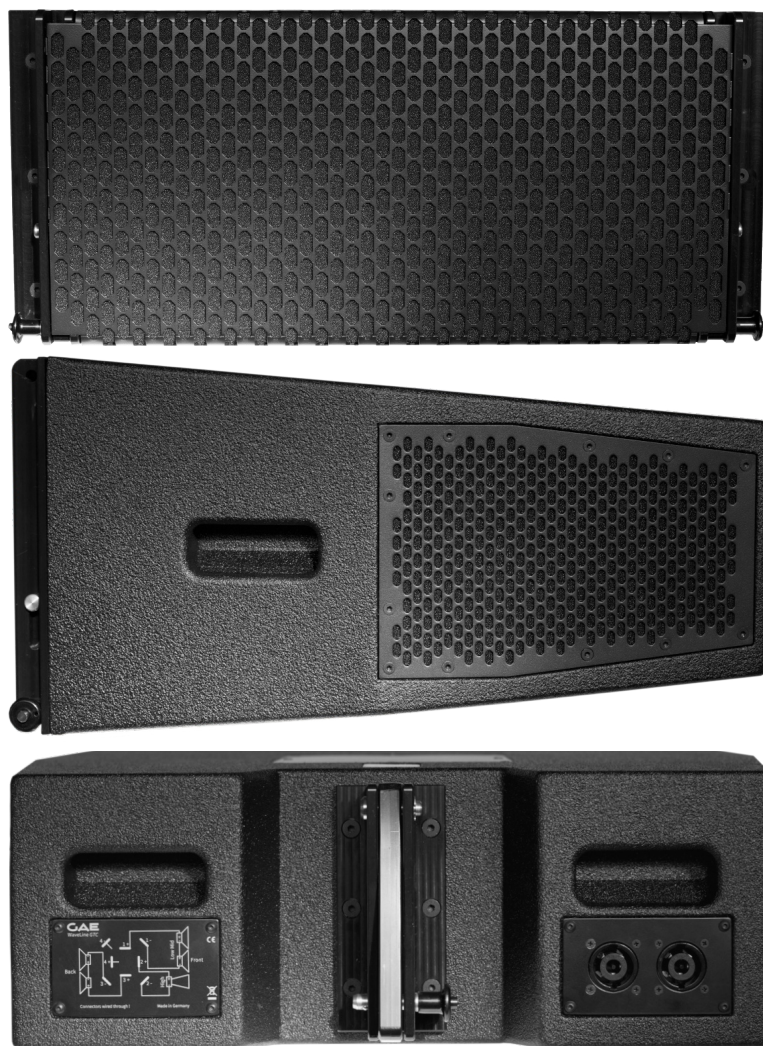


DAL Waveline® - GTC Compact Line Array Module

Key Features

- Symetrical Twin-Coaxial Design, Fully Horn Loadad With Directivity Control Down To 68Hz
- Horizontal Dispersion 110°, Vertical Aiming 1° - 10°, In 1° Increments
- 2 x 2 of 6,5" Long Excursion Cone Transducers, 1 x 1,4" HF Compression Driver On Proprietary Waveformer
- Integrated 3-Point Rigging Hardware For Array Lengths Up To 24 Modules Deep, Compact And Lightweight Package



General:

The DAL Waveline® - **GTC** is a 3-way active driven line array module for array lengths from 6 to 24 modules deep.

The active driven front offers a fully horn loaded twin-coaxial two way design with a dispersion of 110° x 10° (h x v). The active driven side firing cone transducers giving an effective low/mid dispersion control for the side and backward directed sound propagation.

The sound pressure level attenuation is down to -12dB in the range of 68Hz to 200Hz with one loudspeaker module.

This level attenuation increases in total and broadens up to 300Hz by extending array lengths. Our cardioid dispersion control improves program delivery in venues with moderate to poor room acoustics. There is significant less sound radiated to the sides and rear in the range of 300Hz down to 63Hz. As a result, system performance is significantly less impaired by the influence of room acoustic. In the low-frequency range, this dispersion control offers also great advantages for the positioning of the arrays in relation to boundary walls. Cancellations in the lower frequency response caused by reflections from large walls are significantly reduced.

However - applying this technology, the artists on stage are getting significantly less noise and mud on stage.

With this new Generation of our line array technology we are underlining our commitment for best sound, flat frequency and phase response, and low distortion. This combined with best Sensitivity and SPL in class.

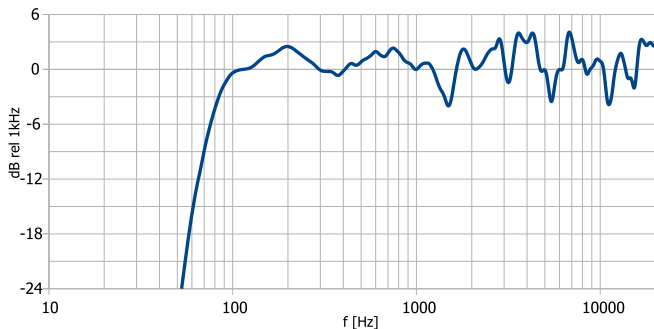
Architectural:

The Waveline®- **GTC** is a small format line array modul with a cardioid dispersion control cancelling sound radiated to the sides and the rear. The DAL Waveline series is wellknown for superior music and vocal reproduction in concert sound and fixed installations. The Waveline® - **GTC** weights 23,5kg and measures 262 x 600 x 545 (HxWxD in mm). The Integrated 3-point rigging hardware offers ground supported or flown installations with the dedicated DAL rigging hardware. Protective grills backed with acoustic permeable foam are recessed into the enclosure. Custom designed mounting hardware and many RAL colour options for varnish coatings simplifying a coordinated integration. The musical quality can be underlined with sub-/low systems like the DAL BR118, GAE BR218 or ETAmx extending the performance down to 30-40Hz.

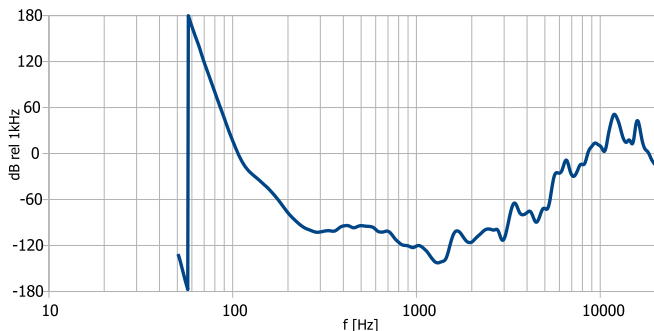
The compact cabinet housing is made from multilayered plywood, supplying two recessed handles on the sides and the backside. The standard coating is Polyurea black. Connectivity is given by 2 Neutrik NL8 connectors. The acoustical bandwidth of the the system is (-3dB +/- 3dB) 80 Hz - 18KHz. A non critical impedance response with a minimum of 15,20hm @86Hz allows the safe operation of up to 6 line array modules on three channels of the DAL Control and Drive Electronics.

Applications:

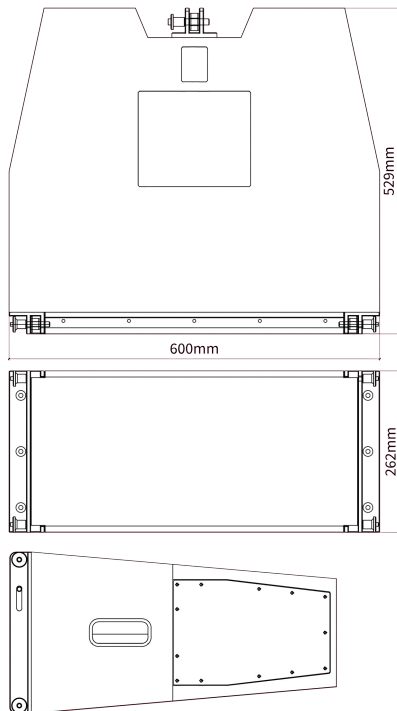
Front of House concert sound and installed audio systems * Acoustically critical venues and stages with the need for high front to side and front to back level attenuation * Open air events where noise emissions into the environment have to be limited * Applications for less noise on stage * Applications with high SPL in a small footprint.



WL-GTC: On Axis Frequency Response 1/12 oct. smoothed



WL-GTC: On Axis Phase Response 1/12 oct. smoothed



WL-GTC: Physical Dimensions

Engineering:

Design: twin-coaxial 3-way active line array module in a vented and horn loaded cabinet with cardioid low-mid dispersion characteristic

Frequency Response -3dB: (-3dB)/+(-3dB): 80Hz - 18KHz in Fullrange Setup

Frequency Response -10dB: (-10dB)/+(-3dB): 68Hz - 18KHz in Fullrange Setup

Dispersion Front: -6dB @ 110° x 10° (h x v)

Acoustic Attenuation to Rear/Sides: > -6 to -18dB, depending on the array size

Nominal Impedance: 3 x 16Ohm, minimum impedance is 2 x 15,2Ohm @86Hz

Power Handling Capacity:

Low/Mid: 300W RMS (IEC 268-5) = 39dBu, 700W Program = 42dBu

Low/Back: 300W RMS (IEC 268-5) = 39dBu, 700W Program = 42dBu

Mid/High: 70W RMS (IEC 268-5) = 32,7dBu, 140W Program)) 35,7dBu

Low/Mid sensitivity (4V/16Ohm/1m): 97,5db/SPL

Program SPL: >125dB/SPL@600W/1m¹

Peak SPL: > 126dB/SPL@800W/1m¹

HF Sensitivity: (4V/16Ohm/1m): 106 dB/SPL

Program SPL: > 131dB @140W/1m¹

Peak SPL: > 133dB@200W/1m¹

Components: 2x2x6,5-inch cone transducers with neodymium magnet and long excursion 1,5-inch voice coil and coated cone. 1x1,4" N-Dym HF-driver with 3-inch voice coil on proprietary waveform in 110° x 10° Constand Q Horn.

Mounting: Integrated 3-Point Rigging Hardware, vertical adjustable in 1° increments

Cabinet: multiplex wood with polyurea coating

Dimensions (HxWxD): 262x600x545

Connectivity: 2 speakon NL-8 in parallel

Weight: 23,5kg

Options: RAL colours for varnish coating. Standard is polyurea coating, standard colour is RAL 9005 (black)

Optional attachments: GTC Flying Cradle, GTC Stack Cradle, Flightcases, customer specified mounting hardware.

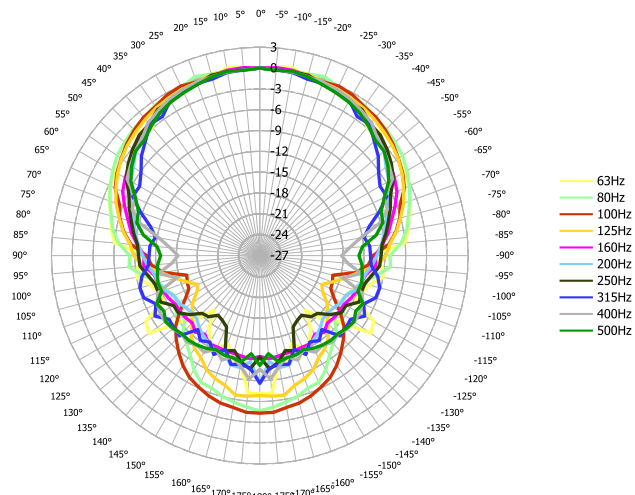
Related Products: GAE Waveline-PT, GAE BR118, GAE BR218, GAE ETAmx

¹ ≤ 10% THD

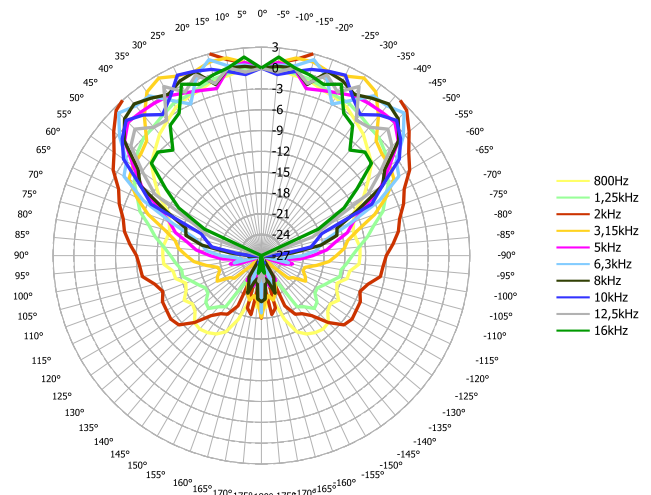
Cardioid Dispersion Control:

The polar plots shown here exemplifying the dispersion characteristic of one array module with and without cardioid function.

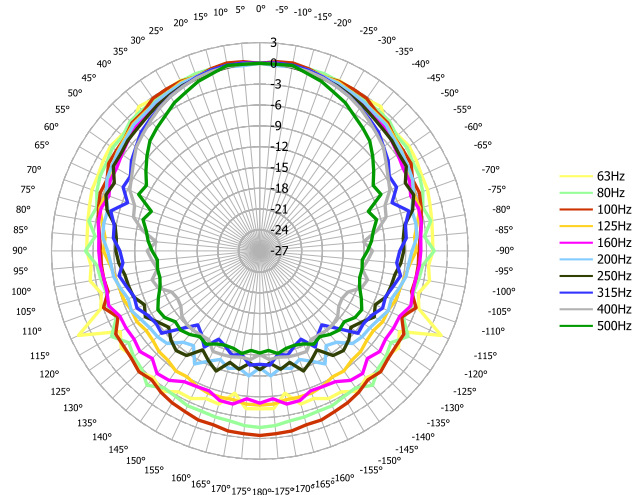
The level attenuation to the rear and the sides is limited by the physical dimensions of the single loudspeaker cabinet. Level attenuation in the range from 68Hz to 300Hz increases by extending the array length. In addition, with longer arrays the level attenuation extends to frequencies up to 500Hz.



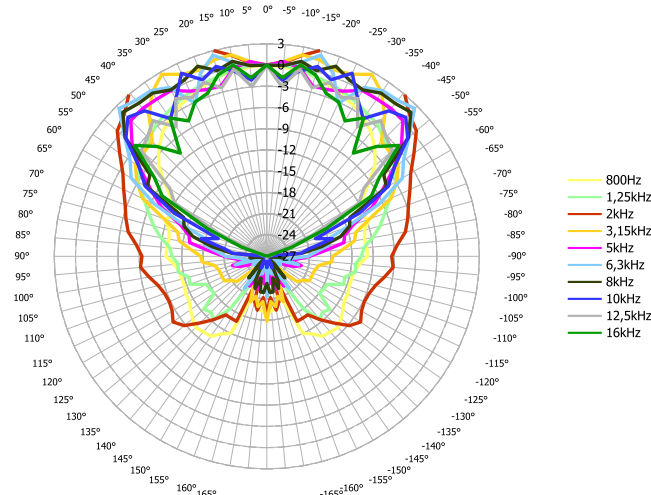
WL-GTC (1): Polar Plot, 63Hz - 500Hz measurements in cardioid mode²



WL-GTC (1): Polar Plot, 800Hz - 16kHz measurements in cardioid mode²



WL-GTC (1): Polar Plot, 63Hz - 500Hz measurements with the cardioid mode switched off²



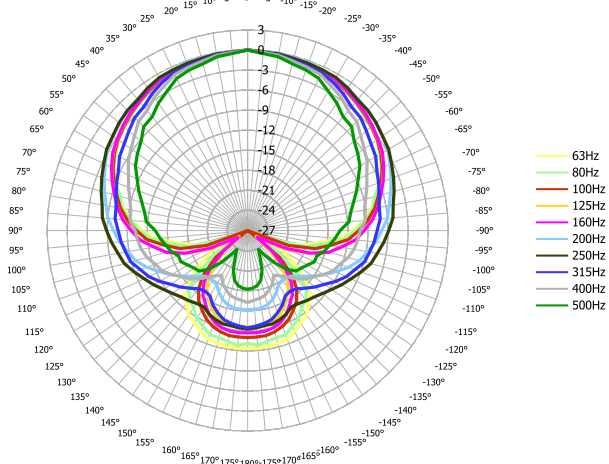
WL-GTC (1): Polar Plot, 800Hz - 16kHz measurements with the cardioid mode switched off²

² All figures are from groundplane measurements, investigating a single line array module under free field conditions. Data shown here are achievable only with the linear phase IIR filters applied with the GAE DS-4L Control & Drive Electronics

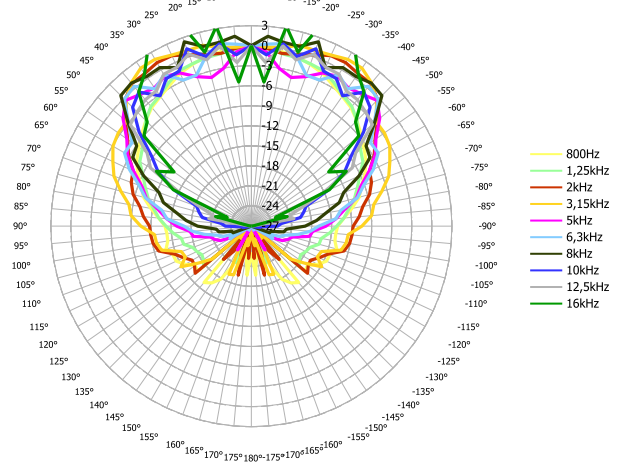
Hypercardioid and Cardioid Dispersion Control:

The polar plots shown here are illustrating the dispersion characteristic given by an array of four modules. The array is driven using either a preset for a hypercardioid or a cardioid mode with the GAE DS-4L Drive & Control Electronics.

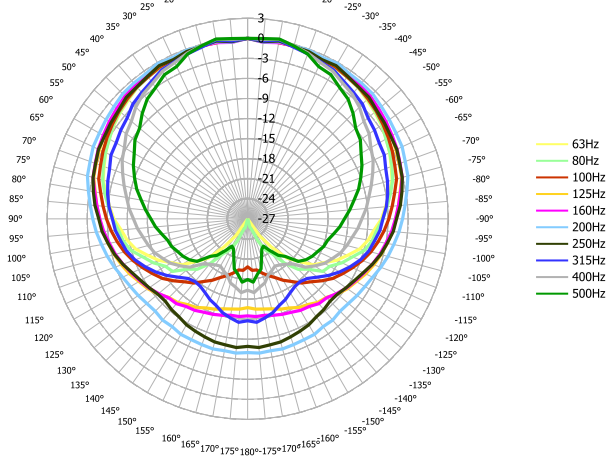
The hypercardioid mode may give an advantage for shorter array lengths (e.g. up to 8 modules deep), whilst the cardioid mode gives a great advantage for larger array lengths. The vertical splay angle of the array here is 5°.



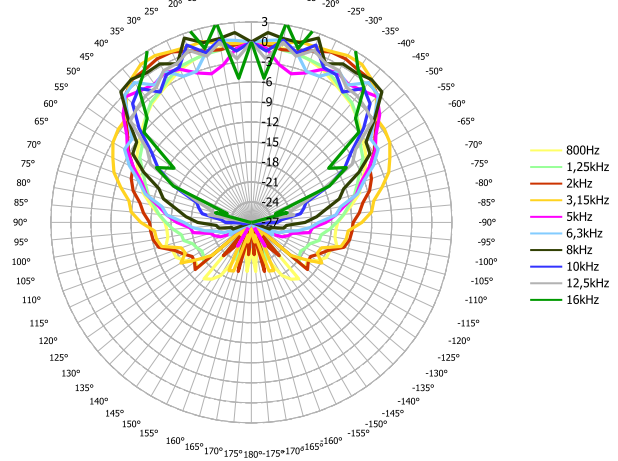
WL-GTC (4): Polar Plot, 63Hz - 500Hz
measurements in hypercardioid mode³



WL-GTC (4): Polar Plot, 800Hz - 16kHz
measurements in hypercardioid mode³



WL-GTC (4): Polar Plot, 63Hz - 500Hz
measurements in cardioid mode³



WL-GTC (4): Polar Plot, 800Hz - 16kHz
measurements in cardioid mode³

³ All figures are from groundplane measurements, investigating an array of four modules under free field conditions. Data shown here are achievable only with the linear phase IIR filters applied with the GAE DS-4L Control & Drive Electronics