 kg (67.3 lbs) |
| **Construction** | 15 mm (⅝") Birch plywood |
| **Finish** | Semi matt white paint |
| **Grille** | Powder coated perforated steel |
| **Flying hardware** | M10 x 9, M8 X 8 points |

## Accessories

TCS152-FP (-WH) Fly plate kit for TCS152

TCS-FK1 (-WH) Inter-cabinet coupler kit for TCS122 or TCS152

TCS-FK2 (-WH) Inter-cabinet coupler kit for TCS115B with TCS122 or TCS152

*independent of limiters and driver protection circuits
†Only qualified personnel are allowed to modify the AC-Main cord and to adhere to all applicable national standards.

Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

## Architecture & Engineering Specifications

The loudspeaker shall be of the full range, two-way, powered type, consisting of one 15" (394 mm) LF driver and one 1.4" (36 mm) HF compression driver. 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 ±3 dB from 41 Hz to 18 kHz and within -10 dB from 35 Hz to 20 kHz. Nominal dispersion, at -6 dB points, shall average 60° H x 40° V, rotatable.Maximum amplifier output power shall be 2,500 Watts peak, independent of limiters and driver protection circuits. Maximum SPL (peak), measured at 1 metre with music program, shall be 133 dB. Dimensions: 834 mm high x 473 mm wide x 451 mm deep (32.8" x 18.6" x 17.8"). Net weight: 30.6 kg (67.3 lbs). The loudspeaker system shall be the TURBOSOUND TCS152/64-AN-WH. 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.

Turbosound

Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

Turbosound

## Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

Turbosound

## Install Speakers

# ATHENS
# TCS152/64-AN-WH

Arrayable 2500 Watt 2 Way 15" Loudspeaker
with Dendritic Waveguide, KLARK TEKNIK DSP
Technology and ULTRANET Networking,
90° H x 40° V Dispersion (White)

POWERED BY ⊗ KLARK TEKNIK

Turbosound

PROCESS    SETUP    EXIT    ENTER

LINK    THRU

INPUT    IN    USB

AUDIO    ULTRANET

AC INPUT    POWER

MADE IN CHINA    POWER SOURCE/
FUSE VALUE

3 Year Warranty

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

Turbosound