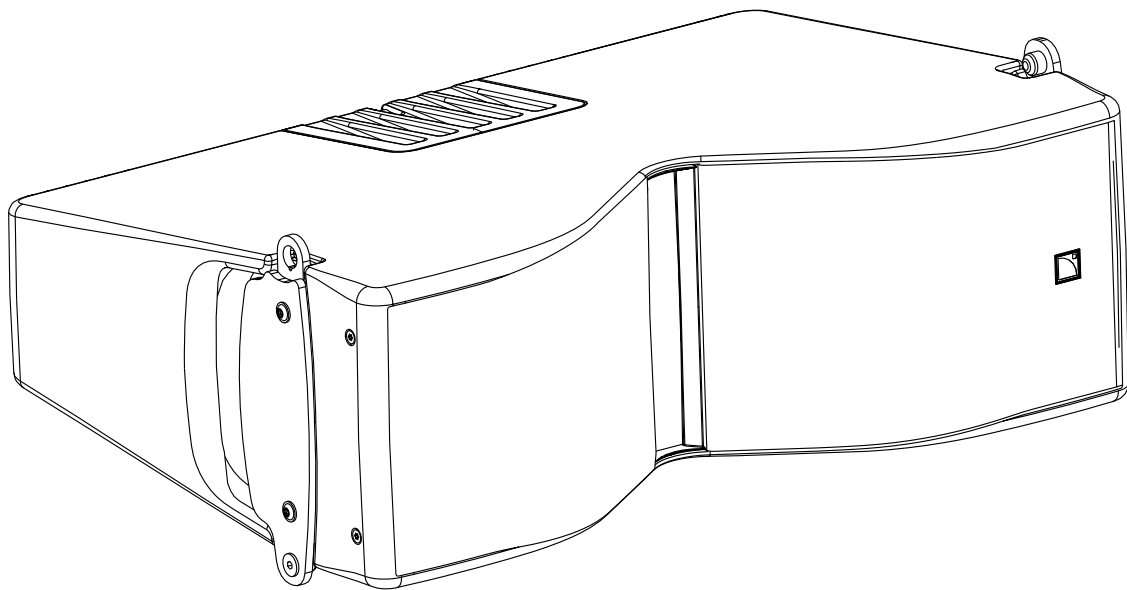


# KIVA II



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user manual (EN)



Document reference: Kiva II user manual (EN) version 3.0

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# Safety

## Instructions

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### **Inspect the product before operation.**

If any sign of defect or damage is detected, immediately withdraw the product from use for maintenance.



### **Never incorporate equipment or accessories not approved by L-Acoustics.**

**Read all the related PRODUCT INFORMATION documents shipped with the products before exploiting the system.**



**Do not store the product on an unstable cart, stand, tripod, bracket, or table.**



### **Beware of sound levels.**

Do not stay within close proximity of loudspeakers in operation.

Loudspeaker systems are capable of producing very high sound pressure levels (SPL) which can instantaneously lead to permanent hearing damage to performers, production crew and audience members. Hearing damage can also occur at moderate level with prolonged exposure to sound.

Check the applicable laws and regulations relating to maximum sound levels and exposure times.



**This system is intended for professional use.**



### **Read the RIGGING MANUAL before installing the system.**

Use the rigging accessories described in the rigging manual and follow the associated procedures.

**Read the maintenance section of this document before servicing the product.**



### **Do not expose the product to extreme conditions.**

Do not expose the product to rain or sea spray.

Do not expose the product to moisture (mist, steam, humidity, condensation...) or excessive heat (direct sun, radiator...) for a long period of time.



### **Contact L-Acoustics for advanced maintenance.**

Any unauthorized maintenance operation will void the product warranty.

## Symbols

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The following symbols are used in this document:



This symbol indicates a potential risk of harm to an individual or damage to the product.

It can also notify the user about instructions that must be strictly followed to ensure safe installation or operation of the product.



This symbol notifies the user about instructions that must be strictly followed to ensure proper installation or operation of the product.



This symbol notifies the user about complementary information or optional instructions.

# Welcome

Thank you for purchasing the L-Acoustics Kiva II.

This document contains essential information on using the system properly.

**As part of a continuous evolution of techniques and standards, L-Acoustics reserves the right to change the specifications of its products and the content of its document without prior notice.** Please check [www.l-acoustics.com](http://www.l-acoustics.com) on a regular basis to download the latest document and software updates.

## Kiva II ultra-compact modular line source

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The Kiva II is an ultra-compact WST® modular line source designed for long-throw sound reinforcement applications with minimum visual impact. The Kiva II features two 6.5" speakers in a bass-reflex cabinet and a 1.75" diaphragm compression driver loaded by a DOSC waveguide and L-Fins.

Kiva II features an outstanding SPL/format ratio thanks to the excursion and power capability of the transducers. The amplifier density is maximized with 16  $\Omega$  impedance.

The Kiva II operates from 70 Hz to 20 kHz. The coplanar transducer arrangement and the new K front grill produce a 100° symmetric horizontal directivity output with a smooth tonal response free of secondary lobes over the entire frequency range. In accordance with the WST coupling criteria to preserve the wave front coherency, the maximum inter-element angle is 15°.

The internal passive crossover network uses custom filters. The L-Acoustics amplified controllers ensure the linearization and the protection of the transducers (L-Drive).

The cabinet is made of a new composite material, with a high immunity to moisture and shocks and remarkable acoustic properties. Kiva II weighs a mere 14 kg (31 lb) and its compact elegance makes for an easy integration in any situation. Available in white or custom RAL CLASSIC, it melts into any architecture. The enclosure is rated IP55. The flush-fitted rigging features a visual safety check.

Kiva II is particularly suited to multi-channel L-ISA systems in performing art centers or for sound reinforcement of special events. These fixed installations or rental projects demand an impactful and immersive sound system yet with a compact footprint to give room for either video displays, visual effects or preserve the architectural aspects of the venue.

Kiva II can be flown as a standalone system or with the SB15m. Under-balcony, pole-mount and pullback arrangements are also possible.

## System components

### Loudspeaker enclosures

Kiva II	2-way passive WST enclosure: 2 x 6.5" LF + 1.75 HF diaphragm
SB15m	High power compact subwoofer : 1 x 15"
SB18	High power compact subwoofer: 1 x 18"



#### **SB18 / SB18i / SB18m**

In this document, the SB18 term and illustrations refer equally to SB18, SB18i or SB18m.

### Powering and driving system

LA4X / LA8 / LA12X	Amplified controller with DSP, preset library and networking capabilities
LA-RAK II	Touring rack containing three LA12X, LA-POWER II for power distribution and LA-PANEL II for audio and network distribution
LA-RAK	Touring rack containing three LA8 and power, audio and network distribution
L-CASE	2U Electronics transport and protection case



Refer to the LA4X / LA8 / LA12X user manual for operating instructions.

### Loudspeaker cables

SP cables	4-point speakON loudspeaker cables (4 mm <sup>2</sup> gauge) SP cables come in four sizes: SP.7 (0.7 m/2.3 ft), SP5 (5 m/16.4 ft), SP10 (10 m/32.8 ft) and SP25 (25 m/82 ft)
SP-Y1	breakout cable for two passive enclosures (2.5 mm <sup>2</sup> gauge) provided with a CC4FP adapter 4-point speakON to 2 x 2-point speakON
DO	8-point PA-COM loudspeaker cables (4 mm <sup>2</sup> gauge) DO cables come in three sizes: DO.7 (0.7 m/2.3 ft), DO10 (10 m/32.8 ft) and DO25 (25 m/82 ft)
DOSUB-LA8	breakout cable for four passive enclosures (4 mm <sup>2</sup> gauge) 8-point PA-COM to 4 x 2-point speakON



#### **Information about the connection of the enclosures to the LA amplifiers is given in this document.**

Refer to the LA4X / LA8 / LA12X user manual for detailed instructions about the whole cabling scheme, including modulation cables and network.

### Rigging elements



Rigging elements or procedures are not presented in this document.  
Refer to the Kiva II rigging manual.

### Software applications

Soundvision	3D acoustical and mechanical modeling software
LA Network Manager	Software for remote control and monitoring of amplified controllers

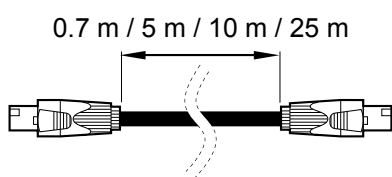


Refer to the **Soundvision** help.

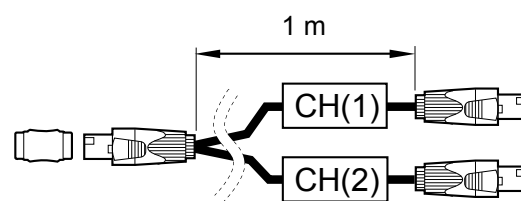


Refer to the **LA Network Manager video tutorial**.

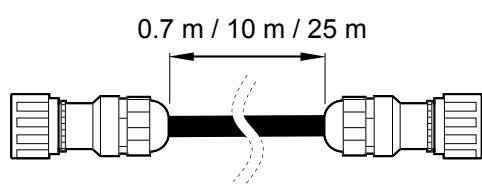
## Loudspeaker cables



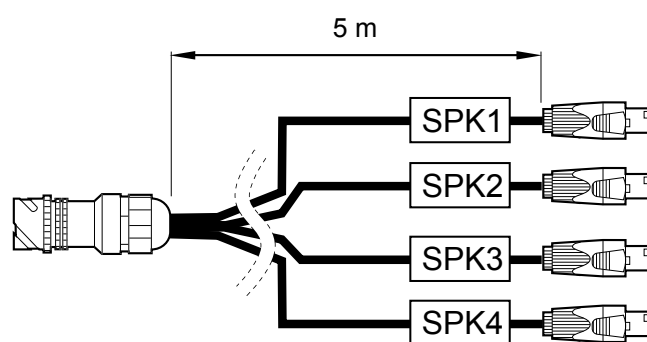
**SP.7 / SP5 / SP10 / SP25**



**SP-Y1**



**DO.7 / DO10 / DO25**



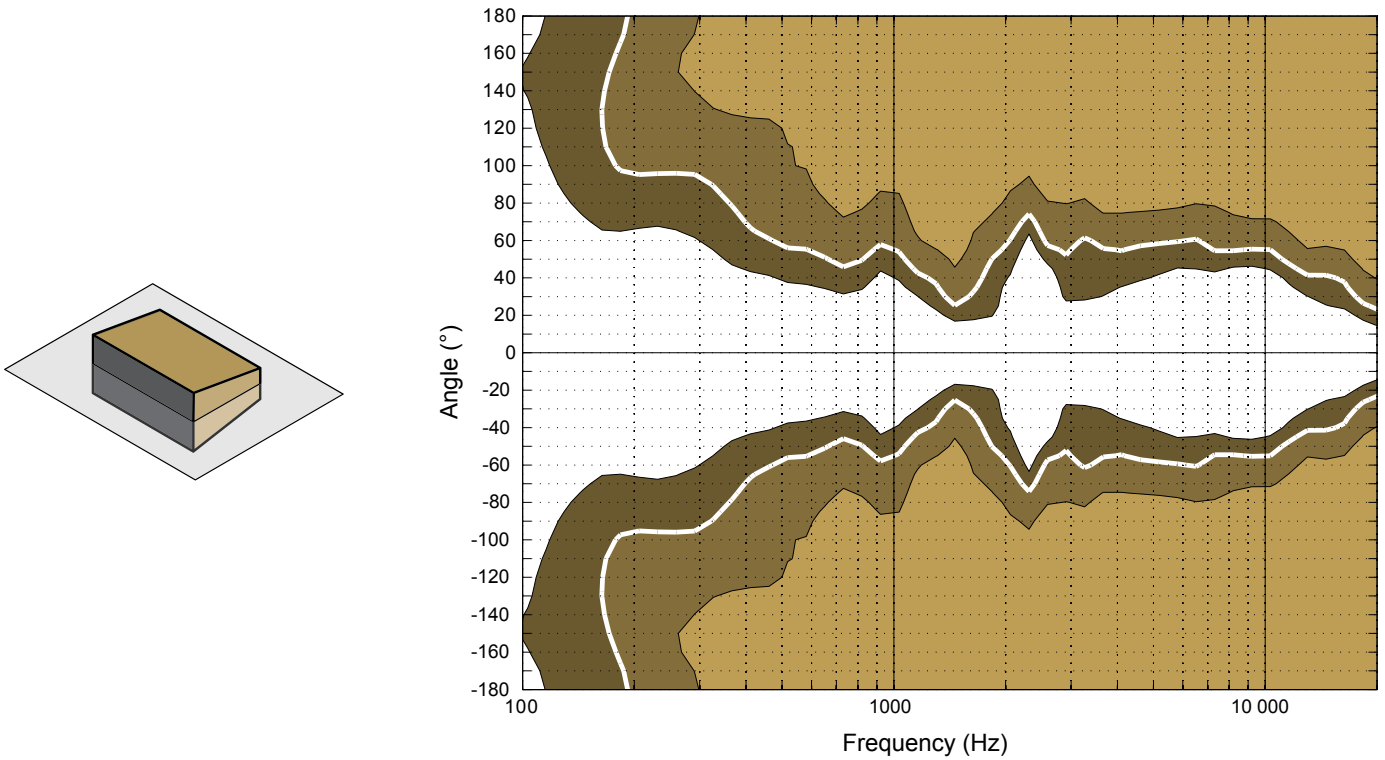
**DOSUB-LA8**

## Technical description

### Directivity

Kiva II features a V-shaped transducer arrangement coupled with a DOSC waveguide that generates a horizontal directivity pattern of 100°.

#### Kiva II beamwidth



Dispersion angle diagram of an array of six enclosures with 0° inter-enclosure angle, using lines of equal sound pressure at -3 dB, -6 dB, -12 dB.

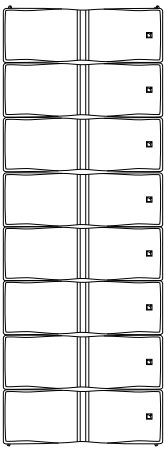
# Loudspeaker configurations

## Kiva II line source

In this configuration the system operates over the nominal bandwidth of the enclosure.

The [KIVA II] preset allows for a reference frequency response in medium to long throw applications.

Kiva II is driven by the LA4X / LA8 / LA12X amplified controllers.

	
Enclosure	Kiva II
Preset	[KIVA II]
Frequency range (-10 dB)	70 Hz - 20 kHz

Kiva II line source with low-frequency element

In this configuration, the bandwidth of the Kiva II system is extended in the low end and the LF contour is reinforced.

The [KIVA II] preset allows for a reference frequency response in medium to long throw applications.

The [SB15\_100] and [SB18\_60] presets provide SB15m and SB18 with an upper frequency limit at 100 Hz and 60 Hz respectively.


Kiva II, SB18 and SB15m are driven by the LA4X / LA8 / LA12X amplified controllers.

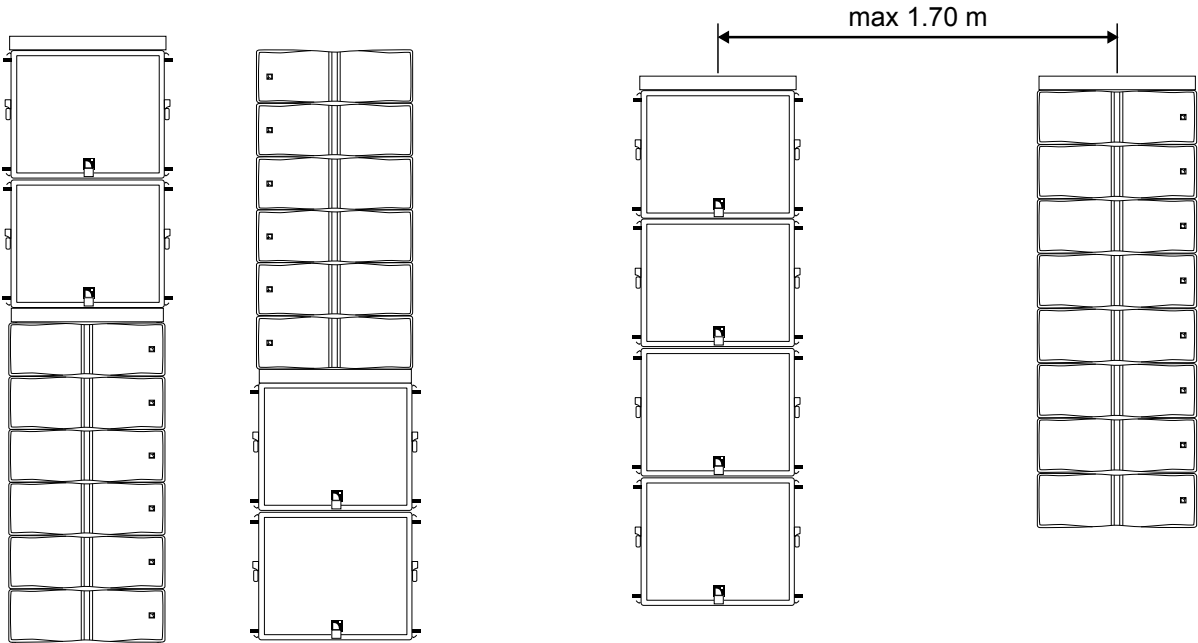
Kiva II line source with SB15m

With SB15m, the system bandwidth is extended down to 40 Hz.


3 Kiva II : 1 SB15m  
reinforced contour

2 Kiva II : 1 SB15m  
reinforced contour  
+ 3 dB at 100 Hz

 Maximum line length:  
12 Kiva II + 4 SB15m



Enclosure	Kiva II	SB15m
Preset	[KIVA II]	[SB15_100]
Frequency range (-10 dB)	40 Hz - 20 kHz	

 **Use [xxxx\_xx\_C] on a reversed subwoofer in a cardioid configuration**  
The cardioid configuration consists in reversing 1 element in an array of 4 subwoofers.  
Refer to the subwoofer user manual and to the **Cardioid configurations** technical bulletin.

 **Delay values**  
Do not forget to add the pre-alignment and geometric delays depending on the configuration.

Pre-alignment delays

[KIVA II] + [SB15_100]	Kiva II = 0 ms	SB15m = 1 ms
[KIVA II] + [SB15_100_C]	Kiva II = 2.7 ms	SB15m = 0 ms

## Kiva II line source with SB15m and SB18

With SB15m and SB18, the system bandwidth is extended down to 32 Hz.

### 3 Kiva II : 1 SB15m : 1 SB18

reinforced contour

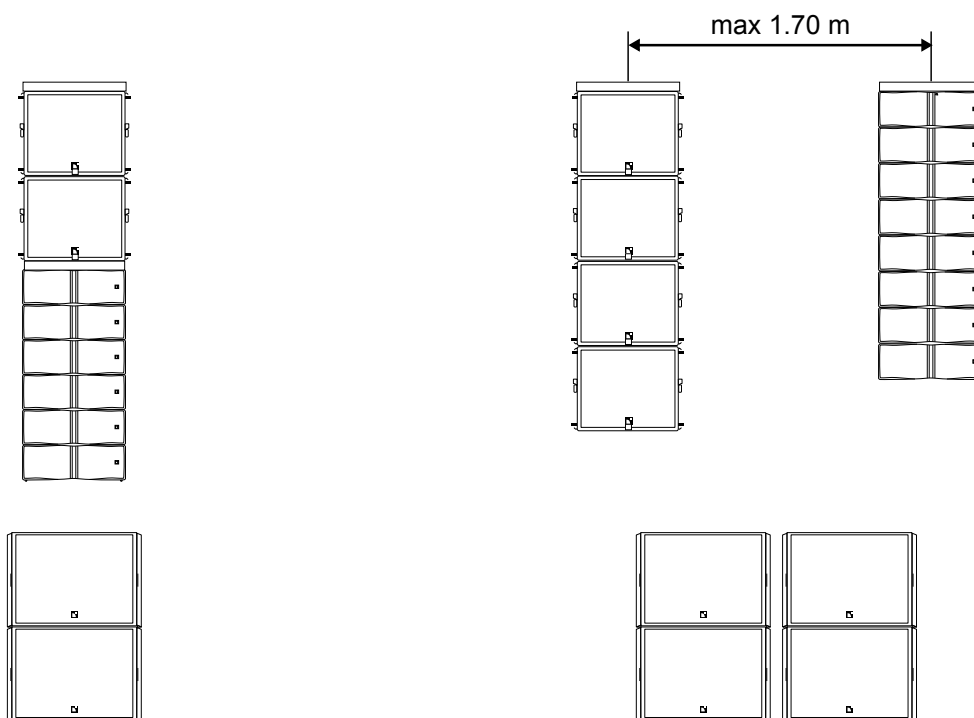


Maximum line length:  
12 Kiva II + 4 SB15m

### 2 Kiva II : 1 SB15m : 1 SB18

reinforced contour

+ 3 dB at 100 Hz



Enclosure	Kiva II	SB15m	SB18
Preset	[KIVA II]	[SB15_100]	[SB18_60]
Frequency range (-10 dB)	32 Hz - 20 kHz		



#### Use [xxxx\_xx\_C] on a reversed subwoofer in a cardioid configuration

The cardioid configuration consists in reversing 1 element in an array of 4 subwoofers.

Refer to the subwoofer user manual and to the **Cardioid configurations** technical bulletin.



#### Grouping subwoofers

Place the subwoofer enclosures side by side. If not possible, the maximum distance between two adjacent acoustic centers must be 2.8 m or 1.7 m if the upper frequency limit of the subwoofer system is at 60 Hz or 100 Hz, respectively.



#### Delay values

Do not forget to add the pre-alignment and geometric delays depending on the configuration.

#### Pre-alignment delays

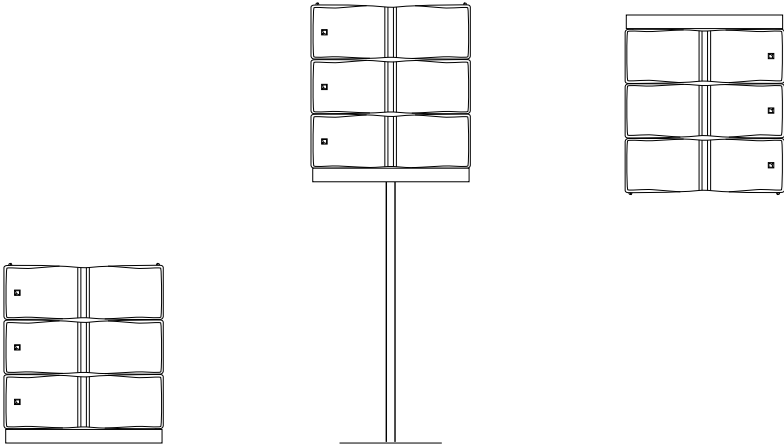
[KIVA II] + [SB15_100] + [SB18_60]	Kiva II = 0 ms	SB15m = 1 ms	SB18 = 8.5 ms
[KIVA II] + [SB15_100] + [SB18_60_C]	Kiva II = 0 ms	SB15m = 1 ms	SB18 = 2.95 ms
[KIVA II] + [SB15_100_C] + [SB18_60]	Kiva II = 2.7 ms	SB15m = 0 ms	SB18 = 11.2 ms
[KIVA II] + [SB15_100_C] + [SB18_60_C]	Kiva II = 2.7 ms	SB15m = 0 ms	SB18 = 5.65 ms

## Kiva II line source element

Up to three Kiva II can be used as a line source element. In this configuration, the system operates over the nominal bandwidth of Kiva II.

The [KIVA II\_FI] preset allows for a reference frequency response in short throw applications.

Kiva II is driven by the LA4X / LA8 / LA12X amplified controllers.

	
Enclosure	Kiva II
Preset	[KIVA II_FI]
Frequency range (-10 dB)	70 Hz - 20 kHz

## Kiva II line source element with low-frequency element

Up to three Kiva II can be used as a line source element with a complementary subwoofer. In this configuration, the system bandwidth is extended in the low end and the LF contour is reinforced.

The [KIVA II\_FI] preset allows for a reference frequency response in medium to long throw applications.

The [SB15\_100] preset provides SB15m with an upper frequency limit at 100 Hz.

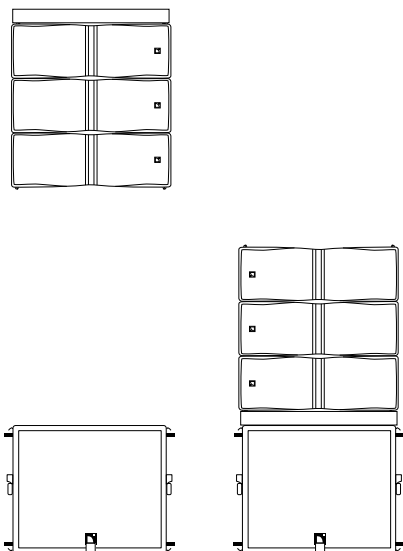
Kiva II and SB15m are driven by the LA4X / LA8 / LA12X amplified controllers.

### Kiva II line source element with SB15m

With SB15m, the system bandwidth is extended down to 40 Hz.

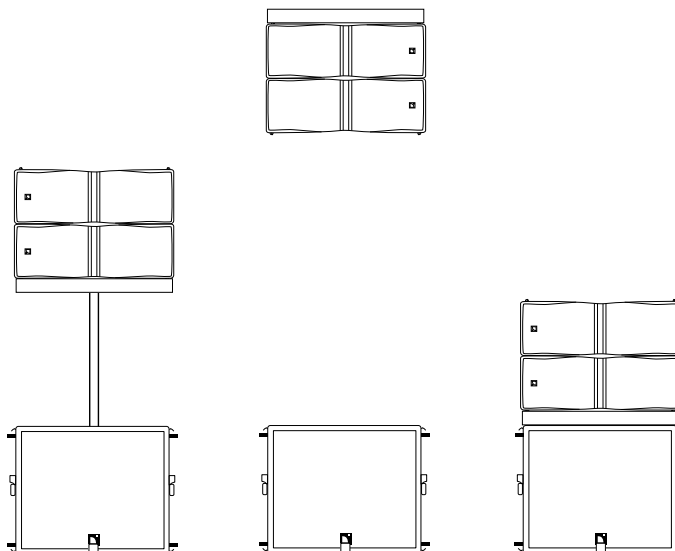
#### 3 Kiva II : 1 SB15m

reinforced contour



#### 2 Kiva II : 1 SB15m

reinforced contour  
+ 3 dB at 100 Hz



Enclosure	Kiva II	SB15m
Preset	[KIVA II_FI]	[SB15_100]
Frequency range (-10 dB)	40 Hz - 20 kHz	



#### Delay values

Do not forget to add the pre-alignment and geometric delays depending on the configuration.

#### Pre-alignment delays

[KIVA II_FI] + [SB15_100]	Kiva II = 0 ms	SB15m = 0.7 ms
[KIVA II_FI] + [SB15_100_C]	Kiva II = 3 ms	SB15m = 0 ms



#### Use [xxxx\_xx\_C] on a reversed subwoofer in a cardioid configuration

The cardioid configuration consists in reversing 1 element in an array of 4 subwoofers.

Refer to the subwoofer user manual and to the **Cardioid configurations** technical bulletin.



#### Grouping subwoofers

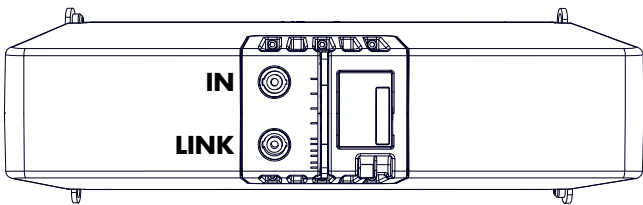
Place the subwoofer enclosures side by side. If not possible, the maximum distance between two adjacent acoustic centers must be 2.8 m or 1.7 m if the upper frequency limit of the subwoofer system is at 60 Hz or 100 Hz, respectively.

# Loudspeaker connection

## Connectors

The Kiva II is equipped with two 4-point speakON connectors.

Kiva II



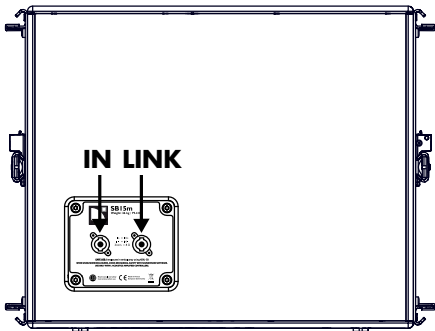
### Internal pinout for L-Acoustics 2-way passive enclosures

speakON points	1 +	1 -	2 +	2 -
Transducer connectors	+	-	Not linked	Not linked

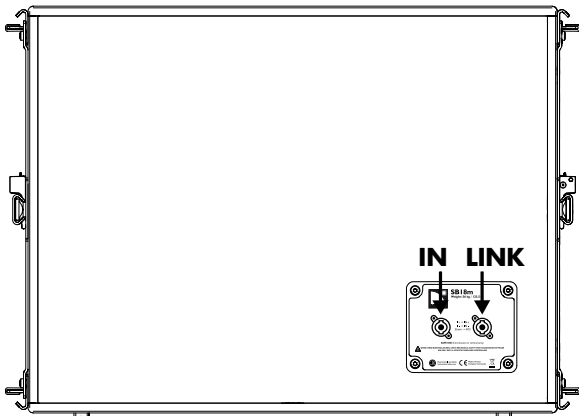
The SB15m is equipped with two 4-point speakON connectors.

The SB18 is equipped with two 4-point speakON connectors.

SB15m



SB18



### Internal pinout for L-Acoustics subwoofers

speakON points	1 +	1 -	2 +	2 -
Transducer connectors	LF +	LF -	Not linked	Not linked

## Connection to LA4X

### Maximum number of enclosures per LA4X

enclosure	max enclosures in parallel	max enclosures per controller
Kiva II	2	8
SB15m	1	4
SB18	1	4

### Impedance load

SB15m SB18

1 enclosure: 8  $\Omega$

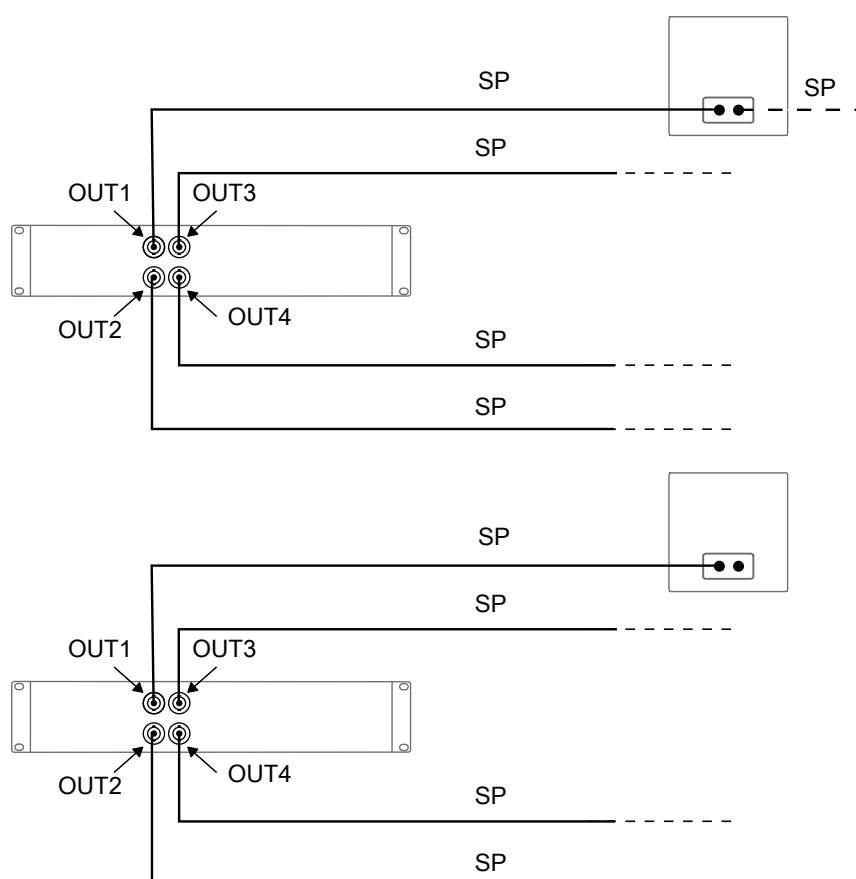
Kiva II

1 enclosure: 16  $\Omega$

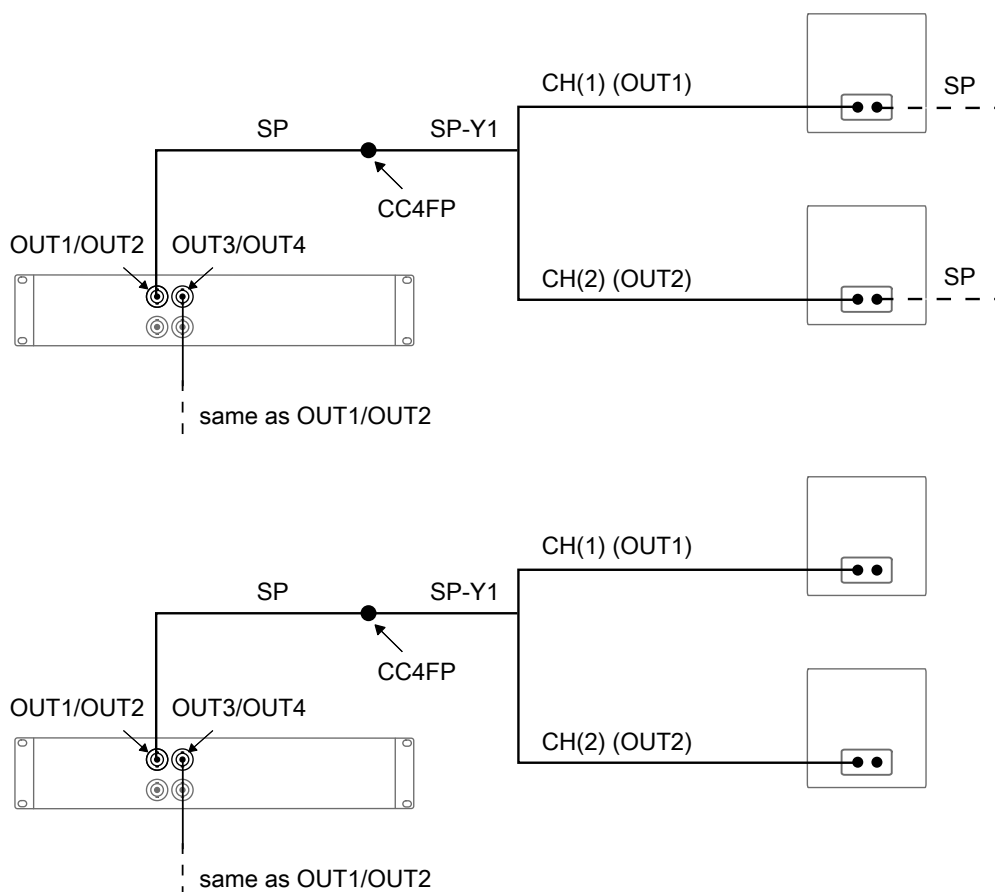
2 enclosures in parallel: 8  $\Omega$

### Connecting 2-way passive enclosures or subwoofers

SP on speakON output



## SP and SP-Y1 on speakON output



## Connection to LA8

### Maximum number of enclosures per LA8

enclosure	max enclosures in parallel	max enclosures per controller
Kiva II	4	16
SB15m	2	6
SB18	2	8



**Make sure the total number of connected enclosures does not exceed the maximum number of enclosures per controller.**

LA8 can drive up to two SB15m per output, but no more than six per controller.

### Impedance load

SB15m SB18

- 1 enclosure: 8  $\Omega$
- 2 enclosures in parallel: 4  $\Omega$

Kiva II

- 1 enclosure: 16  $\Omega$
- 2 enclosures in parallel: 8  $\Omega$
- 3 enclosures in parallel: 5.3  $\Omega$
- 4 enclosures in parallel: 4  $\Omega$

## Connection to LA12X

### Maximum number of enclosures per LA12X

enclosure	max enclosures in parallel	max enclosures per controller
Kiva II	6	24
SB15m	3	12
SB18	3	12

### Impedance load

SB15m SB18

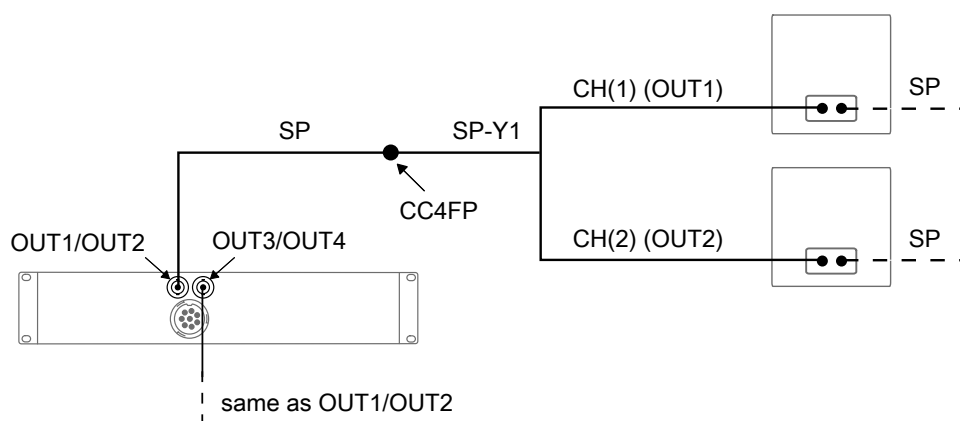
- 1 enclosure: 8  $\Omega$
- 2 enclosures in parallel: 4  $\Omega$
- 3 enclosures in parallel: 2.7  $\Omega$

Kiva II

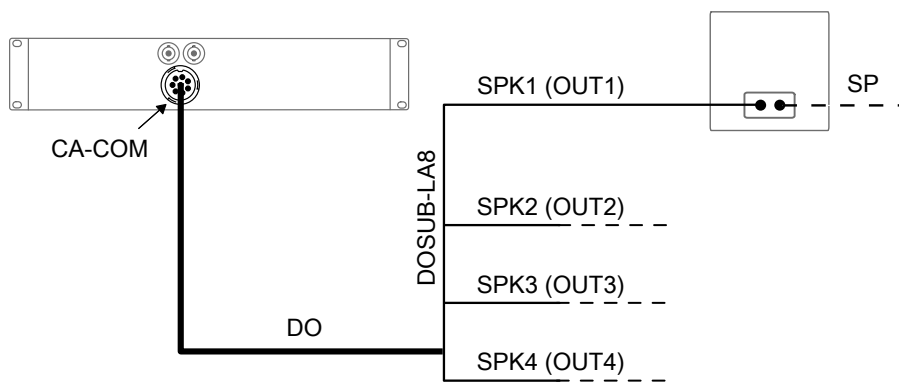
- 1 enclosure: 16  $\Omega$
- 2 enclosures in parallel: 8  $\Omega$
- 3 enclosures in parallel: 5.3  $\Omega$
- 4 enclosures in parallel: 4  $\Omega$
- 5 enclosures in parallel: 3.2  $\Omega$
- 6 enclosures in parallel: 2.7  $\Omega$

### Connecting 2-way passive enclosures or subwoofers

SP and SP-Y1 on speakON output



## DO and DOSUB-LA8 on CA-COM output



## Preset description

### [KIVA II\_FI]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON

### [KIVA II]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN A	0 dB	0 ms	+	ON
OUT 4	PA	IN A	0 dB	0 ms	+	ON

### [SB18\_60] [SB15\_100]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	SB	IN A	0 dB	0 ms	+	ON
OUT 2	SB	IN A	0 dB	0 ms	+	ON
OUT 3	SB	IN A	0 dB	0 ms	+	ON
OUT 4	SB	IN A	0 dB	0 ms	+	ON

### [SB18\_60\_C] [SB15\_100\_C]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
SR	OUT 1	SR	IN A	0 dB	0 ms	+	ON
SB	OUT 2	SB					ON
SB	OUT 3	SB					ON
SB	OUT 4	SB					ON

## Recommendation for speaker cables

Follow the recommended maximum length for loudspeaker cables to ensure minimal SPL attenuation.



### Cable quality and resistance

Only use high-quality fully insulated speaker cables made of stranded copper wire.

Use cables with a gauge offering low resistance per unit length and keep the cables as short as possible.

The table below provides the recommended maximum length for loudspeaker cables depending on the cable gauge and on the impedance load connected to the amplifier.

cable gauge			recommended maximum length					
			8 $\Omega$ load		4 $\Omega$ load		2.7 $\Omega$ load	
mm <sup>2</sup>	SWG	AWG	m	ft	m	ft	m	ft
2.5	15	13	30	100	15	50	10	33
4	13	11	50	160	25	80	17	53
6	11	9	74	240	37	120	25	80

For your installation projects, you can use the more detailed L-ACOUSTICS calculation tool to evaluate cable length and gauge based on the type and number of enclosures connected. The calculation tool is available on our website:

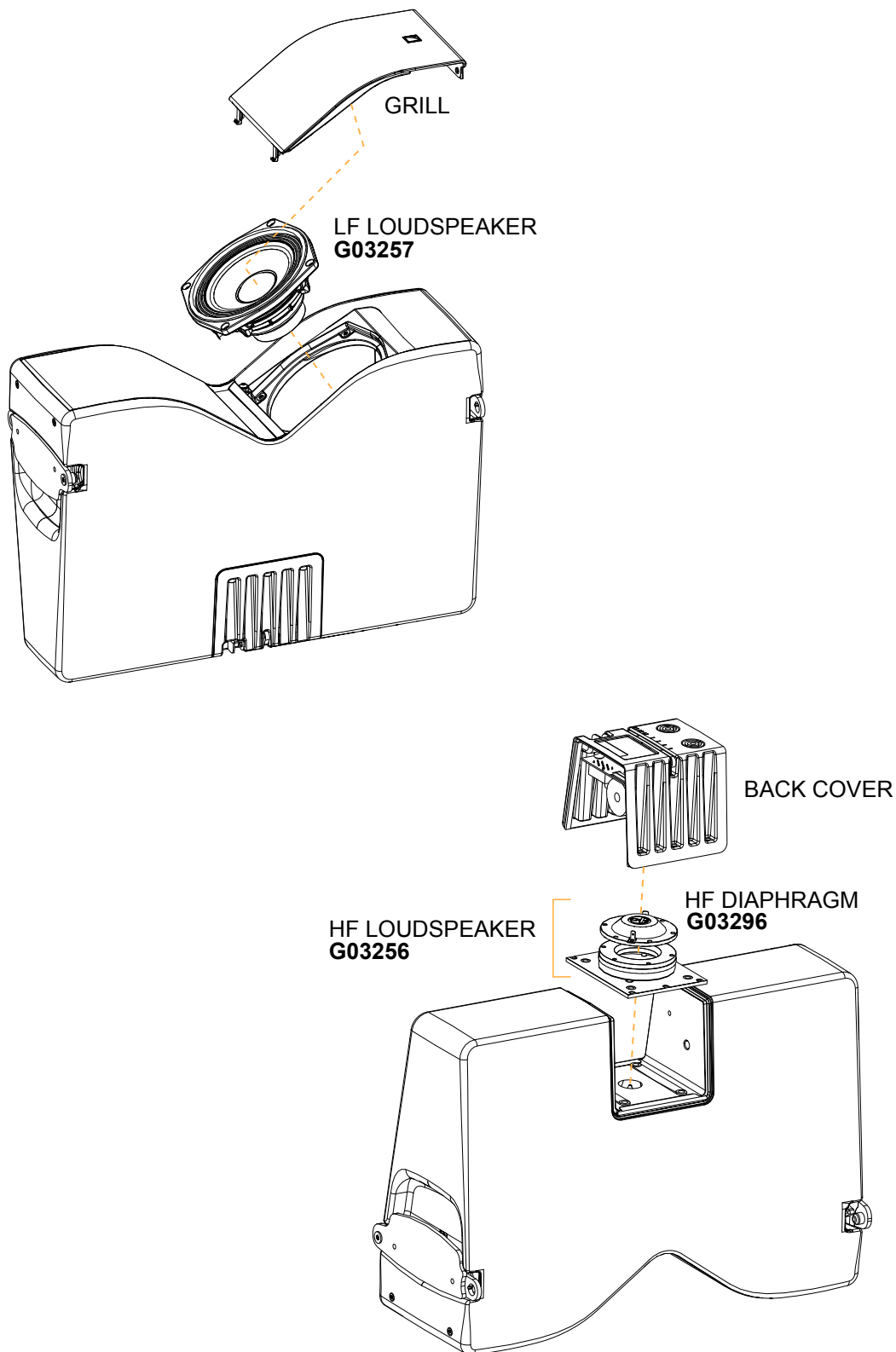
<http://www.l-acoustics.com/installation-outils-de-calcul-137.html>

# Maintenance

## Disassembly and Reassembly procedures

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In order to operate, follow the order outlined here.



## D/R - Back cover

### Tools

- torque screwdriver
- screwdriver extension
- 4 mm hex bit

### Repair kits

**G03256 - KR compression driver 1.75" KIVA II or**

**G03296 - KR diaphragm 1.75" KIVA II**



x6

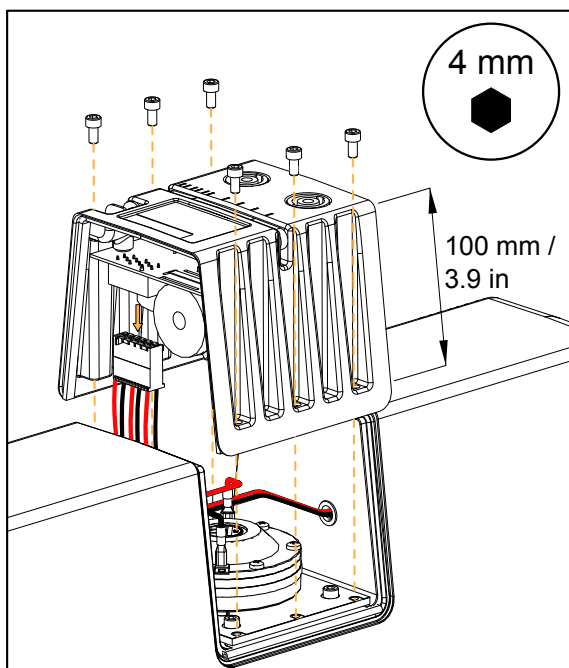
S338

M5x10 hex

### Disassembly

Remove the six screws and carefully disconnect the cables to remove the back cover.

Use a screwdriver extension.



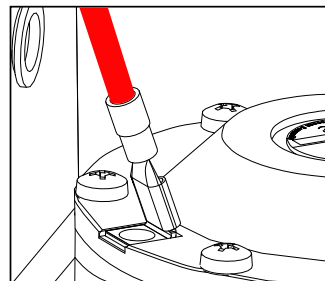
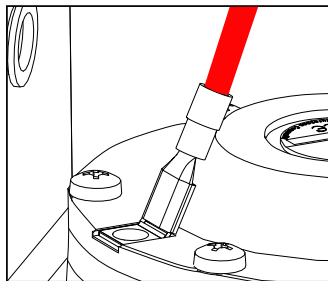
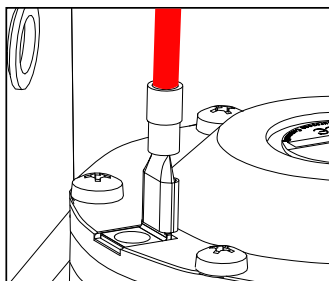
## Reassembly

### About this task



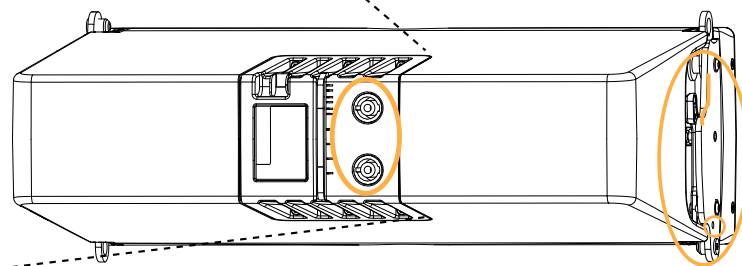
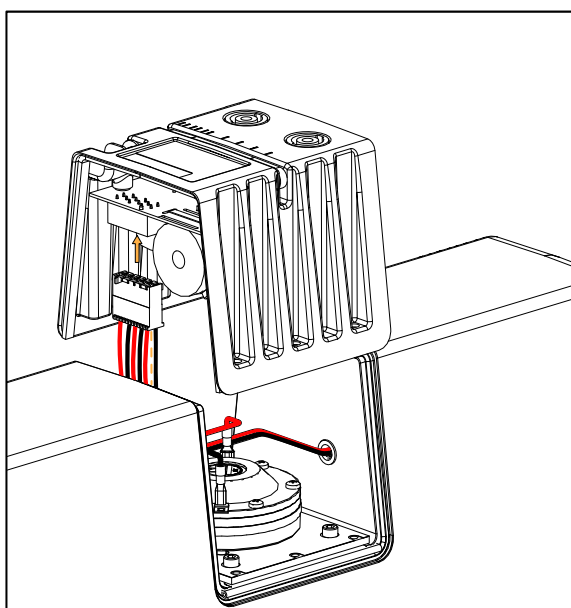
For safety reasons, always use the new screws and spare parts provided in the KR.  
If no new screws are available, use blue threadlocker.

1. Check that the HF speaker terminals are not bent.

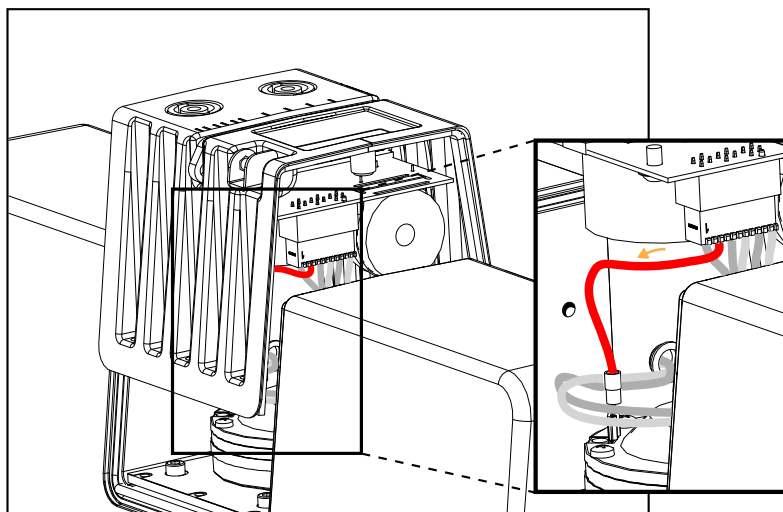


2. Position the back cover and connect the cables.

The speakON connectors must be on the same side as the safety mechanism.

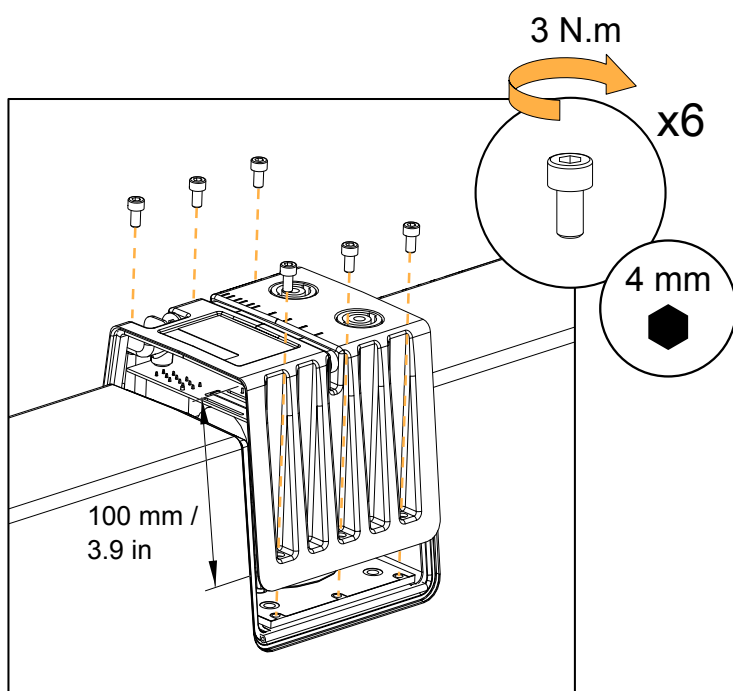


- 3.** Position the HF speaker positive cable (red) against the back cover.



- 4.** Secure the back cover with the six screws.

Use a screwdriver extension.



## D/R - HF diaphragm

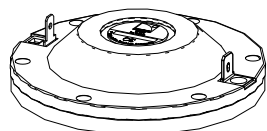
### Tools and consumables

- torque screwdriver
- T20 Torx bit
- compressed air blower
- double face adhesive

### Repair kits

#### G03296

#### KR diaphragm 1.75" KIVA II



x1

17736

diaphragm kit for 1.75" driver - 16 Ω



x6

S17736

M4x8 Torx

### Pre-requisite

Back cover disassembled.

See [Back cover](#) (p.22).



For safety reasons, always use the new screws and spare parts provided in the KR.  
If no new screws are available, use blue threadlocker.

### Exploded view

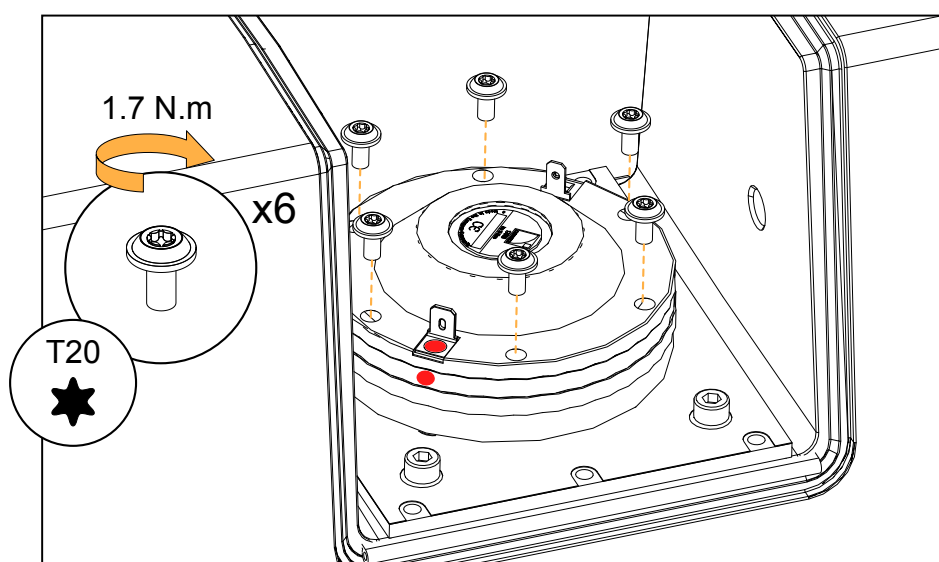


**Make sure the air gap is perfectly clean before reassembly.**

Use a blower or double face adhesive to remove any particle.

Position the diaphragm assembly with the positive (red) connector aligned with the red mark.

Gradually tighten the screws following a star pattern.



### What to do next

Perform the [Acoustical check](#) (p.29) procedures.

## D/R - HF loudspeaker

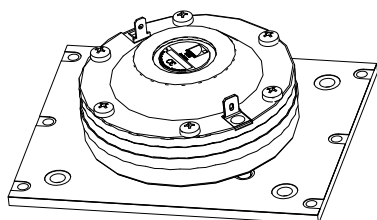
### Tools

- torque screwdriver
- 4 mm hex bit

### Repair kits

**G03256<sup>1</sup>**

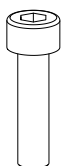
**KR compression driver 1.75" KIVA II**



x1

G100005

1.75" HF driver assembly



x4

S342

M5x20 hex



x2

101002

music note seal

<sup>1</sup> The screws are also available in G03296 - KR diaphragm 1.75" KIVA II .

### Pre-requisite

Back cover disassembled.

See [Back cover](#) (p.22).



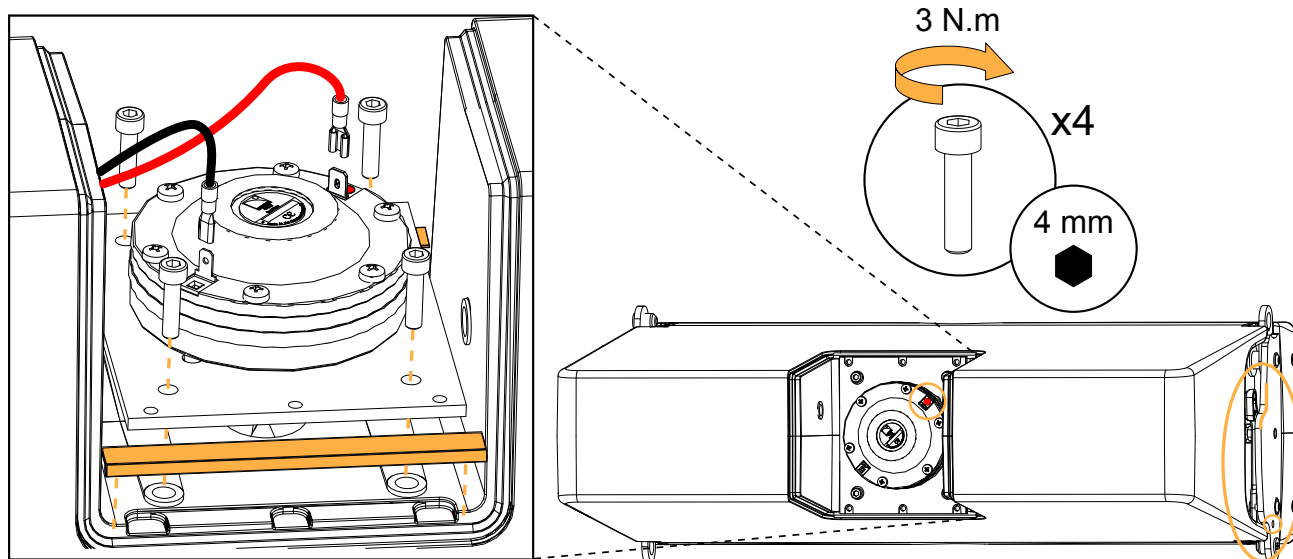
For safety reasons, always use the new screws and spare parts provided in the KR.  
If no new screws are available, use blue threadlocker.

### Exploded view

Position the positive (red) connector on the same side as the safety mechanism.



Gradually tighten the screws following a star pattern.



### What to do next

Perform the [Acoustical check](#) (p.29) procedures.

## D/R - Grill

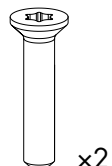
### Tools

- torque screwdriver
- T20 Torx bit

### Repair kits

**G03257**

**KR loudspeaker 6.5" KIVA II**

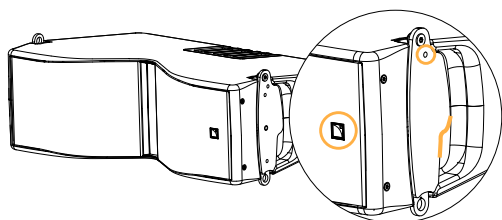


S337

M4x20 Torx



Position the logo on the same side as the safety mechanism (identifiable by the eyelet and the handle shape).

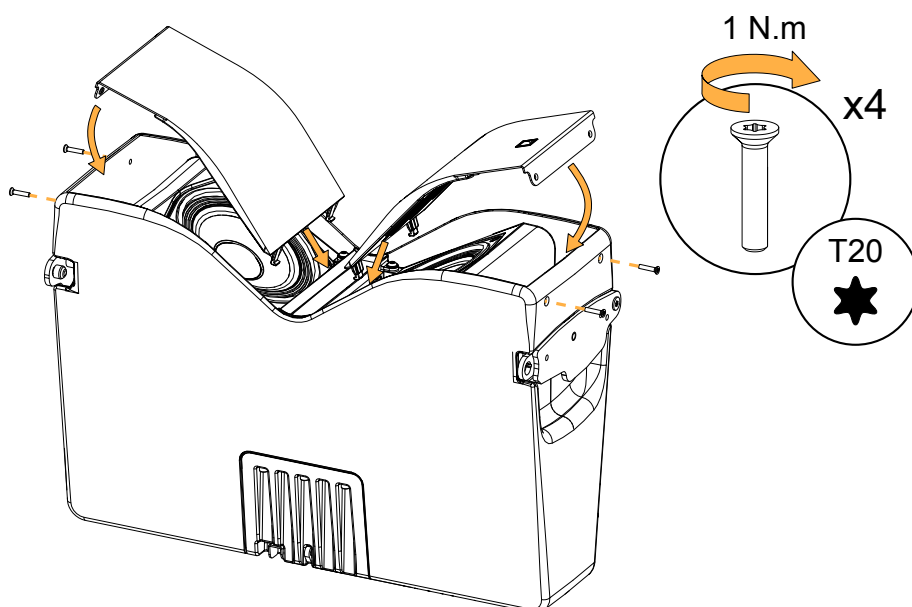


For safety reasons, always use the new screws and spare parts provided in the KR.  
If no new screws are available, use blue threadlocker.

### Exploded view

Use a lever.

Insert the tabs first when reassembling.



## D/R - LF loudspeaker

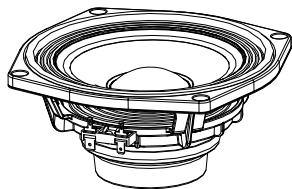
### Tools

- torque screwdriver
- 4 mm hex bit

### Repair kits

**G03257**

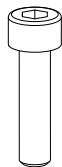
**KR loudspeaker 6.5" KIVA II**



x1

1741

6.5" loudspeaker - 16  $\Omega$  (with gasket)



x4

S342

M5x20 hex

### Pre-requisite

Grill disassembled.

See [Grill](#) (p.27).



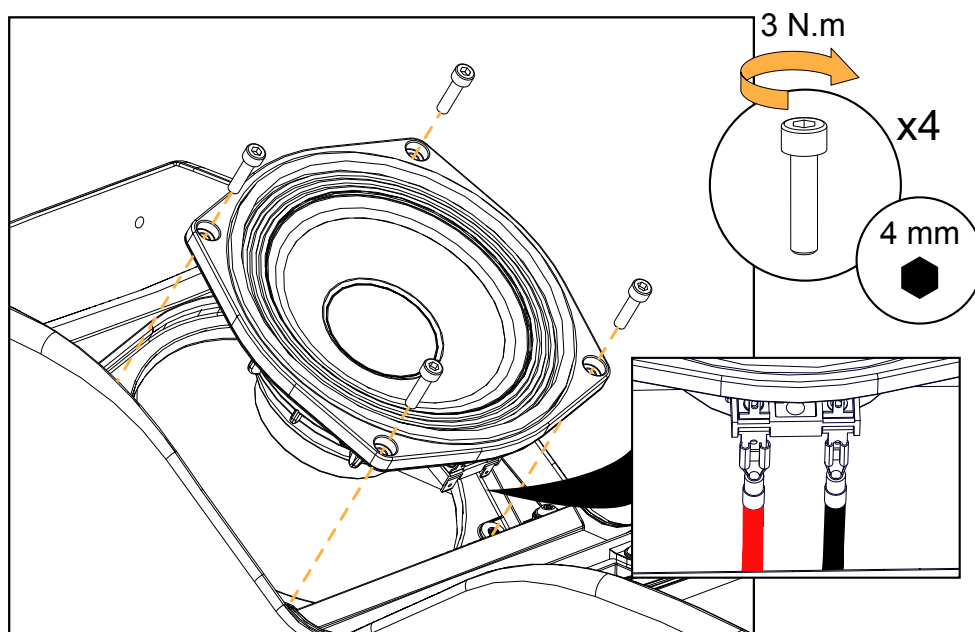
For safety reasons, always use the new screws and spare parts provided in the KR.  
If no new screws are available, use blue threadlocker.

### Exploded view

Use a lever.



Gradually tighten the screws following a star pattern.  
Position the connectors toward the center of the enclosure.



### What to do next

Perform the [Acoustical check](#) (p.29) procedures.

## Acoustical check

### Enclosure check



**This feature is available on:**

LA4X  
LA12X

ENCLOSURE CHECK measures impedance at the reference frequencies for the connected loudspeaker family. The measured impedance is compared to the expected range allowing for fast detection of loudspeakers presenting circuit continuity issues.



The results can be used for preliminary diagnosis but cannot replace a comprehensive quality control.

### Pre-requisite



**ENCLOSURE CHECK measurements can only be reliable if the following requirements are met:**

Environment and temperature:

- Ambient temperature must be comprised between 0 °C / 32 °F and 40 °C / 104 °F. Ideal temperature is 20 °C / 68 °F.
- Enclosures must be at room temperature. If warm from a recent high level use or recently moved from a cold environment, let the loudspeakers reach room temperature before starting.

Enclosures:

- Enclosures must be included in the embedded factory preset library.
- Enclosures must be in nominal operating conditions:
  - Remove covers or dollies obstructing the loudspeakers or the vents.
  - Check for obvious physical damage or air leak: visually inspect the grill, gasket, cabinet, and connector plate for loose, missing or damaged parts.

Connection:

- Use only 10 m / 30 ft 4 mm<sup>2</sup> / AWG 11 speaker cables.
- Do not connect enclosures in parallel.

Amplified controllers:

- LA4X must run at least firmware version 1.1.0.
- LA4X load sensors must be calibrated. Refer to the **Load Sensor Calibration Tool** technical bulletin for more information.
- LA4X must warm up for at least 10 minutes after power up. Do not power off, reboot or switch to standby mode to avoid resetting the countdown.
- Load a preset corresponding to the connected loudspeaker's family. Presets from the user memories may be used on condition they are made of presets supported in the embedded factory preset library.

### Procedure

1. Power up the amplified controller. Let LA4X warm up for at least 10 minutes.
2. Connect the loudspeaker enclosures to the amplified controller.
3. Load a preset from or built from the embedded library corresponding to the connected loudspeaker family.
4. On the amplified controller, use the encoder wheel to select **MONITORING & INFO**. Press the OK key or the encoder wheel to validate.
5. Use the encoder wheel to select **ENCLOSURE CHECK**.



#### **Beware of sound levels.**

Although the sound pressure levels generated for the ENCLOSURE CHECK are moderate, do not stay within close proximity of the loudspeakers and consider wearing ear protection.

6. Press the OK key or the encoder wheel to launch the ENCLOSURE CHECK.

The amplified controller generates short sinusoidal signals simultaneously for each connected output.

The amplified controller displays the results for each output.

**7.** Depending on the displayed results, follow the instructions in the table.

result	interpretation	instructions
OK	measured impedance is within expected range	enclosure is in working order electrically
?	unsupported preset family	only supported enclosures should be tested
NC	Not Connected	if cables are connected: <b>1.</b> inspect the cables and connections <b>2.</b> go to step 8 (p.30)
NOK	measured impedance is not within expected range	<b>1.</b> check that all the prerequisites are met, in particular that the loaded preset corresponds to the connected speaker's family <b>2.</b> inspect the cables and connections <b>3.</b> go to step 8 (p.30)
UNDEF	measured impedance is undefined	

**8.** Under NC, NOK and UNDEF results, press and hold the corresponding OUT key.

The amplified controller displays:

- the tested frequencies,
- information on the measured impedance:
  - OPEN for open circuit (found in NC results),
  - SHORT for short circuit (found in NOK results), or
  - a percentage of variation from the expected range (found in NOK and UNDEF results)
- the number of operational transducers out of the total



Low variations from the expected range are acceptable: displayed percentage can be different from 0 and all transducers considered operational.

## Listening test

### Procedure

1. Load the preset on an LA4X / LA8 / LA12X amplified controller.
2. Connect a sinus generator to the amplified controller.



#### **Risk of hearing damage**

Set a low sound level to start and use ear protection to adjust before testing.

3. Scan the usable bandwidth.  
The sound should remain pure and free of unwanted noise.

### Troubleshooting for LF speakers

One or more LF loudspeaker produces distorted, buzzing, rubbing, muffled or weak sound.

#### **Possible causes**

- The screws used for reassembly are too loose.
- There is an air leak in the gasket.
- There is dust on the cone.
- The cone is damaged.
- The voice coil and/or the spider is damaged.

### Procedure

1. Perform the loudspeaker disassembly procedure.
2. Visually inspect the loudspeaker and the cables.  
If any damage is visible, replace the loudspeaker.
3. Carefully clean the loudspeaker with a dry cloth.
- 4.
5. Repeat the reassembly procedure.  
Replace the loudspeaker gasket and the screws.  
Apply the recommended torque.
6. Repeat the listening test.
7. If a buzzing sound is still audible, repeat the test on the loudspeaker outside of the enclosure.  
If the problem persists, replace the loudspeaker.

### Troubleshooting for HF speakers

One or more HF loudspeaker produces high-frequency harmonic distortions, strange vibrations or weak sound.

#### **Possible causes**

- There are foreign particles on the air gap.
- The screws used for reassembly are too loose.
- The diaphragm is damaged.

### Procedure

1. Perform the diaphragm disassembly procedure.
2. Visually inspect the diaphragm and the voice coil.  
If any damage is visible, replace the diaphragm.
3. Clean the air gap thoroughly.
4. Perform the reassembly procedure.  
Pay close attention to the position of the diaphragm.  
Apply the recommended torque.
5. Repeat the listening test.  
If the problem persists, replace the loudspeaker.

# Specifications

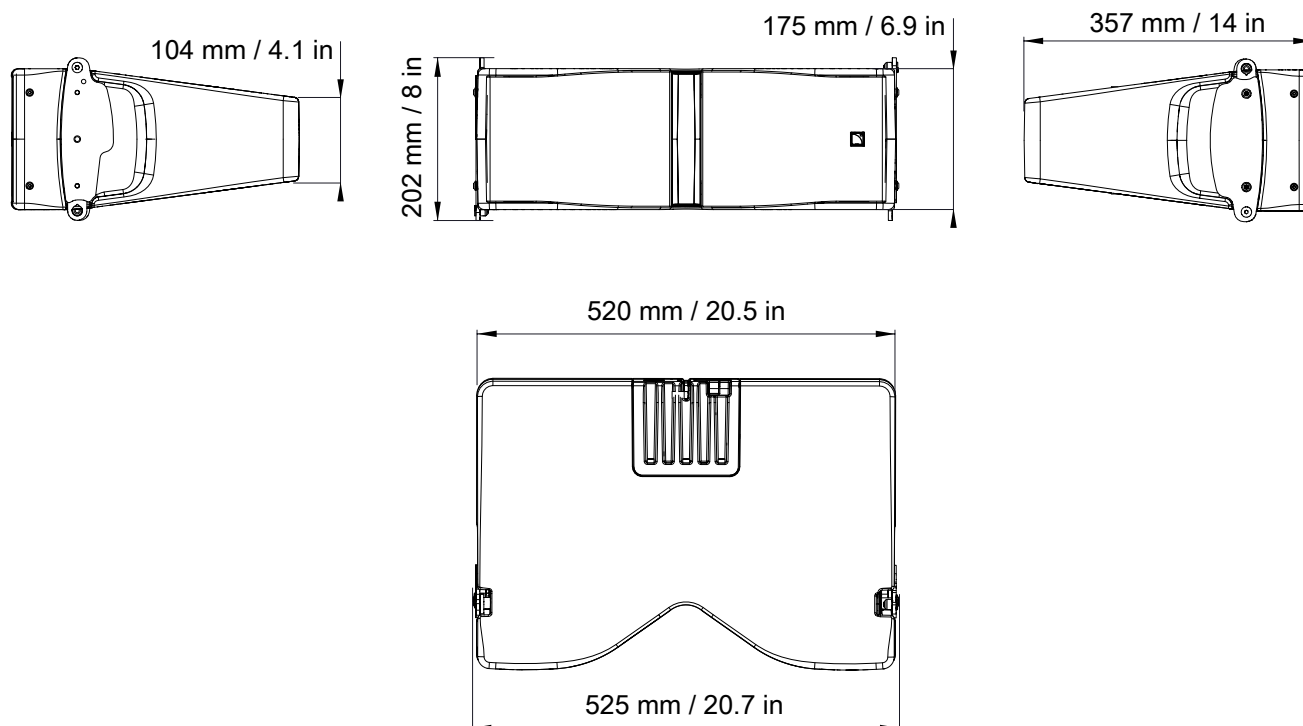
## Kiva II specifications

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<b>Description</b>	2-way passive WST enclosure: 2 x 6.5" LF + 1.75" HF diaphragm, amplified by LA4X / LA8 / LA12X
<b>Usable bandwidth (-10 dB)</b>	70 Hz - 20 kHz ([KIVA II])
<b>Maximum SPL<sup>1</sup></b>	138 dB ([KIVA II])
<b>Nominal directivity</b>	horizontal: 100° vertical: depending on the number of elements and array curvature
<b>Transducers</b>	LF: 2 x 6.5" neodymium HF: 1 x 1.75" neodymium compression driver
<b>Acoustical load</b>	LF: bass-reflex enclosure HF: DOSC waveguide and L-Fins
<b>Nominal impedance</b>	16 Ω
<b>Connectors</b>	IN: 1 x 4-point speakON LINK: 1 x 4-point speakON
<b>Rigging and handling</b>	flush-fitting 3-point rigging system inter-enclosure angles: 0, 1, 2, 3, 4, 5, 7.5, 10, 12.5, 15° 2 handles
<b>Weight (net)</b>	14 kg / 31 lb
<b>Cabinet</b>	composite sandwich structure
<b>Front</b>	composite grill with anti-corrosion coating acoustically neutral 3D fabric
<b>Rigging components</b>	high grade steel
<b>Finish</b>	dark grey brown (Pantone 426C) pure white RAL 9010 custom RAL code on special order
<b>IP</b>	IP55

<sup>1</sup> Peak level measured at 1 m under free field conditions using pink noise with crest factor 4 (preset specified in brackets).

## Kiva II dimensions

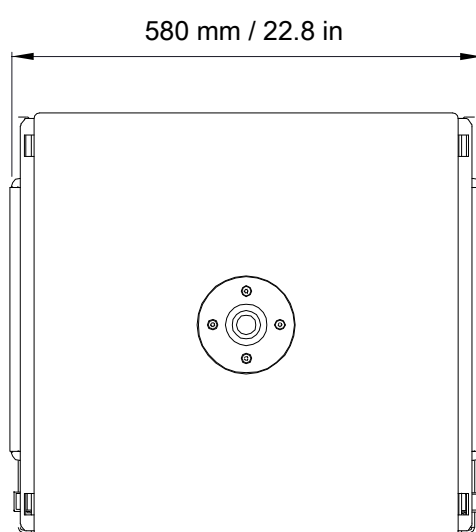
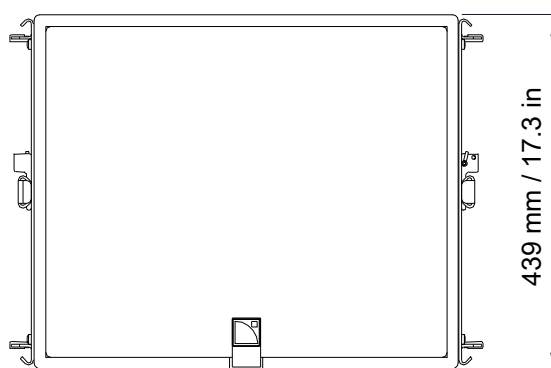
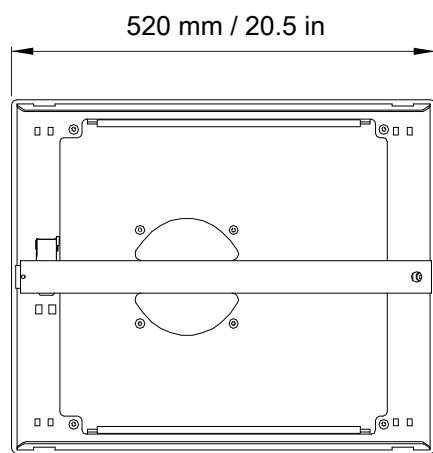


## SB15m specifications

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<b>Description</b>	high power compact subwoofer, amplified by LA4X / LA8 / LA12X
<b>Low frequency limit</b>	40 Hz ([SB15_100])
<b>Maximum SPL<sup>1</sup></b>	137 dB ([SB15_100])
<b>Directivity</b>	standard or cardioid
<b>Transducers</b>	1 x 15"
<b>Acoustical load</b>	bass-reflex enclosure, L-Vents
<b>Nominal impedance</b>	8 $\Omega$
<b>Connectors</b>	IN: 4-point speakON LINK: 4-point speakON
<b>Rigging and handling</b>	2 handles 2 coupling bars and 2 locking tabs 1 x 35 mm pole socket
<b>Weight (net)</b>	36 kg / 79.4 lb
<b>Cabinet</b>	first grade Baltic birch plywood
<b>Front</b>	steel grill with anti-corrosion coating acoustically neutral 3D fabric
<b>Rigging components</b>	high grade steel
<b>Finish</b>	dark grey brown Pantone 426C pure white RAL 9010 custom RAL code on special order

<sup>1</sup> Peak level at 1 m under half space conditions using pink noise with crest factor 4 (preset specified in brackets).

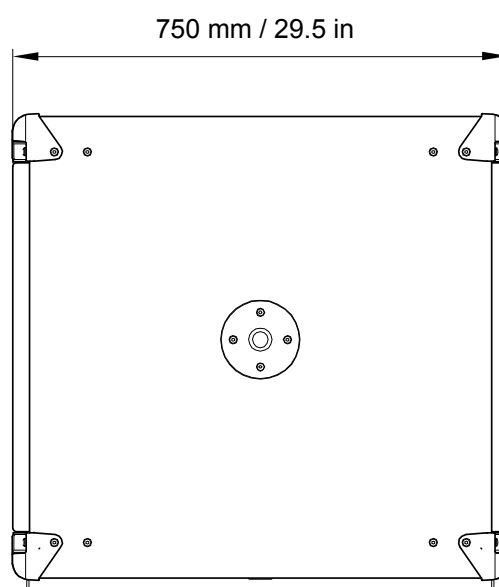
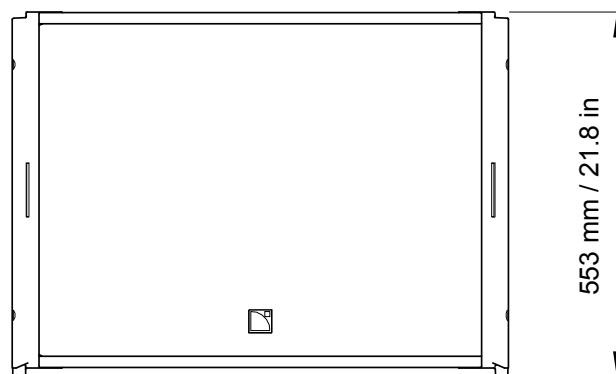
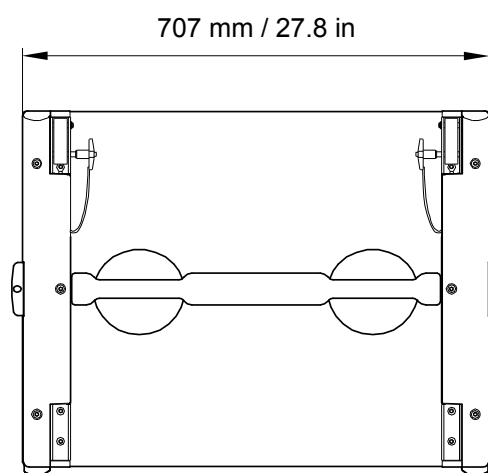
**SB15m dimensions**

## SB18 specifications

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<b>Description</b>	high power compact subwoofer, amplified by LA4X / LA8 / LA12X
<b>Low frequency limit (-10 dB)</b>	32 Hz ([SB18_100])
<b>Maximum SPL<sup>1</sup></b>	138 dB ([SB18_100])
<b>Directivity</b>	standard or cardioid
<b>Transducers</b>	1 x 18"
<b>Acoustical load</b>	dual bass-reflex enclosure, L-Vents
<b>Nominal impedance</b>	8 $\Omega$
<b>Connectors</b>	IN: 4-point speakON LINK: 4-point speakON
<b>Rigging and handling</b>	handles integrated into the cabinet integrated rigging system 1 x 35 mm pole socket
<b>Weight (net)</b>	52 kg / 115 lb
<b>Cabinet</b>	first grade Baltic birch plywood
<b>Front</b>	steel grill with anti-corrosion coating acoustically neutral 3D fabric
<b>Rigging components</b>	steel with anti-corrosion coating
<b>Finish</b>	dark grey brown Pantone 426C
<b>IP</b>	IP45

<sup>1</sup> Peak level at 1 m under half space conditions using pink noise with crest factor 4 (preset specified in brackets).

**SB18 dimensions**



**L-Acoustics, an L-Group Company**

13 rue Levacher Cintrat - 91460 Marcoussis - France

+33 1 69 63 69 63 - [info@l-acoustics.com](mailto:info@l-acoustics.com)

[www.l-acoustics.com](http://www.l-acoustics.com)

**L-Acoustics GmbH**

Steiermärker Str. 3-5

70469 Stuttgart

Germany

+49 7 11 89660 323

**L-Acoustics Ltd.**

PO. Box Adler Shine - Aston House

Cornwall Avenue - London N3 1LF

United Kingdom

+44 7224 11 234

**L-Acoustics Inc.**

2645 Townsgate Road, Suite 600

Westlake Village, CA 91361

USA

+1 805 604 0577



L-GROUP

[www.l-group.com](http://www.l-group.com)