



## TECHNICAL DATA SHEET >



# ELEMENTS E 835/E 435

The E 435 and E 835 enclosures serve as the HK Audio ELEMENTS series' mid/high line sources. Equipped with four or eight 3.5" fullrange speakers configured in a line array and a built-in signal bus, these units can be stacked and scaled up to assemble taller columns. This design, based on the line array principle, brings all the acoustical benefits of line-source columns to bear, including a tightly focused pattern of throw. Its horizontal directivity is 70°, while the vertical directivity ranges from 0° to 10°, depending on the configuration. This dispersion pattern ensures audiences in acoustically challenging venues – such as houses of worship, school gyms and the like – can be addressed with pinpoint precision. The E 435 and E 835 line sources effectively minimize annoying reflections from ceilings and floors, and deliver a natural-sounding, clear audio image. Designed specifically for the ELEMENTS line, the speakers inside the enclosure cover an exceptionally wide frequency range extending from the low mids typical of the human voice to 10+ kHz. This wide-ranging response, in combination with the line array effect, improves speech intelligibility markedly, even at greater distances.

Crafted of rugged, high-grade extruded aluminum, the HK Audio E 435 and E 835 enclosures are 38 and 74.5cm high respectively, 11cm wide and 12cm deep. Their look is one of understated elegance; their silhouette is inconspicuous. The INSTALL KIT, which features modified HK Audio E 435 and E 835 units and practical wall brackets, is available for permanent installation. Up to six E 435s or three E 835s may be combined in a set using these wall brackets. With the benefit of mounting yokes, the ELEMENTS INSTALL KIT may be adjusted 180° horizontally, and fixed in place quickly and easily using hex-head screws. Although standard HK Audio E 435 and E 835 units come in black or white, any RAL color is available on request. The E 435 and E 835 mid/high line sources can thus be made to match any interior design, fading into the background to become practically invisible.

## > FEATURES

- Scalable mid/high units featuring line array technology
- Excellent directivity; uniform sound
- Column speakers with an inconspicuous design
- Rugged aluminum housing
- Built-in E-Connect signal bus
- Lightweight; quick and easy installation

## > TECHNICAL SPECIFICATIONS

### HK Audio E 435

<b>Power Handling:</b>	150 Watts RMS
<b>Speakers:</b>	4 x 3.5" - Fullrange Woofer
<b>Horizontal Directivity:</b>	70°
<b>Vertical Directivity:</b>	0 – 10° (Depending on the number of mid/high line sources)
<b>Frequency Response (-10 dB):</b>	140Hz – 20kHz with active filtering
<b>Max SPL* (10% Thd, Half Space):</b>	111 dB (125dB for the largest line array with six E 435s)
<b>Nominal Impedance:</b>	16 Ohms
<b>Axial Sensitivity 1W/1m:</b>	97dB, Half Space
<b>Connections:</b>	1 x E-Connect-In, 1 x E-Connect-Out
<b>Dimensions (WxHxD):</b>	11 x 38** x 12 cm
<b>Weight:</b>	2.35 kg

### HK Audio E 835

<b>Power Handling:</b>	300 Watts RMS
<b>Speakers:</b>	8 X 3.5" Fullrange Woofer
<b>Horizontal Directivity:</b>	70°
<b>Vertical Directivity:</b>	0 – 10° (Depending on the number of mid/high line sources)
<b>Frequency Response (-10dB):</b>	140Hz – 20kHz with active filtering
<b>Max. SPL * (10% Thd, Half Space):</b>	117 dB (125dB for the largest line array with three E 835s)
<b>Nominal Impedance:</b>	8 Ohms
<b>Axial Sensitivity 1W/1m:</b>	100dB, Half Space
<b>Connections:</b>	1 x E-Connect-In, 1 x E-Connect-Out
<b>Dimensions (WxHxD):</b>	11 x 74.5** x 12 cm
<b>Weight:</b>	5.6 kg

\* Meaningful comparisons between the levels of ELEMENTS and of conventional point-source systems cannot be drawn as ELEMENTS is a line source whose level drops off 3dB rather than 6dB in the near field.

\*\*Without E-Connect Sleeve

## EXTENSIONS

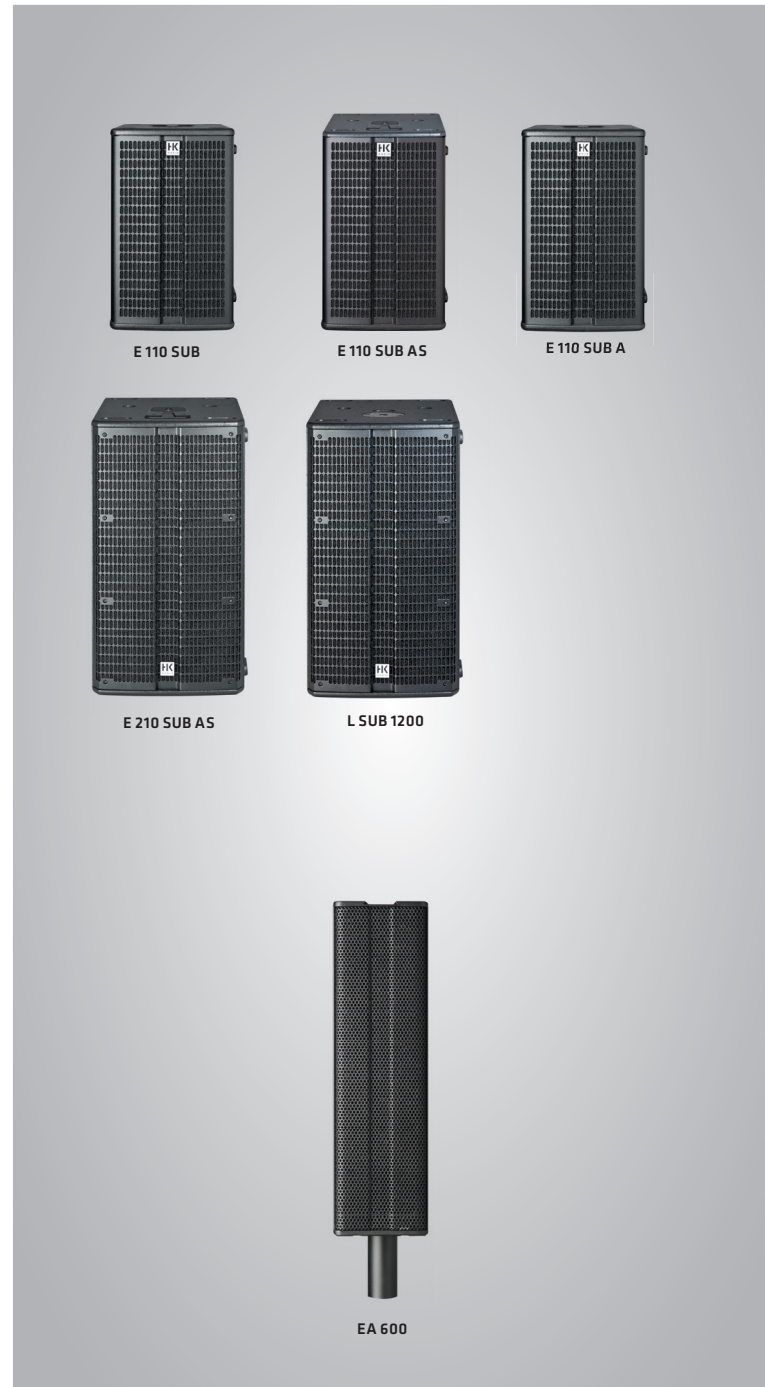


### Active and passive subwoofer add-ons

HK Audio E 435 and E 835 mid/high line sources may be combined with ELEMENTS series subwoofers to provide the full frequency spectrum necessary to render music and other audio signals. The E 110 SUB AS, E 110 SUB A and E 110 SUB models are loaded with one 10" subwoofer, while the E 210 SUB AS and L SUB 1200 feature two. The A in the model designation indicates this is an active version equipped with a power amp for both the in-built low-frequency driver and the mid/high line sources. The AS in the model designation indicates this is a 'system' subwoofer, meaning that its power amp that can drive mid/high line sources as well as an added passive subwoofer. These powered subwoofers also feature crossovers and filters for different combinations of HK Audio E 435s and E 835s. These features enable you to flexibly configure the right sound system for very different occasions. There are few cords to connect, so the system is quickly reconfigured. With a small footprint and a slim silhouette, these subwoofers are extremely inconspicuous bass add-ons indeed.

### Outboard amps

The active subwoofers are one option for driving HK Audio ELEMENTS E 435 and E 835 speakers; another is to have the ELEMENTS series EA 600 amplifier module provide the power and filtering. The EA 600 and E 435 housings share the same design, so they're a perfect match, both visually and mechanically. The 600-watt Class D amplifier delivers plenty of power to drive four E 435s, or two E 835s, or a combination of two SUB E 110 passive subwoofers and two E 435s. Passive ELEMENTS series components may also be configured in various PA systems driven by Lab.gruppen IPD 1200 and 2400 amp modules. Their filter settings are tailored to ELEMENTS series components, so you can enjoy all the benefits of the Lab.gruppen IPD 1200 and 2400 amp modules, such as remote control via iPad and/or networked operation. Example configurations with various amps are shown in this datasheet's appendix.

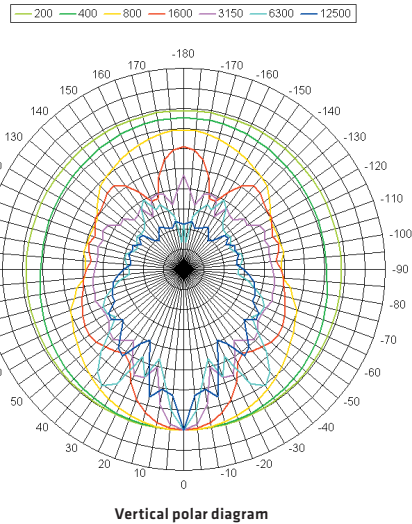
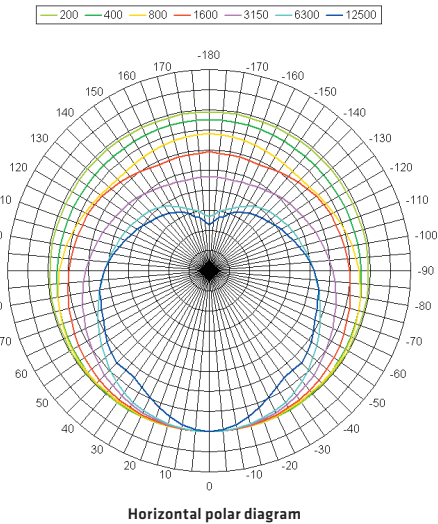
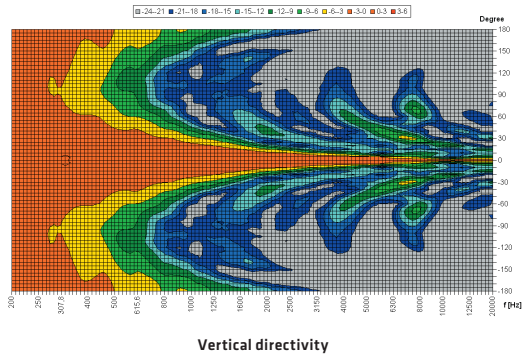
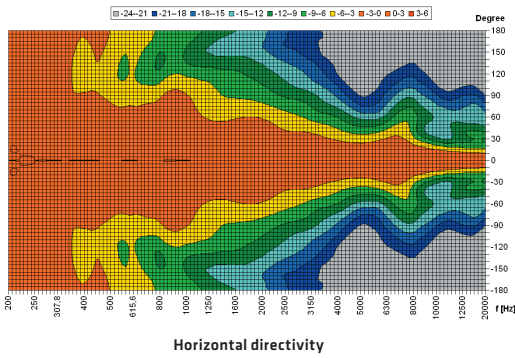
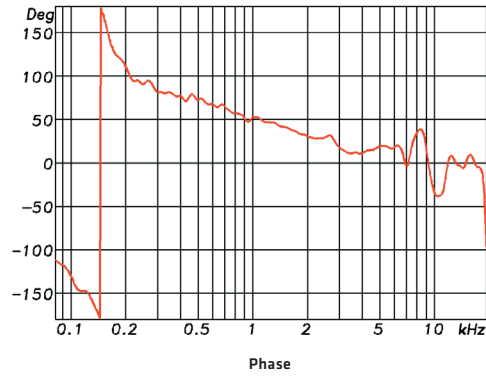
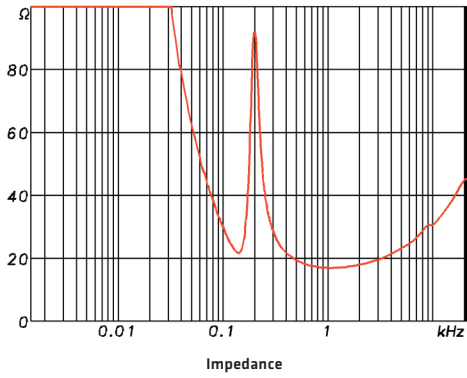
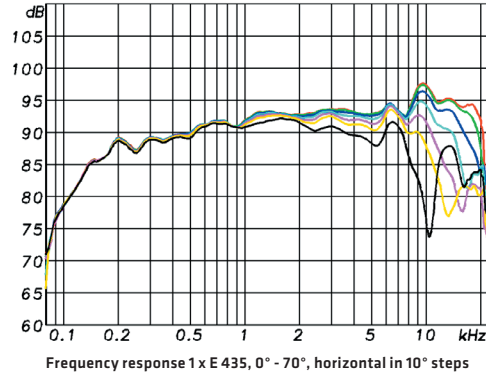
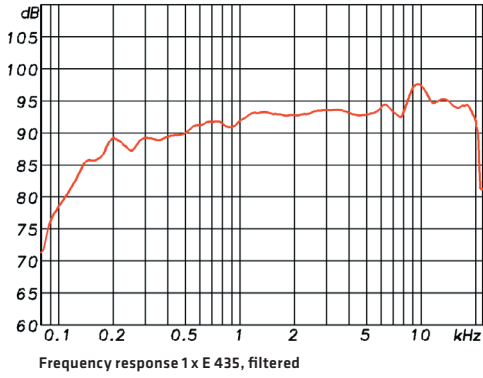


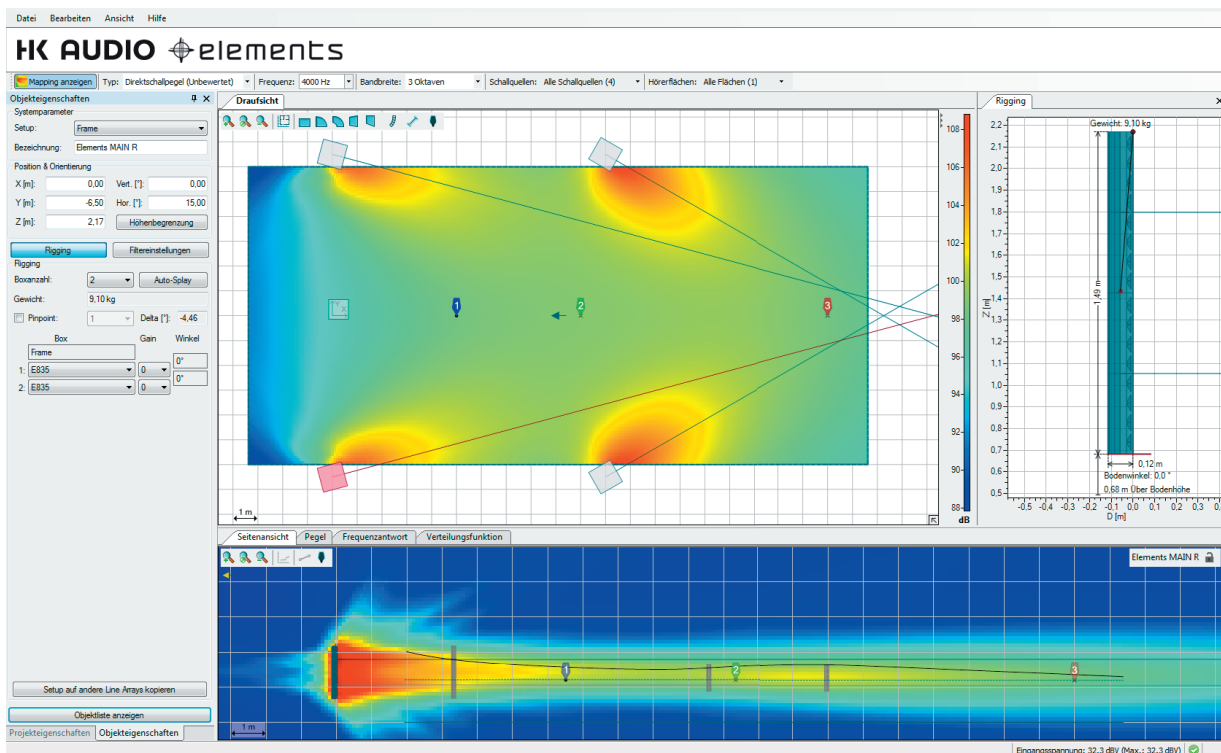
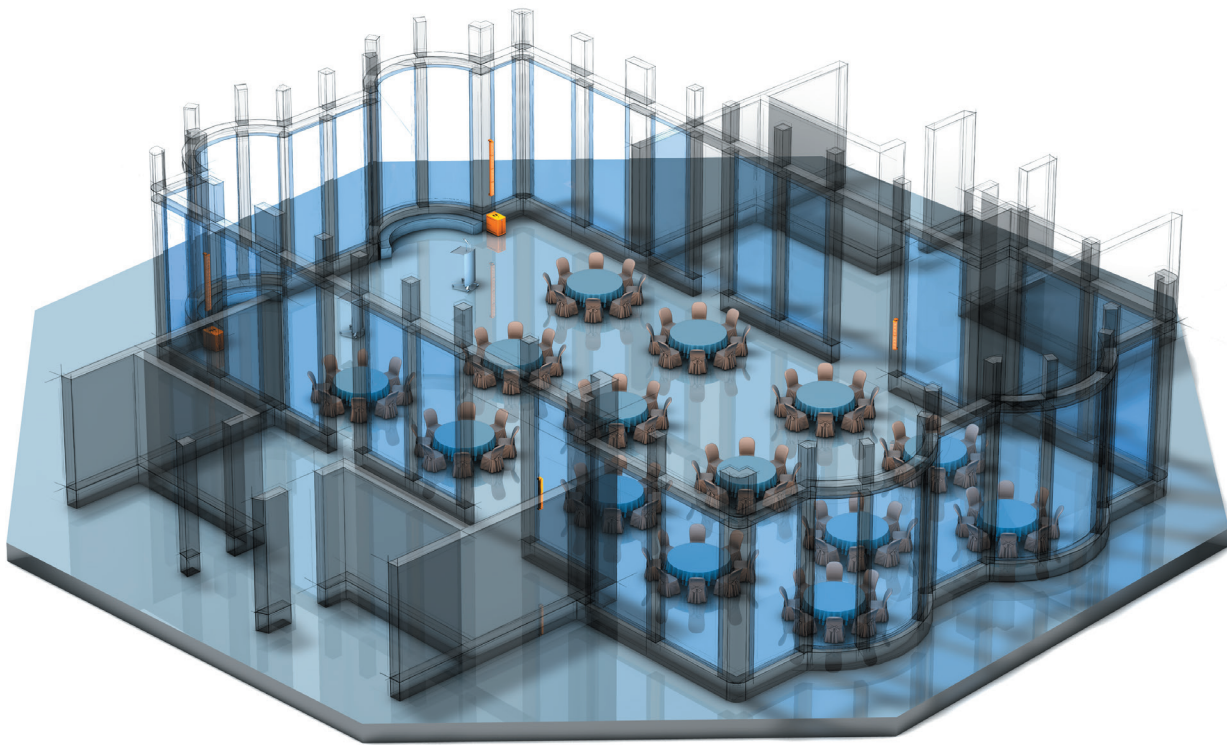
Lab.gruppen IPD 1200/IPD 2400

## MEASURING CHARTS



The following measurements were taken for one E 435 mid/high line source unit. ELEMENTS systems are scalable, so combinations with additional mid/high line sources will yield different measurements. EASE and EASE Focus 2 software simulations provide a realistic picture of ELEMENTS' possibilities. The necessary GLL files may be downloaded at [www.hkaudio.com](http://www.hkaudio.com)





Here's an example simulation generated in the free EASE Focus 2 software. HK Audio provides virtual models of ELEMENTS line sources that may be downloaded to model complex sound systems, conveniently and realistically, in EASE Focus 2. To this end, the near field is calculated on both the horizontal and vertical planes. These simulations may be stored and shared.

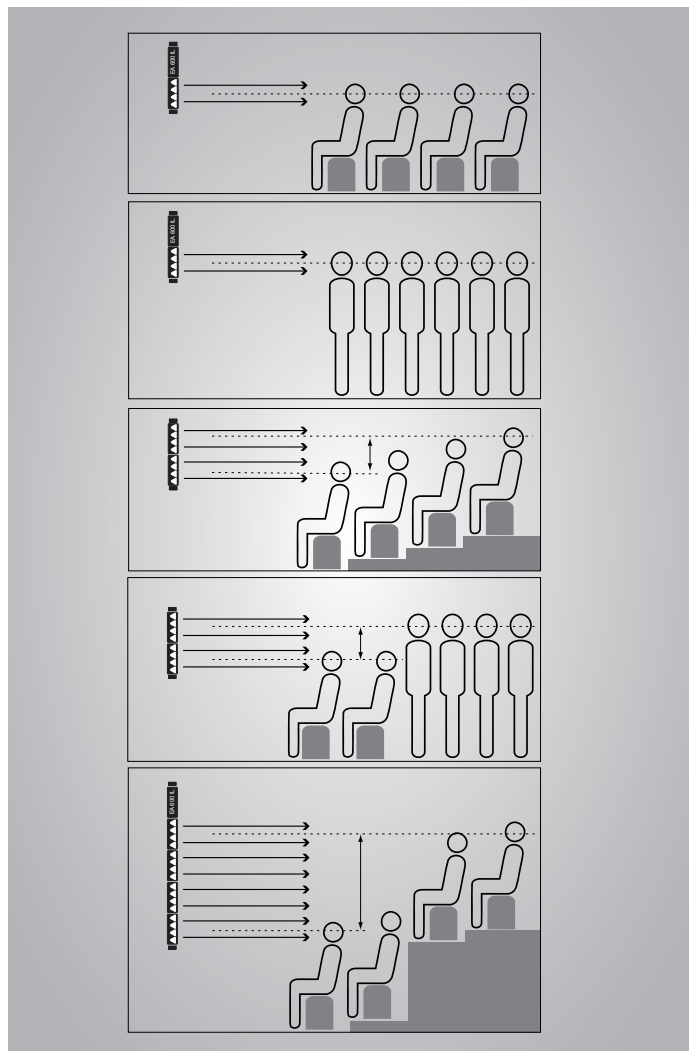
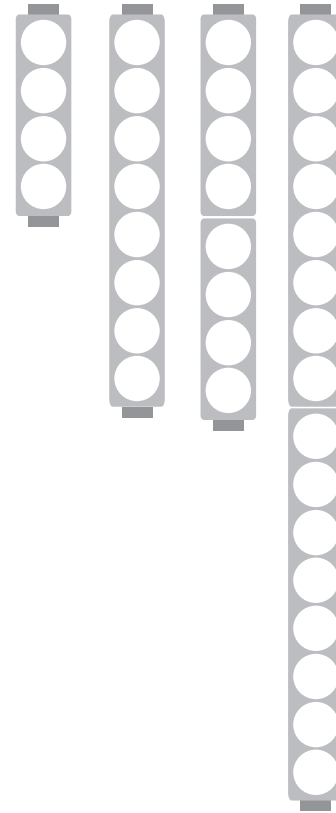
## > ELEMENTS INSTALL KITS



The INSTALL KIT's mounting brackets may be used to permanently install E 435 and E 835 mid/high line sources. It comes with top and bottom ELEMENTS enclosures that have been modified to accept these wall brackets. Additional mid/high line sources can be easily inserted between the two top and bottom components as needed, and without modification.

When contemplating permanent installation, the first decision to be made is whether to go with an active or a passive INSTALL KIT. Both have to be provided with an audio signal, of course, but the active INSTALL KIT also requires an AC power feed. An EA 600 amp module always takes the top spot in an active INSTALL KIT. The bottom component can be an E 435 or E 835 mid/high line source.

Passive INSTALL KITs may be configured with the shorter E 435 mid/high line source or the taller E 835 at the top and bottom positions. INSTALL KITs consisting solely of one E 435 or E 835 mid/high line source unit are special cases where the top and bottom panels are modified so that no other ELEMENTS components may be added.



- INSTALL KIT with 1 x E 435 - non-powered, not extendable
- INSTALL KIT with 1 x E 835 - non-powered, not extendable
- INSTALL KIT with 2 x E 435s - non-powered, extendable
- INSTALL KIT with 2 x E 835s - non-powered, extendable



- INSTALL KIT with 1 x E 435 + 1 x EA 600 - powered, extendable
- INSTALL KIT with 1 x E 835 + 1 x EA 600 - powered, extendable



**1. EA 600**

→ **INSTALL KIT with 4 x E 435**

INSTALL KIT consisting of one EA 600 amp module and up to four E 435 line sources.



**3. E 110 SUB AS**

→ **INSTALL KIT with 4 x E 435, 1 x E 110 SUB AS and 1 x E 110 SUB**

INSTALL KIT consisting of up to four E 435 line sources driven by the active E 110 SUB AS subwoofer, which can also power a passive E 110 SUB subwoofer.



**2. E 110 SUB A**

→ **INSTALL KIT with 2 x E 435 and 1 x E 110 SUB A**

INSTALL KIT consisting of up to two E 435 line sources driven by the active E 110 SUB A subwoofer .



**4. E 210 SUB AS**

→ **INSTALL KIT with 6 x E 435 and 1 x L SUB 1200**

INSTALL KIT consisting of up to six E 435 line sources driven by the active E 210 SUB AS subwoofer, which can also power a passive L SUB 1200 subwoofer.





### 5. IPD 1200

→ INSTALL KIT with 4 x E 435  
and 2 x E Sub 110

INSTALL KIT consisting of up to four E 435 line sources connected to channel 1 of the IPD 1200 amp and two passive E 110 SUB subwoofers connected to channel 2.



### 6. IPD 2400

→ INSTALL KIT with 6 x E 435  
and 2 x L SUB 1200

INSTALL KIT consisting of up to six E 435 line sources connected to channel 1 of the IPD 2400 amp and two passive L SUB 1200 subwoofers connected to channel 2.



## > ACCESSORIES

### Soft Bag

The padded bag holds four E 435s or four EA 600 amps or two E 835s, or any combination thereof, such as three E 435s and one EA 600. It also accommodates speaker mounting poles. Two distance rod protective covers are included.



### EF 45

The EF 45 base provides the pedestal for the E 435 and E 835 mid/high line sources, the EA 600 amp module and the EP 1 or EP 2 speaker mounting poles. Its retractable and extendible feet serve as a stable, secure platform with a small footprint for the mounted ELEMENTS components. Signals are routed to these components via the internal E-Connect bus. External signals are patched in and routed through via two parallel NL4 ports. Also available are protective covers for the EF 45 base.

Dimensions: 45-51 x 31 x 12.5 cm; Weight: 7.7 kg.



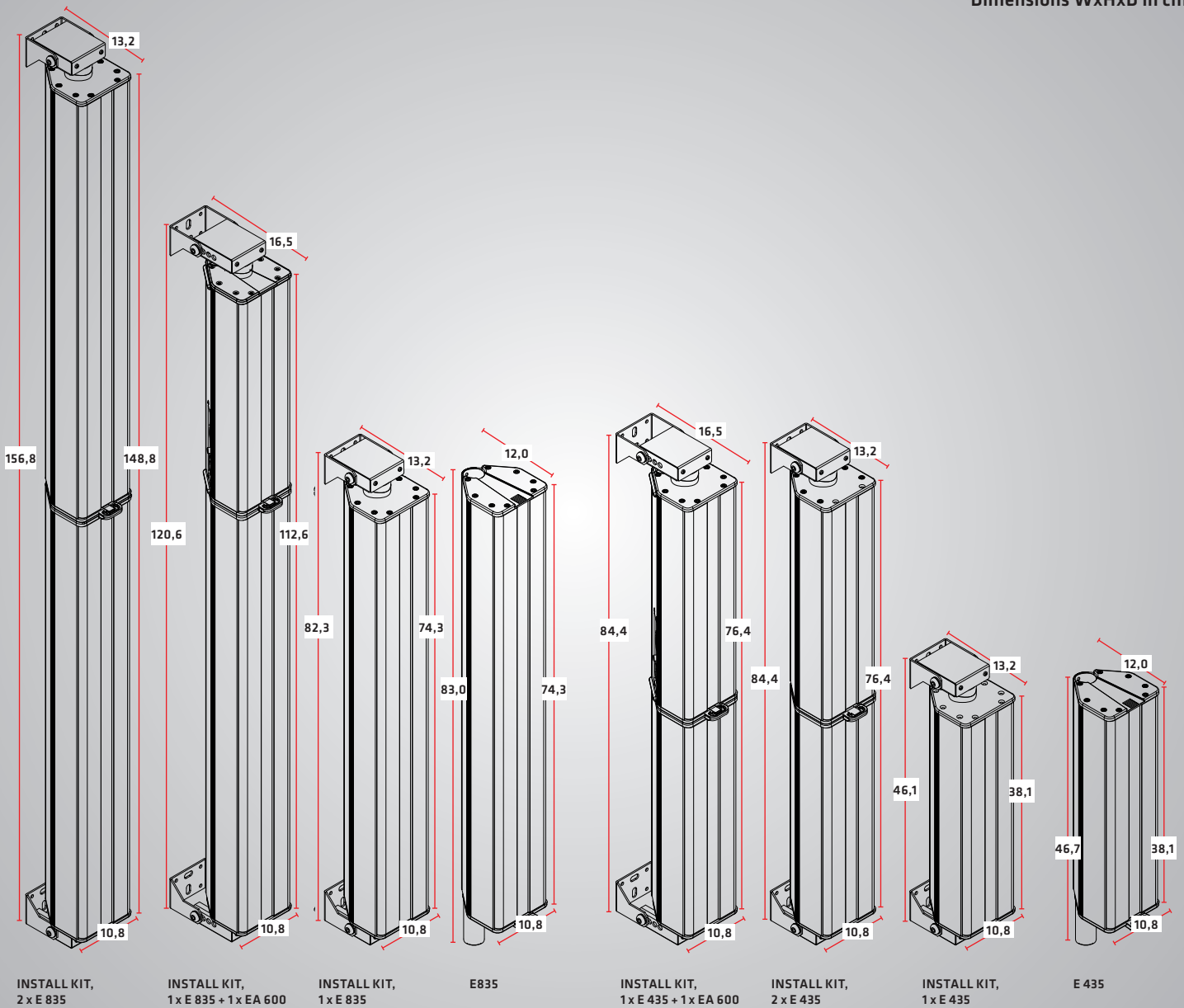
### EP 1 / EP 2

Made of anodized aluminum, the EP 1 and EP 2 mounting poles ensure simple, speedy setup for mobile setups and smaller configurations. Fully adjustable, they are fixed at the desired height using a large ring lock. The EP 1 pole extends from 95 to 160cm, the EP 2 from 44 to 60.5cm. The EP 1 and EP 2 are designed for cordless signal routing. Their internal E-Connect bus forwards the signal to the connected mid/high line sources.

Weights: EP 1: 0.8kg; EP 2: 0.5kg.



Dimensions WxHxD in cm



Dimensions HxDxW in cm

E 435:	46.7 x 12.0 x 10.8	without sleeve 38.1
E 835:	83.0 x 12.0 x 10.8	without sleeve 74.3
INSTALL KIT with 1 x E 435:	outside dimension 46.1, inside dimensions 38.1 x 13.2 x 10.8	
INSTALL KIT with 1 x E 835:	outside dimension 82.3, inside dimensions 74.3 x 13.2 x 10.8	
INSTALL KIT with 2 x E 435:	outside dimension 84.4, inside dimensions 76.4 x 13.2 x 10.8	
INSTALL KIT with 2 x E 835:	outside dimension 156.8, inside dimensions 148.8 x 13.2 x 10.8	
INSTALL KIT with 1 x E 435 + 1 x EA 600:	outside dimension 84.4, inside dimensions 76.4 x 16.5 x 10.8	
INSTALL KIT with 1 x E 835 + 1 x EA 600:	outside dimension 120.6, inside dimensions 112.6 x 16.5 x 10.8	



## › PART NUMBER LIST

<i>Part Number</i>	<i>Model</i>	<i>Description</i>
1006601	<b>Elements E 435</b>	Line Source Unit, 4 x 3.5"
1007081	<b>Elements E 835</b>	Line Source Unit, 8 x 3.5"
1007286	<b>Elements E 435 W</b>	Line Source Unit, 4 x 3.5", white
1007287	<b>Elements E 835 W</b>	Line Source Unit, 8 x 3.5", white
1007378	<b>Elements Install Kit</b>	1 x E 435
1007392	<b>Elements Install Kit W</b>	1 x E 435, white
1007379	<b>Elements Install Kit</b>	1 x E 835
1007480	<b>Elements Install Kit W</b>	1 x E 835, white
1007075	<b>Elements Install Kit</b>	2 x E 435
1007271	<b>Elements Install Kit W</b>	2 x E 435, white
1007481	<b>Elements Install Kit</b>	2 x E 835
1007482	<b>Elements Install Kit W</b>	2 x E 835, white
1007234	<b>Elements Install Kit A</b>	E 435 + EA 600, 230 V
1007260	<b>Elements Install Kit A</b>	E 435 + EA 600, 240 V
1007261	<b>Elements Install Kit A</b>	E 435 + EA 600, 100/120 V
1007272	<b>Elements Install Kit A W</b>	E 435 + EA 600, 230 V, white
1007483	<b>Elements Install Kit A W</b>	E 435 + EA 600, 240 V, white
1007484	<b>Elements Install Kit A W</b>	E 435 + EA 600, 100/120 V, white
1007485	<b>Elements Install Kit A</b>	E 835 + EA 600, 230 V
1007486	<b>Elements Install Kit A</b>	E 835 + EA 600, 240 V
1007487	<b>Elements Install Kit A</b>	E 835 + EA 600, 100/120 V
1007488	<b>Elements Install Kit A W</b>	E 835 + EA 600, 230 V, white
1007489	<b>Elements Install Kit A W</b>	E 835 + EA 600, 240 V, white
1007490	<b>Elements Install Kit A W</b>	E 835 + EA 600, 100/120 V, white

## › ACCESSORIES

<i>Part Number</i>	<i>Model</i>	<i>Description</i>
1006611	<b>Elements Soft Bag</b>	incl. 2 x EP 1 covers for E 435 / E 835
1006604	<b>Elements EP 1</b>	Distance Rod 95 - 160cm
1006668	<b>Elements EP 2</b>	Distance Rod 95 - 160cm
1006603	<b>Elements EF 45</b>	Base
1006610	<b>Elements EF 45</b>	Protective Cover



HK Audio®

Postfach 1509  
66595 St. Wendel, Germany  
info@hkaudio.com  
www.hkaudio.com

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