

FLEX ARRAY SERIES ENGINEERING INFORMATION

Flex Array series is a high performance modular loudspeaker system designed for use in a variety of medium scale line array or virtual point source sound reinforcement activities ranging from theatres and live music venues to corporate events and regional tours.

The **TFA-600HDP** is a networkable, digitally self-powered trapezoidal three-way enclosure combining a patent-pending Dendritic HF waveguide and a patented midrange Polyhorn™ in a single physically aligned waveguide with equal path length, ensuring a phase-coherent wavefront at the horn mouth. This geometry allows the enclosure's dispersion to be easily adapted to the implementation of a line array or a virtual point source application.

Flex Array's 75° horizontal dispersion pattern suits typical venues better than line array systems with fixed 90° or greater dispersion, thereby maximising the direct sound field while reducing reverberant energy.

The TFA-600HDP contains a 1" high frequency compression driver on a Dendritic horn, a 6.5" high-mid frequency driver on a patented Polyhorn™ device, and two Turbo-loaded 10" low-mid frequency drivers.

The TFA-600DP features a new generation of innovative lightweight Class D amplifiers, utilising revolutionary 96kHz DSP technology to give operating efficiency in excess of 90%. Two independent amplifier channels power the LF and MF/HF drivers separately. A Neutrik™

Powercon connector provides mains input and 3-pin XLR's are used for input and parallel link signal connections. RJ45 network connectors enable multiple loudspeakers to be controlled and monitored over a BVNet network using TurboDrive™ software.

Neodymium drive units are used throughout in order to achieve the compact cabinet's exceptionally low 43kg net weight, making it convenient to transport, handle and rig. In addition the drive units are symmetrically arranged within the enclosure, which contributes to the smooth and consistent horizontal and vertical coverage.

The enclosure has both vertical and horizontal flying systems integrated into the cabinet in order to facilitate simple and intuitive rigging with a minimum of external parts. The horizontal, or A mode, system is used to create flown or ground-stacked line array configurations. The B mode vertical rigging system is used for single box and virtual point source applications. This flexibility of use is made possible by the rotatable mid/high section.

A flight-cased trucking system allows three cabinets to be pre-rigged and transported together.

The 15mm birch plywood cabinet is equipped with eight recessed handles on the sides, rear, top and bottom.



FEATURES

**Digitally self-powered
Line array or virtual point
source element**

Ultra low distortion

75°h x 16°v dispersion

136dB max output

Trapezoidal enclosure

Neodymium drive units

Seamless arrayability

APPLICATIONS

House of Worship

Flown clusters

Ground-stacked touring

Theatre and corporate

Live music venues

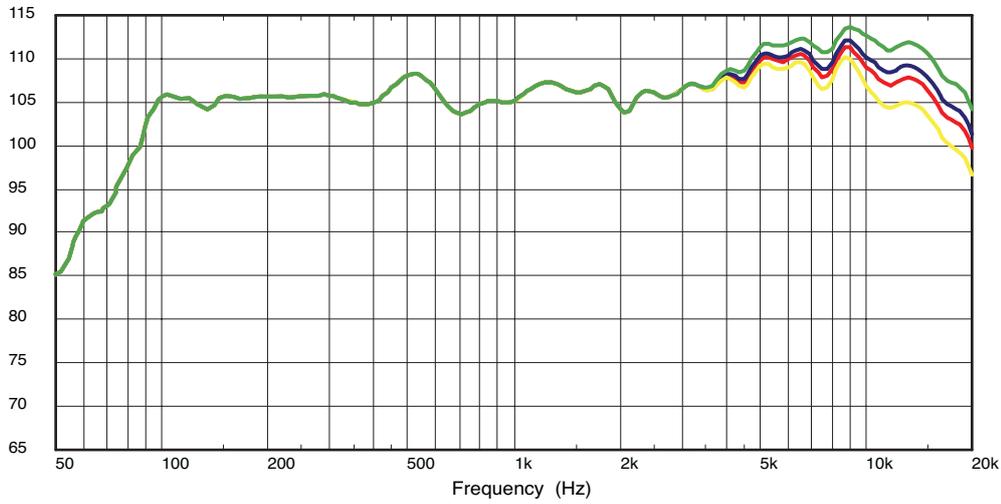
Dance clubs

DIMENSIONS (HxWxD)	710mm x 304mm x 560mm (28" x 12" x 22")	
NET WEIGHT	43kg (94.6 lbs)	
COMPONENTS	2 x custom 10" (254mm) LMF driver, 1 x custom 6.5" (165mm) HMF driver on a midrange Polyhorn™, 1 x custom HF driver on a high frequency Dendritic device	
FREQUENCY RESPONSE	90Hz - 18kHz ±3dB, 80Hz - 20kHz ±10dB	
DISPERSION²	75°H x 16°V @-6db points	
CALCULATED MAX SPL	Single enclosure: 130dB continuous (calculated SPL addition), 136dB peak Multiple enclosures: 2 x Line Array enclosures 136dB continuous, 142dB peak 3 x Line Array enclosures 140dB continuous, 146db peak 4 x Line Array enclosures 142dB continuous, 148dB peak 2 x Point Source enclosures 133dB continuous, 139dB peak 3 x Point Source enclosures 135dB continuous, 141dB peak 4 x Point Source enclosures 136dB continuous, 142dB peak	
AMPLIFIER	TYPE:	Class D inc SMPA and networked DSP
	POWER OUTPUT:	2 x 800 watts continuous @ 8 ohms (1kHz, 0.01% THD)
	DYNAMIC RANGE:	110dB
	INPUT CLIP:	10dBu
	BANDWIDTH:	20Hz - 20kHz ±0.5dB
	POWER REQUIREMENTS:	100V to 240V AC @ 50/60Hz
CONSTRUCTION	15mm (5/8") birch plywood throughout; rebated, screwed and glued. Finished in black semi-matt textured paint (optional TurboBlue™). Eight recessed carrying handles	
GRILLE	Powder coated perforated stainless steel with reticulated foam backing	
CONNECTORS	Input: (1) XLR female, Link (1) XLR male, pin 2 hot; (1) male Neutrik Powercon; (1) female Neutrik Powercon; (2) RJ4N network ports	
SPARES AND ACCESSORIES	MG-600H	Replacement cloth/expanded metal grille
	LS-1025	10" (254mm) LMF loudspeaker
	RC-1025	Recone kit
	LS-6507	6.5" (165mm) HMF loudspeaker
	CD-117	HF driver
	RD-117	Replacement diaphragm
	TFA-600HDP AMP	Replacement amplifier

Frequency Response Including DSP Presets 1 through 4

FREQUENCY
RESPONSE

(dB) Level, Sound pressure



Preset 1 — single unit extremely nearfield

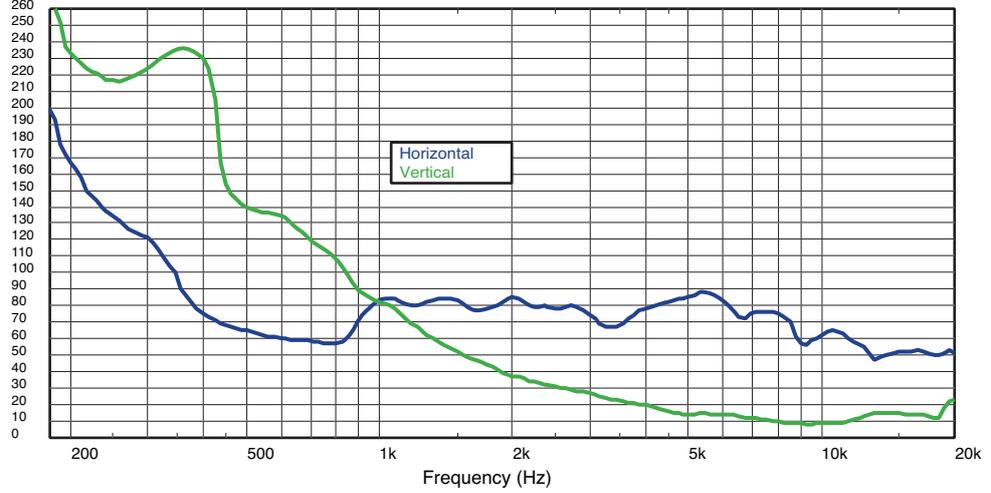
Preset 2 — midfield

Preset 3 — long throw 1

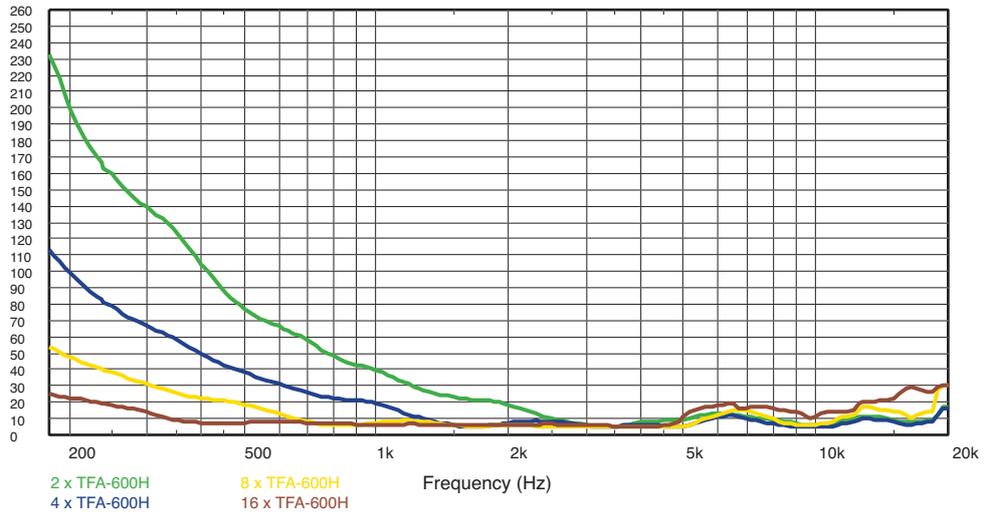
Preset 4 — long throw 2

BEAMWIDTH

A single enclosure
(degrees)

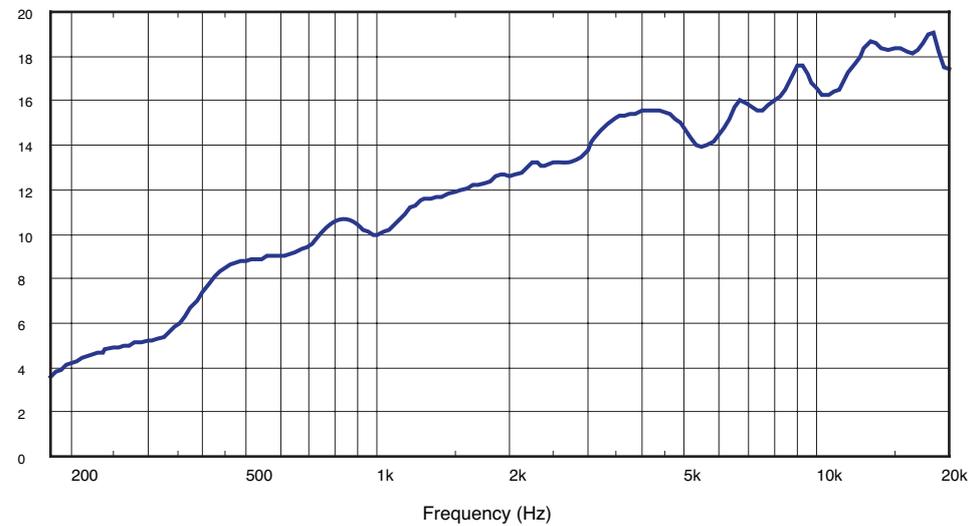


Vertical dispersion of multiple cabinets with zero degree intercabinet angles



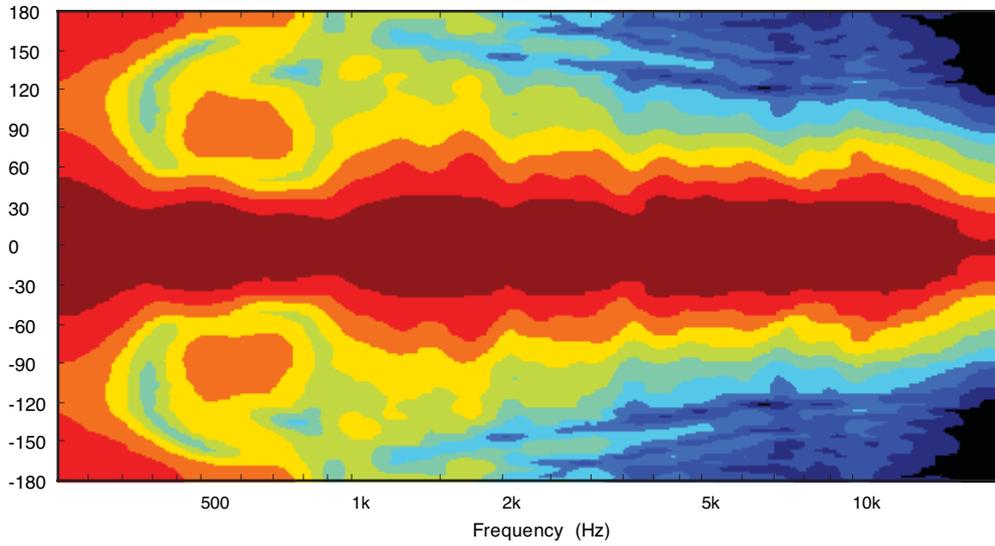
'A' mode directivity index

DIRECTIVITY

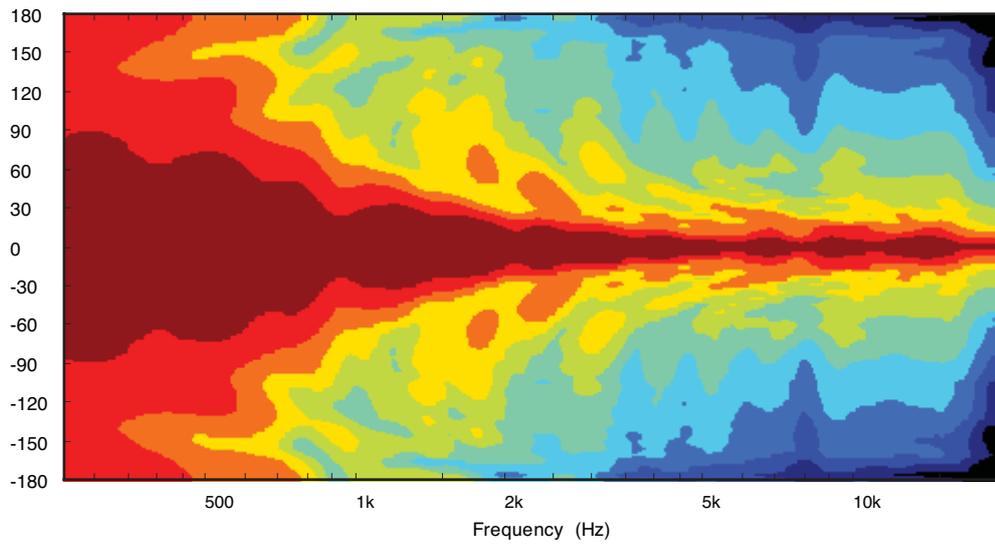


CONTOUR MAPS

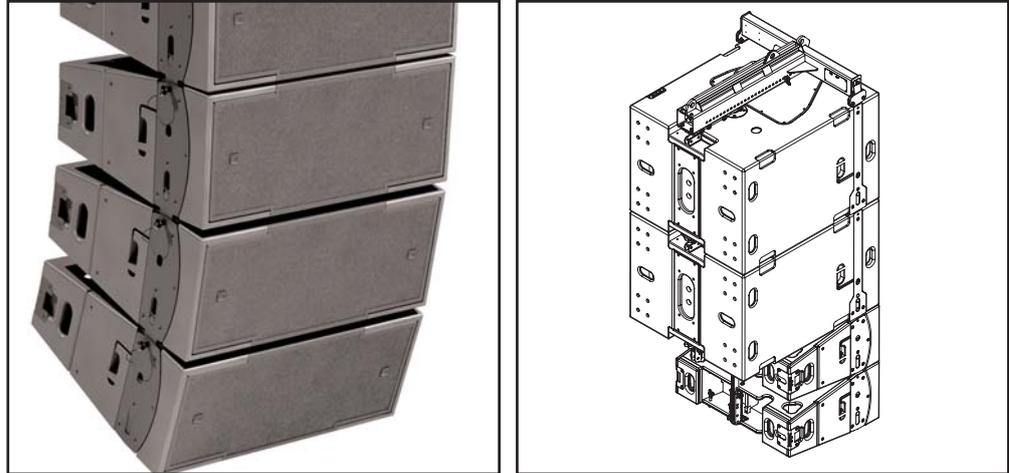
Horizontal Contour — 'A' mode
(deg) Axial angle



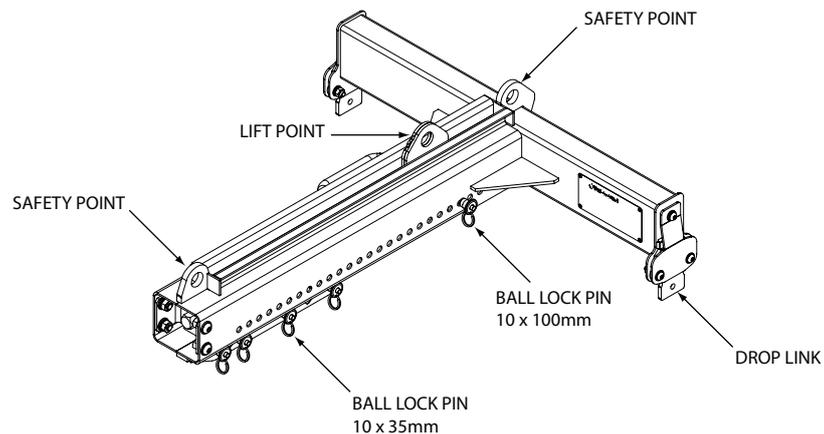
Vertical Contour — 'A' mode
(deg) Axial angle



The loudspeaker is equipped with two integral rigging systems designed to allow it to operate in two different modes: horizontal format line array (A mode) or virtual point source (B mode).



For line array applications the loudspeaker enclosures are suspended from the FB-600 flybar. The flybar provides a single pickup point, equipped with front-to-rear screw thread adjustment. This facility allows the inclination of a column of loudspeakers to be easily adjusted, even while under load. A column of 16 loudspeakers is designed to be flown from a single one-tonne motor. The loudspeaker cabinets are coupled using the drop links built into the side-mounted flygear, while the inter-cabinet angles are determined by means of a rear cabinet link, allowing incremental adjustment in 8 steps from 0° to 16°. TFA-600L bass cabinets



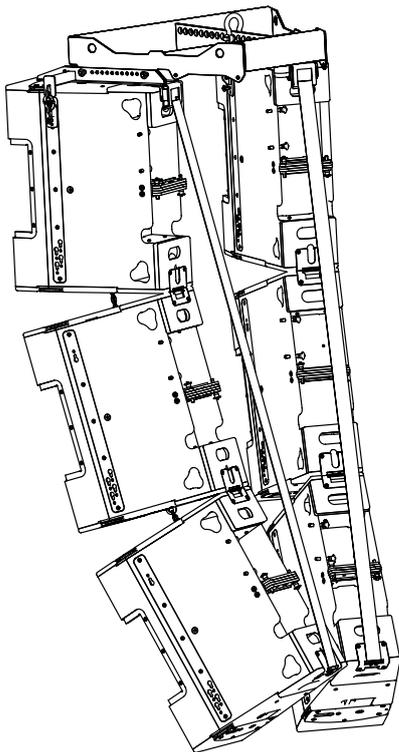
are designed to fly at the top of the column, with a CF-600 conversion frame providing attachment between the bass cabinet and the first mid-high cabinet.

Virtual point source applications are catered for by fully adjustable flying yokes and T-bars. Cabinets can also be truss mounted using the yokes together with scaffold clamps.

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RIGGING HARDWARE

Virtual point source clusters are assembled using the integrated 'B' mode flygear. The side-mounted flying strips provide multiple keyhole slots for the locator pin of the ICL-600 inter-cabinet link, giving a total of four possible alternate vertical inter-cabinet angles, to suit the vertical coverage required. TS-890 double-ratchet tilt straps are used to alter the overall cluster inclination. The 6-box cluster shown below is designed to be suspended using a one-tonne motor from a single rigging point.



Single boxes can be simply mounted and angled using a pole mount and flying yoke on top of suitable bass cabinets equipped with a pole mount socket.

**ARCHITECTURAL
 & ENGINEER'S
 SPECIFICATIONS**

The loudspeaker system shall be of the digitally self-powered trapezoidal type comprising: one 1" (25mm) high frequency driver loaded with a Dendritic device, one 6.5" (165mm) high-mid frequency driver loaded with a patented PolyHorn™, and two 10" (254mm) Turbo-loaded low-mid frequency drivers. Performance specifications of a typical production unit shall meet or exceed the following: frequency response, measured with a swept sine wave input shall be flat within $\pm 3\text{dB}$ from 90Hz to 18kHz, and within $\pm 10\text{dB}$ from 80Hz to 20kHz. Dispersion shall average $75^\circ\text{H} \times 16^\circ\text{V}$. Calculated maximum SPL (peak) shall be 136dB. Dimensions: 710mm x 304mm x 560mm (28" x 12" x 22"). Weight: 43kg (94.6lbs). The loudspeaker system shall be the Turbosound TFA-600HDP. No other system shall be acceptable unless the above combined performance specifications are equalled or exceeded. Rigging hardware shall be available comprising a range of load-certified components.

DIMENSIONS

