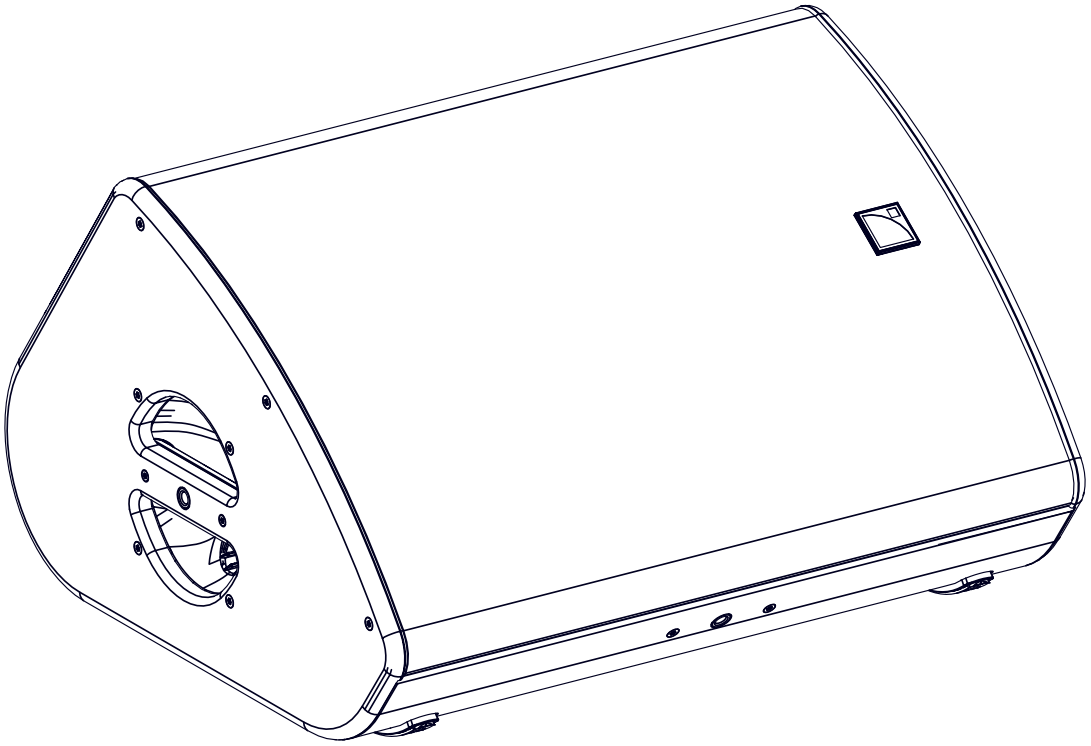
X15 HIQ

user manual (EN)



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Contents

Safety

Instructions

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

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 X15 HiQ.

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* on a regular basis to download the latest document and software updates.

X15 HiQ reference stage monitor

The X15 HiQ is an active coaxial system designed as a reference stage monitor. The enclosure features a 3" diaphragm compression driver coaxially-loaded by a 15" low frequency transducer in a bass-reflex cabinet. The L-Vents laminar vented ports reduce turbulence and port noise at high levels to increase LF efficiency.

The X15 HiQ operates from 55 Hz to 20 kHz. The coaxial transducer arrangement and its ellipsoid waveguide produce a 40° x 60° directivity pattern with a smooth tonal response free of secondary lobes over the entire frequency range. As a result, X15 HiQ boasts an exceptional immunity to feedback.

The L-Acoustics amplified controllers ensure the advanced crossover functions, time alignment, linearization and L-Drive protection of the transducers.

With a cabinet combining the properties of birch and beech plywood, X15 HiQ weighs a mere 21 kg and features ergonomic handles for a solid grip and efficient handling. Its elegance and ultra-low profile make for an easy integration into the set. It provides a stage monitoring angle setting of 35° with regard to vertical or 55° thanks to its built-in risers. For special narrow fill applications, the X15 HiQ can be pole-mounted using the integrated socket or flown and tilted in various orientations using its rigging accessories.

The X15 HiQ combines all the qualities of a reference stage monitor. It offers power (SPL) in beamwidth, an excellent acoustic isolation with its narrow ellipsoid directivity of 40° x 60°, a high immunity to feedback, an ultra-low profile and low weight for integration and handling, a rugged build and an active design with low latency preset. In addition, sound designers can take advantage of its directivity for narrow fill applications.

The X15 HiQ can be pole-mounted using the integrated socket. Other deployments such as wall-mounted, ceiling-mounted or flown are quick and easy, with a complete range of rigging accessories that offer multiple set-up options and various orientations.

System components

Loudspeaker enclosures

X15 HiQ	2-way active coaxial enclosure: 15'' LF + 3'' HF diaphragm
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	Touring Rack (RK9U/3xLA8/LA-POWER/ LA-PANEL/LA-PANELAES3/2U panels)
LA-RAK II	Touring rack containing three LA12X, LA-POWER II for power distribution and LA-PANEL II for audio and network distribution

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

Loudspeaker cables

SP cables	4-point speakON loudspeaker cables (4 mm² 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 mm² gauge) provided with a CC4FP adapter
	4-point speakON to 2 × 2-point speakON
DO	8-point PA-COM loudspeaker cables (4 mm² 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 mm² gauge)
	8-point PA-COM to 4 × 2-point speakON
DOFILL-LA8	breakout cable for two 2-way active enclosures (4 mm² gauge)
	8-point PA-COM to 2 x 4-point speakON
DO3WFILL	breakout cable for one 2-way active enclosure and two passive enclosures (4 mm² gauge)
	8-point PA-COM to 1 x 4-point speakON and 2 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 X15 HiQ rigging manual.

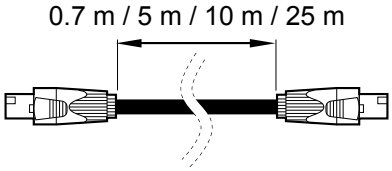
Software applications

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

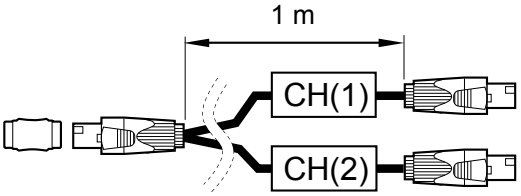
Refer to the **Soundvision** help.

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

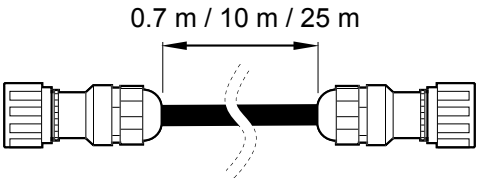
Loudspeaker cables



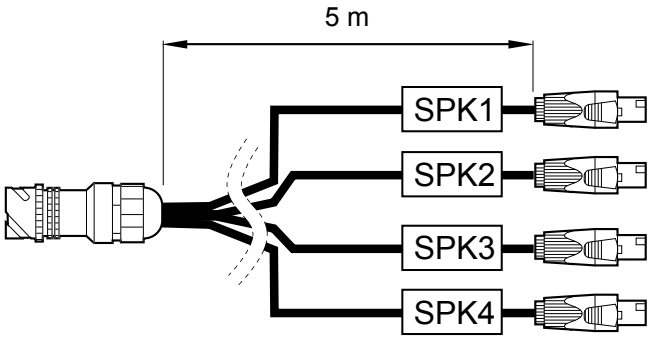
SP.7 / SP5 / SP10 / SP25



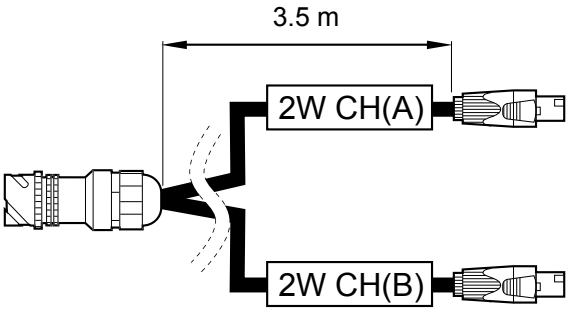
SP-Y1



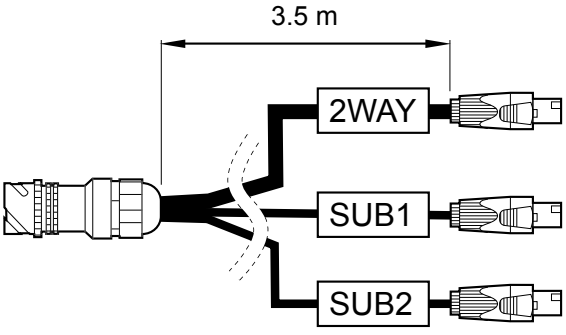
DO.7 / DO10 / DO25



DOSUB-LA8



DOFILL-LA8



DO3WFILL

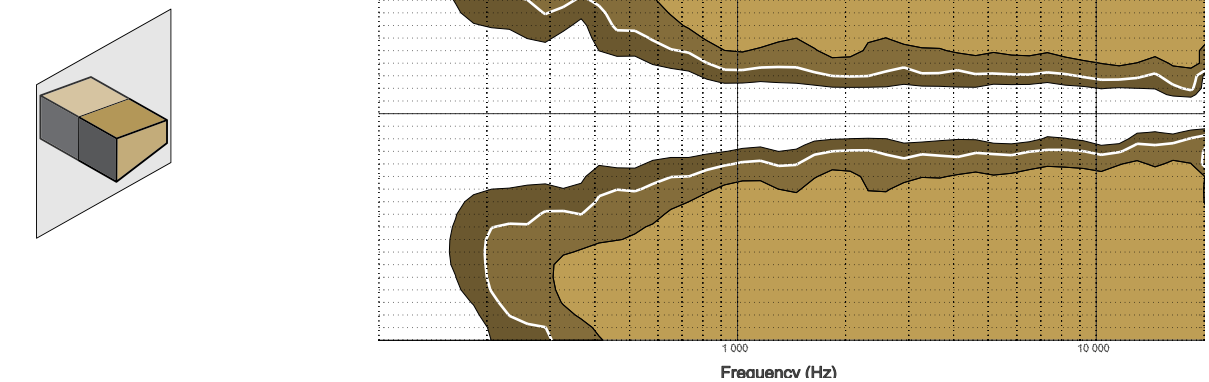
Technical description

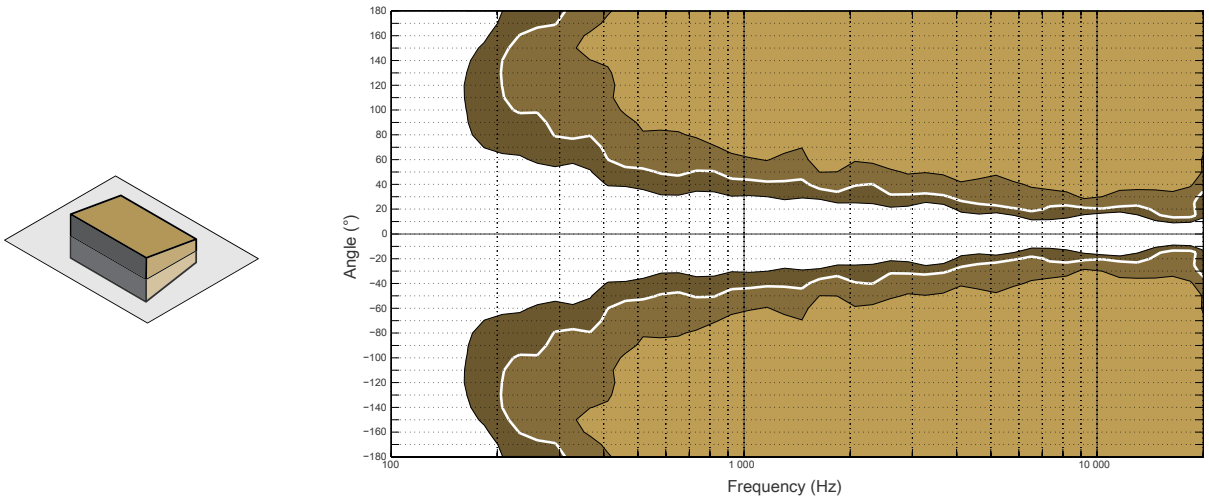
Low-latency preset

A low-latency preset is available for the X15 HiQ enclosure used as a monitor ([X15_MO]). It reduces latency from 3.84 ms down to 1.19 ms (LA8) and 0.76 ms (LA4X / LA12X). If the monitor is combined with a subwoofer, a custom preset must be used.

Directivity

X15 HiQ features a coaxial transducer arrangement coupled with an ellipsoid waveguide that generates an H/V directivity pattern of 40° x 60°.

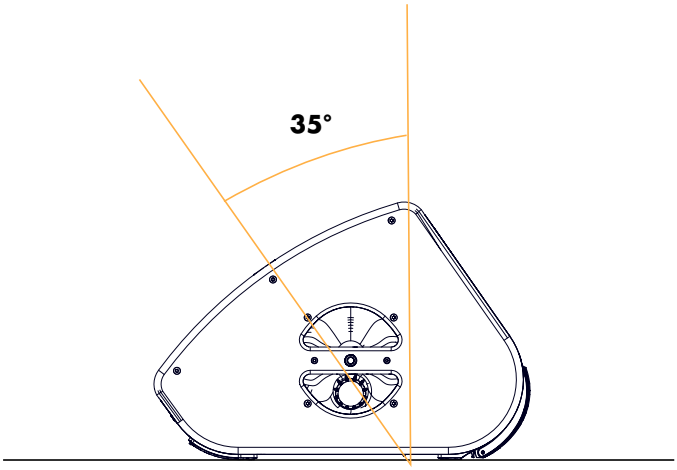


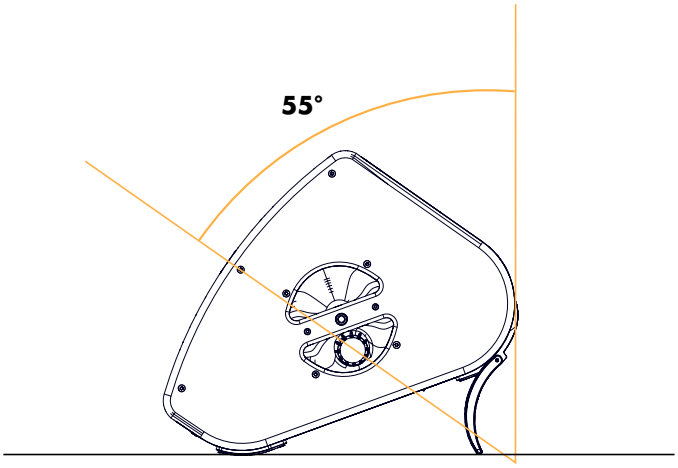


Dispersion angle diagram of a single X15 HiQ using lines of equal sound pressure at -3 dB, -6 dB, -12 dB.

Monitor angles

X15 HiQ features risers that allow to change the monitor angle from 35° to 55°.





Loudspeaker configurations

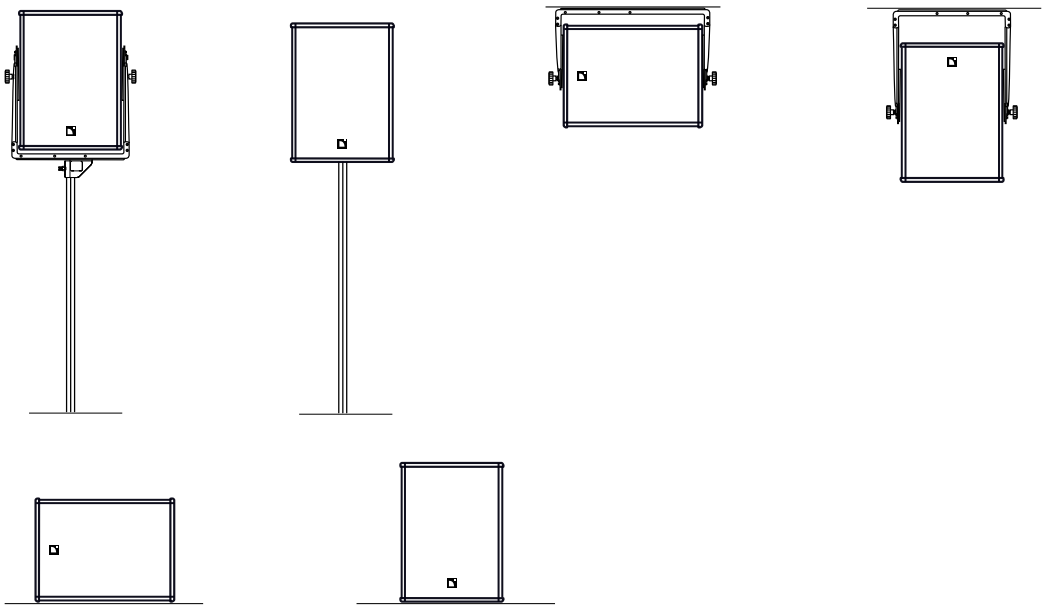
X15 HiQ point source

Deployed as a standalone point source, a X15 HiQ system operates over the nominal bandwidth of the X15 HiQ enclosure.

The [X15] preset allows for a reference frequency response in short throw applications.

The X15 HiQ enclosure is driven by the LA4X / LA8 / LA12X amplified controllers.

Standalone X15 HiQ



Enclosure	X15 HiQ
Preset	[X15]
Frequency range (-10 dB)	55 Hz - 20 kHz

X15 HiQ point source with LF

Deployed as a point source with SB18 subwoofers, an X15 HiQ system operates with augmented LF resources.

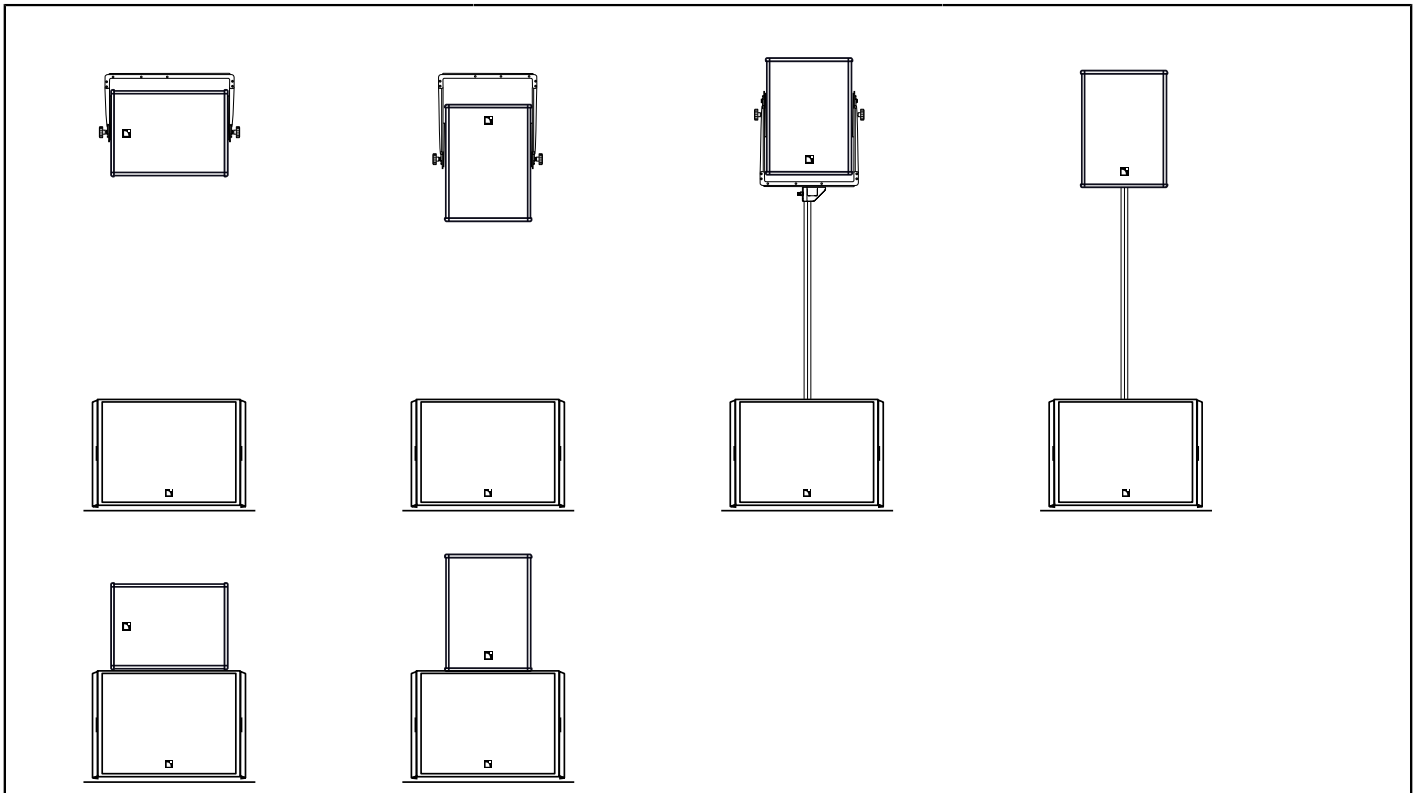
The [X15] preset allows for a reference frequency response in short throw applications.

The [SB18_100] preset provides the SB18 with an upper frequency limit at 100 Hz for an optimal frequency coupling with the X15 HiQ.

The X15 HiQ and SB18 enclosures are driven by the LA4X / LA8 / LA12X amplified controllers.

X15 HiQ with SB18

With SB18, the X15 HiQ system contour is reinforced by 8 dB at 100 Hz and the system bandwidth is extended down to 32 Hz.



Enclosure	X15 HiQ	SB18
Preset	[X15]	[SB18_100]
Frequency range (-10 dB)	32 Hz - 20 kHz	
Enclosure ratio	1 X15 HiQ : 1 SB18	

Delay values

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

Pre-alignment delays

[X15] + [SB18_100]	X15 HiQ = 0 ms	SB18 = 0 ms

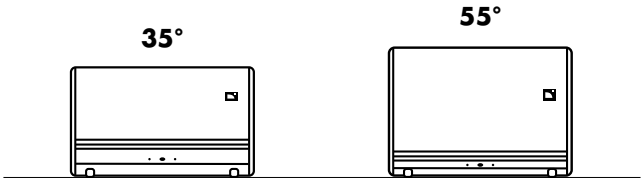
X15 HiQ stage monitor

Deployed as a stage monitor, an X15 HiQ system operates over the nominal bandwidth of the X15 HiQ enclosure.

The [X15_MO] preset allows for a reference frequency response in stage monitoring applications.

The X15 HiQ enclosure is driven by LA4X / LA8 / LA12X.

Standalone X15 HiQ



Enclosure	X15 HiQ
Preset	[X15_MO]
Frequency range (-10 dB)	52 Hz - 20 kHz

Paired X15 HiQ monitors with LFC

The Low Frequency Contour (LFC) tool implemented in LA Network Manager can compensate for coupling effects between closely operating monitors. LFC allows to adjust the frequency response curve to obtain the desired low frequency contour.

For paired X15 HiQ monitors, enter the following parameters to obtain the reference response curve of a single enclosure:

For more information about LFC, refer to the **LA Network Manager** video tutorial (module: Group Control Panel) and to the **Array Morphing** white paper, available on *www.l-acoustics.com* (Download Center).

X15 HiQ stage monitor with LF

Deployed as a stage monitor with SB18 subwoofers, an X15 HiQ system operates with augmented LF resources.

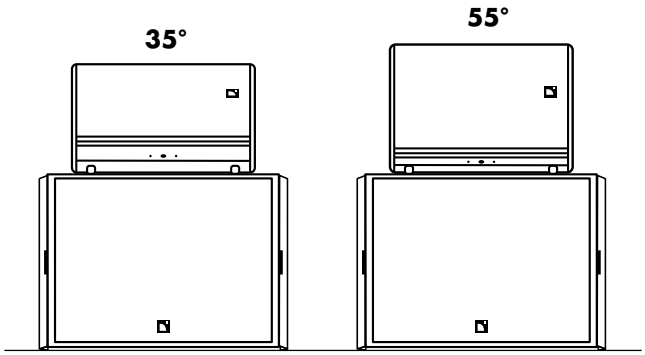
The [X15_MO] preset allows for a reference frequency response in stage monitoring applications.

The [SB18_100] preset provides the SB18 with an upper frequency limit at 100 Hz for an optimal frequency coupling with the X15 HiQ.

The X15 HiQ and SB18 enclosures are driven by the LA4X / LA8 / LA12X amplified controllers.

X15 HiQ with SB18

With SB18, the X15 HiQ system contour is reinforced by 8 dB at 100 Hz, and the system bandwidth is extended down to 32 Hz.



Enclosure	X15 HiQ	SB18
Preset	[X15_MO]	[SB18_100]
Frequency range (-10 dB)	32 Hz - 20 kHz	
Enclosure ratio	1 X15 HiQ : 1 SB18	

Delay values

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

Pre-alignment delays

[X15_MO] + [SB18_100]	X15 HiQ = 0 ms	SB18 = 0 ms

[xx_MO] presets for the X series use the amplified controller low latency operating mode. When used along with subwoofers, it is recommended to use the subwoofers in low latency operating mode. To achieve this, create custom presets combining low latency channel sets and subwoofer channel sets.

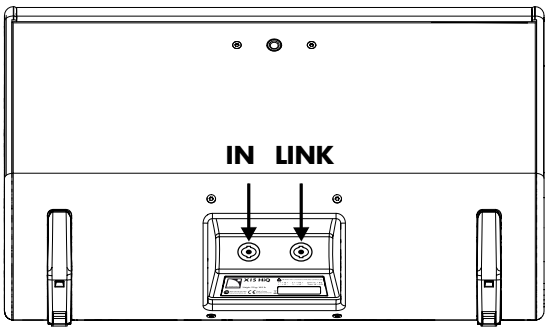
If the subwoofers are driven from a dedicated amplified controller using a subwoofer factory preset, they are operated in normal latency mode. Therefore, an additional delay should be set to the [xx_MO] low latency channels to align them: 2.65 ms on LA8 or 3.08 ms on LA4X and LA12X.

Loudspeaker connection

Connectors

The X15 HiQ is equipped with two 4-point speakON connectors.

X15 HiQ

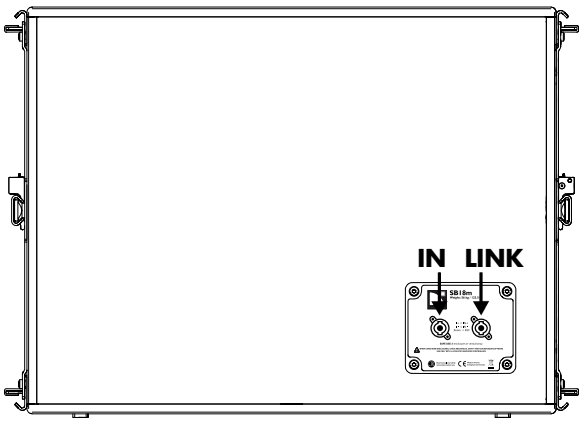


Internal pinout for L-Acoustics 2-way active enclosures

speakON points	1 +	1 -	2 +	2 -
Transducer connectors	LF +	LF -	HF +	HF -

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

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
X15 HiQ	1	2
SB18	1	4

*For passive loudspeakers, the value corresponds to the number of enclosures in parallel on the output. For active loudspeakers, the value corresponds to the number of sections in parallel on the output.

Impedance load

X15 HiQ

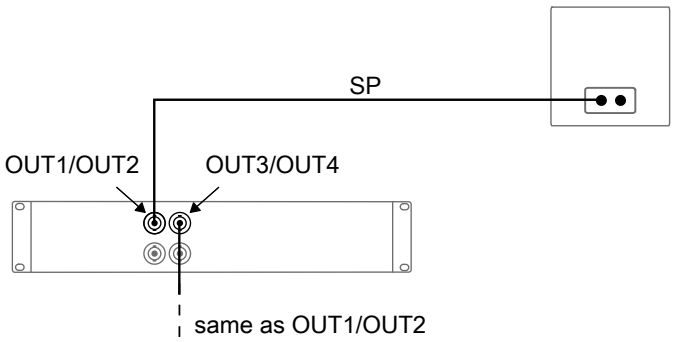
1 enclosure: LF 8 Ω / HF 8 Ω

SB18

1 enclosure: 8 Ω

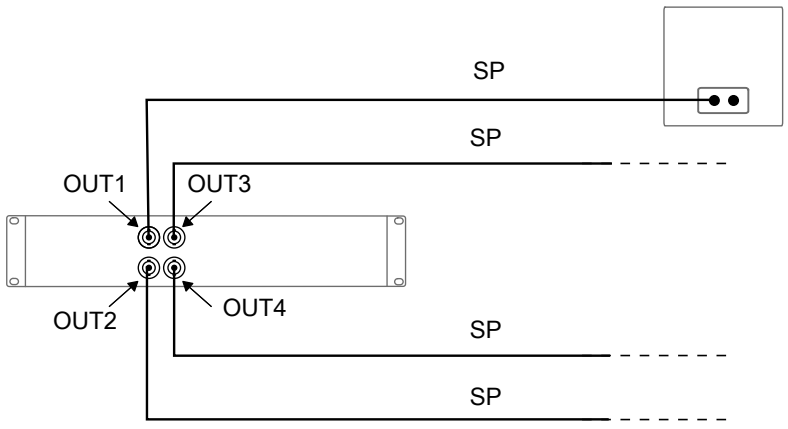
Connecting 2-way active enclosures

SP on speakON output

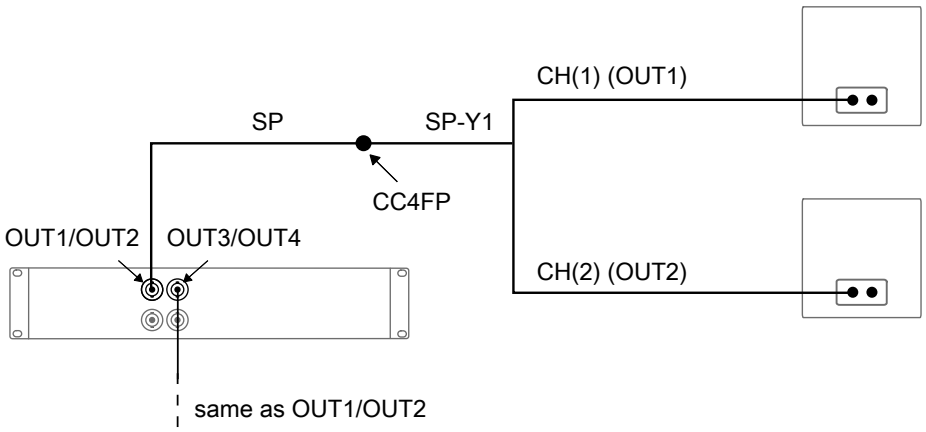


Connecting 2-way passive enclosures or subwoofers

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
X15 HiQ	2	4
SB18	2	8

*For passive loudspeakers, the value corresponds to the number of enclosures in parallel on the output. For active loudspeakers, the value corresponds to the number of sections in parallel on the output.

Impedance load

X15 HiQ

1 enclosure: LF 8 Ω / HF 8 Ω
2 enclosures in parallel: LF 4 Ω / HF 4 Ω

SB18

1 enclosure: 8 Ω
2 enclosures in parallel: 4 Ω

Connection to LA12X

Maximum number of enclosures per LA12X

enclosure	max enclosures in parallel *	max enclosures per controller
X15 HiQ	3	6
SB18	3	12

*For passive loudspeakers, the value corresponds to the number of enclosures in parallel on the output. For active loudspeakers, the value corresponds to the number of sections in parallel on the output.

Impedance load

X15 HiQ

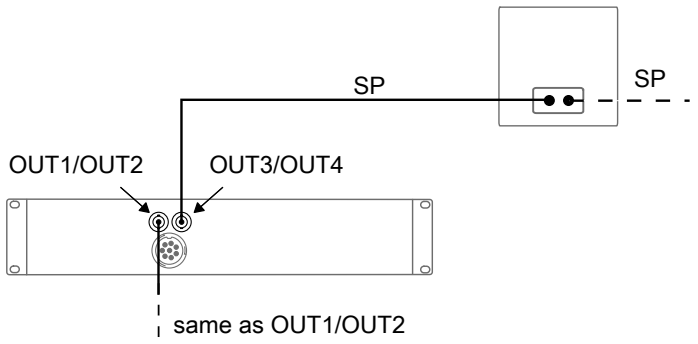
1 enclosure: LF 8 Ω / HF 8 Ω
2 enclosures in parallel: LF 4 Ω / HF 4 Ω
3 enclosures in parallel: LF 2.7 Ω / HF 2.7 Ω

SB18

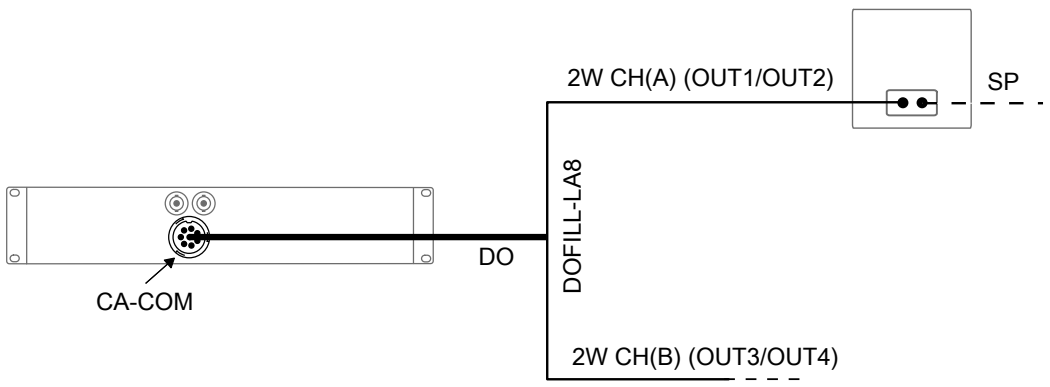
1 enclosure: 8 Ω
2 enclosures in parallel: 4 Ω
3 enclosures in parallel: 2.7 Ω

Connecting 2-way active enclosures

SP on speakON output

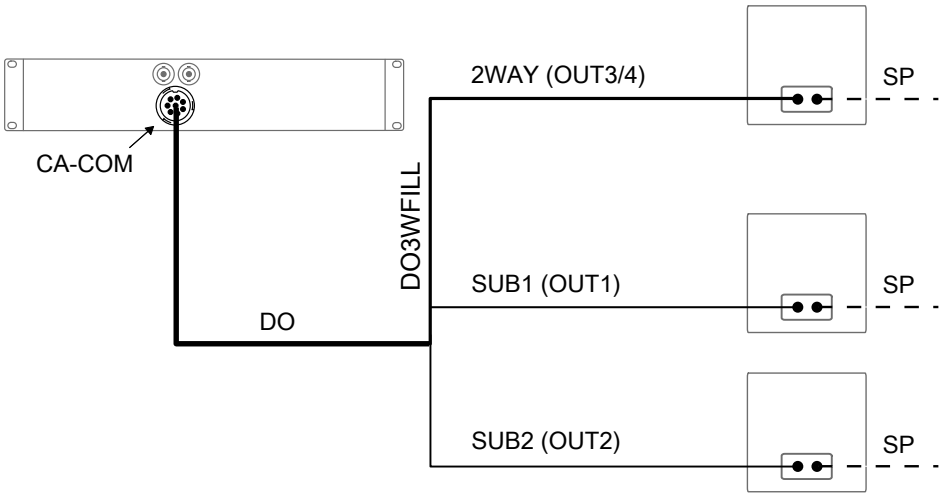


DO and DOFILL-LA8 on CA-COM output



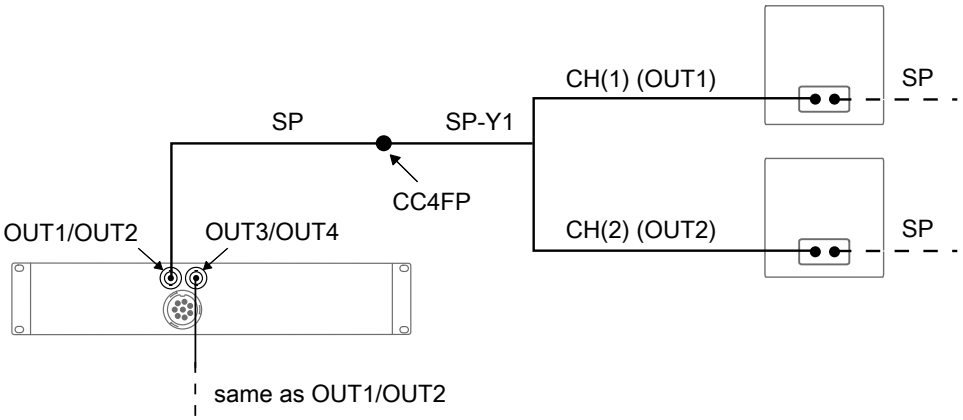
Connecting a 2-way active enclosure with subwoofers

DO and DO3WFILL on CA-COM output

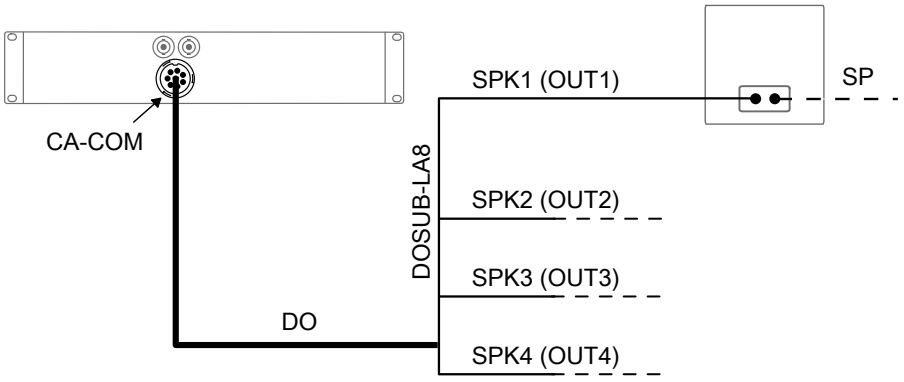


Connecting 2-way passive enclosures or subwoofers

SP and SP-Y1 on speakON output



DO and DOSUB-LA8 on CA-COM output



Preset description

[X15] [X15_MO]

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

[SB18_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_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 Ω load		**4 Ω load**		**2.7 Ω load**	
mm ^{2}	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

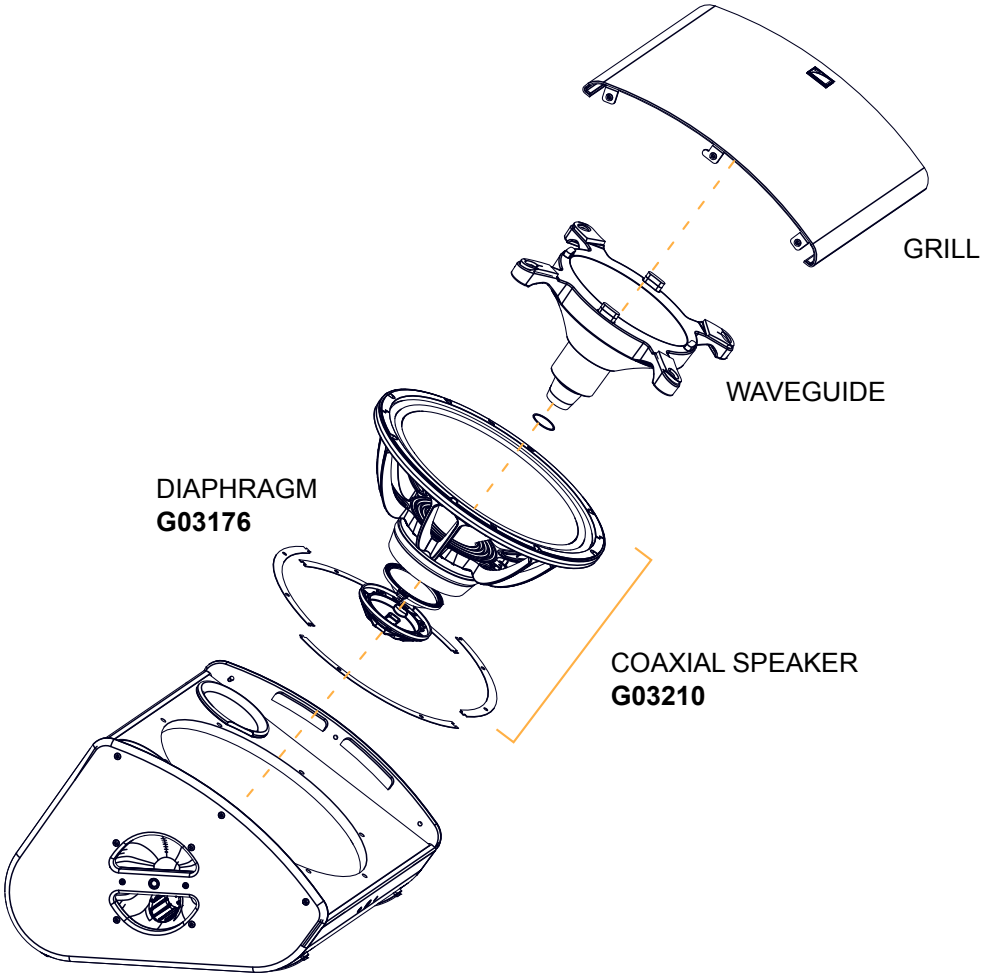
For your installation projects, you can use the more detailed L-ACOUSTICS calculation tool to evaluate cable length and gauge based on the type and number of enclosures connected. The calculation tool is available on our website:

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

Maintenance

Disassembly and Reassembly procedures

In order to operate, follow the order outlined here. Each assembly refers to the corresponding D/R procedure and the necessary repair kit.



D/R - X15 HiQ GRILL

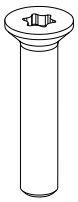
How to remove and reassemble the X15 HiQ grill.

Tools

— torque screwdriver
— T25 Torx bit

Repair kit

G03210 - KR coaxial speaker X15 HiQ or
G03176 - KR diaphragm X15 HiQ



x6

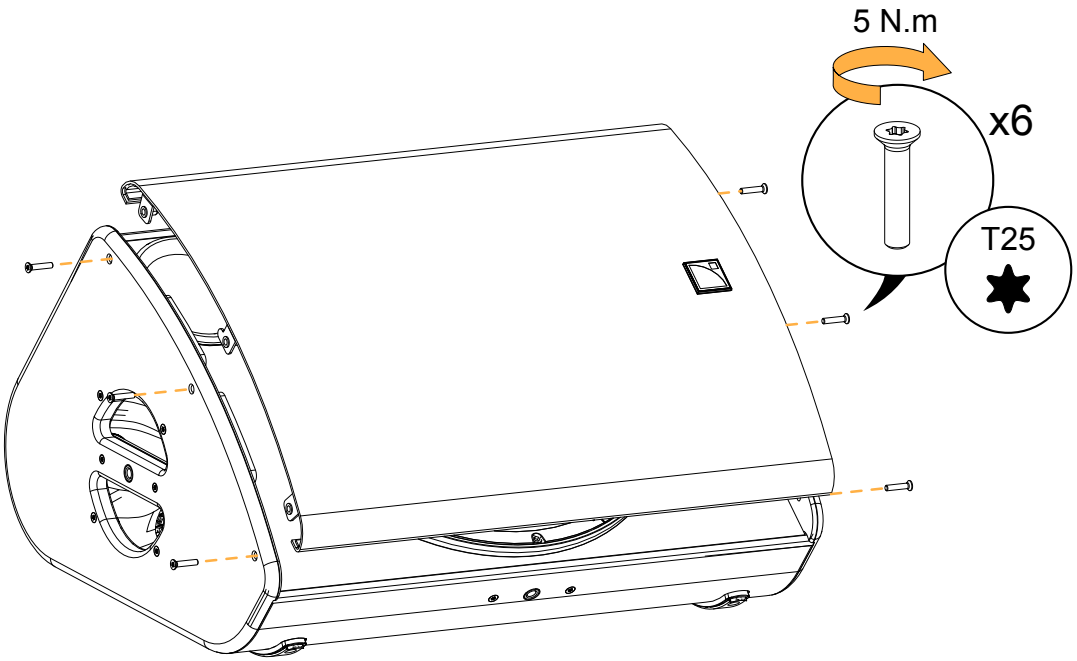
S100033

M5x25 Torx

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

Gradually tighten the screws following a star pattern.



D/R - X15 HiQ WAVEGUIDE

How to remove and replace the waveguide in the X15 HiQ speaker assembly.

Tools

— torque screwdriver
— 4 mm hex bit
— 5 mm hex bit

Consumables

— cyanoacrylate glue

Repair kit

G03210 - KR coaxial speaker X15 HiQ or
G03176 - KR diaphragm X15 HiQ


×4
100546
M6x17 hex


×2
CV TC550SPT
M5x50 hex


×1
100214
waveguide gasket


×2
CT AMORCEX15HIQ
Lexan™ screwcover

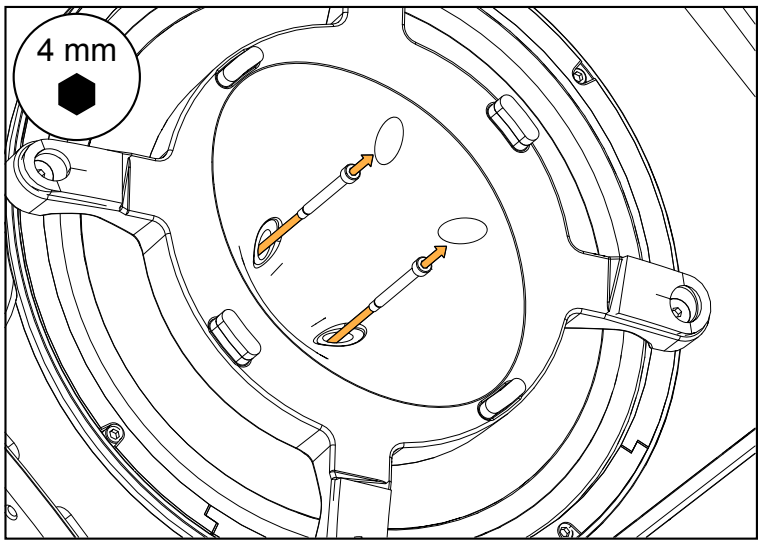
Pre-requisite

Grill disassembled.

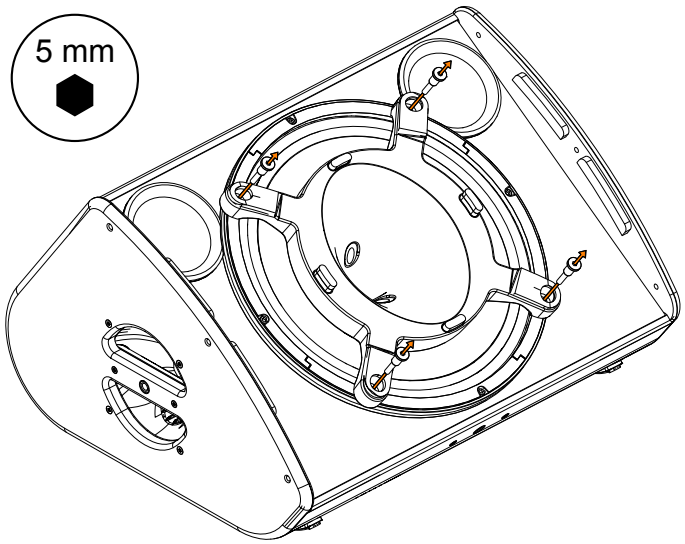
See *X15 HiQ GRILL* (p.23).

Disassembly

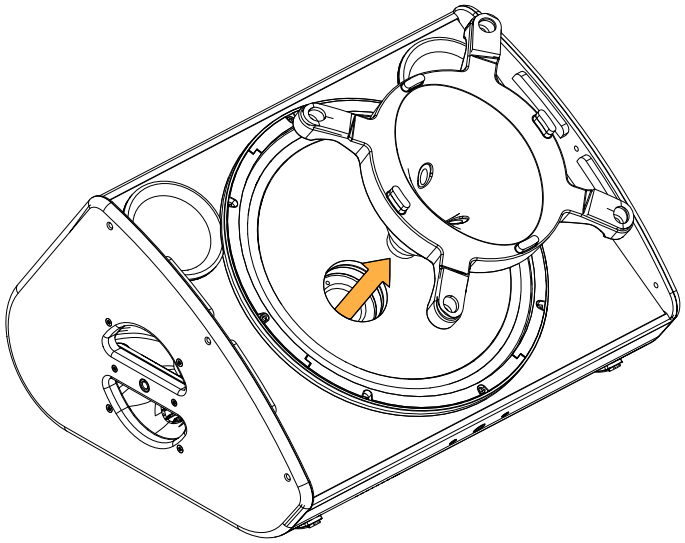
1. Remove the Lexan screw covers.
2. Remove the two screws securing the waveguide to the speaker.



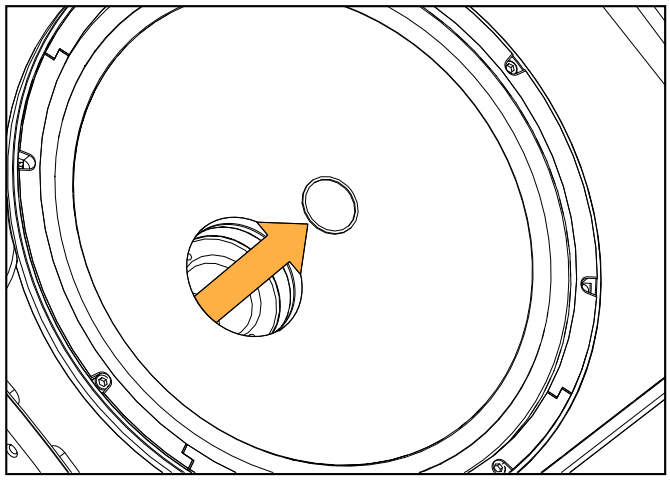
3. Remove the four remaining screws.



4. Carefully remove the waveguide.



5. Remove the waveguide gasket.

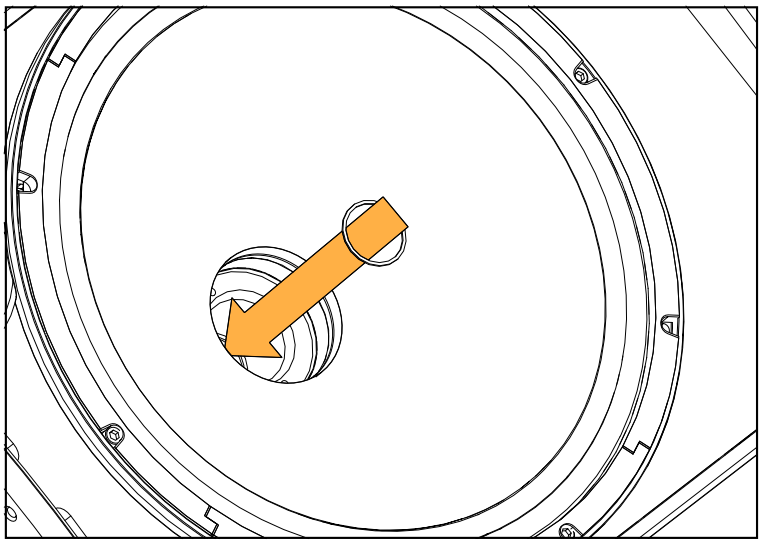


Reassembly

About this task

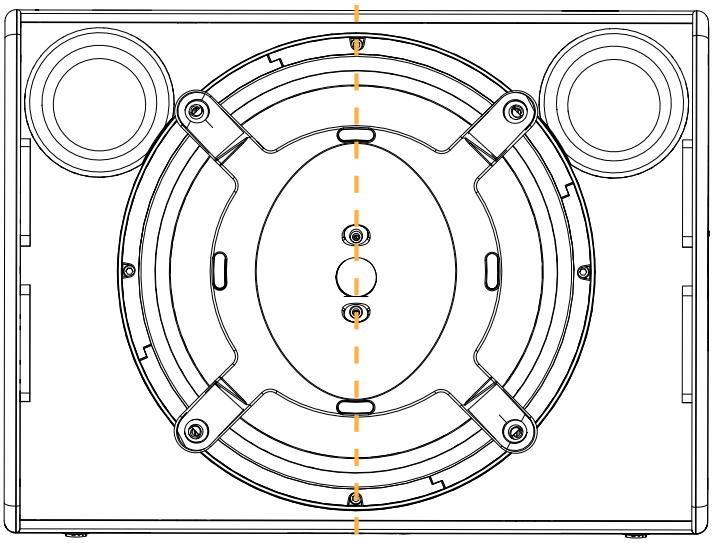
For safety reasons, always use the new screws and spare parts provided in the KR.
If no new screws are available, use blue threadlocker.

1. Place the gasket inside the throat of the speaker.

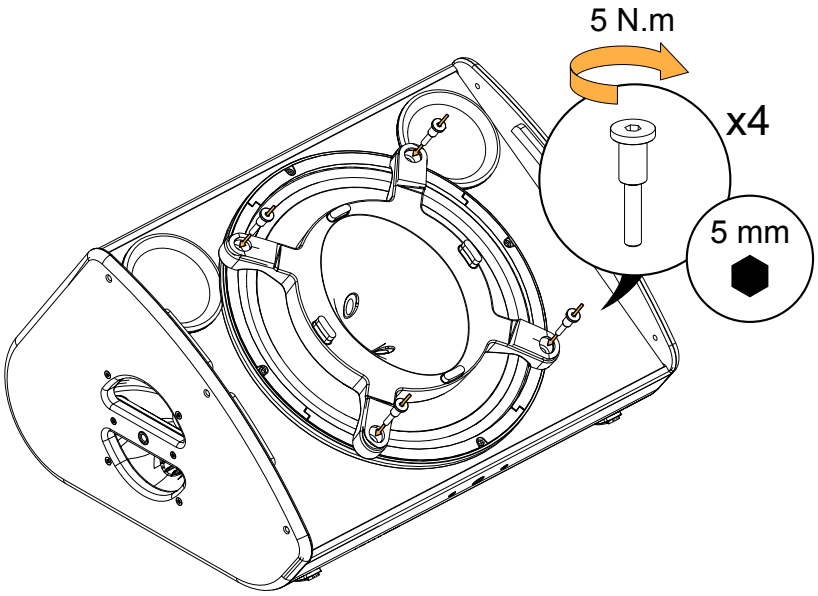


2. Position the waveguide.

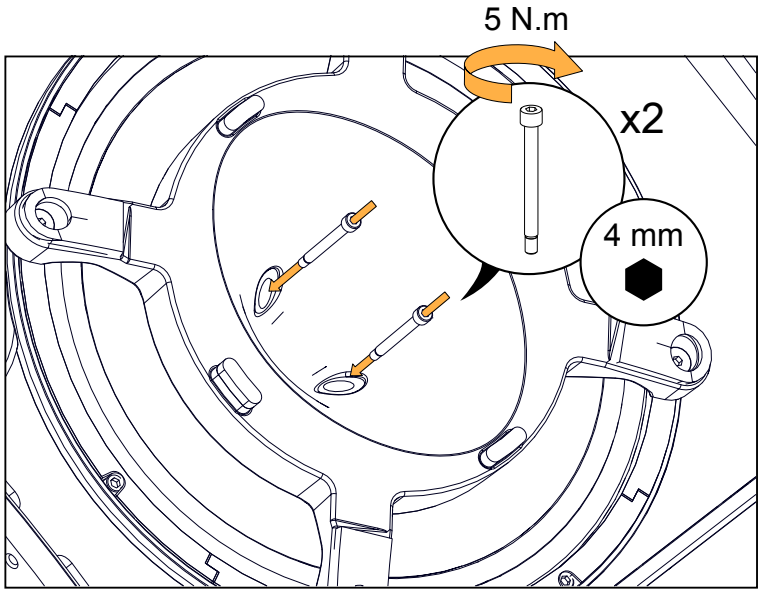
   The center holes are aligned with the connectors.



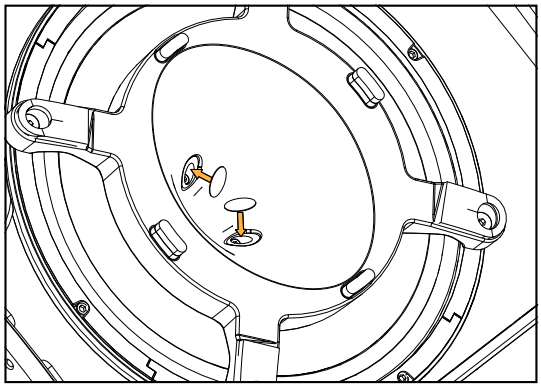
3. Secure the waveguide to the cabinet with the provided 100546 screws.

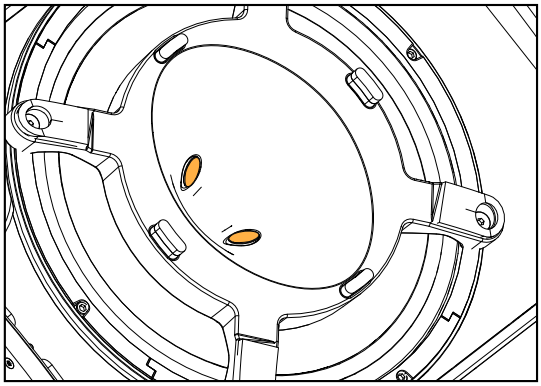


4. Secure the waveguide to the speaker with the provided CV TC550SPT screws.



5. Stick the Lexan screw covers with the cyanoacrylate glue.





D/R - X15 HiQ COAXIAL SPEAKER

How to remove and replace the X15 HiQ coaxial speaker.

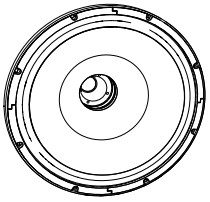
Tools

— torque screwdriver
— 5 mm hex bit

Repair kit

G03210 *

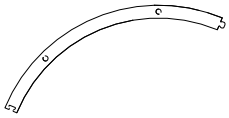
KR coaxial speaker X15 HiQ



×1

1630

15" coaxial speaker - 8 ohms



×4

1245

15" speaker gasket

×4

S100054

M6x30 hex

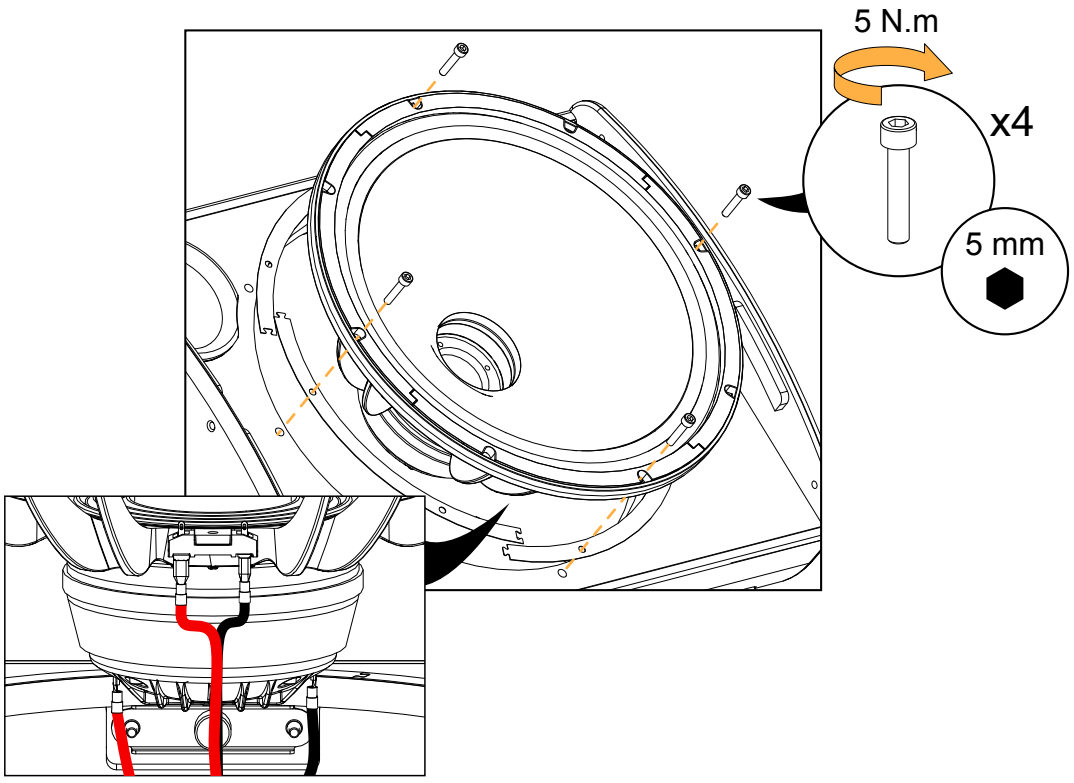
* The screws and gaskets are also available in G03176 - KR diaphragm X15 HiQ .

Pre-requisite

Grill disassembled.	See *X15 HiQ GRILL* (p.23).
Waveguide removed.	See *X15 HiQ WAVEGUIDE* (p.24).

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



D/R - X15 HiQ DIAPHRAGM

How to remove and replace the X15 HiQ speaker diaphragm.

Tools

— torque screwdriver
— 3 mm hex bit
— 3 mm Allen wrench
— blower

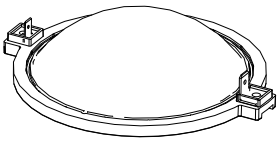
Consumables

— double face adhesive tape

Repair kit

G03176

KR diaphragm X15 HiQ



×1

17581

diaphragm assembly (with 2 shims)

×4

S100082

M4x14 hex

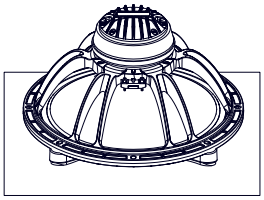
Pre-requisite

Grill disassembled. See *X15 HiQ GRILL* (p.23).

Waveguide removed. See *X15 HiQ WAVEGUIDE* (p.24).

Coaxial speaker removed. See *X15 HiQ COAXIAL SPEAKER* (p.28).

The speaker is placed on a flat surface in a dust-free environment.



Disassembly

1. Remove the four screws securing the cover.
   Use the 3 mm hex bit.
2. Remove the cover.
3. Carefully remove the diaphragm.
4. If there are shims on the dome, carefully remove them.
   Take note of how many and what kind of shims are present.

Reassembly

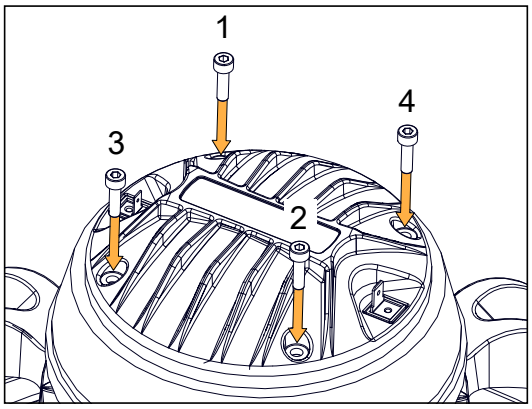
About this task

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. Clean the dome and the air gap.
   Use a blower or double face adhesive tape to remove any particle.

Make sure the air gap is perfectly clean before moving to the next step.

2. Place the same kind and number of shims that were initially present.
3. Carefully place the diaphragm.
4. Position the diaphragm using the cable connectors as reference points.
   Facing the LF cable connectors, the small HF cable connector must be on the left, and the larger one on the right.
5. Secure the cover to the speaker using four S100082 screws.
   a) Gradually secure each screw manually with the 3 mm Allen wrench.
      Follow a cross scheme.



   b) Tighten the screws in the same order with the electric screwdriver.
      Use the 3 mm hex bit. Set the torque to 3.5 Nm.

Acoustical check

Procedure

1. Load a FLAT preset on an LA4X / LA8 / LA12X amplified controller.
2. Connect a low frequency generator to the active input of the amplified controller.
3. Connect a voltmeter to the output of the amplified controller and check the output voltage.

   Risk of damaging the HF driver
   The output voltage must not exceed 1 Vrms.
4. Connect the HF driver to the output of the amplified controller.

   Use ear protection to set the sound level before testing.
5. Send a test signal of 1.5 kHz at 1 Vrms for 5 seconds.
   The sound should remain pure and free of unwanted noise.

Troubleshooting

The loudspeaker produces high-frequency harmonic distortions or strange vibrations.

Possible causes

— There are foreign particles on the air gap.
— The number of shims is wrong.
— The screws used for reassembly are too loose.

Procedure

1. Repeat the disassembly procedure.
2. Clean the air gap thoroughly.
3. Repeat the reassembly procedure.
   Pay close attention to the number of shims and the position of the diaphragm.
   Apply the recommended torque.
4. Repeat the acoustical check.

   If a buzzing sound is still audible, it might be necessary to add an extra shim on the air gap.

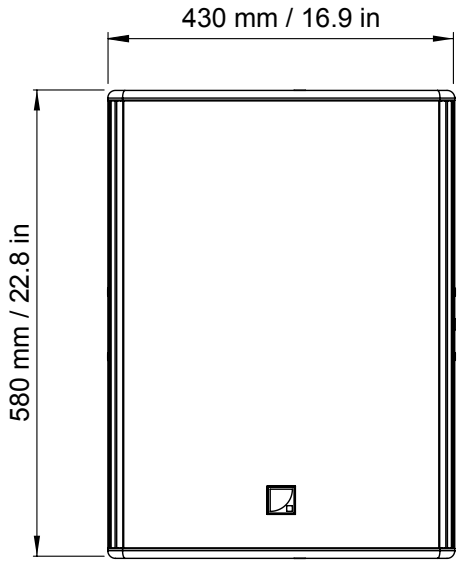
Specifications

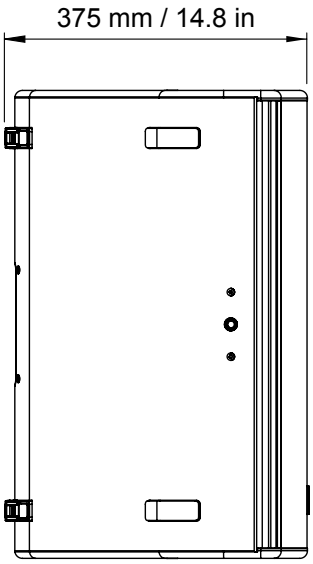
X15 HiQ specifications

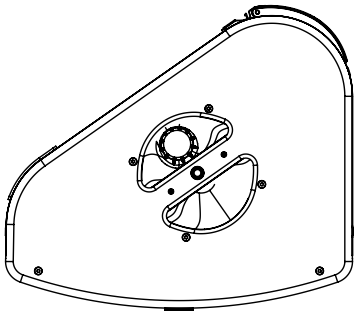
Description	active 2-way coaxial enclosure, amplified by LA4X / LA8 / LA12X
Usable bandwidth (-10 dB)	55 Hz - 20 kHz ([X15])
Maximum SPL[1]	138 dB ([X15])
Nominal directivity	vertical: 60°
	horizontal: 40°
Monitoring angle	without risers: 35°
	with risers: 55°
Transducers	LF: 1 × 15"
	HF: 1 × 3" compression driver, neodymium
Acoustical load	bass-reflex, L-Vents, ellipsoidal waveguide
Nominal impedance	LF: 8 Ω
	HF: 8 Ω
Connectors	IN: 4-point speakON
	LINK: 4-point speakON
Rigging and handling	2 handles
	DIN580-compatible M8 threaded insert
	4 M10 threaded inserts
	2 x 35 mm pole socket
Weight (net)	21 kg / 46.3 lb
Cabinet	first grade Baltic beech and birch plywood
Front	steel grill with anti-corrosion coating
	acoustically neutral 3D fabric
Finish	dark grey brown Pantone 426C
	custom RAL code on special order
IP	IP43

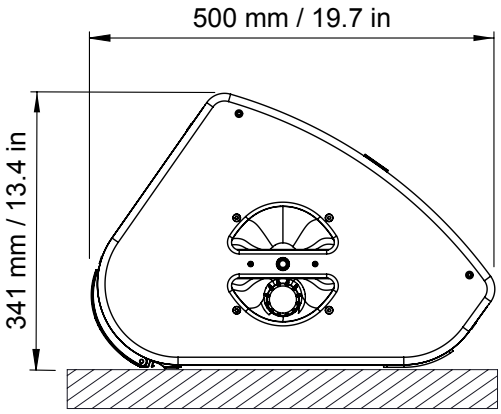
[1] Peak level measured at 1 m under free field conditions using pink noise with crest factor 4 (preset specified in brackets).

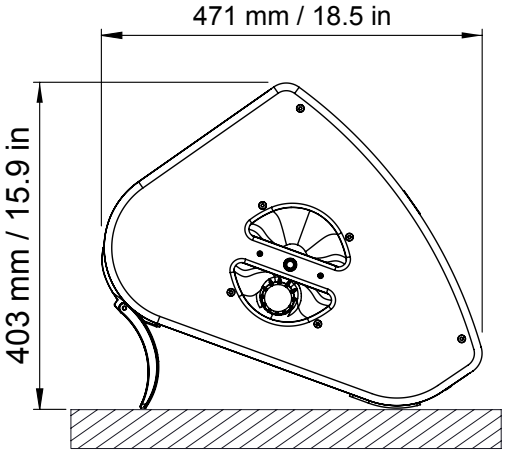
X15 HiQ dimensions









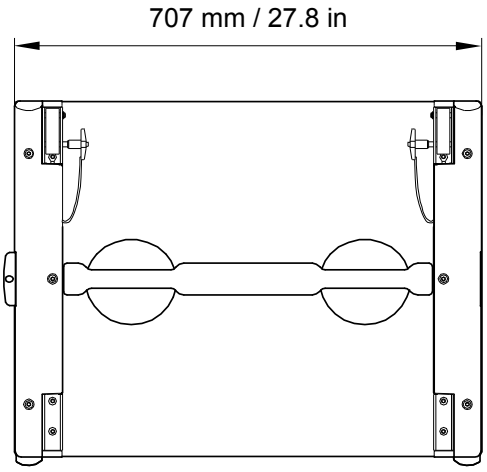


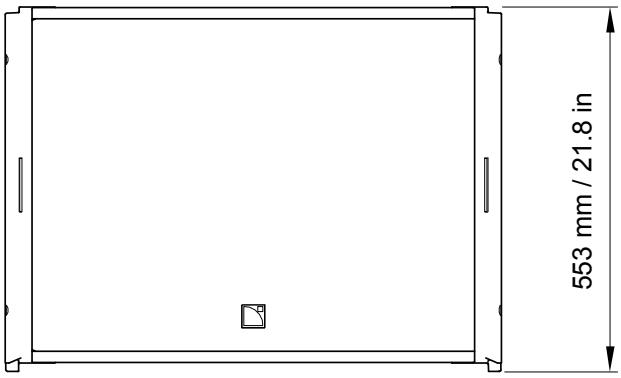
SB18 specifications

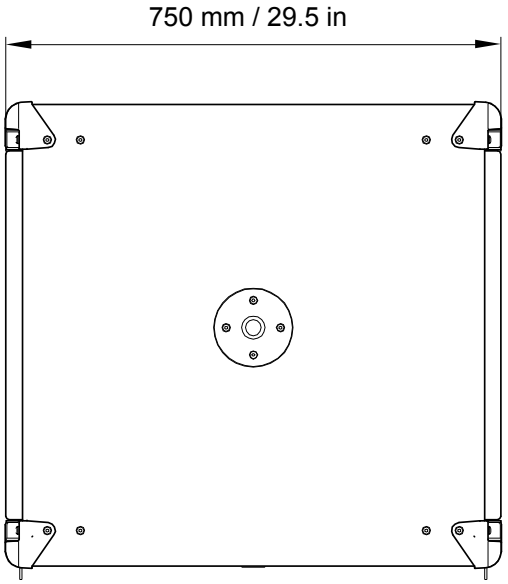
Description	high power compact subwoofer, amplified by LA4X / LA8 / LA12X
Low frequency limit (-10 dB)	32 Hz ([SB18_100])
Maximum SPL[1]	138 dB ([SB18_100])
Directivity	standard or cardioid
Transducers	1 x 18"
Acoustical load	dual bass-reflex enclosure, L-Vents
Nominal impedance	8 Ω
Connectors	IN: 4-point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

[1] Peak level at 1 m under half space conditions using pink noise with crest factor 4 (preset specified in brackets).

SB18 dimensions







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