



ES Series

User Guide

• ES1.0 • ES1.5 • ES1.8 • ES2.5 • ES2.6



The Future of Sound. Made Perfectly Clear.

At KV2 Audio our vision is to constantly develop technologies that eliminate distortion and loss of information providing a true dynamic representation of the source.

Our aim is to create audio products that absorb you, place you within the performance and deliver a listening experience beyond expectations.

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ESTM 1.0 MID/HIGH MODULE

Compact Active-driven Mid/High Module

ES1.0 - part number KVV 987 002



Application

Specifically designed as an extreme high output, compact mid-high enclosure as part of ES systems

- For live performance and music playback
- Small to large live concerts
- Small to medium nightclubs
- Houses of worship • Portable PA
- Scalable into larger multi-tasking projects and systems

Introduction

The ES1.0 is a 3-way, very high output, active-driven, mid-high / mid-bass module designed as part of a complete ES system, driven by the EPACK2500/R control and amplification unit. The ES1.0 is compact, lightweight and can be combined with a variety of ES series subwoofers. As a single system it offers one of the highest quality portable sound reinforcement solutions on the market today. When coupled with another ES1.0 (running two horizontally per side) it becomes an even more powerful tool, providing peak SPL of 139 dB and a throw of up to 40 metres for applications of up to 3000 people.

ES Modular Sound System Benefits

Total flexibility

Choose the active driven subwoofer combination you need for each application and venue. Rotate the ES1.0 horn to operate the system in either a horizontal or vertical stack.

Lightest-weight compact active SR system yet

All the benefits of active sound reinforcement technology but with the electronics in a separate module.

Superb sound

Greater dynamic range than any current active design.

Easy set-up

Ergonomic weight-balanced design with four handles, eight suspension points and "integrating feet" for easy positioning on stage. Plug-and-play connection to EPACKTM amp/processor module.

Requires EPACK unit for control electronics and amplification.



EPAK2500

part name part num.
EPAK2500-115 V · KVV 987 001
EPAK2500-230 V · KVV 987 000
EPAK2500-250 V · KVV 987 134



EPAK2500R

part name part num.
EPAK2500R-115 V · KVV 987 062
EPAK2500R-230 V · KVV 987 061
EPAK2500R-250 V · KVV 987 112

For full range systems, use one, or a combination of, the following Bass Modules:



ES1.5
part num. **KVV 987 003**
Single fifteen-inch
compact Bass Module



ES1.8
part num. **KVV 987 004**
Single eighteen-inch
high-output Bass Module



ES2.5
part num. **KVV 987 005**
Double fifteen-inch, 4 Ω
high-output Bass Module



ES2.6
part num. **KVV 987 150**
Double fifteen-inch, 8 Ω
high-output Bass Module

Technology

The ES1.0 is a 3-way high output, active-driven, compact mid/high Loudspeaker module. It is designed as part of a sound reinforcement speaker system that includes the EPAK™ system control and amplification system plus a compliment of application specific Bass modules. The ES1.0 Loudspeaker system benefits from being designed exclusively to operate above 130 Hz. By optimizing the ideal operating band pass of each system component, the ES1.0 can achieve extremely high output levels consistently and safely.

Active-driven by the EPAK2500/R™ unit

Power, electronic crossovers, phase alignment, equalization, time correction and speaker protection are provided within the EPAK unit. This "one plug in, one-plug-out" system ensures fast, easy set up and complete control. It gives you the benefits of active sound reinforcement technology, yet locates the electronics in an easy-access "stand alone" or Rackmount module. Together, the ES1.0 and EPAK2500/R units deliver the highest dynamic range of any system currently available, providing new levels of clarity, depth and resolution.

Advanced compression driver

KV2 Audio's transducer partner, 18 Sound in Caviago, Italy, manufactures and co-develops all ES1.0 components. The compression driver is a 1.75-inch titanium diaphragm design, featuring a complex geometry phase plug that dramatically lowers distortion, eliminates ring modes and provides clearer, ripple free performance.

Exclusive KV2 rotatable horn design for maximum flexibility

The ES1.0 features a mid/high integrated horn design with a number of unique features. First, the horn can be rotated 90°, allowing for complete flexibility in selection of vertical, horizontal and left / right system set up. The horn design is based on constant-directivity geometry with an emphasis on maintaining low transducer compression ratios, high output and wide dispersion (90 × 40). The midrange speaker is fixed to a large aluminum heat sink which is attached to a precisely designed midrange "chamber". The combination provides optimal cone loading and heat dissipation. Further loading and dispersion is controlled through a 2.28" (58 mm) precision phase plug.

Heat-resistant midrange

Midrange frequencies between 500 Hz and 2.5 kHz are reproduced by a new six-inch midrange speaker that provides 106 dB of sensitivity (1 watt / 1 meter) when coupled with the integrated horn. The magnetic motor assembly features a high temperature 1.75" (44 mm) diameter voice coil assembly and extensive use of neodymium. Because of the limited linear movement of most midrange transducers - usually 2-3 mm - ventilation of the voice coil assembly and magnetic structure is poor and failure rate from heat fatigue is high. The ES1.0 midrange dissipates heat passively through the use of a massive aluminum heat sink. When combined with the EPAK unit control electronics, the system provides high output levels safely and consistently over infinite periods of time and dramatically reducing heat associated transducer problems such as power compression and decreased dynamics.

Neodymium mid-bass transducer

The ES1.0 features a twelve-inch neodymium mid-bass speaker mounted on a slot-loaded horn design. It is important to note that neodymium is not a transducer panacea, as it cannot safely operate at the same typical operating temperatures ferrite does. Using neodymium requires a profound understanding of material science and finite element analysis to properly design a stable, high force magnetic structure that functions correctly. 18 Sound and KV2 e engineering jointly designed the twelve-inch mid bass driver for the ES1.0. The ES1.0 mid-bass transducer reproduces frequencies from 130 Hz to 500 Hz. The horn mouth is designed for optimal coupling with the mid/high horn assembly in either the vertical or horizontal position. The horn design is responsible for the mid-bass speaker's resulting high sensitivity and output. The high efficiency neodymium motor provides an extraordinary amount of force that delivers complete control of the cone mass and a high overall weight loss.

Easy to move and set up

The ES1.0 is a very compact enclosure featuring a number of ergonomically designed components that make it a light, small, and easy speaker to set up and use. KV2 designed and tooled new cabinet handles for use in their products. The two side handles make it easy to pick up and reposition the ES1.0 in a natural, instinctive manner. There are four industrial grade, internal braces placed at each corner and one internal brace on the back. Corner braces are held in places by four M6 and two M10 bolts, the back brace is held by two M6 and one M10, providing a wide range of installation and suspension flexibility.



ES1.0 rear panel (cable connection to EPAK unit Amplifier/Controller)

Specifications

System Acoustic Performance

Max SPL Long-term	131 dB
Max SPL Peak	137 dB
-3 dB Response	130 Hz to 20 kHz
-10 dB Response	85 Hz to 28 kHz
Impedance	Low 16 Ω Mid 8 Ω High 8 Ω
Crossover Point	130 Hz, 500 Hz, 2.5 kHz

High Frequency Section

High Horn Coverage Horizontal / Vertical	90° x 40° rotatable
High Frequency Amplifier Requirement	100 W from EPAK2500/R
Throat Exit Diameter / Diaphragm Size	1" / 1.75"
Diaphragm Material	Titanium
Magnet Type	Neodymium

Mid Range Section

Acoustic Design	Horn Loaded
Mid Horn Coverage Horizontal / Vertical	90° x 40° rotatable
Midrange Amplifier Requirement	200 W from EPAK2500/R
Woofer Size / Voice Coil Diameter	6" / 1.75"
Diaphragm Material	Epoxy Reinforced Cellulose
Magnet Type	Neodymium

Mid-Bass Section

Acoustic Design	Horn Loaded
Mid-bass Amplifier Requirement	600 W from EPAK2500/R
Woofer Size / Voice Coil Diameter / Design	12" / 3" / Inside Outside
Diaphragm Material	Epoxy Reinforced Cellulose
Magnet Type	Neodymium

Speaker Input

Speaker Input	AP6
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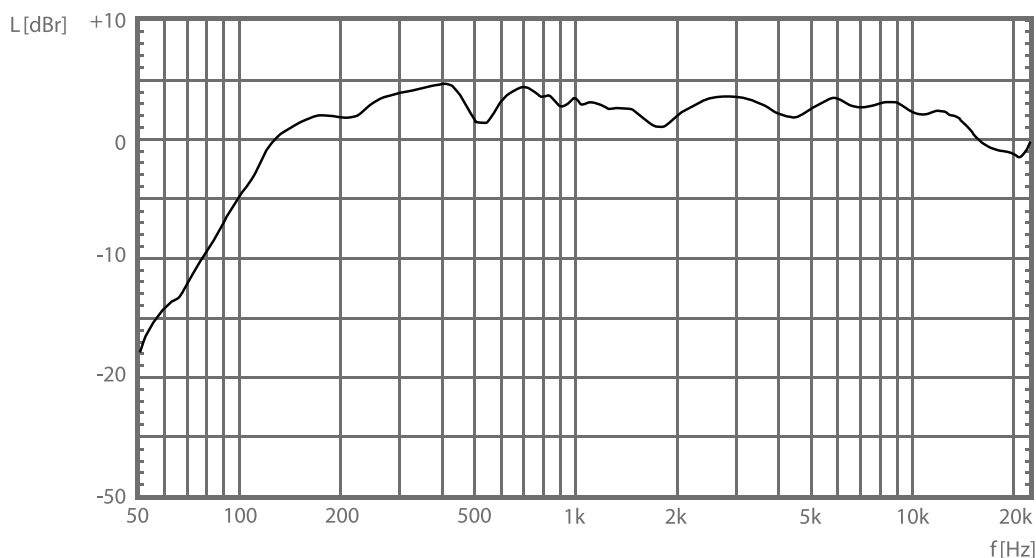
Cabinet

Cabinet Material	Baltic birch
Handles	2
Pole Mount	35 mm
Color	"Orange peeled" Matt Black or any RAL

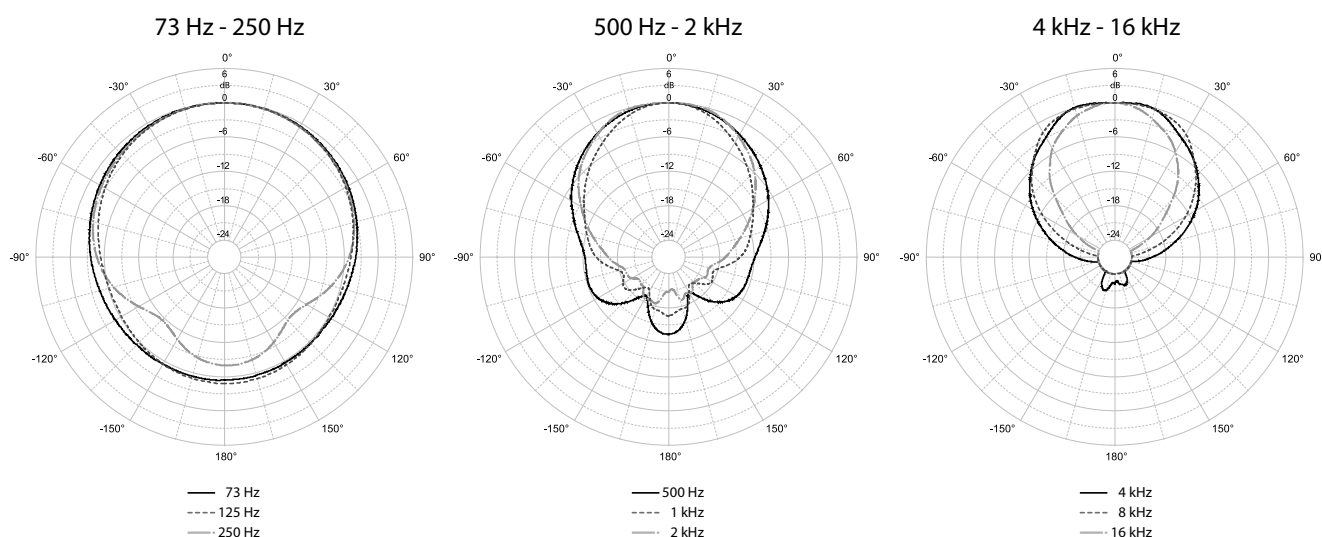
Physical Dimensions

Height	700 mm (27.55")
Width	450 mm (17.71")
Depth	450 mm (17.71")
Weight	34 kg (74.8 lb)

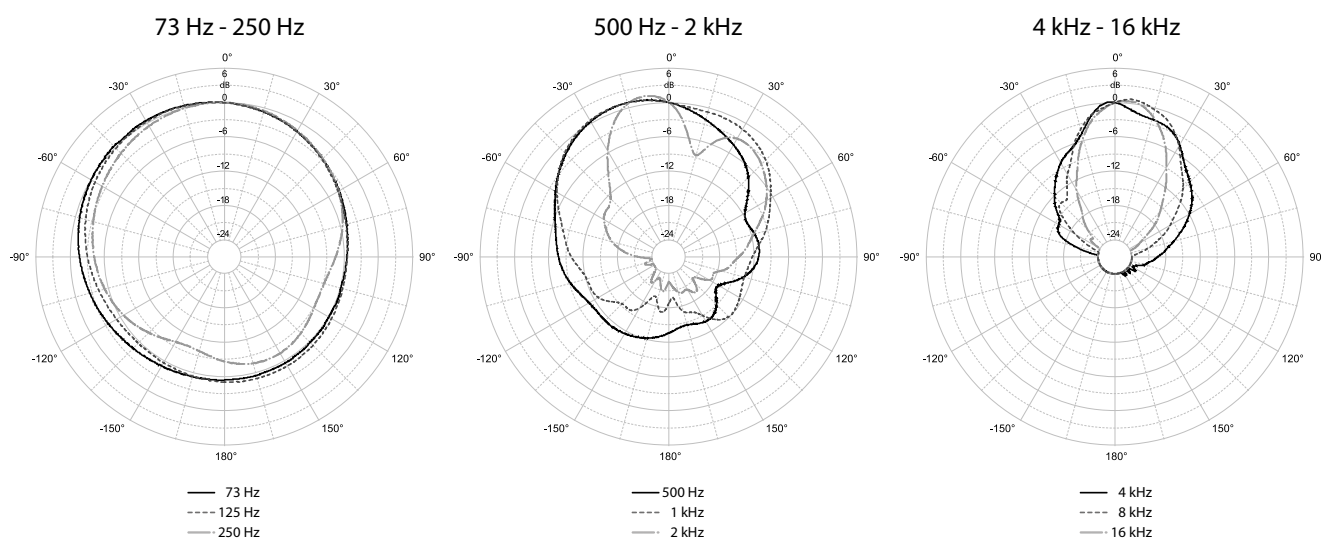
Frequency response



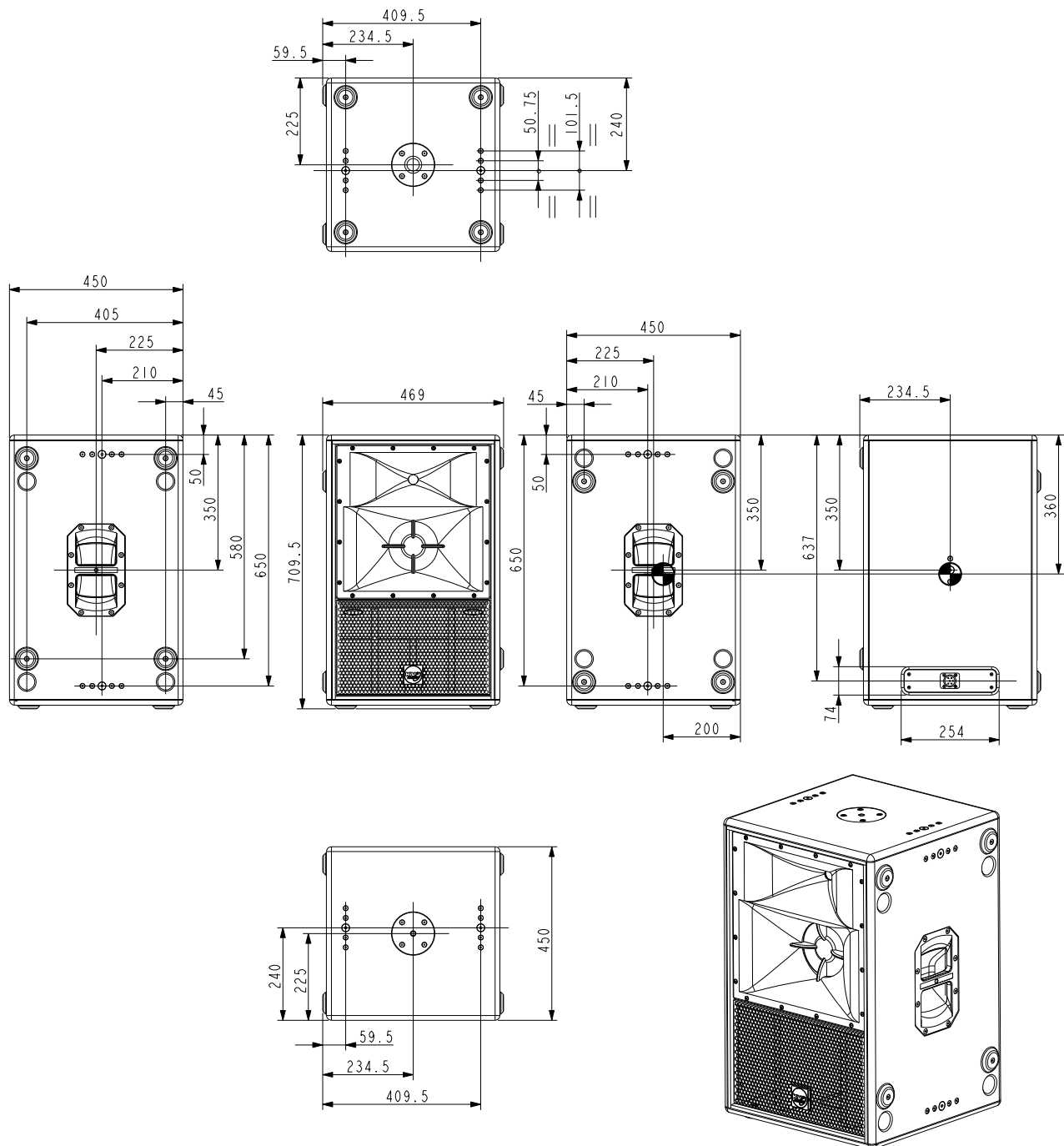
Horizontal Polarplots



Vertical Polarplots



Drawing



ES1.0 Architects and Engineer's Specifications

The three-way, mid/high loudspeaker system shall incorporate one 12-inch mid-bass (MB) transducer a 6-inch mid range (MR) speaker and a 1-inch exit compression driver high frequency (HF) transducer. The LF driver shall be mounted onto a slot-loaded horn located inside a compact wood enclosure tuned for optimum mid-bass response. The HF and MR transducers shall be loaded on a rotatable, integrated, constant directivity mid/high horn assembly. The system has a nominal coverage pattern of 90° (horizontal) x 40° (vertical). The loudspeaker enclosure shall have a rectangular shape and shall incorporate, two side handles with integrated M10 suspension points, four integrated internal braces with eight M10 suspension points, one M10 suspension point on the back and top hat for pole mounting application. The speaker cabinet shall be finished with an ultra wear resistant black polymer coating and fitted with a weather resistant perforated steel grill. The system shall receive power from a separate Amplifier. Controller module consisting of separate power amplifiers for high, midrange and midbass transducers as well as signal processing including electronic band pass crossover filters, phase alignment, time correction, equalization and speaker protection. The speaker system shall connect to the Amplifier/Controller Module via proprietary cables terminated in Amphenol AP-6 connectors. The three-way mid/high loudspeaker system shall be the KV2 Audio ES1.0.

Heavy duty cover for ES1.0

part name: **Cover ES1.0**

part number: **KVV 987 119**



Cart for 2 pcs ES1.0 or ES1.5

part name: **CRT- 0001**

part number: **KVV 987 030**

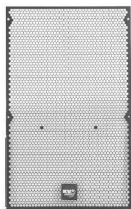
- wheels not included



Optional full grille for ES1.0

part name: **FULL GRILL ES1.0**

part number: **KVV 987 131**

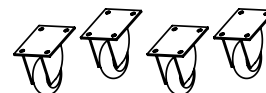


Cart Wheels with bolts nuts kit

part name: **CRT - WHL**

part number: **KVV 987 031**

- 4 pcs in pack, (rotating), (blue)

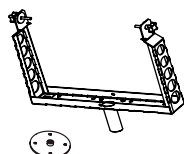


Horizontal bracket for ES1.0 or ES1.5

part name: **ES1.0 Horizontal Bracket**

part number: **KVV 987 035**

- including top hat cover adaptor plate and two connection bolts

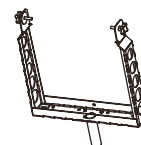


Vertical bracket for ES1.0

part name: **ES1.0 Vertical Bracket**

part number: **KVV 987 032**

- including two connection bolts



Speaker pole - universal

part name: **KV2-H**

part number: **KVV 987 130**

- weight 2.2 kg
- Heavy duty telescopic speakerpole
- 0.735 to 1.23 m
- diameter 35 mm
- max. load 50 kg
- bottom terminal M20
- matte black

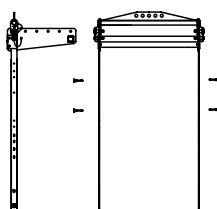


Fly Bar and Bracket for ES systems

part name: **FLY BAR - 0002**

part number: **KVV 987 191**

- 8 pcs M10 screws
- 8 pcs Quick-lock-pins 6 mm included
- 4 pcs Quick-lock-pins 1/2" included

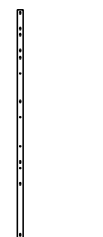


Additional arms for FB-0002

part name: **ARMS OF FB - 0002**

part number: **KVV 987 192**

- 2 pcs ARMS OF FB-0002
- 8 pcs M10 screws
- 8 pcs Quick-lock-pins 6 mm included



ES Mid/Hi speaker cable MH15, AP6 connectors - 1.5 m

part name: **MH15**

part number: **KVV 987 147**

- 1.5 m (5 ft), Mid/Hi Module hook-up



ES Mid/Hi speaker cable MH60, AP6 connectors - 6 m

part name: **MH60**

part number: **KVV 987 125**

- 6 m (20 ft), Mid/Hi Module hook-up



ES Cable kit

part name: **CABLE-KIT**

part number: **KVV 987 047**

The ES Cable Pack consist of four high-quality Amphenol AP cable assemblies designed for use with ES Series.

- 2 pcs LF15
- 1 pc LF40
- 1 pc MH60



ES Mid/Hi speaker cable MH120, AP6 connectors - 12 m

part name: **MH120**

part number: **KVV 987 126**

- 12 m (40 ft), Mid/Hi Module hook-up



Amphenol AP6 cable-mount female connector

part name: **AP-6-11**

part number: **KVV 987 050**



ES Mid/Hi speaker cable MH180, AP6 connectors - 18 m

part name: **MH180**

part number: **KVV 987 127**

- 18 m (60 ft), Mid/Hi Module hook-up



Amphenol AP6 cable-mount male connector

part name: **AP-6-12**

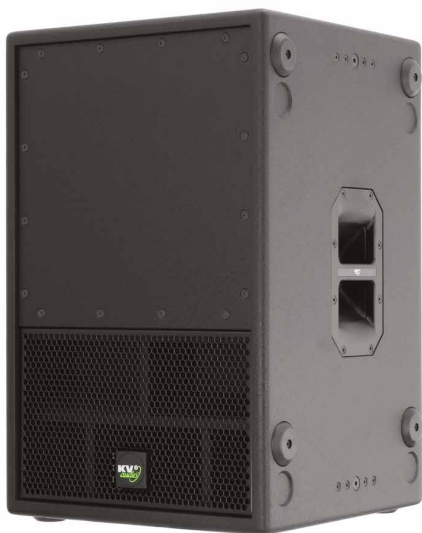
part number: **KVV 987 051**



ESTM 1.5 BASS MODULE

Compact Active-driven Bass Module

ES1.5 - part number KVV 987 003



Application

Specifically designed to accompany and compliment the ES1.0 as a true full range compact system

- Portable PA
- Fixed Installations
- Bars and Nightclubs
- Houses of worship
- Can be integrated with other ES subwoofers

Introduction

The ES1.5 is a single 15", extremely compact, high output subwoofer weighing just 30.8 kg (67.9 lb) designed as part of the ES Series speaker system. Used singularly or in multiples of up to three, alongside a single ES1.0 mid high cabinet, the system is powered by the EPAK2500/R Amplifier ensuring fast, easy set up with perfect balance and complete control. The EPAK2500/R also allows up to two ES1.5's to be used alongside an ES1.8, where the ES1.5 can either be flown alongside an ES1.0 or ground stacked with the ES1.8.

ES Modular Sound System Benefits

Total flexibility

Use one unit with the ES1.0 Mid/High enclosure, for small systems, or scale up to a maximum of three units for larger applications. Operate in either a horizontal or vertical stack with same dimensions and footprint as ES1.0.

Lightest-weight compact active SR system yet

All the benefits of active sound reinforcement technology but with the electronics in a separate module.

Superb sound

Greater dynamic range than any previous active design.

Easy set-up

Ergonomic weight-balanced design with four handles, eight suspension points and "integrating feet" for easy positioning on stage. Plug-and-play connection to EPAKTM amp/processor module.

Requires EPAK unit for control electronics and amplification.



EPAK2500

part name	part num.
EPAK2500-115 V	· KVV 987 001
EPAK2500-230 V	· KVV 987 000
EPAK2500-250 V	· KVV 987 134



EPAK2500R

part name	part num.
EPAK2500R-115 V	· KVV 987 062
EPAK2500R-230 V	· KVV 987 061
EPAK2500R-250 V	· KVV 987 112

For full range systems, use with the ES1.0 Three-way Mid/High Module



ES1.0

part num. **KVV 987 002**
Compact Active-driven
Mid/Hi Module

ES1.5 can also be combined with this other ES Series Bass module:



ES1.8

part num. **KVV 987 004**
Single eighteen-inch
high-output Bass Module

Technology

The ES1.5 is an extremely compact yet high output bass module designed as part of an ES Series sound reinforcement speaker system. The ES1.5 speaker system benefits from being designed exclusively to operate below 150 Hz. By optimizing the ideal operating band pass of each system component; the ES1.5 can achieve high output levels consistently and safely. Power for the system is provided by the EPAK unit Amplifier/Controller ensuring fast, easy set up and complete control. Together with the ES1.0 and EPAK2500/R, they deliver the highest dynamic range of any system currently available providing new levels of clarity, depth and resolution.

Advanced 15-inch driver

KV2 Audio's transducer partner, 18 Sound in Caviago, Italy, manufactures the low frequency transducer inside the ES1.5. Frequencies between 40 Hz and 150 Hz are reproduced by a new fifteen-inch woofer that provides 99dB of sensitivity (1watt / 1 meter). Loading of the woofer is done through two, asymmetrical chambers with horn-profiled exits. The high efficiency neodymium motor provides an extraordinary amount of force that delivers complete control of the cone mass and a high overall weight loss. Neodymium is not a transducer panacea, as it cannot safely operate at the same typical operating temperatures of ferrite. Using neodymium requires a very profound understanding of material science and finite element analysis. Our years of acoustic design experience enable us to properly design a stable, high force magnetic structure using neodymium.

Easy-to-handle enclosure

The ES1.5 is a very lightweight yet resonance-free enclosure featuring a number of ergonomically designed parts that make it compact and easy to set up and use. KV2 designed and tooled new cabinet handles for use in their products. The two side handles make it easy to pick up and reposition the ES1.5 in a natural, instinctive manner.

Perfections in the details

One longstanding problem with standard cabinets is their rubber feet, which prevent you from moving or sliding the enclosure easily into a desired position. They're also easily damaged since they protrude from the box. KV2 has addressed this issue by molding our own feet using acetal copolymer material. This material has two very essential properties that make it ideal for use in this application, high density and a very low coefficient of friction. The enclosure has twelve of these feet placed on three sides of the cabinet. Their asymmetrical placement allows easy setup, alignment and construction of a number of different system configurations.

Easy to fly

There are six industrial-grade internal braces placed at each corner. Each brace is held in place by four M6 and two M10 bolts providing a wide range of installation and suspension flexibility.



ES1.5 rear panel (cable connection to EPAK unit Amplifier/Controller)

Specifications

System Acoustic Performance

Max SPL Long-term	127 dB (134 dB - 3× ES1.5)
Max SPL Peak	133 dB (137dB - 3× ES1.5)
-3 dB Response	40 Hz to 130 Hz
-10 dB Response	36 Hz to 130 Hz
Impedance	16 Ω
Crossover Point	130 Hz

Low Frequency Section

Acoustic Design	Twin Asymmetrical loading
Subwoofer Amplifier Requirement	500 W / ES1.5 from EPAK2500/R
Woofer Size / Voice Coil Diameter / Design	15" / 3" / Inside Outside
Diaphragm Material	Epoxy Reinforced Cellulose
Magnet Type	Ferrite

Speaker Input

Speaker Input	AP4
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Speaker Output

Speaker Output	AP4
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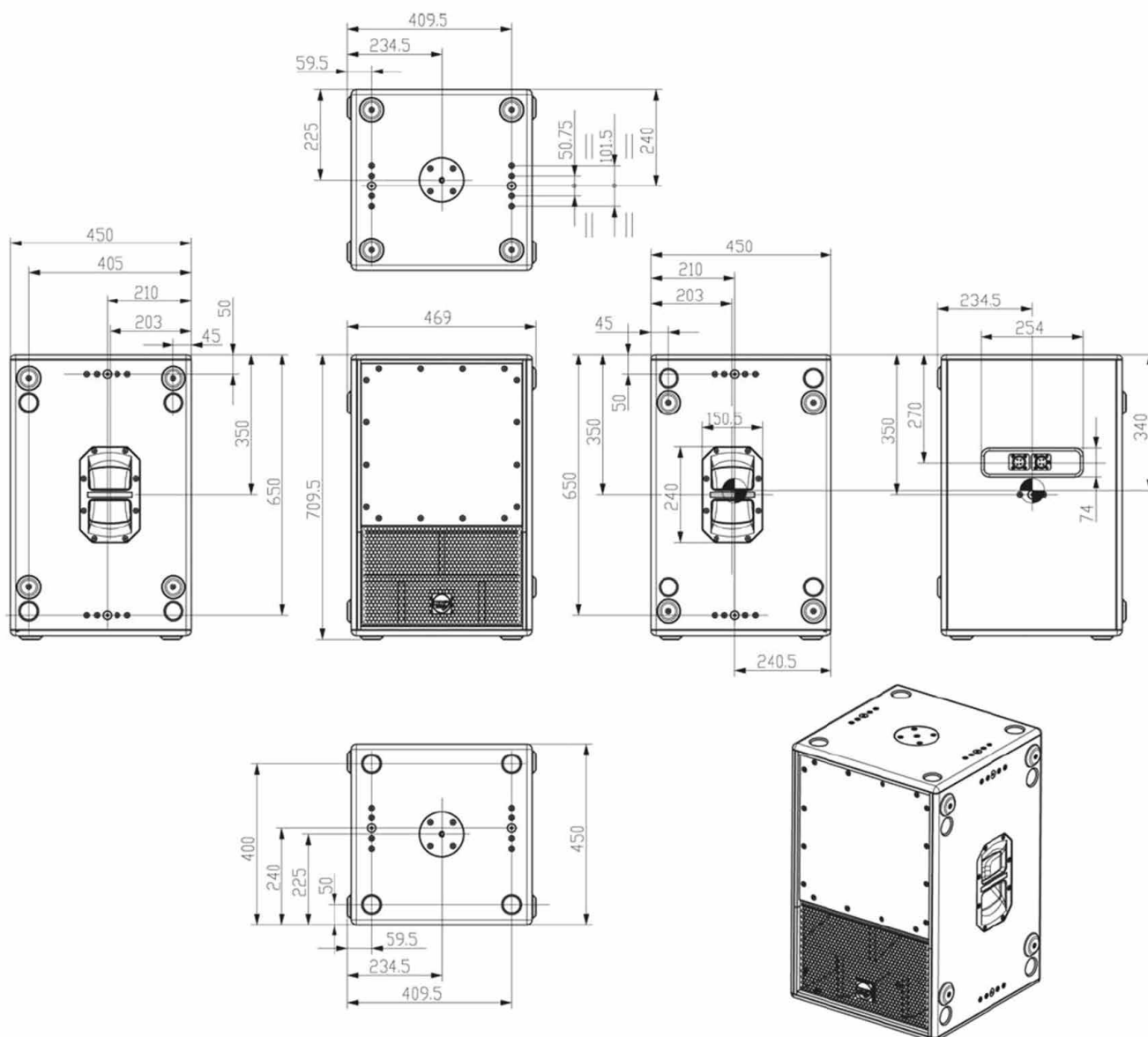
Cabinet

Cabinet Material	Baltic birch
Handles	2
Color	"Orange peeled" Matt Black or any RAL

Physical Dimensions

Height	700 mm (27.55")
Width	450 mm (17.71")
Depth	450 mm (17.71")
Weight	35.7 kg (78.7 lb)

Drawing



ES1.5 Architects and Engineer's Specifications

The bass module loudspeaker system shall incorporate one 15-inch low frequency (LF) transducer with neodymium motor. The LF driver shall be mounted inside a compact wood enclosure in between two asymmetrical acoustic chambers with horn shaped exits tuned for optimum bass response. The loudspeaker enclosure shall have a rectangular shape and shall incorporate, two side handles with integrated M10 points, one top and bottom M10 suspension point and integrated internal braces with eight M10 suspension points, one M10 suspension point on the back. The speaker cabinet shall be finished with an ultra wear resistant black polymer coating and fitted with a weather resistant perforated steel grill. The system shall receive power from a separate Amplifier Controller module consisting of separate power amplifiers for high, midrange and midbass transducers as well as signal processing including electronic band pass crossover filters, phase alignment, time correction, equalization and speaker protection. The speaker system shall connect to the Amplifier/Controller Module via proprietary cables terminated in Amphenol AP-4 connectors. The bass module shall be the KV2 Audio ES1.5.

Heavy duty cover for ES1.5

part name: **Cover ES1.5**

part number: **KVV 987 120**

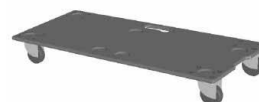


Cart for 2 pcs ES1.0 or ES1.5

part name: **CRT- 0001**

part number: **KVV 987 030**

- wheels not included

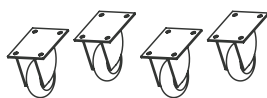


Cart Wheels with bolts nuts kit

part name: **CRT - WHL**

part number: **KVV 987 031**

- 4 pcs in pack, (rotating), (blue)



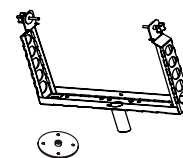
Horizontal bracket

for ES1.0 or ES1.5

part name: **ES1.0 Horizontal Bracket**

part number: **KVV 987 035**

- including top hat cover adaptor plate and two connection bolts

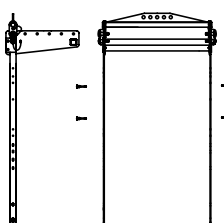


Fly Bar and Bracket for ES systems

part name: **FLY BAR - 0002**

part number: **KVV 987 191**

- 8 pcs M10 screws
- 8 pcs Quick-lock-pins 6 mm included
- 4 pcs Quick-lock-pins 1/2" included

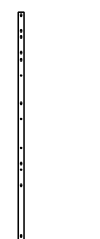


Additional arms for FB-0002

part name: **FLY BAR - 0002**

part number: **KVV 987 192**

- 2 pcs ARMS OF FB-0002
- 8 pcs M10 screws
- 8 pcs Quick-lock-pins 6 mm included



Speaker pole - universal

part name: **KV2-H**

part number: **KVV 987 130**

- weight 2.2 kg
- max. load 50 kg
- 0.735 to 1.23 m
- diameter 35 mm
- matte black



ES Bass speaker cable LF15,

AP4 connectors - 1,5 m

part name: **LF15**

part number: **KVV 987 121**

- 1.5 m (5 ft)
- for ES Bass Module daisy-chaining



ES Bass speaker cable LF40,

AP4 connectors - 4 m

part name: **LF40**

part number: **KVV 987 122**

- 4 m (13 ft)
- for ES Bass Module hook-up



ES Bass speaker cable LF100,

AP4 connectors - 10 m

part name: **LF100**

part number: **KVV 987 123**

- 10 m (33 ft)
- for ES Bass Module hook-up



ES Bass speaker cable LF200,

AP4 connectors - 20 m

part name: **LF200**

part number: **KVV 987 124**

- 20 m (66ft)
- for ES Bass Module hook-up



ES Cable kit

part name: **CABLE-KIT**

part number: **KVV 987 047**

The ES Cable Pack consist of four high-quality Amphenol AP cable assemblies designed for use with ES Series.

- 2 pcs LF15
- 1 pc LF40
- 1 pc MH60



Amphenol AP4 cable-mount

female connector

part name: **AP-4-11**

part number: **KVV 987 048**



Amphenol AP4 cable-mount

male connector

part name: **AP-4-12**

part number: **KVV 987 049**



ESTM 1.8 BASS MODULE

**High-Output / Active-driven
Bass Module**

ES1.8 - part number KVV 987 004



Application

Specifically designed to be used in pairs to accompany the ES1.0 as a true full range high output system for music playback and live performance

- Large Bars and Nightclubs
- Concert venues
- Portable PA
- Scalable into larger systems

Introduction

The ES1.8 is a high-output, reflex horn loaded, single 18" subwoofer, designed as a part of the ES Series sound reinforcement system. It provides tight, up front, low frequency extension with authority, attack and definition. Designed to be used in pairs, or with up to two ES1.5, the ES1.8 can achieve high output levels consistently and safely. Alongside the ES1.0 and EPAK2500/R, ES1.8 offers a very firm foundation on which to build a powerful ES system.

ES Modular Sound System Benefits

Total flexibility

Use two units coupled horizontally or vertically with single ES1.0 Mid /High Module.

Lightest-weight compact active SR system yet

All the benefits of active sound reinforcement technology but with the electronics in a separate module.

Superb sound

Greater dynamic range than any previous active design.

Easy set-up

Ergonomic weight-balanced design with four handles, eight suspension points and "Integrating feet" for easy positioning on stage. Plug-and-play connection to EPAKTM amp/processor module.

Requires EPAK unit for control electronics and amplification.



EPAK2500

part name	part num.
EPAK2500-115 V	· KVV 987 001
EPAK2500-230 V	· KVV 987 000
EPAK2500-250 V	· KVV 987 134



EPAK2500R

part name	part num.
EPAK2500R-115 V	· KVV 987 062
EPAK2500R-230 V	· KVV 987 061
EPAK2500R-250 V	· KVV 987 112

For full range systems, use with the ES1.0 Three-way Mid/High Module



ES1.0

part num. **KVV 987 002**
**Compact Active-driven
Mid/Hi Module**

ES1.8 can also be combined with this other ES Series Bass module:



ES1.5

part num. **KVV 987 003**
**Single fifteen-inch
compact Bass Module**



ES2.5

part num. **KVV 987 005**
**Double fifteen-inch
high-output Bass Module**

Technology

The ES1.8 is a high-output, front-loaded single eighteen-inch bass module designed as a part of an ES Series sound reinforcement speaker system. The ES1.8 was designed to provide tight, up-front, low frequency reinforcement. The front-loaded configuration along with the use of large-format porting, provides improved attack and definition for the large format 18-inch woofer. By optimizing the ideal operating band pass of each system component, the ES1.8 can achieve high output levels consistently and safely. Power for the system is provided by the EPAK unit Amplifier/Controller ensuring fast, easy set up and complete control. Together with the ES1.0 and EPAK/R unit, they deliver the highest dynamic range of any system currently available providing new levels of clarity, depth and resolution.

Advanced 18-inch driver

KV2 Audio's transducer development and manufacturing partner, 18 Sound in Cavriago, Italy, manufactures the woofer for the ES1.8. The device is the result of their state-of-the-art R&D facility and advanced production capabilities. The transducer features a double silicone spider, polyimide voice coil assembly that undergoes multiple baking and curing processes as well as an advanced magnetic structure with advanced cooling system.

Easy-to-handle enclosure

The ES1.8 is a very compact, lightweight enclosure featuring a number of ergonomically designed parts that make it an easy speaker to set up and use. There are 4 side handles that make it easy to pick up and reposition the ES1.8 in a natural instinctive manner.

Perfections in the details

One longstanding problem with standard cabinets is their rubber feet, which prevent you from moving or sliding the enclosure easily into a desired position. They're also easily damaged since they protrude from the box. KV2 has addressed this issue by molding our own feet using acetal copolymer material. This material has two very essential properties that make it ideal for use in this application, high density and a very low coefficient of friction. The enclosure has twelve of these feet placed on three sides of the cabinet. Their asymmetrical placement allows easy setup, alignment and construction of a number of different system configurations.

Easy to fly

There are six industrial-grade internal braces placed at each corner and one brace on the back. Each brace is held in place by four M6 and two M10 bolts providing a wide range of installation and suspension flexibility.



ES1.8 rear panel (cable connection to EPAK unit Amplifier/Controller)

Specifications

System Acoustic Performance

Max SPL Long-term	131 dB (136 dB - 2× ES1.8)
Max SPL Peak	137dB (139dB - 2× ES1.8)
-3 dB Response	37 Hz to 130 Hz
-10 dB Response	33 Hz to 130 Hz
Impedance	8 Ω
Crossover Point	130 Hz

Low Frequency Section

Acoustic Design	Horn reflex loaded
Subwoofer Amplifier Requirement	800 W / ES1.8 from EPAK2500/R
Woofer Size / Voice Coil Diameter / Design	18" / 4" / Inside Outside
Diaphragm Material	Epoxy Reinforced Cellulose
Magnet Type	Ferrite

Speaker Input

Speaker Input	AP4
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Speaker Output

Speaker Output	AP4
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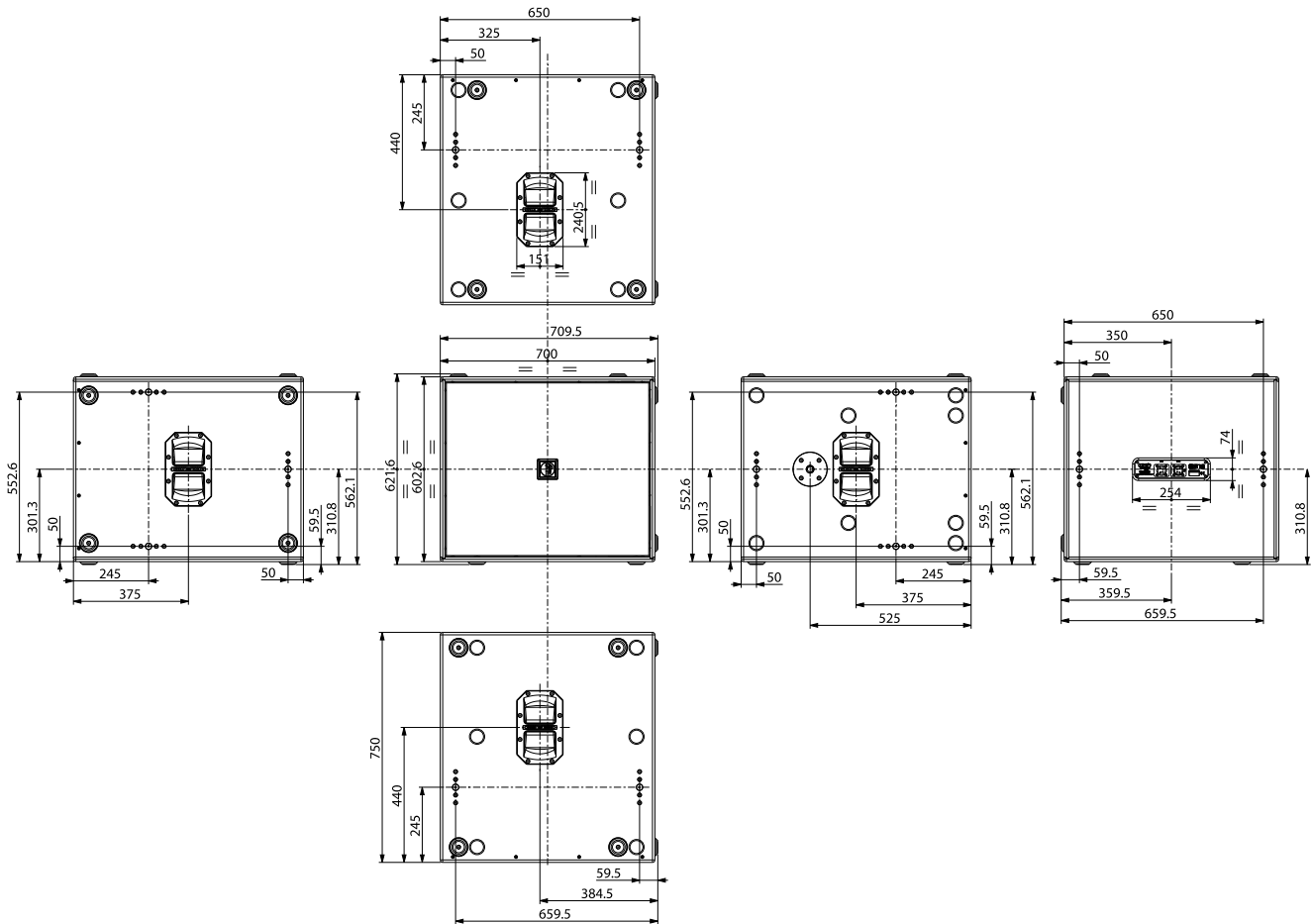
Cabinet

Cabinet Material	Baltic birch
Handles	4
Pole Mount	M20
Color	"Orange peeled" Matt Black or any RAL

Physical Dimensions

Height	600 mm (23.62")
Width	700 mm (27.55")
Depth	750 mm (29.52")
Weight	55.6 kg (122.6 lb)

Drawing



ES1.8 Architects and Engineer's Specifications

The bass module loudspeaker system shall incorporate one 18-inch low frequency (LF) transducer with ferrite motor and 4-inch polyimide, high-temperature voice coil. The LF driver shall be mounted inside a compact wood enclosure with large-format low-distortion reflex ports. The loudspeaker enclosure shall have a rectangular shape and shall incorporate, four side handles and integrated internal braces with twelve M10 suspension points. The speaker cabinet shall be finished with an ultra wear resistant black polymer coating and fitted with a weather resistant perforated steel grill. The system shall receive power from a separate Amplifier/Controller module consisting of separate power amplifiers for high, midrange and midbass transducers as well as signal control including electronic band pass crossover filters, phase alignment, time corrections, equalization and speaker protection. The speaker system shall connect to the Amplifier/Controller Module via proprietary cables terminated in Amphenol AP-4 connectors. The bass module shall be the KV2 Audio ES1.8.

Heavy duty cover for ES1.8 used without cart
 part name: **COVER ES1.8 WITHOUT CART**
 part number: **KVV 987 115**



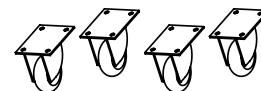
Front mount magnetic cart for ES1.8, ES2.5, ES2.6, EX2.5 MkII
 part name: **CRT- 0009**
 part number: **KVV 987 114**
 - wheels not included



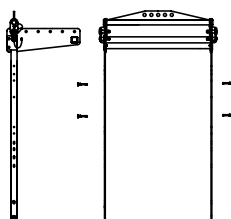
Heavy duty cover for ES1.8 used with cart CRT - 0009
 part name: **COVER ES1.8 WITH CART**
 part number: **KVV 987 116**



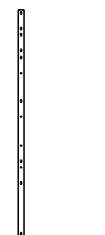
Cart Wheels with bolts nuts kit
 part name: **CRT 0009 - WHL KIT**
 part number: **WHL - KVV 987 128**
 - 4 pcs in pack, (rotating), (blue)



Fly Bar and Bracket for ES systems
 part name: **FLY BAR - 0002**
 part number: **KVV 987 191**
 - 8 pcs M10 screws
 - 8 pcs Quick-lock-pins 6 mm included
 - 4 pcs Quick-lock-pins 1/2" included



Additional arms for FB-0002
 part name: **FLY BAR - 0002**
 part number: **KVV 987 192**
 - 2 pcs ARMS OF FB-0002
 - 8 pcs M10 screws
 - 8 pcs Quick-lock-pins 6 mm included



Speaker pole - universal
 part name: **KV2-H**
 part number: **KVV 987 130**
 - weight 2.2 kg
 - max. load 50 kg
 - 0.735 to 1.23 m
 - diameter 35 mm
 - bottom terminal M20
 - matte black



ES Bass speaker cable LF15, AP4 connectors - 1.5 m
 part name: **LF15**
 part number: **KVV 987 121**
 - 1.5 m (5 ft)
 - for ES Bass Module daisy-chaining



ES Cable kit
 part name: **CABLE-KIT**
 part number: **KVV 987 047**
 The ES Cable Pack consist of four high-quality Amphenol AP cable assemblies designed for use with ES Series.
 - 2 pcs LF15
 - 1 pc LF40
 - 1 pc MH60



ES Bass speaker cable LF40, AP4 connectors - 4 m
 part name: **LF40**
 part number: **KVV 987 122**
 - 4 m (13 ft)
 - for ES Bass Module hook-up



ES Bass speaker cable LF100, AP4 connectors - 10 m
 part name: **LF100**
 part number: **KVV 987 123**
 - 10 m (33 ft)
 - for ES Bass Module hook-up



Amphenol AP4 cable-mount female connector
 part name: **AP-4-11**
 part number: **KVV 987 048**



ES Bass speaker cable LF200, AP4 connectors - 20 m
 part name: **LF200**
 part number: **KVV 987 124**
 - 20 m (66 ft)
 - for ES Bass Module hook-up



Amphenol AP4 cable-mount male connector
 part name: **AP-4-12**
 part number: **KVV 987 049**





High-Output Active-driven Bass Module

ES2.5 - part number KVV 987 005
ES2.6 - part number KVV 987 150



Application

Live performance and recorded playback for venues up to 2000 persons (depending on program material and number of bass modules used):

- Church sanctuaries
- Auditoriums
- Band PA
- Dance clubs
- Mobile DJ
- Corporate events

Introduction

The ES2.5 & 2.6 is a high output, -double 15" Bass Module of medium dimensions, weight and footprint. Designed to accompany the ES1.0 Mid/High Module as a system, the extreme output and high quality performance present flexible adaptability and scalability for varied applications.

ES Modular Sound System Benefits

Total flexibility

Use one ES2.5 module or two ES2.6 modules to accompany a single ES1.0 Mid/High module. These can be placed vertically or horizontally.

Lightest-weight compact active SR system yet

All the benefits of active sound reinforcement technology but with the electronics in a separate module.

Superb sound

Greater dynamic range than any previous active design.

Easy set-up

Ergonomic weight-balanced design with four handles, eight suspension points and "Integrating feet" for easy positioning on stage. Plug-and-play connection to EPAK™ amp/processor module.

Requires EPAK unit for control electronics and amplification.



EPAK2500

part name	part num.
EPAK2500-115 V	• KVV 987 001
EPAK2500-230 V	• KVV 987 000
EPAK2500-250 V	• KVV 987 134



EPAK2500R

part name	part num.
EPAK2500R-115 V	• KVV 987 062
EPAK2500R-230 V	• KVV 987 061
EPAK2500R-250 V	• KVV 987 112

For full range systems, use with the ES1.0 Three-way Mid/High Module



ES1.0

part num. **KVV 987 002**
Compact Active-driven
Mid/Hi Module

ES2.5/2.6 can also be combined with this other ES Series Bass module:



ES1.5

part num. **KVV 987 003**
Single fifteen-inch
compact Bass Module



ES1.8

part num. **KVV 987 004**
Single eighteen-inch
high-output Bass Module

Technology

The ES2.5 and ES2.6 are a compact, high output bass module designed as a component of an ES Series sound reinforcement speaker system. The ES2.5 and ES2.6 were designed using new concepts in twin asymmetrical acoustic chambers that deliver very high speaker loading and output from a relatively small cabinet footprint. It is ideal for use in live applications that require reproduction of low frequencies with very high transient content.

Part of the matched, modular EPAK™ System

Power for the system is provided by the EPAK amplification and control system from KV2 Audio ensuring fast, easy set up and complete control. Together with an ES Series Mid/High module and an EPAK system, they deliver the highest dynamic range of any system currently available providing new levels of clarity, depth and resolution.

Durable, high-output low frequency transducers

KV2 Audio's transducer development and manufacturing partner, 18 Sound in Cavriago, Italy, manufactures the woofer for the ES2.5 and ES2.6. The device is the result of their state-of-the-art R&D facility and advanced production capabilities. The transducer features a double silicone spider, polyimide voice coil assembly that undergoes multiple baking and curing processes as well as an advanced magnetic structure with advanced cooling system.

Built with load-in and load-out in mind

The ES2.5 and ES2.6 are a very compact, lightweight enclosure featuring a number of ergonomically designed parts that make it an easy speaker to set up and use. KV2 designed and tooled new cabinet handles for use in their products. The four side handles make it easy to pick up and reposition the ES2.5 and ES2.6 in a natural, instinctive manner.

Perfections in the details

One longstanding problem with standard cabinets is their rubber feet, which prevent you from moving or sliding the enclosure easily into a desired position. They're also easily damaged since they protrude from the box. KV2 has addressed this issue by molding our own feet using acetal copolymer material. This material has two very essential properties that make it ideal for use in this application, high density and a very low coefficient of friction. The enclosure has eight of these feet placed on two sides of the cabinet. Their asymmetrical placement allows easy setup, alignment and construction of a number of different system configurations.

Easy to fly

There are six industrial grade, internal braces placed at each corner. Each brace is held in place by four M6 and two M10 bolts providing a wide range of installation and suspension flexibility.



ES2.5 rear panel (cable connection to EPAK unit Amplifier/Controller)



ES2.6 rear panel (cable connection to EPAK unit Amplifier/Controller)

Specifications

System Acoustic Performance

Max SPL Long-term	134 dB
Max SPL Peak	140 dB
-3 dB Response	38 Hz to 130 Hz
-10 dB Response	34 Hz to 130 Hz
Impedance	4 Ω
Crossover Point	130 Hz

Low Frequency Section

Acoustic Design	Twin Asymmetrical loading
Number of drivers	2
Subwoofer Amplifier Requirement	1600 W / ES2.5 from EPAK2500/R
Woofer Size / Voice Coil Diameter / Design	15" / 4" / Inside Outside
Diaphragm Material	Epoxy Reinforced Cellulose
Magnet Type	Ferrite

Speaker Input

Speaker Input	AP4
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Cabinet

Cabinet Material	Baltic birch
Handles	4
Pole Mount	M20
Color	"Orange peeled" Matt Black or any RAL

Physical Dimensions

Height	600 mm (23.62")
Width	700 mm (27.55")
Depth	750 mm (29.52")
Weight	74.7 kg (163.1 lb)

Specifications

System Acoustic Performance

Max SPL Long-term	132 dB (137 dB - 2× ES 2.6)
Max SPL Peak	138dB (140dB - 2× ES2.6)
-3 dB Response	38 Hz to 130 Hz
-10 dB Response	34 Hz to 130 Hz
Impedance	8 Ω
Crossover Point	130 Hz

Low Frequency Section

Acoustic Design	Twin Asymmetrical loading
Number of drivers	2
Subwoofer Amplifier Requirement	800 W / ES2.6 from EPAK2500/R
Woofer Size / Voice Coil Diameter / Design	15" / 4" / Inside Outside
Diaphragm Material	Epoxy Reinforced Cellulose
Magnet Type	Ferrite

Speaker Input

Speaker Input	AP4
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Speaker Output

Speaker Output	AP4
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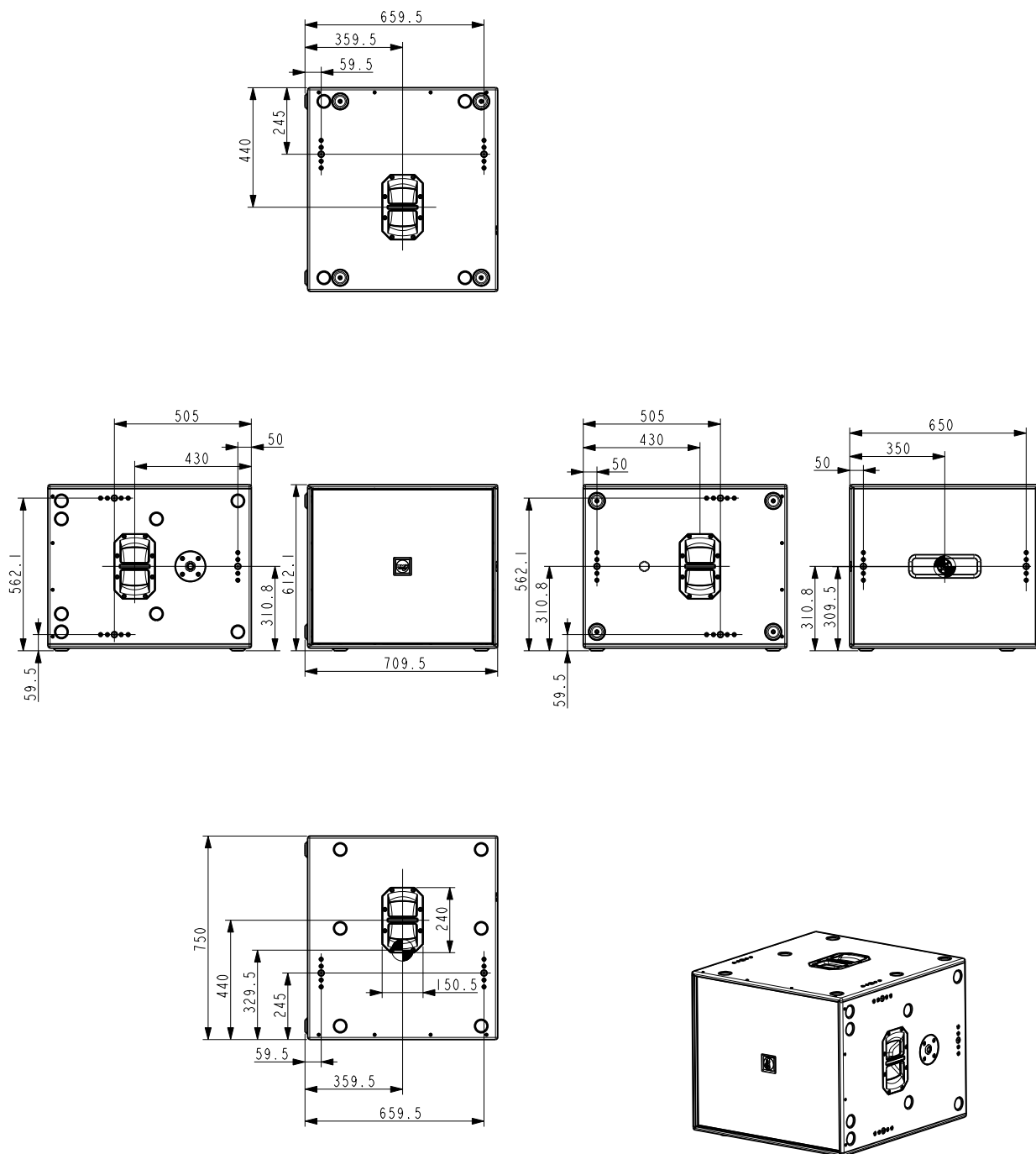
Cabinet

Cabinet Material	Baltic birch
Handles	4
Pole Mount	M20
Color	"Orange peeled" Matt Black or any RAL

Physical Dimensions

Height	600 mm (23.62")
Width	700 mm (27.55")
Depth	750 mm (29.52")
Weight	74.7 kg (163.1 lb)

Drawing



ES2.5 and ES2.6 Architects and Engineer's Specifications

The bass module loudspeaker system shall incorporate two 15-inch low frequency (LF) transducer with ferrite motors and 4-inch polyimide, high-temperature voice coils. The LF driver shall be mounted inside a compact wood enclosure with twin asymmetrical chambers. The loudspeaker enclosure shall have a rectangular shape and shall incorporate, four side handles and integrated internal braces with twelve M10 suspension points.

The speaker cabinet shall be finished with an ultra wear resistant black polymer coating and fitted with a weather resistant perforated steel grill. The system shall receive power from a separate Amplifier/Controller Module consisting of separate power amplifiers for high, midrange and midbass transducers as well as signal processing including electronic and pass crossover filters, phase alignment, time corrections, equalization and speaker protection.

The speaker system shall connect to the Amplifier/Controller Module via proprietary cables terminated in Amphenol AP-4 connectors. The bass module shall be the KV2 Audio ES2.5 or ES2.6.

Heavy duty cover for ES2.5 used without cart
 part name: **COVER ES2.5 WITHOUT CART**
 part number: **KVV 987 117**



Heavy duty cover for ES2.6 used without cart
 part name: **COVER ES2.6 WITHOUT CART**
 part number: **KVV 987 153**
 - wheels not included



Heavy duty cover for ES2.5 used with cart CRT - 0009
 part name: **COVER ES2.5 WITH CART**
 part number: **KVV 987 118**



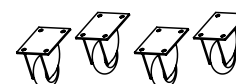
Heavy duty cover for ES2.6 used with cart CRT0009
 part name: **COVER ES2.6 WITHOUT CART**
 part number: **KVV 987 154**



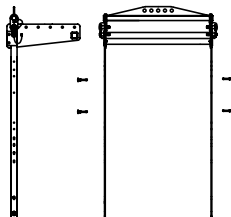
Front mount magnetic cart for ES1.8, ES2.5, ES2.6, EX2.5 MkII
 part name: **CRT - 0009**
 part number: **KVV 987 114**



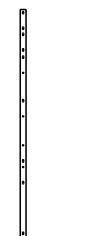
Cart Wheels with bolts nuts kit
 part name: **CRT 0009 - WHL KIT**
 part number: **WHL - KVV 987 128**
 - 4 pcs in pack, (rotating), (blue)



Fly Bar and Bracket for ES systems
 part name: **FLY BAR - 0002**
 part number: **KVV 987 191**
 - 8 pcs M10 screws
 - 8 pcs Quick-lock-pins 6 mm included
 - 4 pcs Quick-lock-pins 1/2" included



Additional arms for FB-0002
 part name: **FLY BAR - 0002**
 part number: **KVV 987 192**
 - 2 pcs ARMS OF FB-0002
 - 8 pcs M10 screws
 - 8 pcs Quick-lock-pins 6 mm included



Speaker pole - universal
 part name: **KV2-H**
 part number: **KVV 987 130**
 - weight 2.2 kg
 - max. load 50 kg
 - 0.735 to 1.23 m
 - diameter 35 mm
 - bottom terminal M20
 - matte black



ES Bass speaker cable LF15, AP4 connectors - 1.5 m
 part name: **LF15**
 part number: **KVV 987 121**
 - 1.5m (5 ft)
 - for ES Bass Module daisy-chaining



ES Cable kit
 part name: **CABLE-KIT**
 part number: **KVV 987 047**
 The ES Cable Pack consist of four high-quality Amphenol AP cable assemblies designed for use with ES Series.
 - 2 pcs LF15
 - 1 pc LF40
 - 1 pc MH60



ES Bass speaker cable LF40, AP4 connectors - 4 m
 part name: **LF40**
 part number: **KVV 987 122**
 - 4 m (13 ft)
 - for ES Bass Module hook-up



ES Bass speaker cable LF100, AP4 connectors - 10 m
 part name: **LF100**
 part number: **KVV 987 123**
 - 10 m (33 ft)
 - for ES Bass Module hook-up



Amphenol AP4 cable-mount female connector
 part name: **AP-6-11**
 part number: **KVV 987 048**



ES Bass speaker cable LF200, AP4 connectors - 20 m
 part name: **LF200**
 part number: **KVV 987 124**
 - 20 m (66 ft)
 - for ES Bass Module hook-up



Amphenol AP4 cable-mount male connector
 part name: **AP-6-12**
 part number: **KVV 987 049**



Warranty

Your ES System is covered against defects in material and workmanship.

Refer to your supplier for more details.

Service

In the unlikely event that your ES System develops a problem, it must be returned to an authorised distributor, service centre or shipped directly to our factory. Because of the complexity of the design and the risk of electrical shock, all repairs must be attempted only by qualified technical personnel.

If the unit needs to be shipped back to the factory, it must be sent in its original carton. If improperly packed, the unit may be damaged.

To obtain service, contact your nearest KV2 Audio Service Centre, Distributor or Dealer.



The Future of Sound.
Made Perfectly Clear.

KV2 Audio International

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