TECHNICAL DATA SHEET

HALO-A

2-WAY LARGE FORMAT LINE ARRAY ELEMENT

HALO Arena is the flagship product with EM Acoustics "maximum headroom" approach - a modular line array system, which whilst keeping with the sonic character and overall signature of EM Acoustics products and the HALO family in particular, now offers an overall SPL capability of a level suitable for much larger applications - both fixed installation and touring.

FEATURES AND BENEFITS

- Signature EM Acoustics 'maximum headroom' approach ensures consistency of performance regardless of SPL level
- Biamplified design for most efficient amplifier channel count
- Extremely consistent horizontal dispersion across the operating frequency band – nominal coverage patterns maintained down to 250Hz
- Two dispersion options – HALO-A (80° horizontal) and HALO-A-WIDE (100° horizontal)
- Compact enclosure with low weight means less truck space used and smaller motors required
- Enclosure coated with 3-step polyurethane process - ensuring the cabinets are weather resistant and more resilient to impact damage
- Intuitive 3-point flying system, assembled from ultra-high tensile strength steel with Xylan™ coating for enhanced durability

APPLICATIONS

- Medium to large format touring sound reinforcement for festivals, stadia, arenas and concert halls
- Large format corporate A/V events
- Medium-to-large format fixed installations in concert halls, theatres and sports arenas
- Houses of Worship

HALO Arena is designed to produce the same staggering results as HALO Compact, but in a package more suited to larger events. The same core design principle of the maximum headroom possible means that HALO Arena delivers a consistent performance across all SPL levels. HALO-A has been built for touring – but is equally at home in large format fixed installations.

A single HALO-A exhibits a flat, free-field frequency response from 48Hz to 19kHz (±3dB) and a phase response which is ±20 degrees between 150Hz and 18kHz. Due to the unique loading technique applied to the low frequency drivers, combined with the high frequency waveguide, the dispersion pattern control is maintained down to 250Hz.

Similarly to HALO-C, the high frequency device is a major factor in setting the system apart from its competitors. Unlike HALO-C, which utilises an AMT plane-wave drive unit, HALO-A uses compression drivers due to the much higher SPL required for these applications. However, HALO-A uses a proprietary emulation manifold, which combines the energy of four 3.4" (86mm) diaphragm, 1.4" (36mm) exit compression drivers into a plane-wave array. This assembly gives not only a very significant moving area for the high frequency section, but provides twice the headroom of other comparable systems. Viewed from another perspective, if running at the same SPL as a competitor system, HALO-A would run with 3dB less distortion due to the increased overall HF headroom.

The high frequency manifold feeds a constant-directivity waveguide, and two dispersion options are offered. The standard HALO-A enclosure has a nominal horizontal dispersion of 80°, whereas for near-field applications HALO-A-WIDE offers 100° of coverage. Both enclosures are identical in all other respects.

Working alongside the high frequency assembly are a pair of high power

3.5" (88mm) voice coil 12" (305mm) low frequency transducers. These two powerful drive units, combined with optimally-tuned low turbulence porting and generous cabinet volume ensure HALO-A has a low frequency performance to match the stunning highs. Keeping HALO-A as a two-way system reduces the off-axis parallax issues to a single crossover point, and through tireless research and development this issue has been almost completely eradicated.

The HALO Arena enclosure is constructed from premium 15mm and 30mm (5/8" and 1 3/16") multi-laminate Baltic birch plywood – rebated, screwed and glued together for maximum strength. Intelligent internal bracing, combined with the unique low-loss porting structure minimises panel flexure – thereby removing unwanted resonances but still keeping the overall enclosure weight low. The enclosure is finished in a polyurethane coating, which as well as being far tougher than the conventional water-based paints used on other products, offers HALO-A a significant level of weather resistance without any further treatment.

The flying hardware has also been built with touring flexibility and reliability in mind. HALO-A uses a 3-point system, utilising quick-release pins as you would expect. Array angles can be pre-set on individual elements whilst stored on their transit wheelcarts. As the array is lifted the rear links move to their pre-set array angles, and a final pin fixes everything in position. Ultra-high tensile steel parts form the core of the 3-point system, which is coated with Xylan™ – a fluoropolymer coating which contains PTFE for both lubrication and impact resistance. Arrays of up to 24 elements can be safely assembled with above-regulation safety factors.
HALO-A requires two amplifier channels and makes use of the latest in FIR DSP technology – as such it must be used with either the DQ20 advanced system amplifier. Using this amplifier a maximum of eight HALO-A enclosures could be driven from a single amplifier, although six is recommended as a maximum for full output.

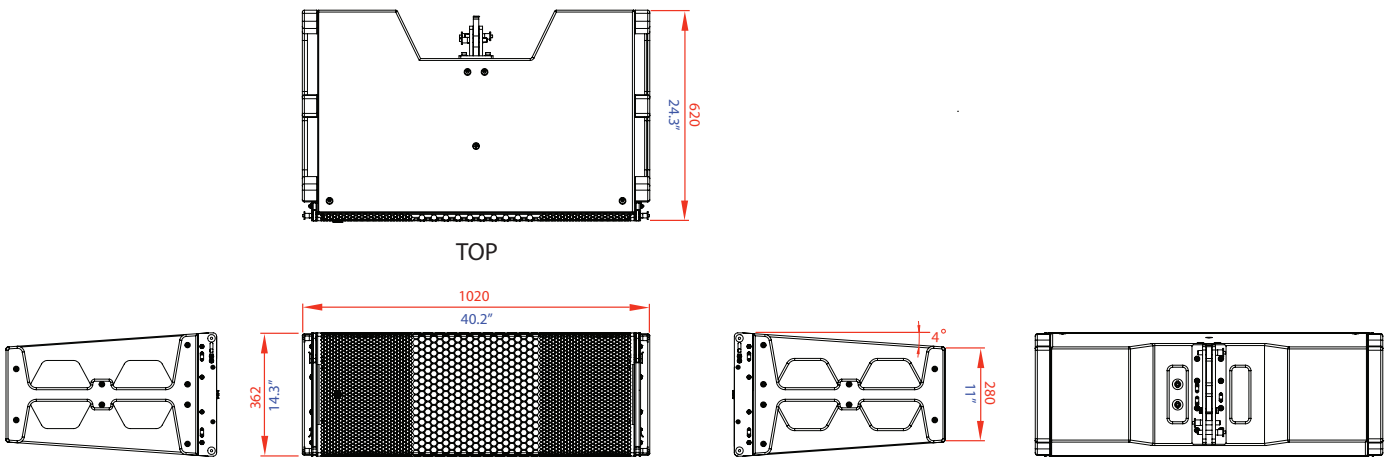
TECHNICAL SPECIFICATIONS

ENCLOSURE TYPE:	2-way large format line array element
FREQUENCY RESPONSE[1]:	48Hz - 19kHz ±3dB
PHASE RESPONSE	±20 degrees, 150Hz - 18kHz
MAXIMUM SPL[4]:	143dB continuous, 149dB peak
DISPERSION[3]:	80° horizontal (HALO-A), 100° horizontal (HALO-A-WIDE)
SPLAY ANGLES	0.25°, 0.5°, 1°, 1.5°, 2°, 2.5°, 3°, 4°, 5°, 6°, 7°, 8°
DIMENSIONS: (HxWxD): :	362 x 1020 x 619mm (14.3" x 40.2" x 24.4")
NET/SHIPPING WEIGHT:	66/70kg (145.2/154lbs)
DRIVE UNITS:	LF: 2 x 3.5" (88mm) voice coil neodymium 12" (305mm) HF: 4 x 3.4" (86mm) diaphragm, 1.4" (36mm) exit neodymium HF drive units on bespoke plane-wave manifold
CABINETS PER AMPLIFIER	DQ6: 2, DQ10: 4, DQ20: 8**
POWER HANDLING:	LF: 1400W RMS, 2800W program HF: 400W RMS, 800W program
NOMINAL IMPEDANCE:	LF: 8 ohms, HF: 16 ohms
CONNECTORS:	2 x Neutrik® speakON™ NLT4MP
ENCLOSURE:	15 & 30mm (5/8 and 1 3/16") multi-laminate Birch plywood - rebated, screwed and glued together, Finished in impact and weather resistant black polyurethane, or textured white paint
RIGGING & HARDWARE:	3-point system, ultra-high tensile steel. Enclosure hardware rated to 24 elements at 10:1 safety factor
GRILLE:	Perforated stainless steel backed with acoustically transparent fabric
OPTIONS:	White and custom colours / permanent outdoor protection options
ACCESSORIES:	FG-HALO-A master flying grid WC-HALO-A quad-enclosure transit wheelcart TC-HALO-A quad-enclosure padded touring cover HALO-A-DELTA azimuth control plate GS-HALO-A ground stack frame
SPARE PARTS:	DU-1210-16 12" LF drive unit CDU-1405-16 1.4" exit HF drive unit RD-1405 replacement HF diaphragm RFG-HALO-A replacement grille/fabric PIN-0.375/0.813 locking pin (front) PIN-0.5/1.625 locking pin (rear)

NOTES ON MEASUREMENT CONDITIONS:

[1]Measured on-axis at 2m in an anechoic environment and referenced to 1m. [2] Measured in half space at 2m with 4W sine wave input and referenced to 1m. [3]Nominal dispersion, measured in an anechoic environment and averaged over stated bandwidth. [4]Calculated and verified by subjective listening test of familiar program material.
** Four HALO-A in parallel should only be used with short cable runs (less than 30m), and ideally a maximum of only 3 enclosures should be connected in parallel.

ENGINEERING DRAWING

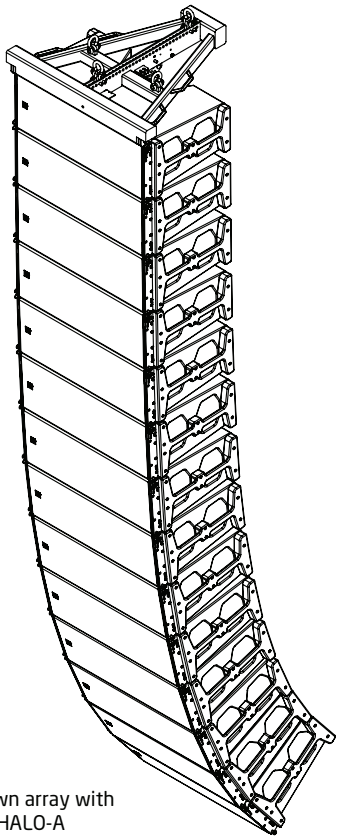


ENCLOSURE OPTIONS

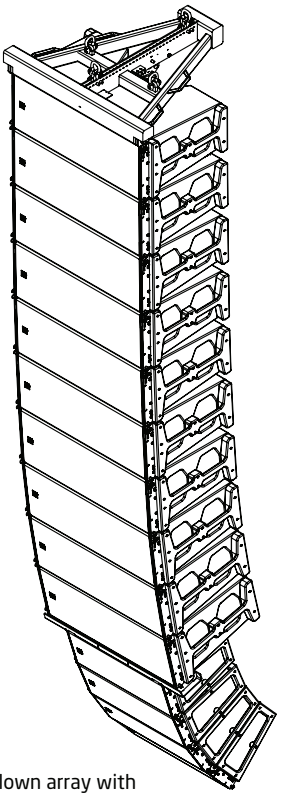
HALO-A loudspeakers are available as standard in black 3-step impact resistant polyurethane finish. All other colours, including white, are treated as custom; extended lead times and set up costs apply. HALO-A loudspeakers can be supplied as an outdoor version (OD), finished in the same black weather-resistant 3-step polyurethane coating. HALO-A is already inherently weather resistant, with a stainless steel grille and IP54 rated connectors. For permanent outdoor use, alternative connector options can be specified as well as cabinet modifications to customer requirements. Please contact your EM Acoustics representative for details.

RIGGING EXAMPLES

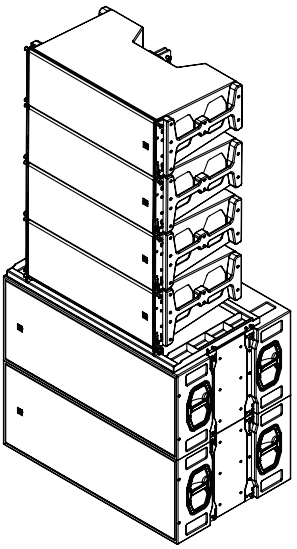
A wide variety of accessories are available for rigging HALO-A enclosures both in flown and groundstacked configurations. Please consult the separate rigging hardware datasheet for more information on these different options.



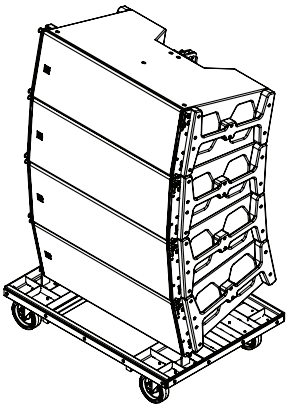
Flown array with
FG-HALO-A



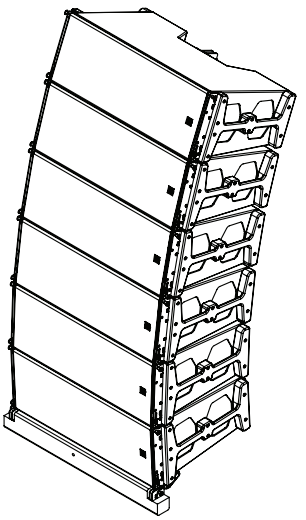
Flown array with
FG-HALO-A, PB-HALO-A
and HALO-B downfill



Ground stacked array
with GS-HALO-A
on ST-218



WC-HALO-A



Ground stacked array
with FG-HALO-A