



# LINEAR 5 LTS A LINEAR SUB 4000 A

***THE NEW PERFORMANCE CLASS >***



# LINEAR 5 LTS A

**LONG THROW.  
ULTRA COMPACT.  
ECONOMICAL.**

What does it take to throw the entire frequency spectrum over 30 meters and beyond? Only large line arrays pack a punch powerful enough to deliver that kind of performance. Until now, that is.

LINEAR 5 LTS A has arrived, and it's the first speaker to deliver real long throw performance in an ultra-compact format. Now you can hit the road with fewer speaker components in tow, saving valuable space on your truck. What's more, you can set up, stack and fly rigs that much faster and easier.

The new LINEAR 5 LTS A is not only the easiest way of treating audiences of up to 3,000 to the best sound; it's also the most economical option out there.

## **LONG THROW.**

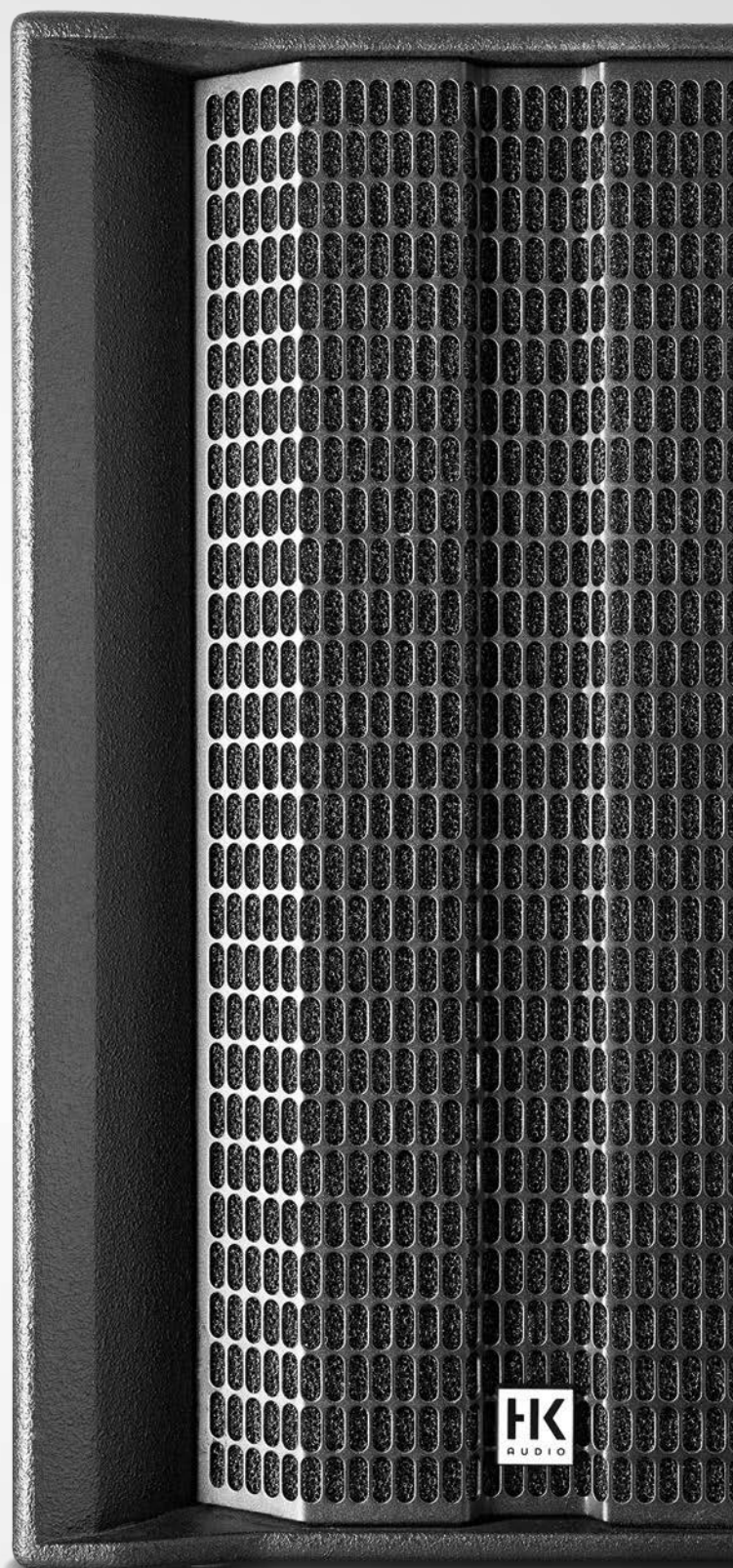
Whether it's 30, 40 or 50 meters – the new LTS mid/high unit throws the sonic image as far as it needs to go, sending even silky top-end frequencies all the way to the back row. This is made possible thanks to HK Audio's ground-breaking Multicell Transformer technology. This ingenious invention drastically reduces high frequency distortion, thereby solving a major problem of legacy horn and waveguide designs: they generate distortion that limits the amount of useful sound pressure. Equipped with this proprietary technology, the LTS A is able to deliver 138dB SPL, an exceptionally high maximum by any standard. This awesome power, paired with a curved array created by the multiple cells, extends the range to cover the entire sound field with a crystal-clear audio image.

## **ULTRA COMPACT.**

The pioneering Multicell Transformer makes setting up compact speaker systems an exercise in convenience. The latest generation LINEAR 5 series model is housed in an ultra-compact 68x44x46cm enclosure. Tipping the scales at just 24.9kg, the LTS A can easily replace speakers twice its size and weight to save truck space and make installation in a rig so much easier. The LTS A's classic streamlined format is certainly a refreshing change. Talk about intuitive handling: finally, here's a straightforward design that can be stacked on the ground or on its head, and clustered with remarkable ease and flexibility. All this contributes to making the LTS A easily the most flexible tool in its class.

## **ECONOMICAL.**

Sophisticated features, a remarkably affordable price, a small footprint and fast setup. With the LINEAR 5 LTS A, your savings are threefold: peoplepower, truck space and time. This gives you far greater leeway for planning the given production's budget, as well as making the LTS A the most economical solution in its application range.

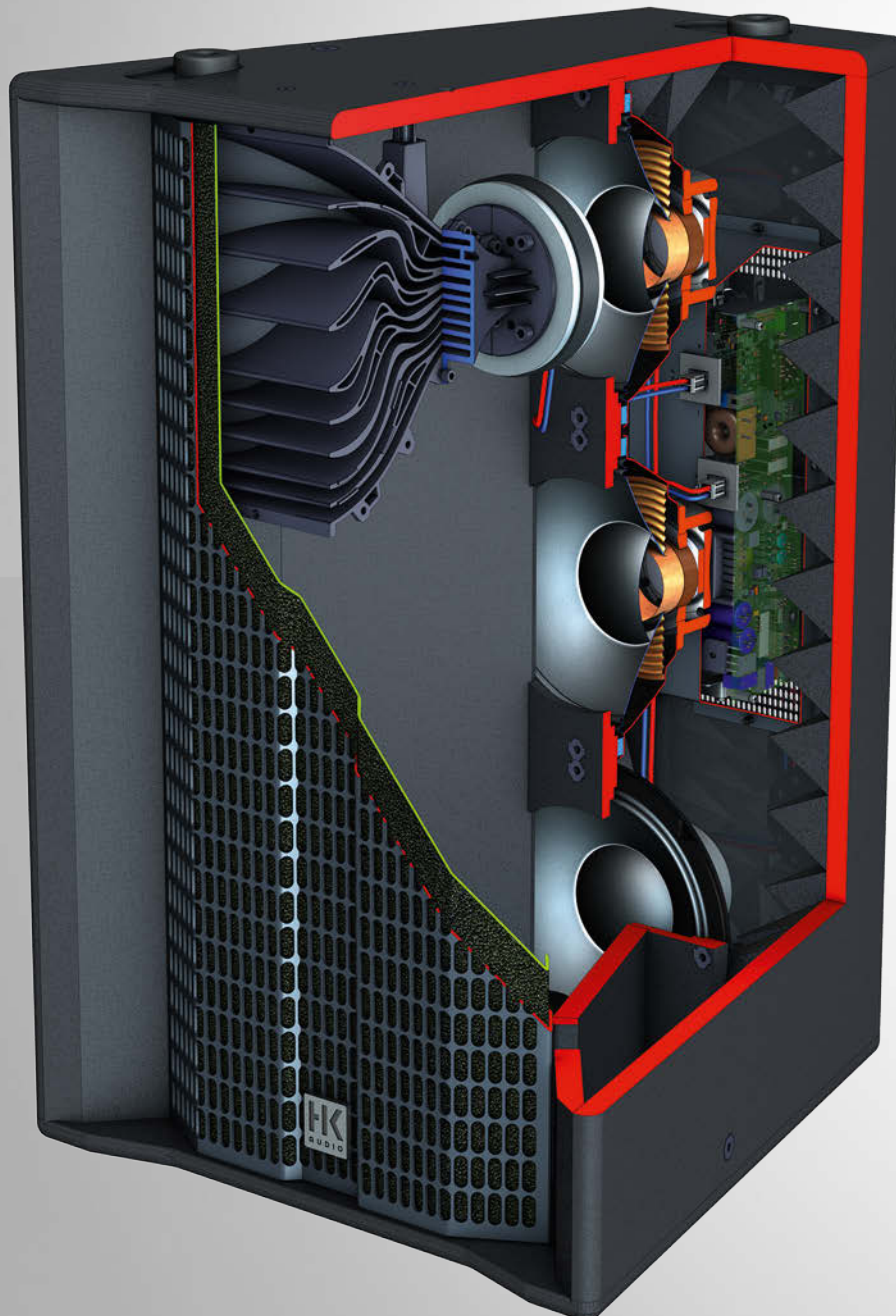


## THE INNOVATIVE MULTICELL TRANSFORMER

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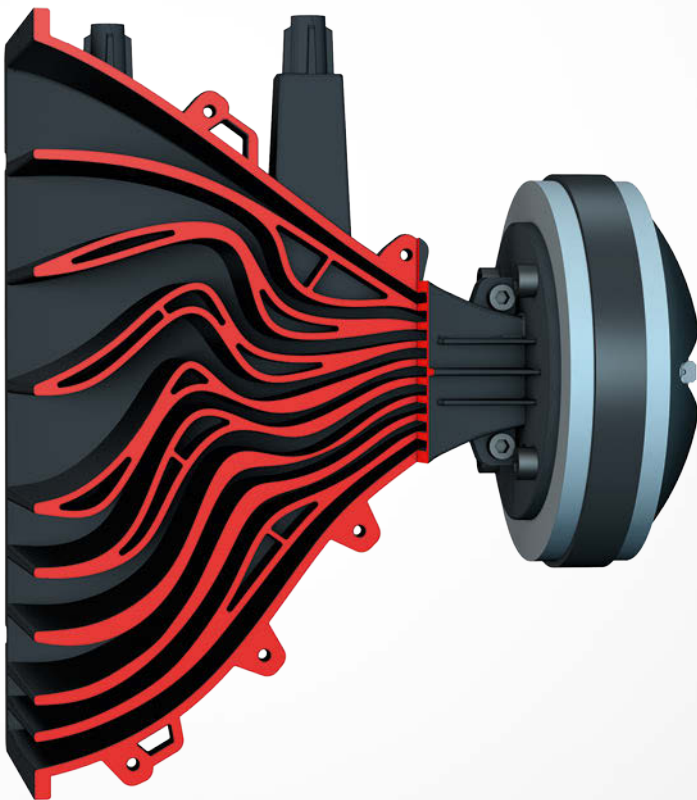
To date, there have been two ways to construct long range speaker systems. The time-tested approach is to use long throw horns. They have to have very large mouths and deep enclosures to accommodate the horn's throat, so the housings are huge. Plus, there's a lot of real estate inside the horn. These surfaces cause resonances and reflections that manifest as distortion, particularly at high frequencies. This distortion puts a very low cap on the maximum achievable sound pressure.

The other option for long throw applications, the line array, has been around for about 20 years. Waveguides shape the wave-front so that the line array is able to render even high frequencies well. The downside is that you have to haul, assemble and align a whole lot of speakers even for small or medium-scale events, which costs you truck space, time and money.

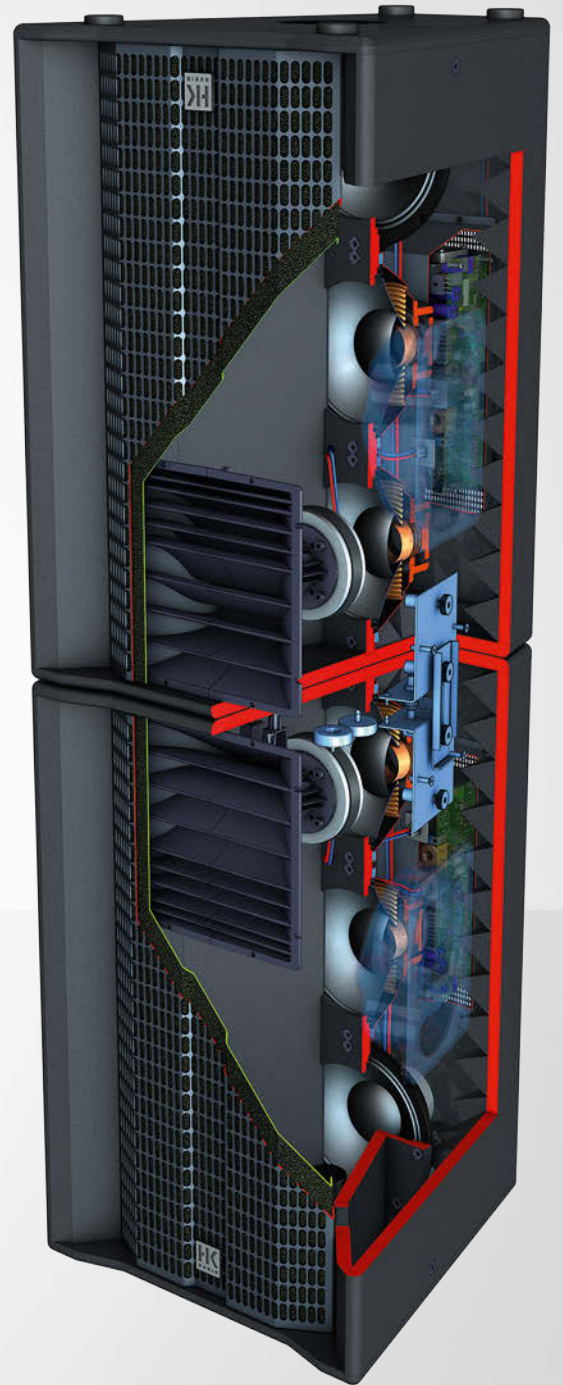


HK Audio engineers took up the challenge of reinventing the long throw speaker and came up with a ground-breaking solution: the Multicell Transformer (MCT). This ingenious invention makes the most of horns' and waveguides' physical advantages, with none of the drawbacks. The mouths of the nine horn channels form a line array, with sound traveling down channels of different lengths to achieve different delay times. This yields a perfect vertical curve and a very precise  $+5^{\circ}/-25^{\circ}$  pattern of throw.

With these unique properties, the MCT achieves the performance of comparable horns and waveguides at a fraction of their size. This revolutionary advance in technology is the key to building sensationally small and streamlined speakers.



Here's a simplified run-down of how it works: the MCT splits the wave-front into nine small wave-fronts. Each of these partial waves is directed through the flaring duct of a horn of different length and mouth size. These horns don't have acres of real estate that can cause interference, so the only distortion they generate is beyond the range of human hearing. This increases useful sound pressure by up to 10dB.



Thanks to the MCT horn's asymmetrical directivity, two LINEAR 5 LTS A units can be set up together in an 'acoustically correct' head stack.

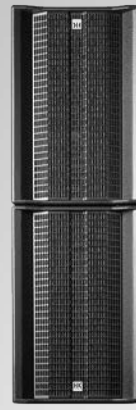
# SETUPS



Solo



Horizontal Cluster



Head Stacking



Head Stacking Cluster



Rear view



Top view



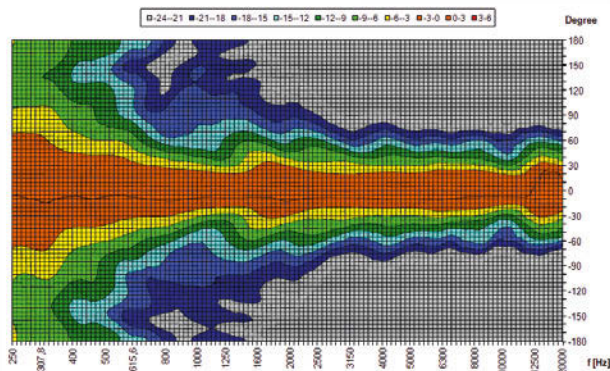
Side view



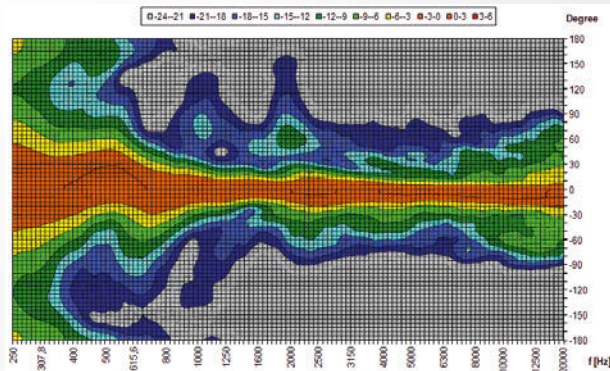
Bottom view

# TECHNICAL DATA

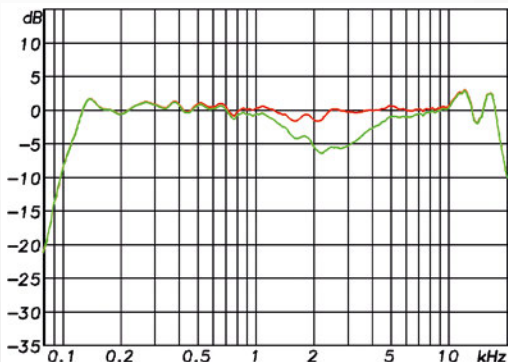
<b>Frequency Response +/-3 dB</b>	115Hz – 14kHz
<b>Frequency Response -10 dB</b>	100Hz – 20kHz
<b>Max. SPL @ 10% THD</b>	133dB half space
<b>Max. SPL Peak @ 10% THD</b>	138dB half space
<b>Max. SPL Calc.</b>	141dB half space
<b>Amplifier/Type</b>	Class D Biamped
<b>Power Rating</b>	1000W
<b>HF Amplifier</b>	350W @ 4ohms
<b>Low/Midrange Amplifier</b>	650W @ 4ohms
<b>Active Protection Circuits</b>	Undervoltage Protection, Thermoprotection, Short Circuit Protection, Overcurrent Protection
<b>Protection</b>	Subsonic 24dB/oct., Peak Limiter, DSP Input Limiter
<b>Power Consumption</b>	3.3A/230V (Power Consumption Relating to EN60065 Directive)
<b>Input Sensitivity</b>	+4dBu @ Gain Centerclick/L5 System Level
<b>Connections</b>	XLR Combi In, XLR Thru
<b>Power Supply</b>	1 x IEC Power Connector with V-Lock Protection System
<b>Low Mid Speaker</b>	3 x 8" (16ohms) Neodymium
<b>HF Driver</b>	1 x 1" (16ohms) Neodymium
<b>Horn Characteristics</b>	60° x +5°/-25° MCT Horn
<b>X-over Frequency</b>	1.7kHz FIR X-Over with 48dB/oct.
<b>Pole Mount</b>	MonoTilt 0°
<b>Rigging Points</b>	7 x M8
<b>Handles</b>	2, Integrated
<b>Optional Accessories</b>	Protective Transport Covers, Tilt Bracket, Tilt Bracket Head Stack Extension Set, Cluster Plate (Pick Point), AP-8 Rigging Point
<b>Housing</b>	Birch Multiplex 15mm
<b>Grille</b>	2mm Metal Grille with Black Acoustic Foam
<b>Finish</b>	Acrylic Enamel, Black
<b>Dimensions (WxHxD)</b>	44 x 68 x 46.1cm
<b>Weight</b>	24.9kg / 54.9lbs



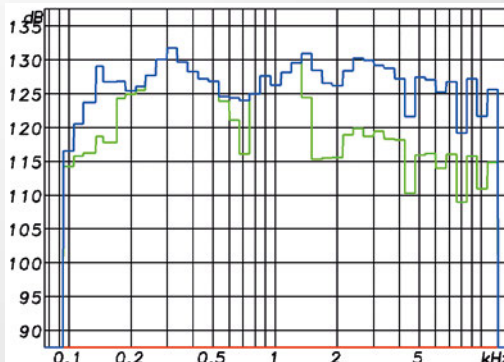
LTS A horizontal - 2D directivity



LTS A vertical - 2D directivity



LTS A - frequency response (flat/contour)



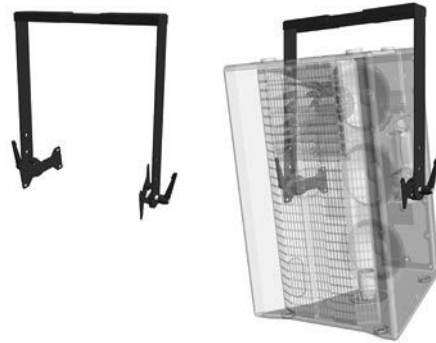
LTS A - max SPL 3% & 10% THD full space

## ACCESSORIES

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### TB-N

Tilt bracket for loudspeakers in the LINEAR 5 (L5 112 F/FA, L5 115 F/FA, L5 LTS/LTS A) and HK Audio PULSAR (PL 112 FA, PL 115 FA) series. For attaching to trusses using appropriate half-couplers or trigger clamps (M12). Mounts to the speaker via clamping levers (M10). Also suitable for installation on ceilings, wall brackets or tripods. Flexible vertical and horizontal alignment.



### TB-NQ (QRP)

Tilt bracket with quick release pins for loudspeakers in the LINEAR 5 (L5 112 F/FA, L5 115 F/FA, L5 LTS/LTS A) and HK Audio PULSAR (PL 112 FA, PL 115 FA) series. For attaching to trusses using appropriate half-couplers or trigger clamps (M12). Quick installation through ball lock pins. Also suitable for installation on ceilings, wall brackets or tripods. Flexible vertical and horizontal alignment.

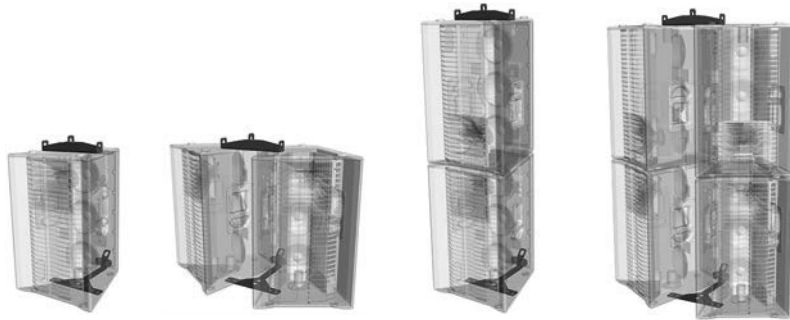


### TB-HES

Tilt bracket extension (compatible with TB-N/TB-NQ) for L5 LTS head stacking applications.







### PP-2/CP

This set, composed of one pick point and one clustering plate, offers either two or three attachment points for flying and angling L5 LTS units. Suitable for use in single, head stack, cluster, and head stack cluster operating modes.



### TC LTS

Perfect-fitting padded protective covers are available for all LINEAR 5 series models as an optional accessory. Openings afford access to the enclosures' carrying handles.



### AP-8

This attachment point has a workload limit (WLL) of 360kg/794lbs. It safely attaches enclosures with M8 rigging points to steel cables or chains.



# LINEAR SUB 4000 A

## **Powerful and Versatile**

L SUB 4000 A is the flexible new 18" subwoofer from HK Audio. Compatible with all LINEAR 5 fullrange speakers and mid/high units, its powerful low end – ranging from 30 to 100 Hertz – is totally and powerfully impressive.

L SUB 4000 A can also serve as a sub-low add-on to LINEAR SUB 2000 to beef up the bottom end in the range of 30 to 70 Hertz.

## **Innovative and Combinable**

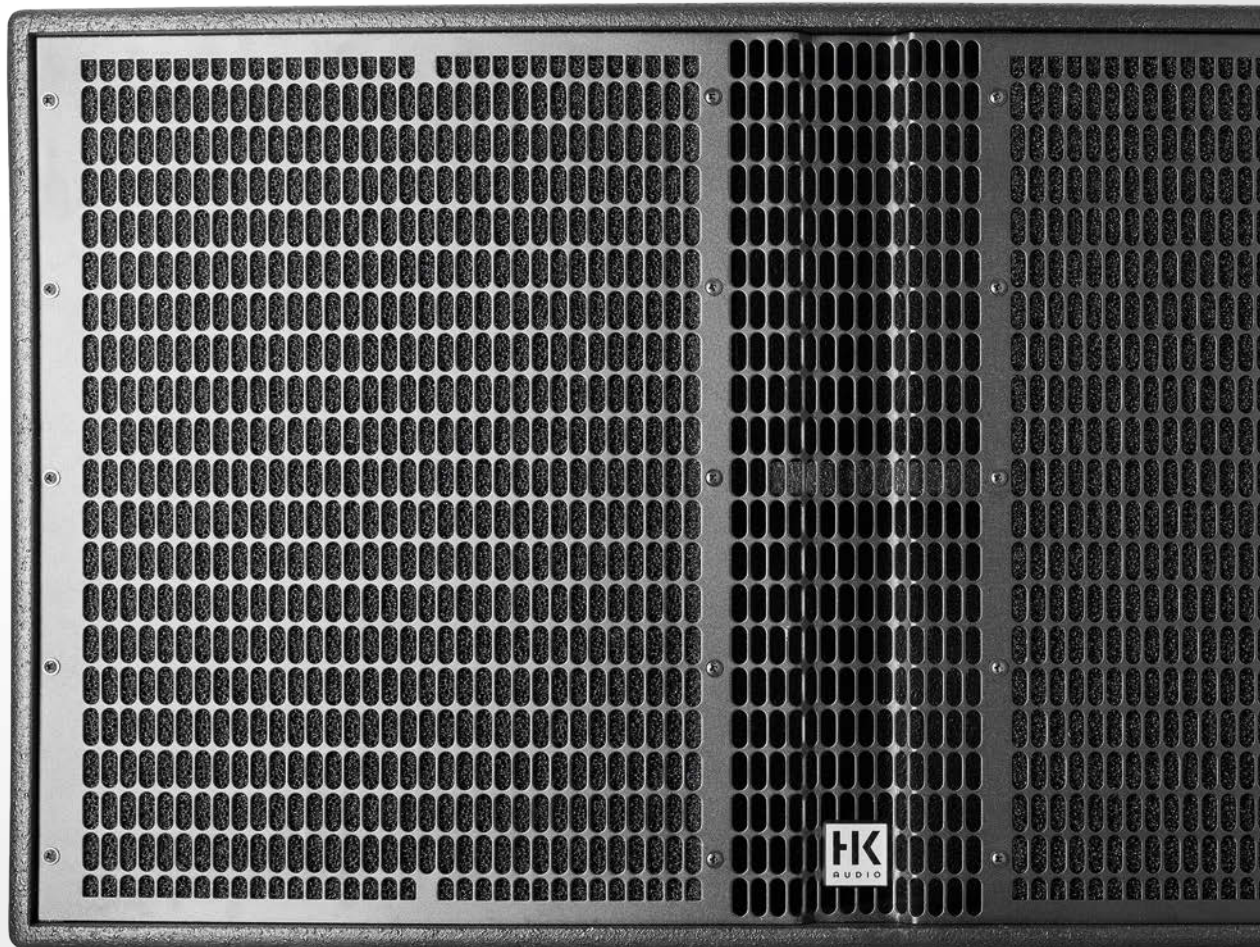
The chambers of this double-ventilated band-pass enclosure were tuned differently, and optimized for ultra-low signals and kick drums. L SUB 4000 A can be deployed flexibly as the sole subwoofer for a PA or as a sub-low extension unit.

HK Audio engineers tuned the L SUB 4000 A's band-pass enclosure and electronics to deliver phase-corrected response when paired with the L SUB 2000 A. This means the L SUB 4000 A can be added to a legacy system without requiring additional outboard controllers. The built-in preamp is stereo, so a single L SUB 4000 A may be deployed as a central sub-low bin for a stereo system.

## Dynamic and Faithful Response

Rugged high-tech courtesy of German engineering: HK Audio has decades of experience developing advanced sound reinforcement solutions, and the L SUB 4000 A has also benefitted from our engineers' unique skillset. This subwoofer delivers high maximum SPL paired with dynamic, deep-ranging response, and renders signal peaks with remarkable fidelity even when pushed very hard. Its robust wood housing is built to withstand the wear and tear of daily use.

L SUB 4000 A is perfectly suited for professional gigs and installation in clubs. Under-voltage, thermal and over-current protection circuits and a peak limiter keep the electronic components safe from overloads to ensure this unit will keep delivering reliable performances for many, many tomorrows to come.



## TECHNICAL DATA

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<b>Frequency response +/-3dB</b>	31Hz – X-over
<b>Frequency response -10dB</b>	39Hz – X-over
<b>Sensitivity 1W/1m</b>	99dB full space, 105dB half space
<b>Max. SPL @ 10% THD</b>	135dB half space
<b>Max. SPL Peak @ 10% THD</b>	137dB half space
<b>Max. SPL Calc.</b>	138dB half space
<b>Amplifier/Type</b>	Class D
<b>Power Rating</b>	1200W
<b>Subwoofer Amplifier</b>	1200W @ 4ohms
<b>Amplifier Active Protection Circuits</b>	Undervoltage Protection, Thermoprotection, Short Circuit Protection, Overcurrent Protection
<b>Loudspeaker Protection</b>	Subsonic 24dB/oct., Peak Limiter
<b>Power Consumption</b>	3.3A/230V (Power Consumption Relating to EN60065 Directive)
<b>Input Sensitivity</b>	+4dBu @ Gain Centerclick



<b>Connections</b>	2 x XLR In, 2 x XLR Thru, 2 x XLR Mid/High Out
<b>Power Supply</b>	1 x IEC Power Connector with V-Lock Protection System
<b>Low Frequency Speaker</b>	1 x 18" (4ohms) with 4" Voice Coil featuring Advanced-Ventilated Voice Coil Gap
<b>X-over Frequency</b>	70/100Hz variable with 24dB/oct.
<b>Pole Mount</b>	2 x M20
<b>Handles</b>	8, Integrated
<b>Optional Accessories</b>	Protective Covers, Mounting Hardware for Casters, Tilt Unit
<b>Housing</b>	Birch Multiplex 15/18mm, 9/13 ply
<b>Grille</b>	2mm Metal Grille
<b>Finish</b>	Acrylic Enamel, Black
<b>Dimensions (WxHxD)</b>	90.8 x 50.8 x 80.7cm
<b>Weight</b>	59kg/130.1lbs



## SUGGESTED SYSTEM SETUPS

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### **LTS Front PA - Long Throw Sound Reinforcement**

Audience size\*: max. 1,000

2 x L5 LTS A

2 x Distance pole with hand crank

4 x L SUB 4000 A



**L SUB 4000 A Sub Low Extension for additional Low End**

Audience size\*: max. 1,000

2 x L5 LTS A

4 x L SUB 2000 A

2 x L SUB 4000 A

## SUGGESTED SYSTEM SETUPS

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### **LTS Clustering for broader horizontal dispersion**

Audience size\*: max. 1,500

4 x L5 LTS A

6 x L SUB 4000 A





**LTS Head Stacking for further Long Throw capability**

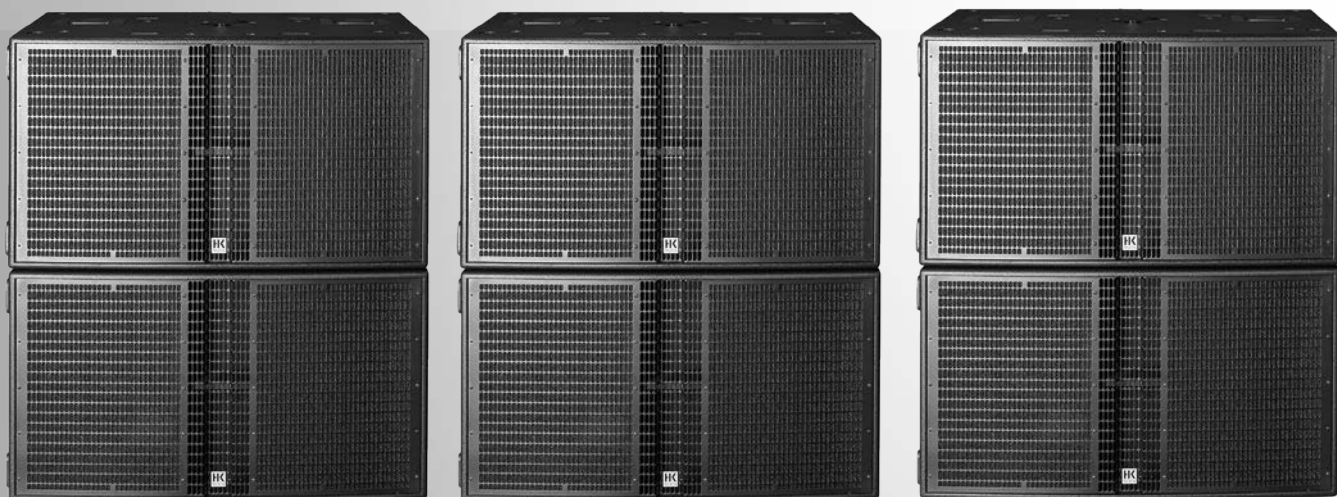
Audience size\*: max. 1,500

4 x L5 LTS A

6 x L SUB 4000 A

## SUGGESTED SYSTEM SETUPS

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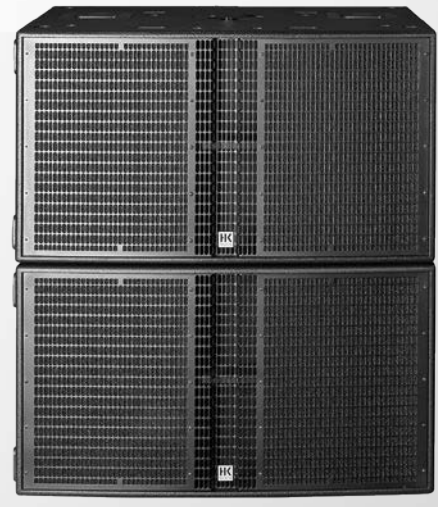
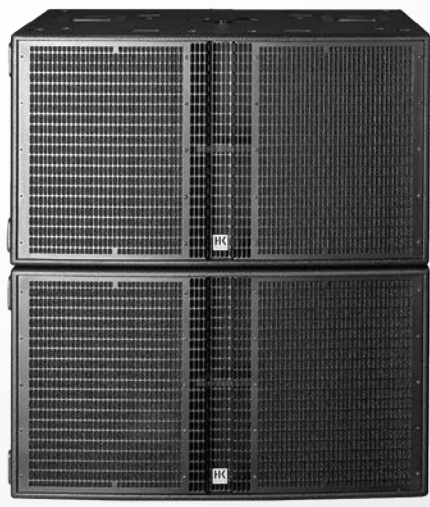
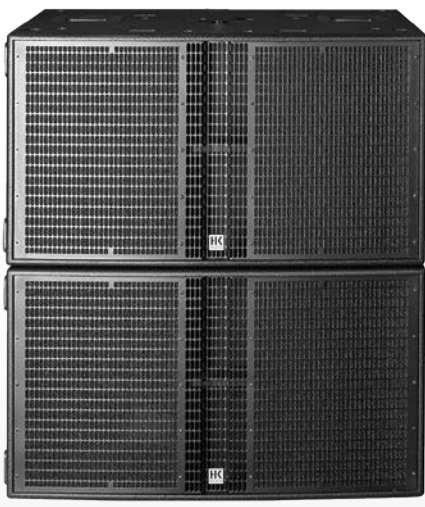
### **LTS Headstack Clustering for broader horizontal dispersion and further Long Throw capability**

Audience size\*: max. 3,000

8 x L5 LTS A

12 x L SUB 4000 A

Nearfills are recommended in a setup like this



\* A note on audience size: these are suggestions, rather than recommendations, meaning these numbers are more for your general orientation. The actual coverage will depend on the room's size, layout, appointments and furnishings, as well as the area you want to cover and the sound pressure levels you wish to achieve.



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