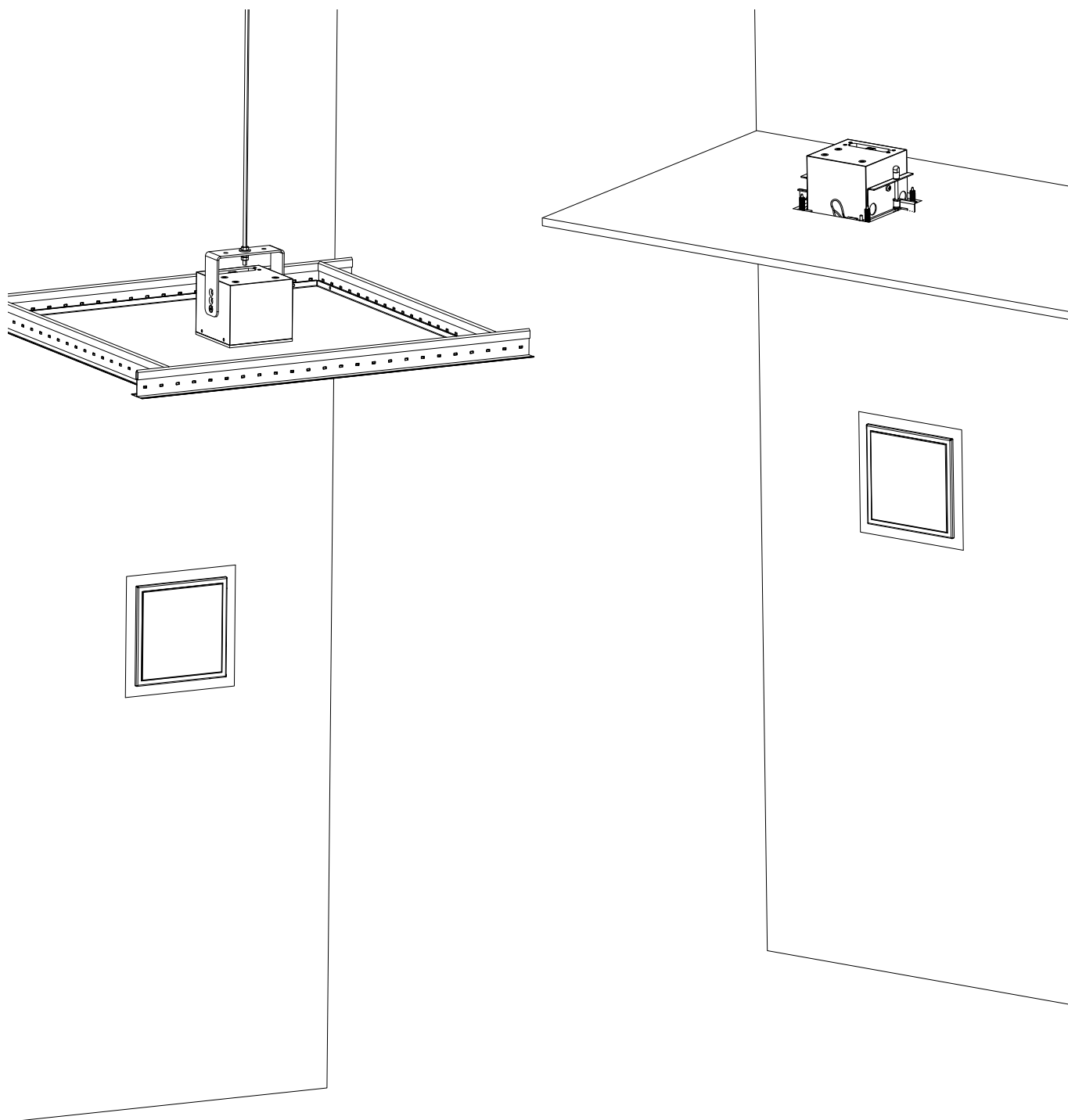


# X4r



## owner's manual (EN)



Document reference: X4r owner's manual (EN) version 1.0

Distribution date: June 5, 2023

© 2023 L-Acoustics. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means without the express written consent of the publisher.

## Contents

Safety.....	5
Instructions.....	5
Introduction.....	7
X4r miniature enclosure.....	7
How to use this manual.....	7
Revision history.....	8
System components.....	9
Electro-acoustical description.....	11
Directivity.....	11
Preset description.....	11
Connectors.....	12
Rigging system description.....	13
X4r.....	13
X4r-inCW.....	13
X4r-Screen.....	15
X-U4i.....	15
X4r-Tilescreen.....	16
Mechanical safety.....	17
Loudspeaker configurations.....	18
X4r point source.....	18
X4r point source with low-frequency element.....	19
X4r point source with SB6r.....	19
X4r point source with SB10r.....	22
Rigging procedures.....	25
Tools.....	25
Mounting X4r in a wall or in a ceiling with X4r inWall.....	26
Mounting X4r in a ceiling tile with X4r inTile.....	30
Connection to LA amplified controllers.....	34
Cabling schemes for X4r.....	34
Cabling X4r.....	36
Specifications.....	38
X4r.....	38

SB6r.....	39
SB10r.....	40
X4r-inCW.....	41
X4r-Screen.....	42
X-U4i.....	43
X4r-Tilescreen.....	44
APPENDIX A: Recommendation for speaker cables.....	45
APPENDIX B: Specifications for custom rigging.....	46

# Safety

## Instructions

---



### **Inspect the system before any deployment.**

Perform safety related checks and inspections before any deployment.

### **Perform preventive maintenance at least once a year.**

Refer to the preventive maintenance section for a list of actions and their periodicity.

Insufficient upkeep of the product can void the warranty.

### **If any safety issue is detected during inspection, do not use the product before performing corrective maintenance.**

Check for issues. A rigging system part or fastener is missing or loose. A rigging system part exhibits: bends, breaks, broken parts, corrosion, cracks, cracks in welded joints, deformation, denting, wear, holes. A safety cue or label is missing.



### **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.



### **Work with qualified personnel for rigging the system.**

Installation should only be carried out by qualified personnel that are familiar with the rigging techniques and safety recommendations outlined in this manual.

### **Ensure personnel health and safety.**

During installation and set-up personnel must wear protective headgear and footwear at all times. Under no circumstances is personnel allowed to climb on a loudspeaker assembly.

### **Respect the Working Load Limit (WLL) of third party equipment.**

L-Acoustics is not responsible for any rigging equipment and accessories provided by third party manufacturers.

Verify that the Working Load Limit (WLL) of the suspension points, chain hoists and all additional hardware rigging accessories is respected.

### **Respect the maximum configurations and the recommended safety precautions.**

For safety issue, respect the maximum configurations outlined in this manual. To check the conformity of any configuration in regards with the safety precautions recommended by L-Acoustics, model the system in Soundvision and refer to the warnings in Mechanical Data section.

### **Be cautious when flying a loudspeaker configuration.**

Before installing/raising the product, check each individual element to make sure that it is securely fastened to the adjacent element. Always verify that no one is standing underneath the product when it is being installed/raised. Never leave the product unattended during the installation process.

As a general rule, L-Acoustics recommends the use of secondary safety at all times.

### **Risk of falling objects**

Verify that no unattached items remain on the product or assembly.

### **Risk of tipping**

Remove all rigging accessories before transporting a product or an assembly.



**Intended use**

This system is intended for use by trained personnel for professional applications.



**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 documents without prior notice.**

Check [www.l-acoustics.com](http://www.l-acoustics.com) on a regular basis to download the latest document and software updates.



**Long term exposure to extreme conditions may damage the product.**

For more information, refer to the **Products weather protection** document, available on the website.



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



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

Any unauthorized maintenance operation will void the product warranty.



This marking indicates that this product should not be disposed of with other household waste throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.



# Introduction

## X4r miniature enclosure

---

X4r is an installation-specific miniature coaxial system designed for short throw applications requiring seamless integration in the smallest spaces.

X4r features a 1.4" diaphragm compression driver coaxially loaded by a 4" neodymium low-mid frequency transducer mounted in a closed cabinet. X4r operates from 120 Hz to 20 kHz and delivers a peak SPL of 116 dB. The coaxial transducer arrangement produces a 110° axisymmetric directivity with a smooth tonal response free of secondary lobes over the entire frequency range.

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

## How to use this manual

---

The X4r owner's manual is intended for all actors involved in the system design, implementation, preventive and corrective maintenance of the X4r system. It must be used as follows:

1. Read the technical description for an overview of all system elements, their features, and their compatibilities.
  - [Electro-acoustical description](#) (p.11)
  - [Rigging system description](#) (p.13)
2. Prepare the system configuration. Consider the mechanical limits and the available acoustical configurations.
  - [Mechanical safety](#) (p.17)
  - [Loudspeaker configurations](#) (p.18)
3. Before rigging the system, perform mandatory inspections and functional checks.
4. To deploy the system, follow the step-by-step rigging instructions and refer to the cabling schemes.
  - [Rigging procedures](#) (p.25)
  - [Connection to LA amplified controllers](#) (p.34)

**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.




## Contact information

For information on advanced corrective maintenance:

- contact your Certified Provider or your L-Acoustics representative
- for Certified Providers, contact the L-Acoustics customer service: [customer.service@l-acoustics.com](mailto:customer.service@l-acoustics.com) (EMEA/APAC), [laus.service@l-acoustics.com](mailto:laus.service@l-acoustics.com) (Americas).

## 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.

## Revision history

---

<b>version number</b>	<b>publication date</b>	<b>modification</b>
1.0	Jun. 2023	Initial version.



## System components

### Loudspeaker enclosures

X4r	2-way passive coaxial enclosure: 4" LF + 1.4" HF diaphragm (recessed version)
SB6r	Ultra-shallow subwoofer: 2 × 6.5" (recessed version)
SB10r	Ultra-compact subwoofer: 1 × 10" (recessed version)

### Powering and driving system

LA2Xi / LA4X / LA7.16i / LA12X	Amplified controller with DSP, preset library and networking capabilities
-----------------------------------	---



Refer to the LA2Xi / LA4X / LA7.16i / LA12X owner's manual for operating instructions.

### Cables

2 × 2.5 mm <sup>2</sup> cable	speaker cable with bare wire endings Adapt the cable length to the installation.
custom 2-point speakON cable	2-point speakON cable (2.5 mm <sup>2</sup> gauge) to bare wire cable  This cable needs to be custom made.



**Information about the connection of the enclosures to the LA amplified controllers is given in this document.**

Refer to the LA2Xi / LA4X / LA7.16i / LA12X owner's manual for detailed instructions about the whole cabling scheme, including modulation cables and network.

### Rigging elements

X4r-inCW	In-wall or in-ceiling mounting accessory for X4r
X-U4i	Adjustable U-bracket for X4i

### Screens

X4r-Screen	Wall or ceiling screen for X4r
X4r-TileScreen	Tile ceiling screen for X4r

### 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** help.

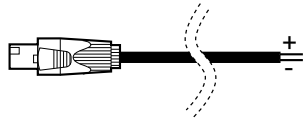
## System component illustrations

---

### Cables

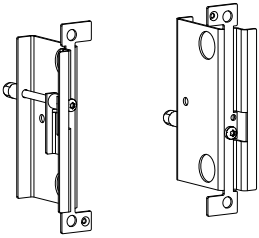


2 x 2.5 mm<sup>2</sup> cable

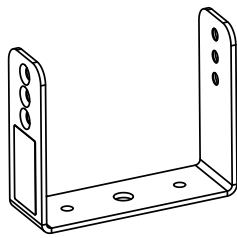


custom 2-point speakON cable

### Rigging accessories

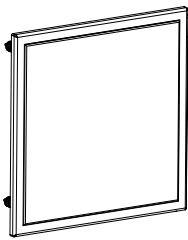


X4r-inCW

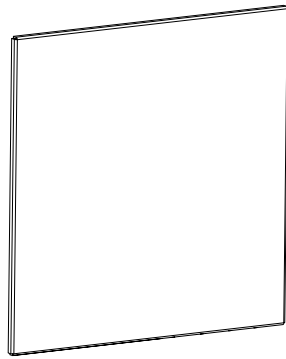


X-U4i

### Screens

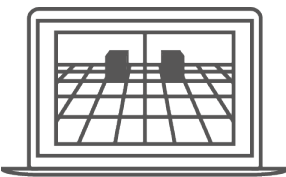


X4r-Screen



X4r-Tilescreen

### Software applications



Soundvision



LA Network Manager

## Electro-acoustical description

### Directivity

---

X4r generates an axisymmetrical directivity pattern of 110°.

Dispersion is dependant on the installation environment.

### Preset description

---

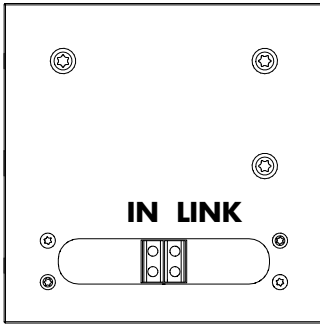
#### [X4] [X4\_60] [X4\_MO]

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

#### [SB10\_60] [SB10\_100] [SB10\_200] [SB6\_60] [SB6\_100] [SB6\_200]

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

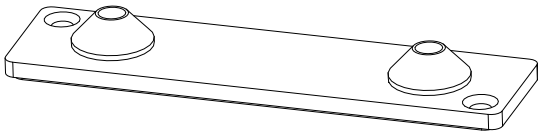
## Connectors



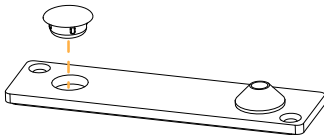
### X4r

2 × 2-point screw terminal

X4r is provided with a connector sealing plate with two cable glands for 2.5 mm<sup>2</sup> cables.



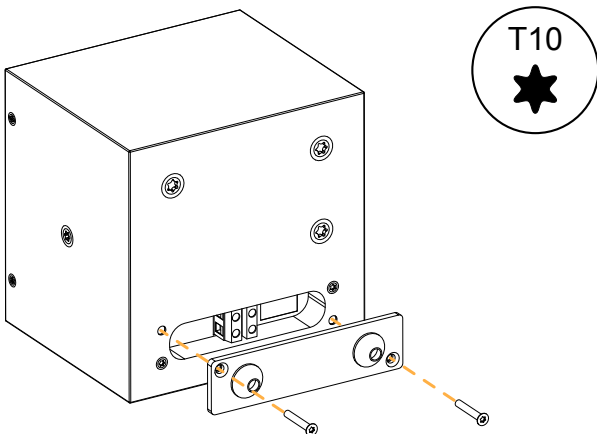
**i** If only one connector is used, replace one cable gland with the protective plug.



**!** Pass the cables through the cable glands before connecting them to the screw terminals.

Refer to [Cabling X4r](#) (p.36).

Secure the connector sealing plate to protect the connectors.



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

Screw terminal points	IN +	IN -
Transducer connectors	+	-

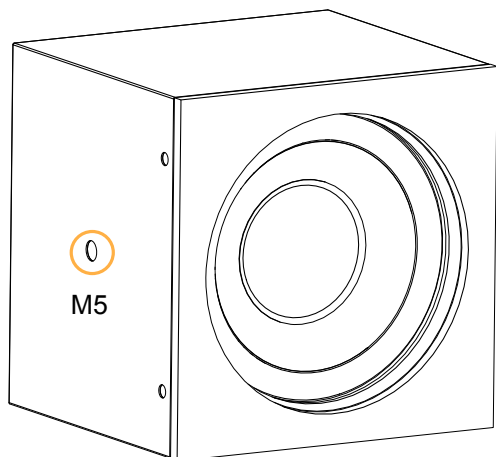
## Rigging system description

### X4r

---

X4r is the recessed version of the X4i enclosure and is designed for in-wall or in-ceiling configurations. The front of the enclosure features a gasket to fit against a screen.

X4r features one M5 insert on each side to secure X4r-inCW for in-wall or in-ceiling configurations or X-U4i for configurations in ceiling tiles.



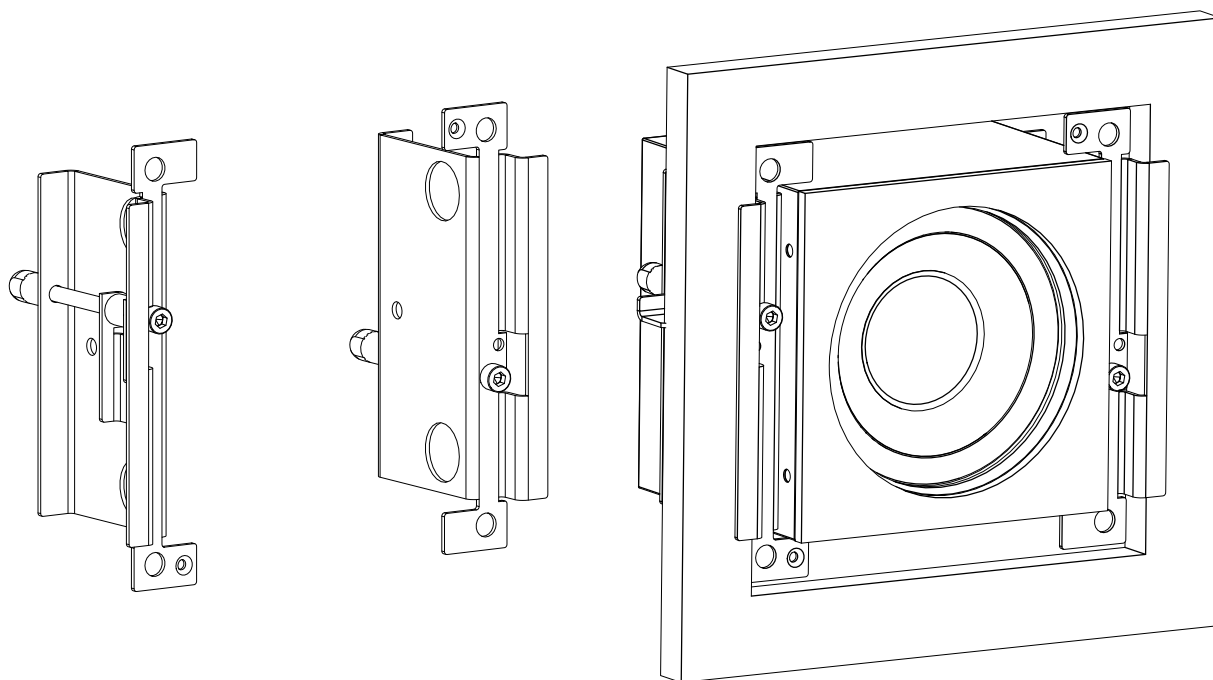
#### Risk of acoustic leaks

Always put the placeholder screws back in place when the inserts are not in use.

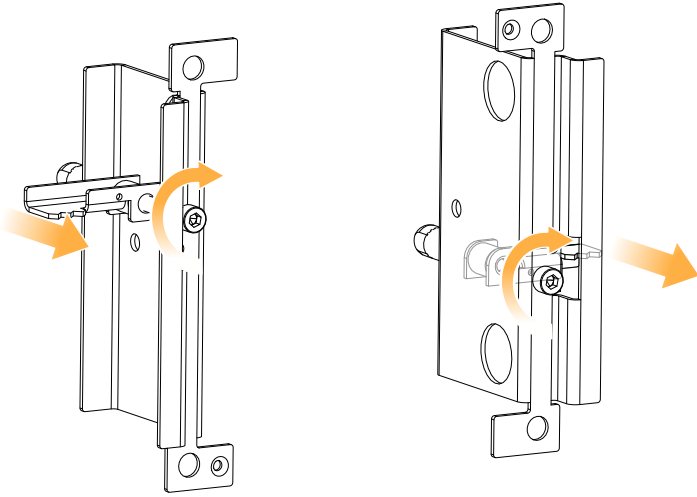
### X4r-inCW

---

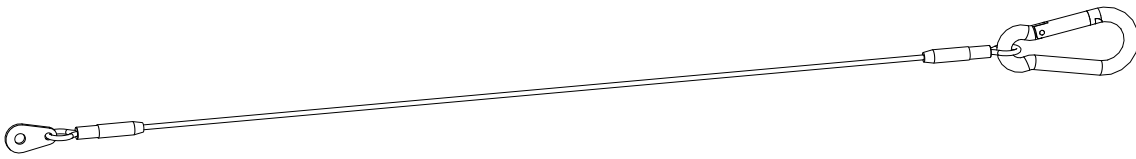
X4r-inCW is a rigging accessory for mounting one X4r inside a wall or a ceiling.



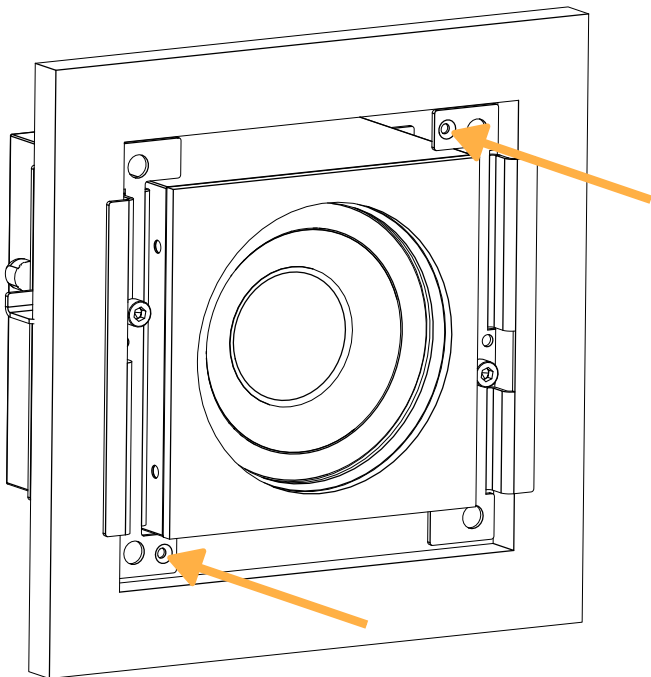
X4r-inCW is secured to the drywall using the fixing clamps.



X4r-inCW is provided with a tether for secondary safety.



An insert is available on both elements of X4r-inCW to secure the secondary safety tether and the tether of X4r-Screen.

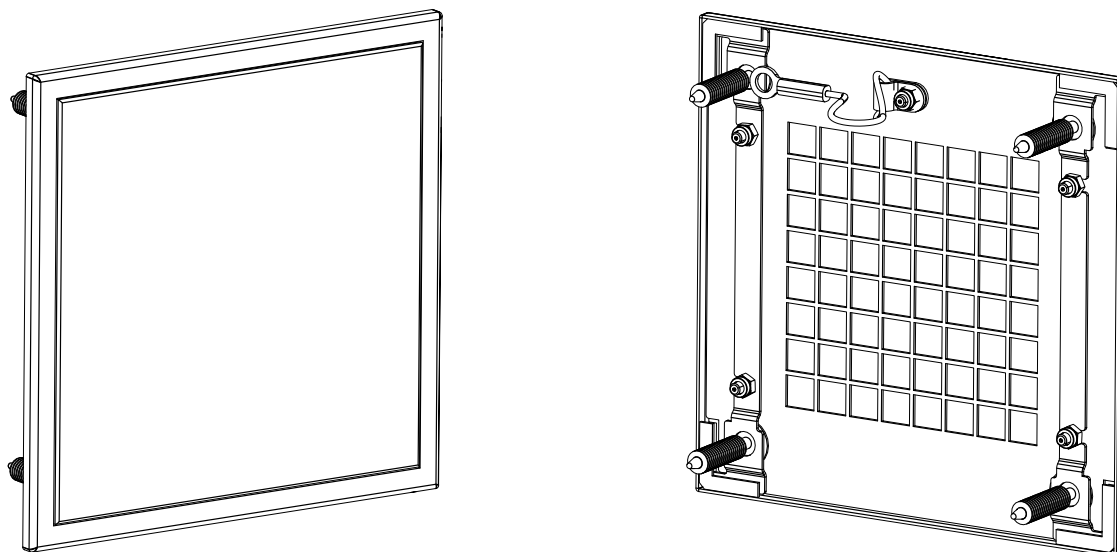


## X4r-Screen

---

X4r-Screen is an acoustically transparent screen for in-wall or in-ceiling configurations with X4r and X4r-inCW. X4r-Screen is secured to the assembly using four barbed push fasteners.

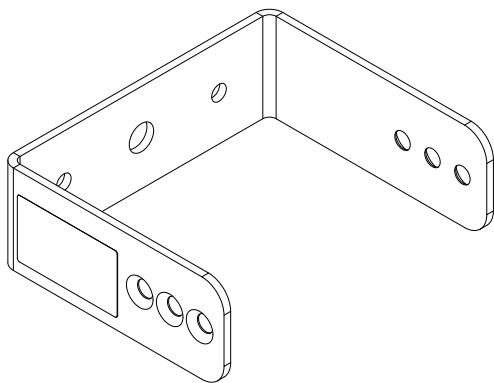
X4r-Screen can be secured to X4r-inCW using the tether and the provided M4x12 Torx screw for additional safety.



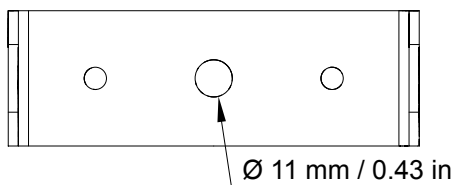
## X-U4i

---

X-U4i is an adjustable U-bracket compatible with X4r.



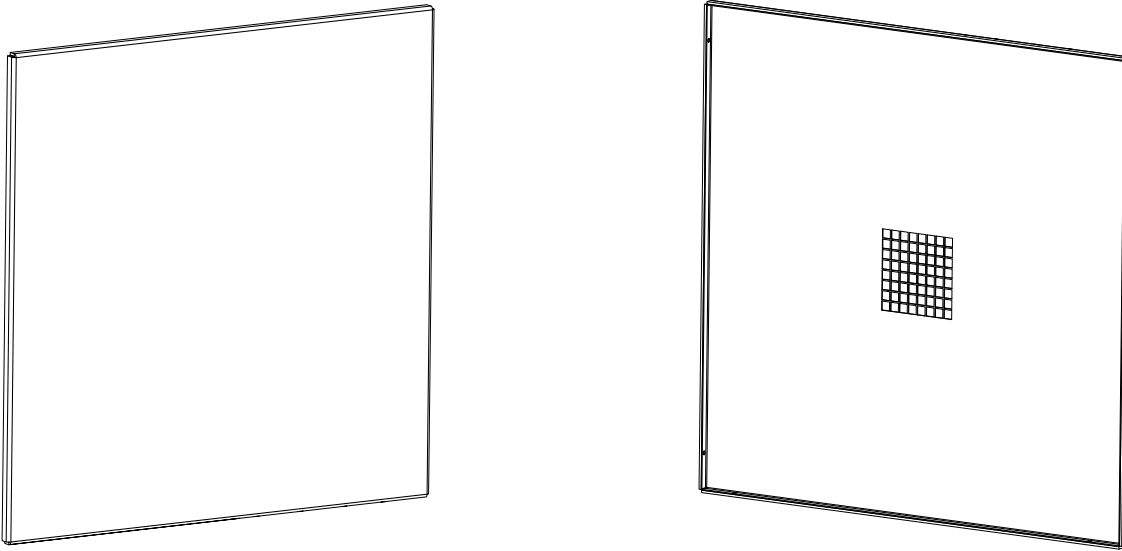
It can be used to mount one X4r in ceiling tiles with a threaded rod, using the  $\varnothing 11$  mm /  $\varnothing 0.43$  in hole.



## X4r-Tilescreen

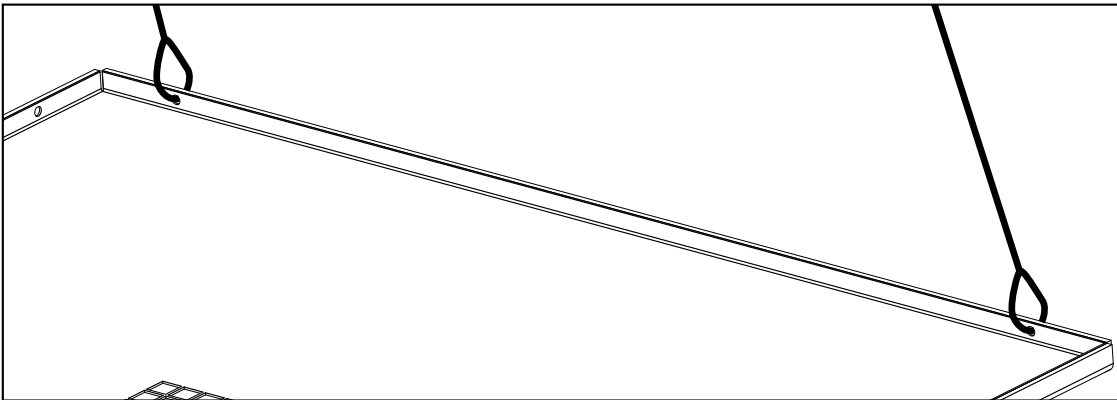
---

X4r-Screen is an acoustically transparent screen for configurations in ceiling tiles with X4r and X-U4i.



**!** X4r-Tilescreen is only compatible with 600×600 mm (2×2 ft) ceiling tiles.

Eight holes are available on the sides of X4r-Tilescreen for secondary safety.








## Mechanical safety

The X4r rigging system complies with EN 62368-1: 2014 Audio/video, information and communication technology equipment — Part 1: Safety requirements.

The deployments described in this manual achieve a safety factor of **5**.

### X4r

configuration	rigging accessory	maximum / safe limit
in-wall or in-ceiling	X4r-inCW + X4r-Screen	1
in-tile	X4r-Tilescreen + X-U4i	1

- 
**Risk of overloading the drywall**  
 When implementing a recessed system in a drywall, make sure to respect the country's standards related to loads in a drywall.
- 
**Risk of tearing the drywall**  
 The recessed system should always be implemented in a straight drywall.
- 
**Risk of overloading the suspended ceiling**  
 When implementing one or multiple X4r-Tilescreen, make sure to respect the country's standards related to suspended ceilings.  
 X4r-Tilescreen weight: 3.1 kg / 6.8 lb

## Loudspeaker configurations

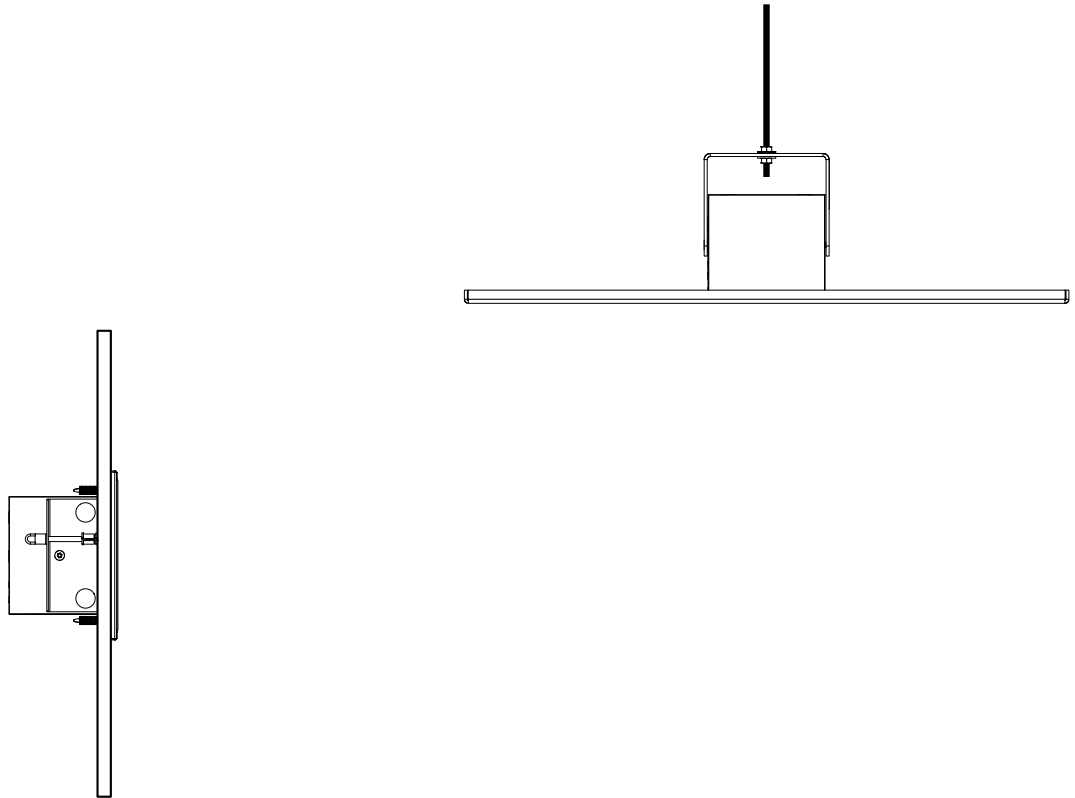
### X4r point source

---

In this configuration, the X4r system operates over the nominal frequency range of the enclosure.

The [X4] preset delivers a reference frequency response in short throw applications.

X4r is driven by the LA2Xi / LA4X / LA7.16i / LA12X amplified controllers.



Enclosure	X4r
Preset	[X4]
Frequency range (-10 dB)	120 Hz - 20 kHz

## X4r point source with low-frequency element

Deployed as a point source with SB6r or SB10r subwoofers, an X4r system operates with augmented LF resources.

For closely coupled configurations, the [X4] preset delivers a reference frequency response in short throw applications, and the [SB6\_200] and [SB10\_200] presets provide SB6r and SB10r with an upper frequency limit at 200 Hz.

For coupled configurations, the [X4] preset delivers a reference frequency response in short throw applications, and the [SB6\_100] and [SB10\_100] presets provide SB6r and SB10r with an upper frequency limit at 100 Hz.

For separated configurations, the [X4\_60] preset provides X4r with a lower frequency limit at 60 Hz, and the [SB6\_60] and [SB10\_60] presets provide SB6r and SB10r with an upper frequency limit at 60 Hz.

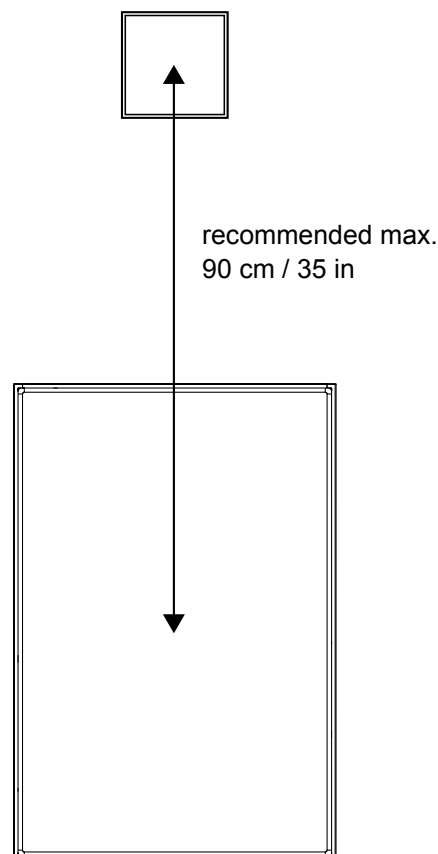
X4r, SB6r, and SB10r are driven by the LA2Xi / LA4X / LA7.16i / LA12X amplified controllers.

### X4r point source with SB6r

#### Closely coupled

With SB6r and the preset [SB6\_200], the bandwidth of the X4r system is extended down to 32 Hz and the system contour is reinforced by 9 dB\* at 50 Hz (peak low-end SPL).

**in-ceiling/wall**  
reinforced contour  
+ 9 dB\* at 50 Hz



Enclosure	X4r	SB6r
Preset	[X4]	[SB6_200]
Ratio	1 X4r : 1 SB6r	
Frequency range (-10 dB)	32 Hz - 20 kHz	



#### Delay values

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

\* Contour value takes into account the effect of the wall and floor on the contour.

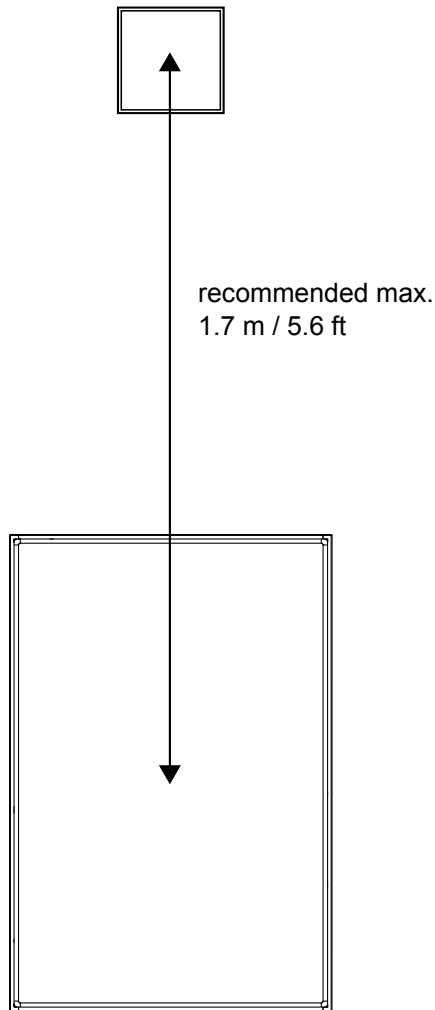
**Pre-alignment delays**

presets	pre-alignment delay values and polarity settings	
[X4] or [X4_MO] + [SB6_200]	X4i = 0.6 ms <input type="button" value="+"/>	SB6i = 0 ms <input type="button" value="-"/>

**Coupled**

With SB6r and the preset [SB6\_100], the bandwidth of the X4r system is extended down to 29 Hz and the system contour is reinforced by 7 dB\* at 50 Hz (peak low-end SPL).

**in-ceiling/wall**  
reinforced contour  
+ 7 dB\* at 50 Hz



Enclosure	X4r	SB6r
Preset	[X4]	[SB6_100]
Ratio	1 X4r : 1 SB6r	
Frequency range (-10 dB)	29 Hz - 20 kHz	

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

**Pre-alignment delays**

presets	pre-alignment delay values and polarity settings	
[X4] or [X4_MO] + [SB6_100]	X4i = 0 ms <input type="button" value="+"/>	SB6i = 0.4 ms <input type="button" value="+"/>

\* Contour value takes into account the effect of the wall and floor on the contour.

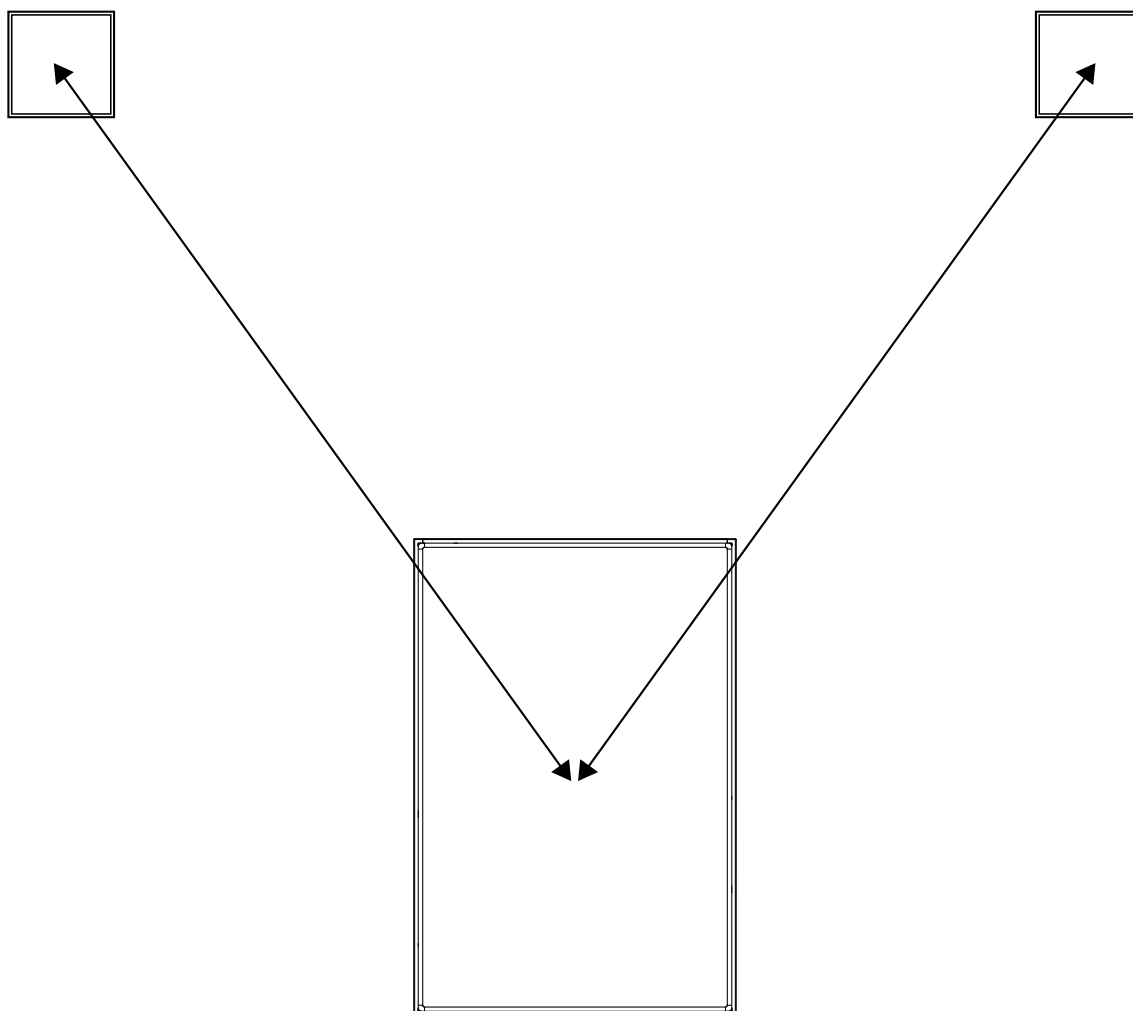
## Separated

With SB6r and the preset [SB6\_60], the bandwidth of the X4r system is extended down to 29 Hz and the system contour is reinforced by 9 dB\* at 50 Hz (peak low-end SPL). The preset [X4\_60] provides optimal frequency coupling with the low-frequency element.

### in-ceiling/wall

reinforced contour

+ 9 dB\* at 50 Hz



Enclosure	X4r	SB6r
Preset	[X4_60]	[SB6_60]
Ratio	2 X4r : 1 SB6r	
Frequency range (-10 dB)	29 Hz - 20 kHz	

### ! Delay values

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

### Pre-alignment delays

presets	pre-alignment delay values and polarity settings		
[X4_60] + [SB6_60]	X4i = 1.8 ms	+	SB6i = 0 ms <span style="float: right;">-</span>

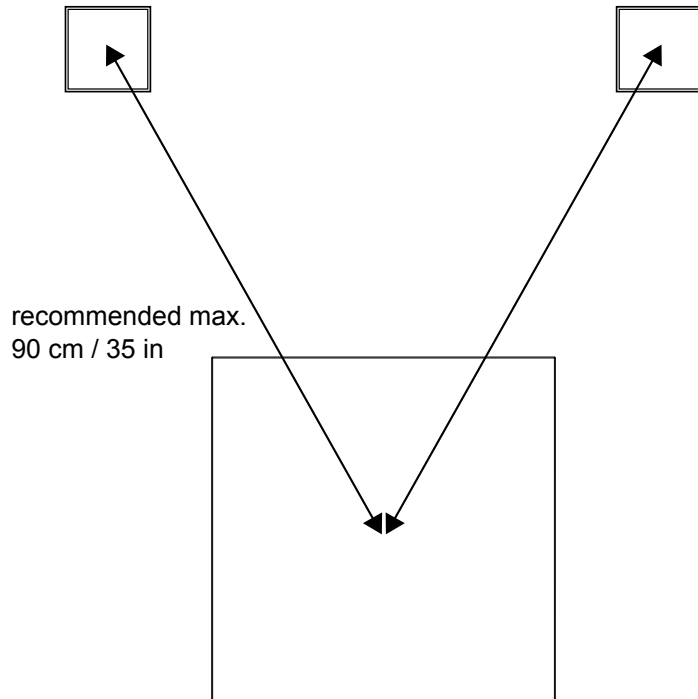
\* Contour value takes into account the effect of the wall and floor on the contour.

## X4r point source with SB10r

### Closely coupled

With SB10r and the preset [SB10\_200], the bandwidth of the X4r system is extended down to 29 Hz and the system contour is reinforced (peak low-end SPL).

**in-ceiling/wall**  
reinforced contour  
+ 10 dB\* at 50 Hz



Enclosure	X4r	SB10r
Preset	[X4]	[SB10_200]
Ratio	2 X4r : 1 SB10r	
Frequency range (-10 dB)	29 Hz - 20 kHz	

### ! Delay values

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

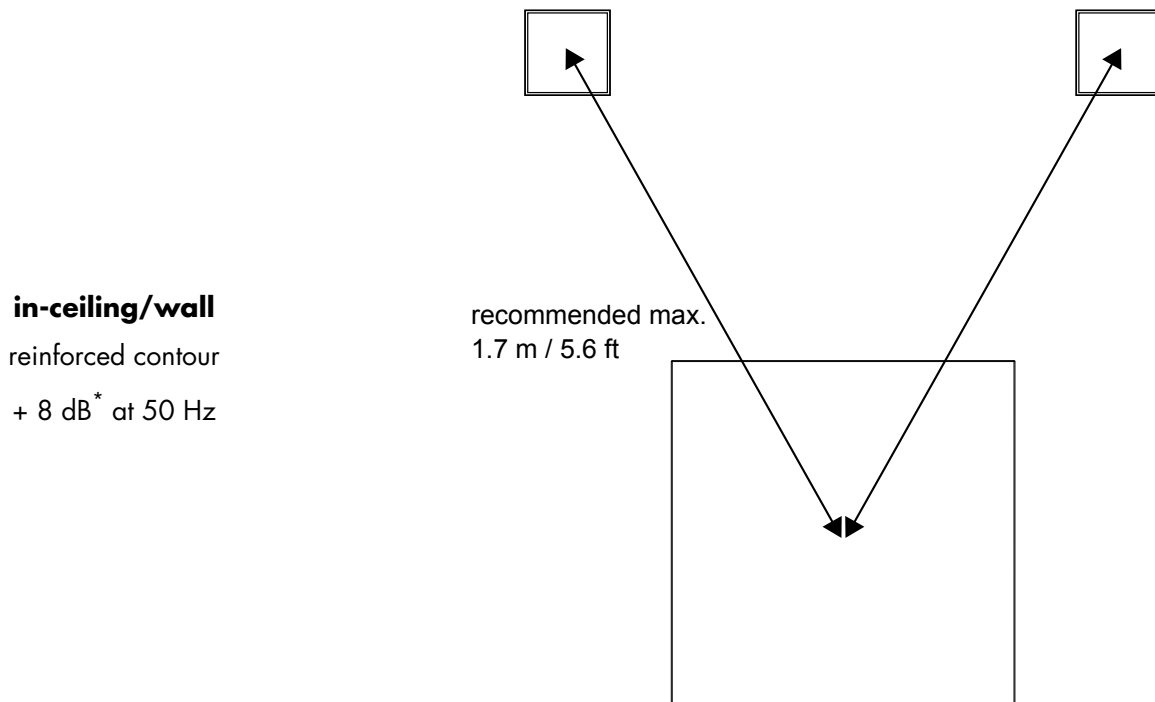
### Pre-alignment delays

presets	pre-alignment delay values and polarity settings		
[X4] + [SB10_200]	X4i = 1.9 ms	<input type="checkbox"/>	SB10i = 0 ms <input type="checkbox"/>
[X4_MO] + [SB10_200]	X4i = 0 ms	<input type="checkbox"/>	SB10i = 0 ms <input type="checkbox"/>

\* Contour value takes into account the effect of the wall and floor on the contour.

## Coupled

With SB10r and the preset [SB10\_100], the bandwidth of the X4r system is extended down to 27 Hz and the system contour is reinforced (peak low-end SPL).



Enclosure	X4r	SB10r
Preset	[X4]	[SB10_100]
Ratio	2 X4r : 1 SB10r	
Frequency range (-10 dB)	27 Hz - 20 kHz	

### ! Delay values

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

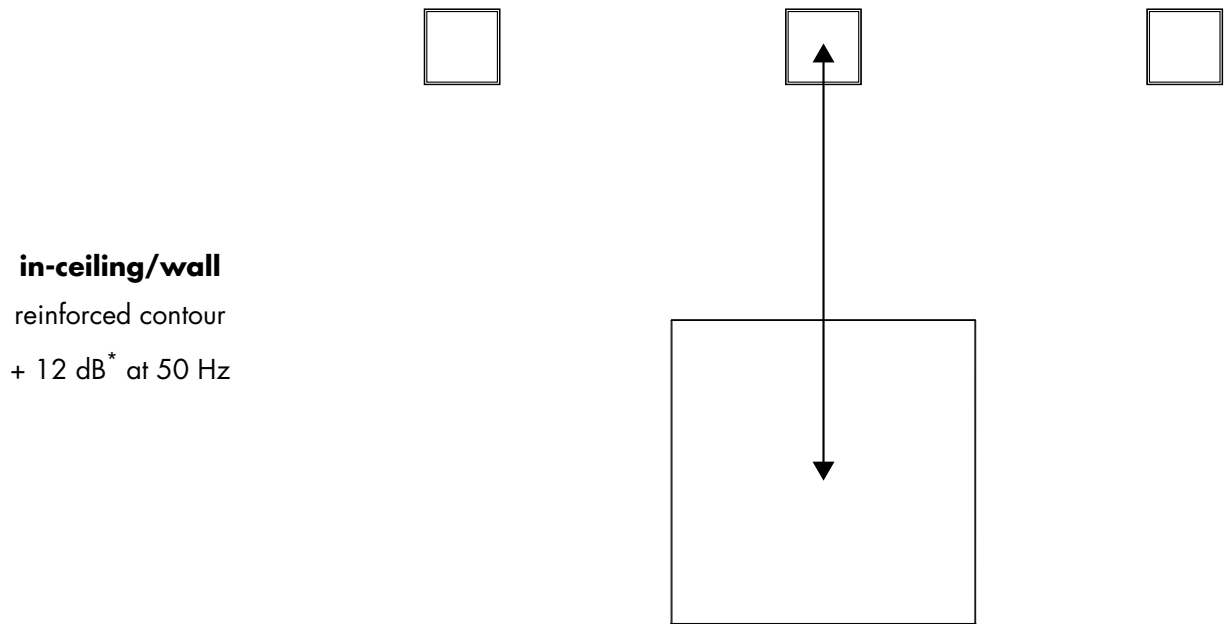
### Pre-alignment delays

presets	pre-alignment delay values and polarity settings	
[X4] or [X4_MO] + [SB10_100]	X4i = 0.8 ms <input data-bbox="965 1451 1018 1507" type="button" value="+"/>	SB10i = 0 ms <input data-bbox="1439 1451 1492 1507" type="button" value="+"/>

\* Contour value takes into account the effect of the wall and floor on the contour.

### Separated

With SB10r and the preset [SB10\_60], the bandwidth of the X4r system is extended down to 25 Hz and the system contour is reinforced (peak low-end SPL). The preset [X4\_60] provides optimal frequency coupling with the low-frequency element.



Enclosure	X4r	SB10r
Preset	[X4_60]	[SB10_60]
Ratio	3 X4r : 1 SB10r	
Frequency range (-10 dB)	25 Hz - 20 kHz	

### ! Delay values

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

### Pre-alignment delays

presets	pre-alignment delay values and polarity settings	
[X4_60] + [SB10_60]	X4i = 7.2 ms <span style="border: 1px solid black; padding: 2px;">+</span>	SB10i = 0 ms <span style="border: 1px solid black; padding: 2px; background-color: red; color: white;">-</span>

\* Contour value takes into account the effect of the wall and floor on the contour.



# Rigging procedures

## Tools

---

Before rigging this product, make sure all the tools listed are available. References are given for FACOM® products in this table. Other manufacturers can be used.

<b>name</b>	<b>reference</b>	<b>distributor</b>
set of 6-point 1/4" sockets	RL.NANO1 / R.360NANO	FACOM
torque screwdriver (2 - 10 N.m)	A.404	FACOM
level	-	-
trim clip removal pliers	-	-

## Mounting X4r in a wall or in a ceiling with X4r inWall

type of deployment	wall-mounting
	ceiling-mounting
rigging accessories	X4r inWall, including: <ul style="list-style-type: none"> <li>• X4r enclosure</li> <li>• X4r-inCW rigging accessory</li> <li>• X4r-Screen</li> <li>• cardboard cutting template</li> </ul>
additional material	2 M5x25 Torx screws (provided)
	1 M4x12 Torx screw (provided)
	secondary safety tether (provided)
tools	torque screwdriver
	T25 Torx bit
	T20 Torx bit
	4 mm hex bit
min. number of operators	1

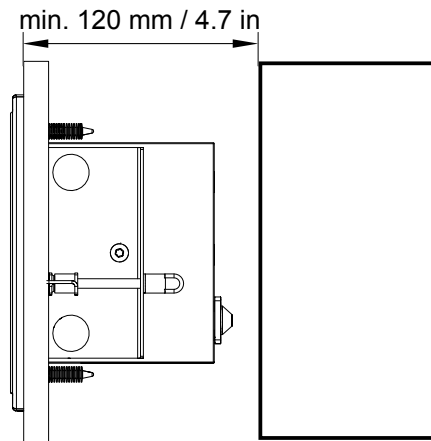
**⚠ Use reinforcements on the drywall for supporting the enclosure assembly.**

As reinforcement, use either a second layer of drywall, or wooden battens or panels.  
The total thickness of the drywall and its reinforcement should not be more than 30 mm / 1.2 in.

**⚠ Secondary safety for in-wall or in-ceiling configurations**

Use the provided tether to implement a secondary safety.

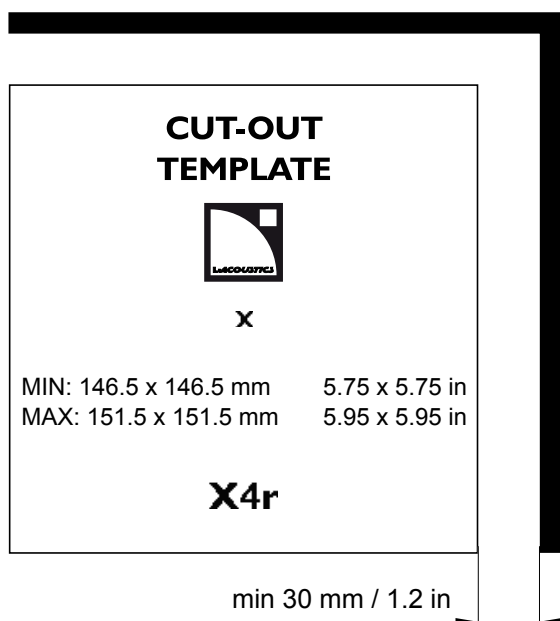
**⚠** 120 mm / 4.7 in of room are required between the main ceiling or wall and the secondary ceiling or wall to install the enclosure assembly.



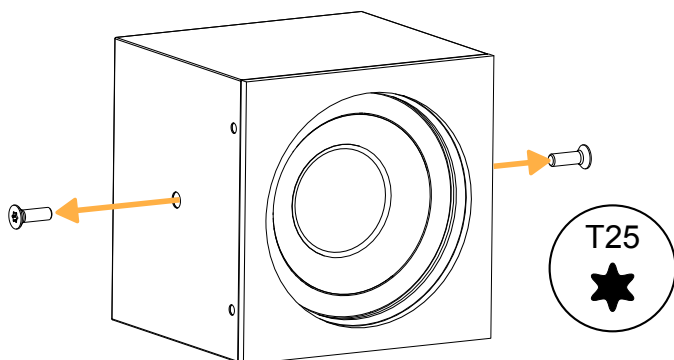
## Assembly

### Procedure

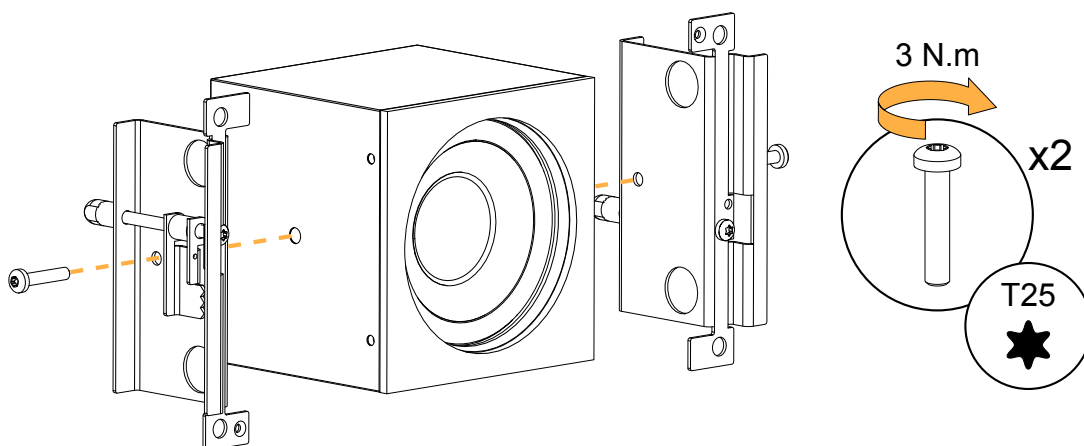
1. Cut the drywall.  
Use the cardboard template provided with X4r-Screen as a reference.



2. Remove the placeholder screws on both sides of the enclosure.

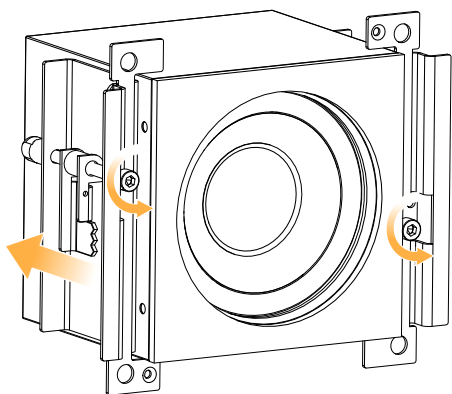


3. Secure X4r-inCW to the enclosure, using the M5x25 Torx screws.

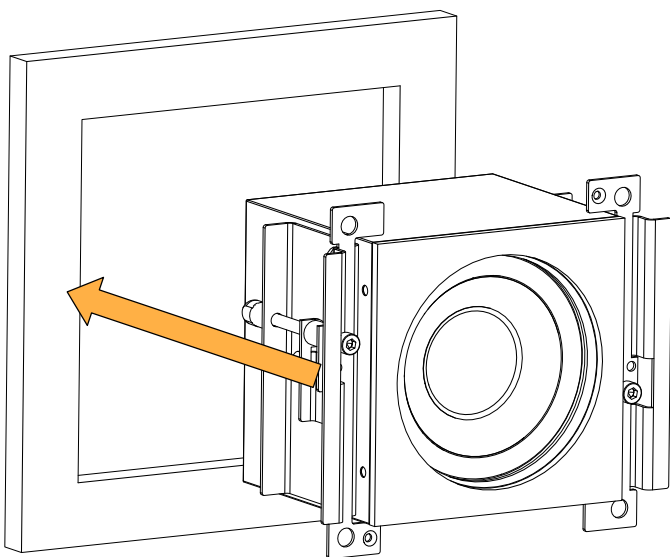


4. Prepare the cabling. Refer to [Cabling X4r](#) (p.36).

5. Unscrew the clamp screws until there is enough space for the drywall between the clamps and the front of the accessory.



6. Position the enclosure assembly in the drywall.

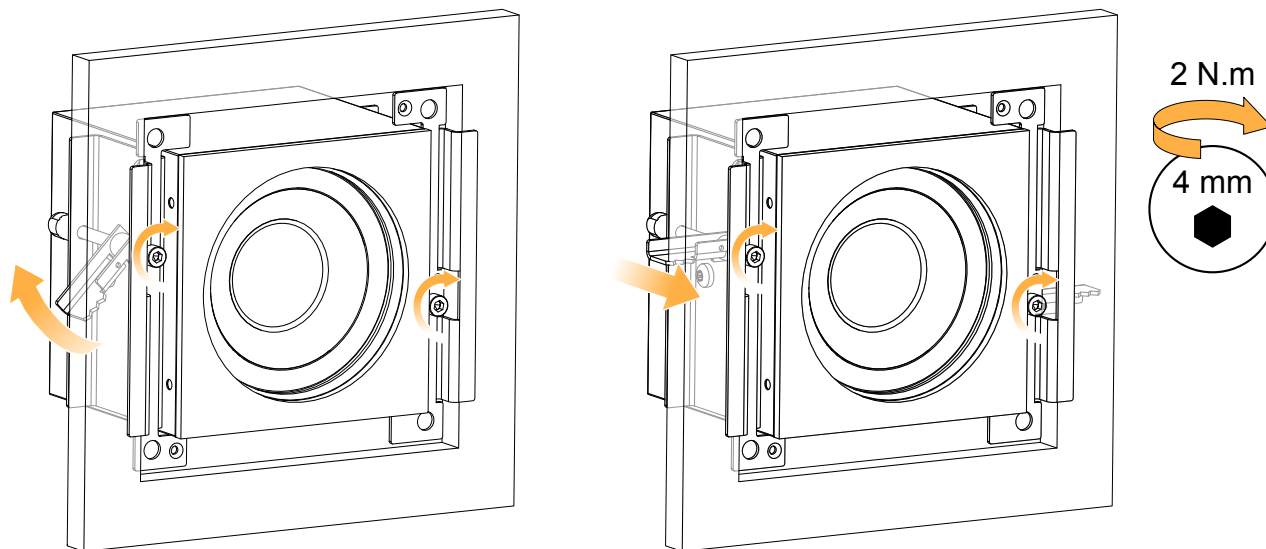


7. Secure the enclosure assembly to the drywall using the clamps.  
Tighten the screws until the clamps are tightly secured against the drywall.

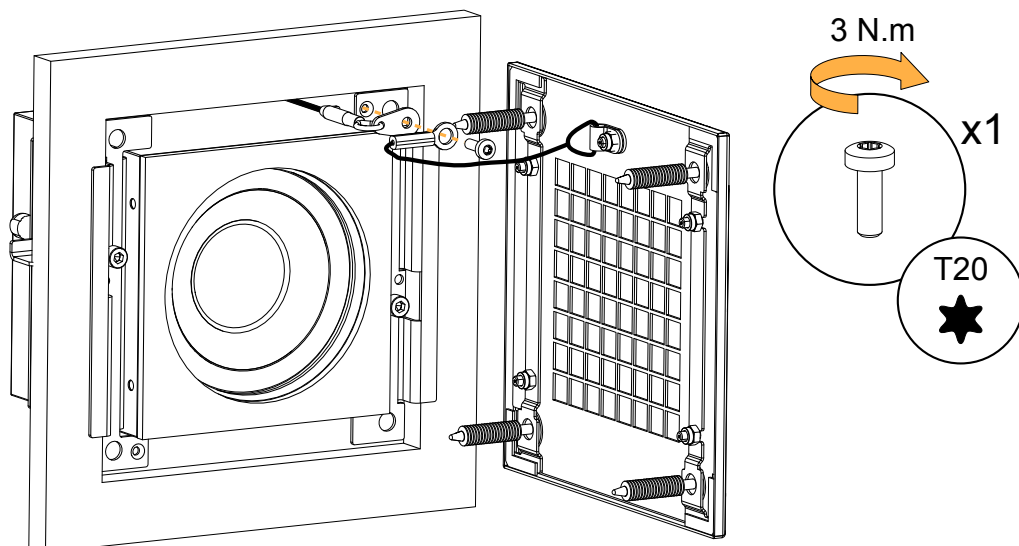


**Risk of damage**

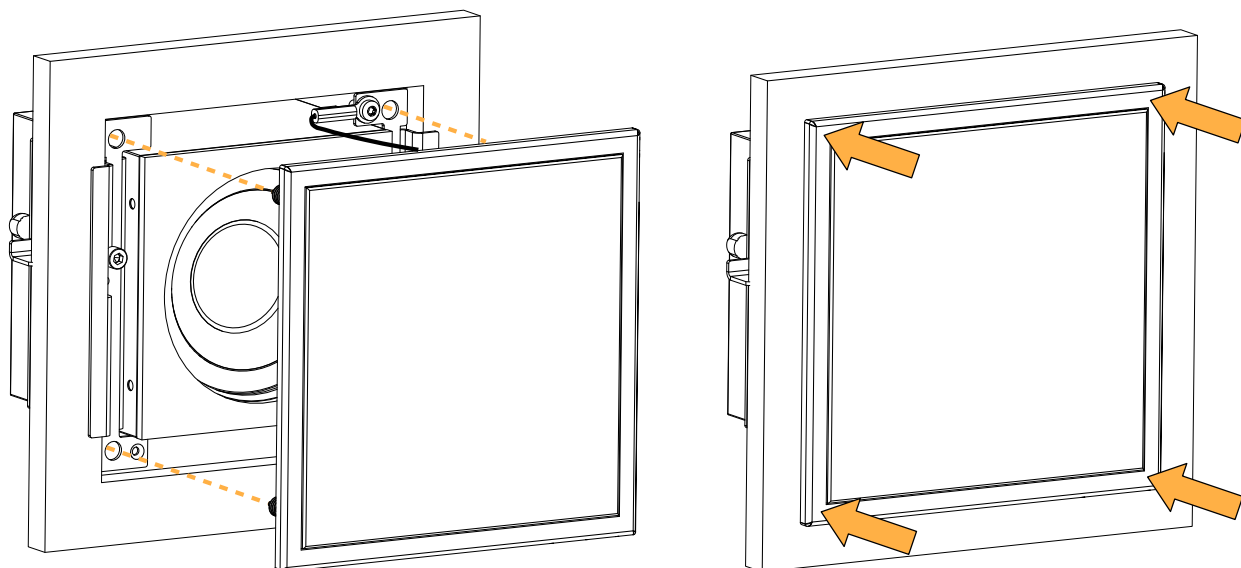
Do not apply more than the indicated torque.



8. Secure the secondary safety tether and the tether of the screen to the top insert of X4r-inCW using the M4x12 Torx screw.



9. Align the barbed push fasteners with the frame holes and push the screen into place. Make sure the screen is fully pressed against the drywall.



### What to do next

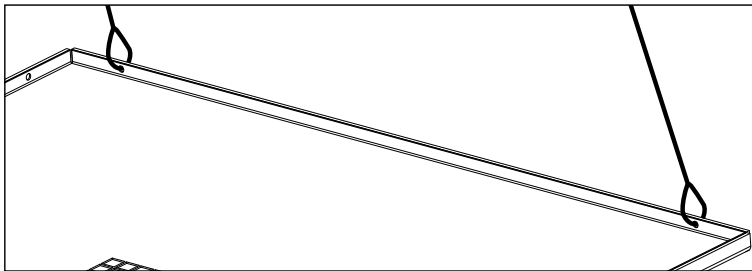
If X4r-Screen needs to be removed, use trim clip removal pliers to remove the barbed push fasteners from X4r-inCW.

## Mounting X4r in a ceiling tile with X4r inTile

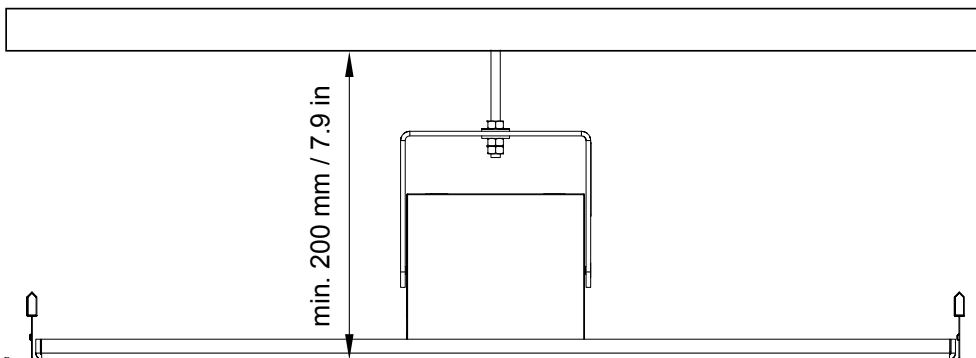
type of deployment	ceiling-mounting
rigging accessories	X4r inTile, including: <ul style="list-style-type: none"> <li>• X4r enclosure</li> <li>• X-U4i rigging accessory</li> <li>• X4r-Tilescreen</li> </ul>
additional material	1 max. Ø10 mm / 0.4 in threaded rod
	3 corresponding nuts
	2 corresponding washers
	2 M5x16 Torx screws (provided)
	tethers for secondary safety
tools	torque screwdriver
	T25 Torx bit
min. number of operators	1

**!** X4r-Tilescreen is only compatible with 600x600 mm (2x2 ft) tiles (European standard).

**!** **Secondary safety with X4r-Tilescreen**  
Use the available holes to implement a secondary safety.



**!** 200 mm / 7.9 in of room are required between the main ceiling and the suspended ceiling or wall to install the enclosure assembly.



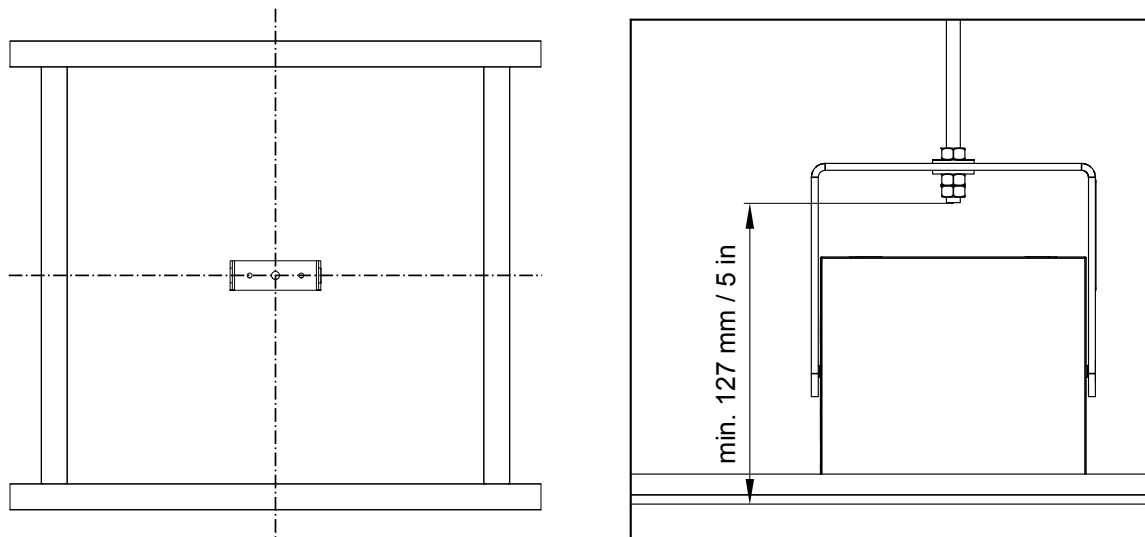
## Assembly

### Procedure

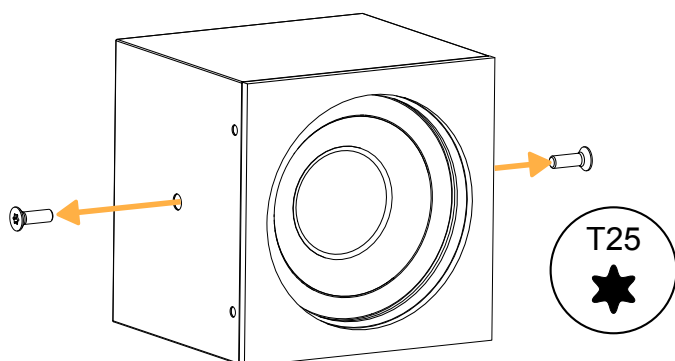
1. Secure the threaded rod to the main ceiling.

Position the threaded rod at the center of the tile frame.

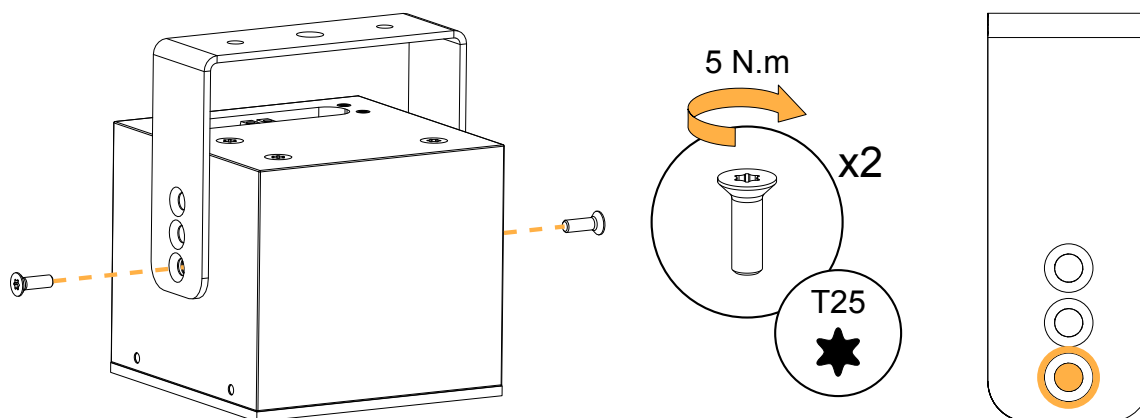
The bottom end of the threaded rod should be approximately at 127 cm / 5 in of the tile frame.



2. Remove the placeholder screws on both sides of the enclosure.

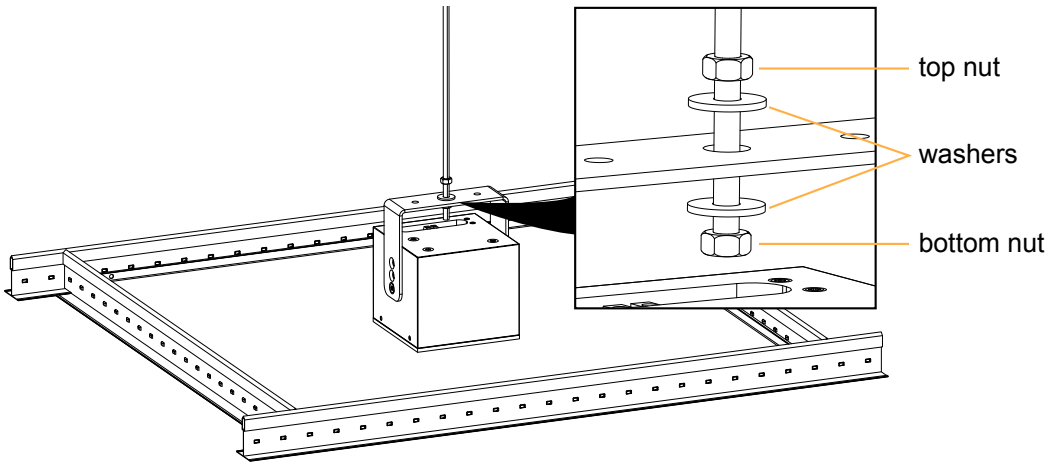


3. Secure the X-U4i rigging bracket to the enclosure, with the front facing down, using the M5x16 Torx screws. Use the hole leaving the most space between the enclosure and the accessory.

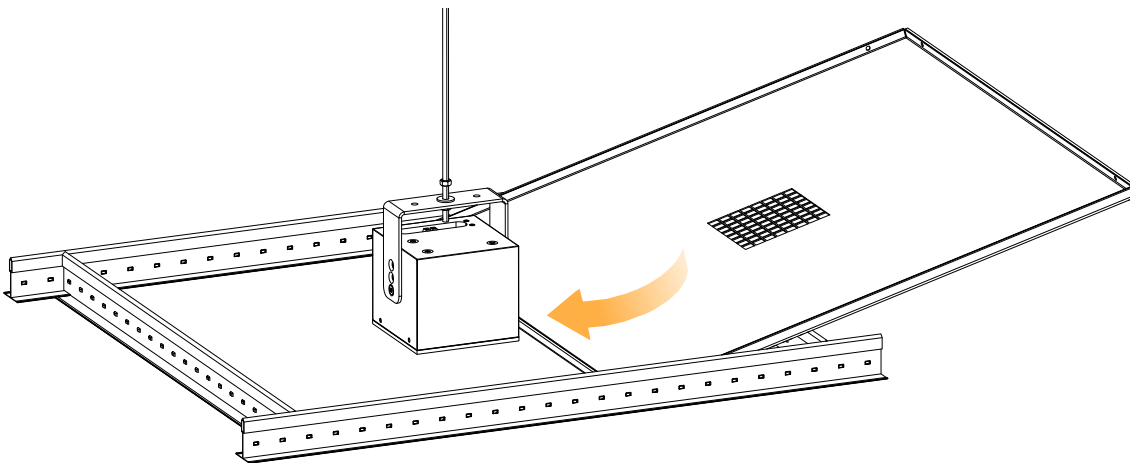


4. Prepare the cabling. Refer to [Cabling X4r](#) (p.36).

5. Secure the enclosure assembly to the threaded rod using nuts and washers.



6. Slide the screen into the tile frame from the side.

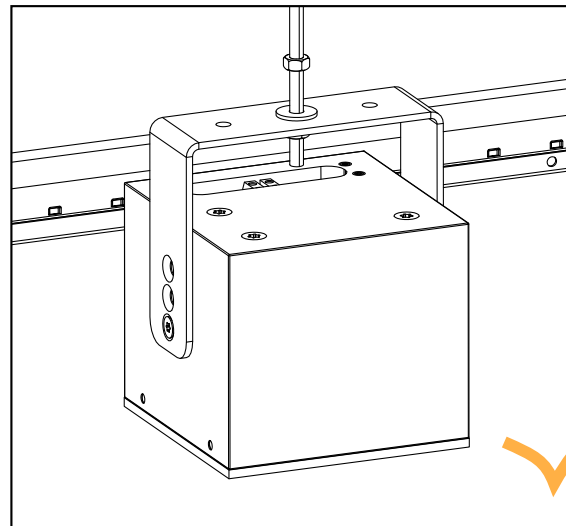
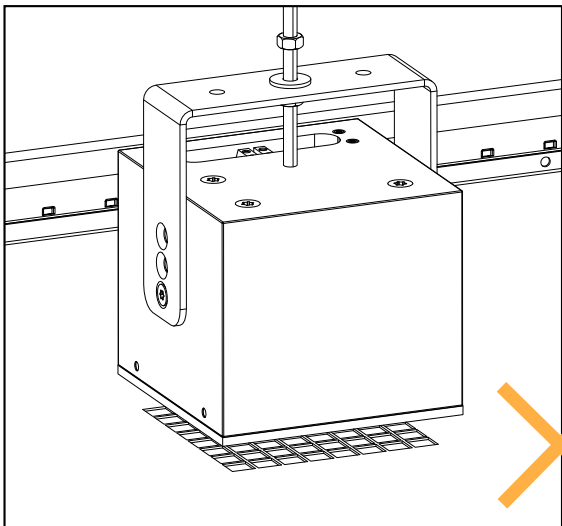


7. Lower the enclosure assembly by moving down the bottom nut until the front gasket presses on the screen.



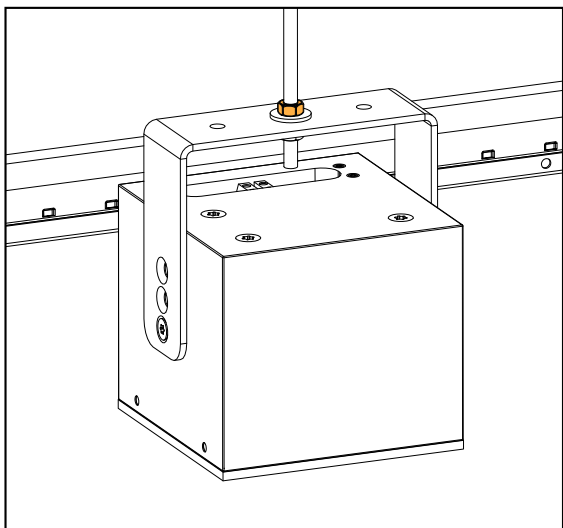
**Risk of overloading the suspended ceiling**

Do not let the enclosure assembly rest on X4r-Tile screen and the suspended ceiling.

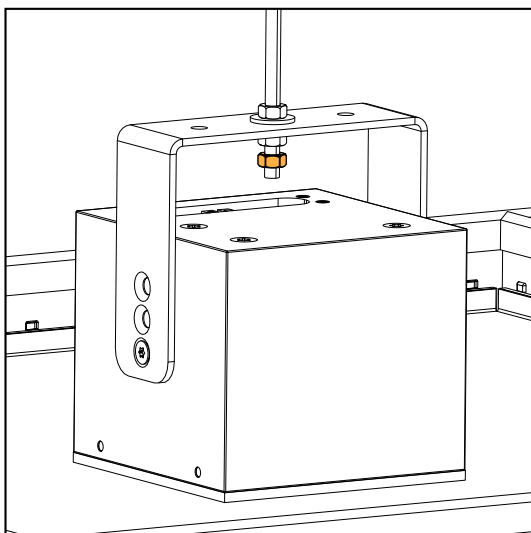




- 8.** Tighten the top nut against the bracket to keep the enclosure assembly pressed against the screen.



- 9.** Insert a security nut and tighten it against the bottom nut.



## Connection to LA amplified controllers

**!** Refer to the **Amplification reference** technical bulletin for the latest information on compatibility with amplified controllers and cabling schemes for all enclosure types.

### Enclosure drive capacity per amplified controller

Make sure the total number of connected enclosures does not exceed the maximum number of enclosures per controller (refer to the footnotes).

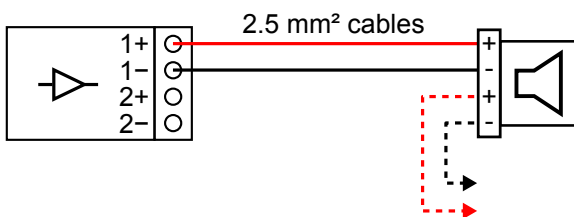
	<b>LA2Xi</b>	<b>LA4X</b>	<b>LA7.16i</b>	<b>LA12X</b>
	<b>per output<sup>*</sup> / total</b>	<b>per output<sup>*</sup> / total</b>	<b>per output<sup>*</sup> / total</b>	<b>per output<sup>*</sup> / total</b>
X4r	4 / 16	4 / 16	4 / 64	6 / 24

### Cabling schemes for X4r

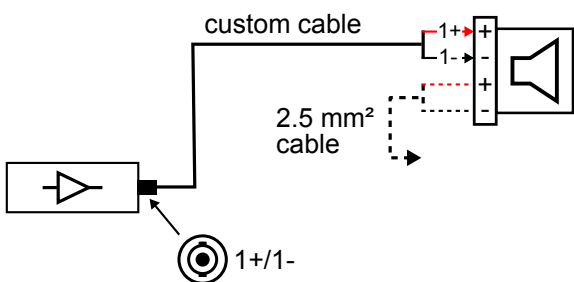
Refer to the cabling schemes to connect the enclosures to different types of output configurations.

**!** Refer to the cable manufacturer documentation for the wire color code.

#### Terminal block output (LA2Xi SE / LA7.16i)

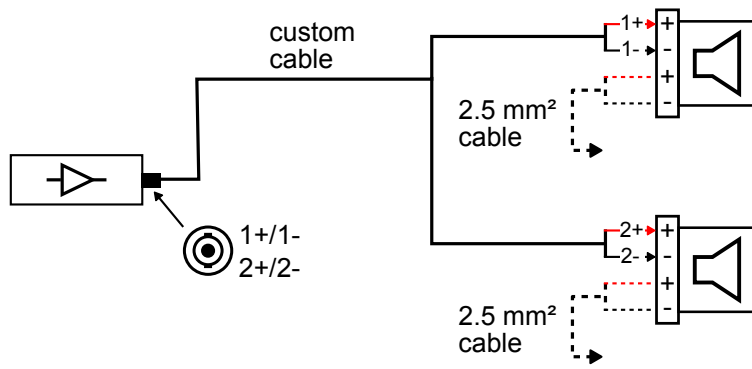


#### One-channel speakON output



\* 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.

### Two-channel speakON output



## Cabling X4r

<b>Accessory</b>	connector sealing plate (provided)
<b>Screws and fasteners</b>	2 M3×20 screws (mounted on enclosure)
<b>Tools</b>	torque screwdriver T10 Torx bit flat screwdriver (3 mm or less)
<b>Min number of operators</b>	1

### Assembly

#### Prerequisite

**!** The cable glands on the connector sealing plate are compatible with cables up to 2 × 2.5 mm<sup>2</sup> gauge.

Refer to:

- [APPENDIX A: Recommendation for speaker cables](#) (p.45)
- [Cabling schemes for X4r](#) (p.34)

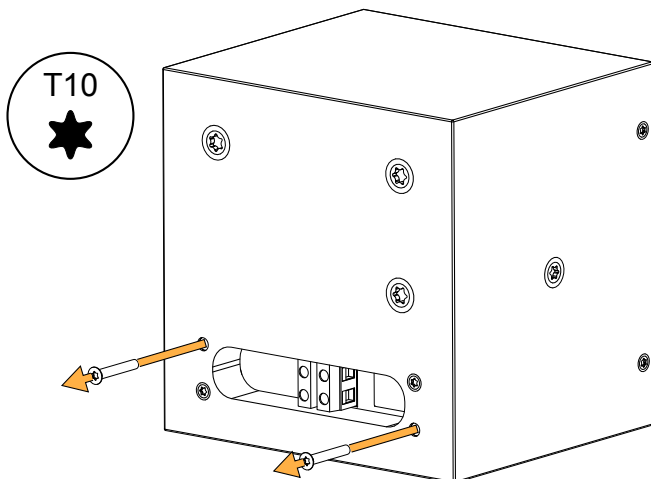
#### About this task

The connector sealing plate has two holes: one for the input cable and one for the cable connecting to the next enclosure in parallel. By default, the first hole is fitted with a cable gland and the second one with a protective plug. An extra cable gland is provided with each enclosure.

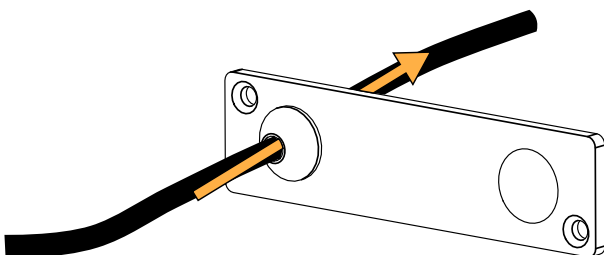
This procedure describes how to connect the input cable to the enclosure. If the enclosure must be connected in parallel, replace the protective plug with the extra cable gland and proceed identically for both cables.

#### Procedure

1. Remove the two screws from the back of X4r.

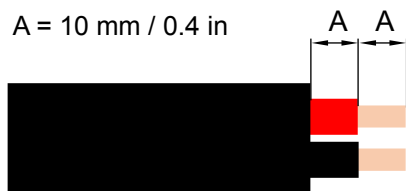


2. Insert the cable through the cable gland.



- Strip the wires of the cable.

A = 10 mm / 0.4 in

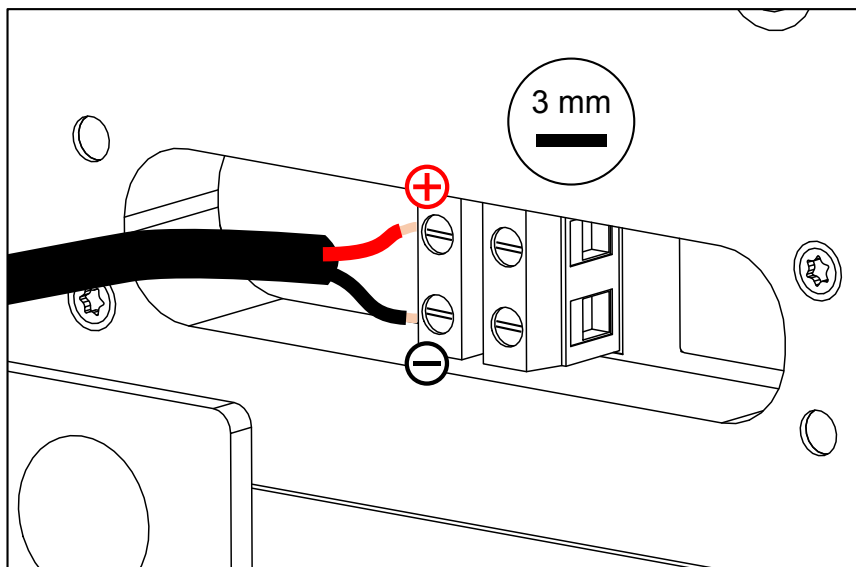


2 × 2.5 mm<sup>2</sup> cable



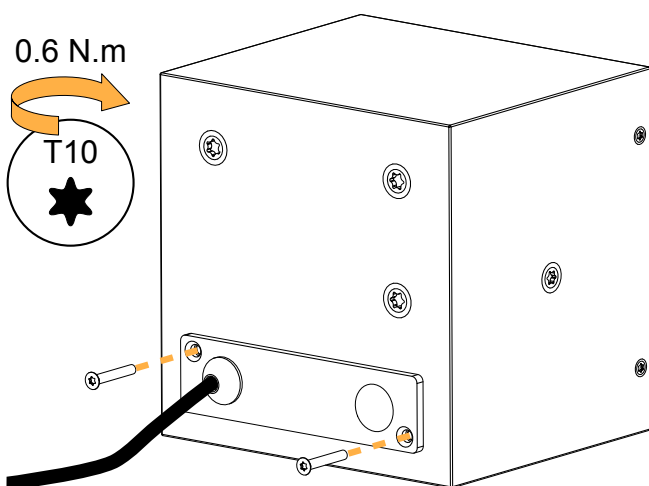
Refer to the cable manufacturer documentation for the wire color code.

- Insert the wires into the terminals and tighten the screws on the terminals with a flat screwdriver.



- Secure the connector sealing plate to the enclosure.

Apply a torque of 0.6 N.m.



# Specifications

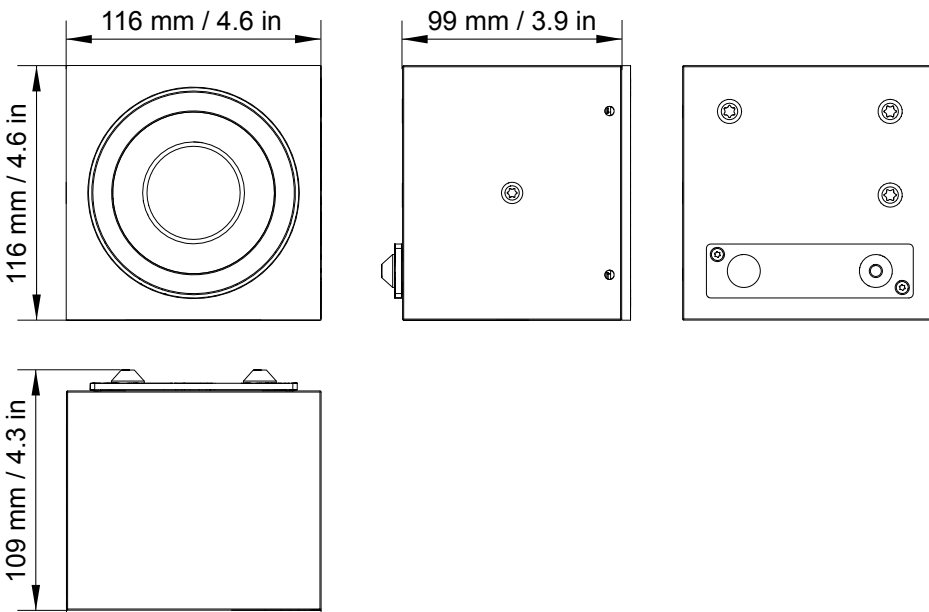
## X4r specifications

<b>Description</b>	2-way passive coaxial enclosure: 4" LF + 1.4" HF diaphragm (recessed version), amplified by LA2Xi / LA4X / LA7.16i / LA12X	
	with preset [X4]	with preset [X4_60]
<b>Low frequency limit (-10 dB)</b>	120 Hz	65 Hz
<b>Maximum SPL<sup>1</sup></b>	116 dB	110 dB
<b>Nominal directivity (-6 dB)</b>	110° axisymmetric	
<b>Transducers</b>	LF: 1 × 4" neodymium HF: 1 × 1.4"	
<b>Acoustical load</b>	closed enclosure	
<b>Nominal impedance</b>	16 Ω	
<b>Connectors</b>	IN: 1 × 2-point screw terminal LINK: 1 × 2-point screw terminal	
<b>Rigging and handling</b>	2 M5 inserts for X4r-inCW and X-U4i 2 M6 inserts for rigging accessory	
<b>Safety</b>	1 M6 insert for secondary safety	
<b>Weight (net)</b>	0.94 kg / 2.1 lb	
<b>Cabinet</b>	premium grade Baltic birch plywood	
<b>Finish</b>	dark grey brown Pantone 426 C	
<b>IP</b>	IP55 <sup>2</sup>	

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

<sup>2</sup> When integrated in-wall or in-ceiling with screen and connector sealing plate.

## X4r dimensions



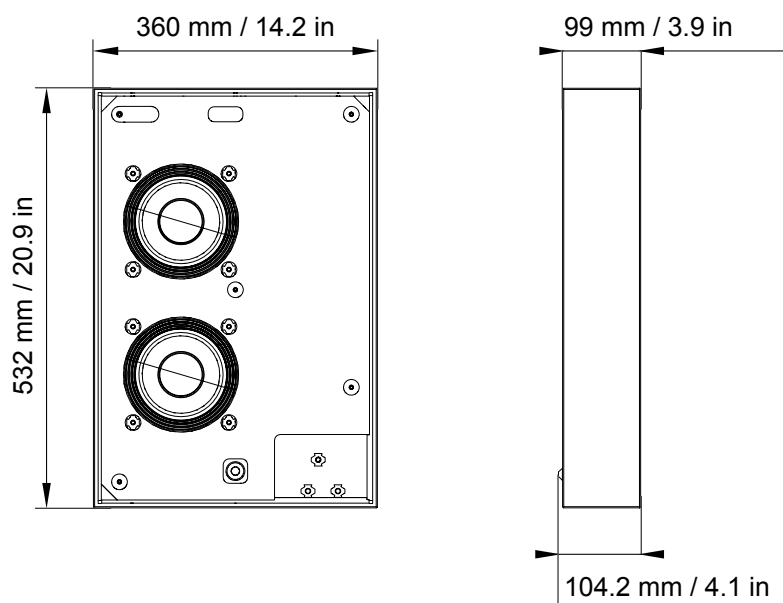
## SB6r specifications

<b>Description</b>	Ultra-shallow subwoofer: 2 × 6.5" (recessed version), amplified by LA2Xi / LA4X / LA7.16i / LA12X		
	with preset [SB6_60]	with preset [SB6_100]	with preset [SB6_200]
<b>Low frequency limit (-10 dB)</b>	29 Hz	29 Hz	32 Hz
<b>Maximum SPL<sup>1</sup></b>	110 dB	111 dB	115 dB
<b>Nominal directivity (-6 dB)</b>	standard configuration		
<b>Transducers</b>	2 × 6.5" cone driver		
<b>Acoustical load</b>	bass-reflex, L-Vents		
<b>Nominal impedance</b>	4 Ω		
<b>Connectors</b>	1 × 4-point terminal block with push-in connection		
<b>Rigging and handling</b>	8 M6 inserts for rigging accessories		
<b>Weight (net)</b>	7.6 kg / 16.8 lb		
<b>Cabinet</b>	premium grade Baltic beech and birch plywood		
<b>Finish</b>	dark grey brown Pantone 426 C		
<b>IP</b>	IP55 <sup>2</sup>		

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

<sup>2</sup> When integrated in-wall or in-ceiling with screen and connector sealing plate.

## SB6r dimensions



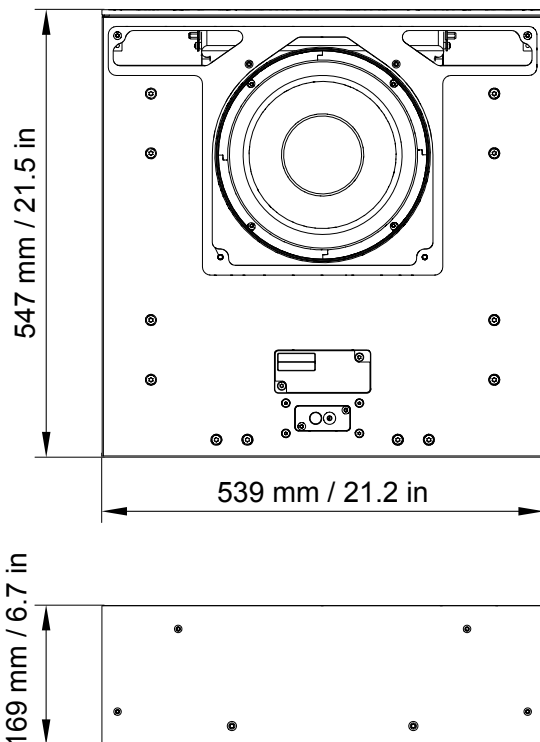
## SB10r specifications

<b>Description</b>	Ultra-compact subwoofer: 1 × 10" (recessed version), amplified by LA2Xi / LA4X / LA7.16i / LA12X		
	with [SB10_60]	with [SB10_100]	with [SB10_200]
<b>Low frequency limit (-10 dB)</b>	25 Hz	27 Hz	29 Hz
<b>Maximum SPL<sup>1</sup></b> with LA2Xi (bridge mode) / LA4X / LA7.16i / LA12X	119 dB	122 dB	124 dB
with LA2Xi	119 dB	120 dB	122 dB
<b>Nominal directivity (-6 dB)</b>	standard configuration		
<b>Transducers</b>	1 × 10" cone driver		
<b>Acoustical load</b>	bass-reflex, L-Vents		
<b>Nominal impedance</b>	8 Ω		
<b>Connectors</b>	1 × 4-point terminal block with push-in connection		
<b>Rigging and handling</b>	12 M6 inserts for rigging accessories		
<b>Weight (net)</b>	13 kg / 29 lb		
<b>Cabinet</b>	premium grade Baltic birch plywood		
<b>Finish</b>	dark grey brown Pantone 426 C		
<b>IP</b>	IP55 <sup>2</sup>		

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

<sup>2</sup> When integrated in-wall or in-ceiling with screen and connector sealing plate.

## SB10r dimensions



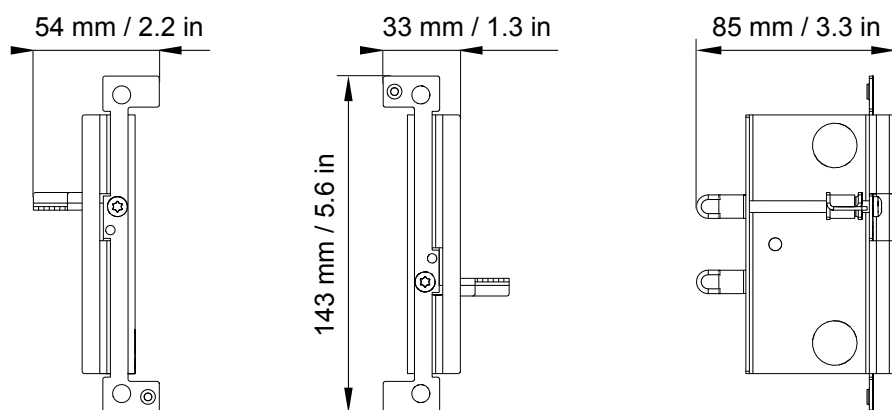


## X4r-inCW specifications

---

<b>Description</b>	In-wall or in-ceiling mounting accessory for X4r
<b>Weight (net)</b>	0.34 kg / 0.75 lb
<b>Material</b>	high grade steel with anti-corrosion coating

### X4r-inCW dimensions

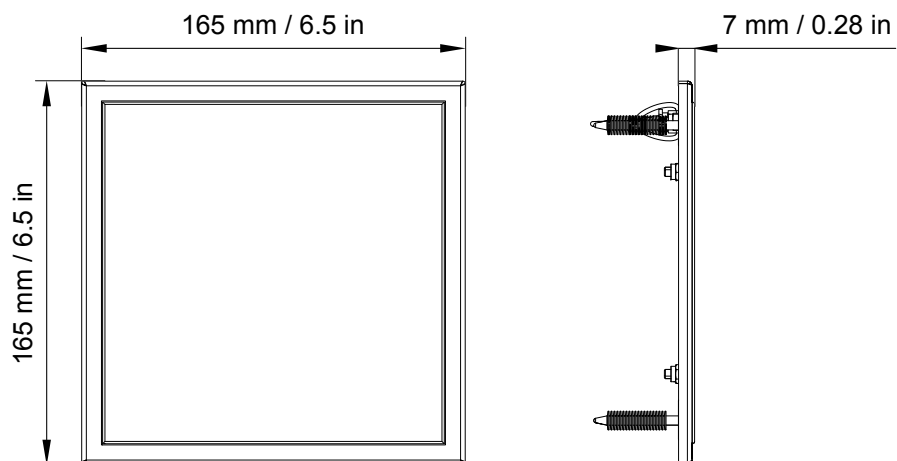


## X4r-Screen specifications

---

<b>Description</b>	Wall or ceiling screen for X4r
<b>Weight (net)</b>	0.3 kg / 0.66 lb
<b>Material</b>	steel with anti-corrosion coating acoustically neutral 3D fabric

### X4r-Screen dimensions

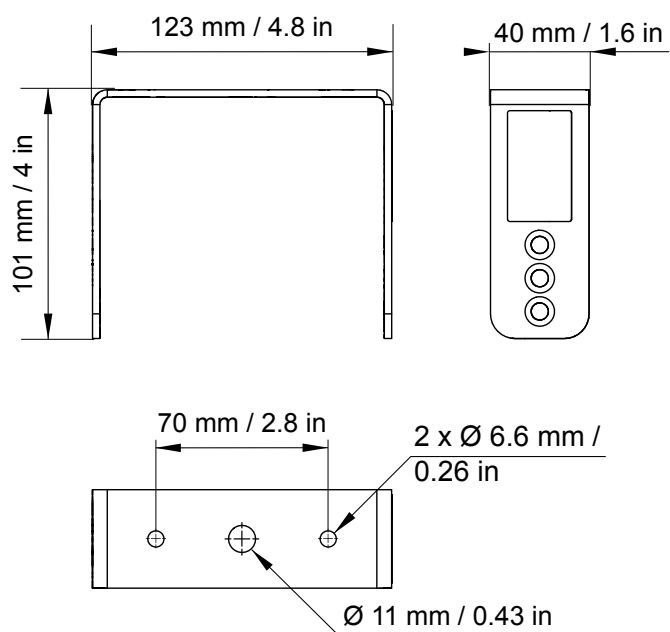


## X-U4i specifications

---

<b>Description</b>	Adjustable U-bracket for X4i
<b>Weight (net)</b>	0.3 kg / 0.7 lb
<b>Material</b>	steel with anti-corrosion coating

### X-U4i dimensions

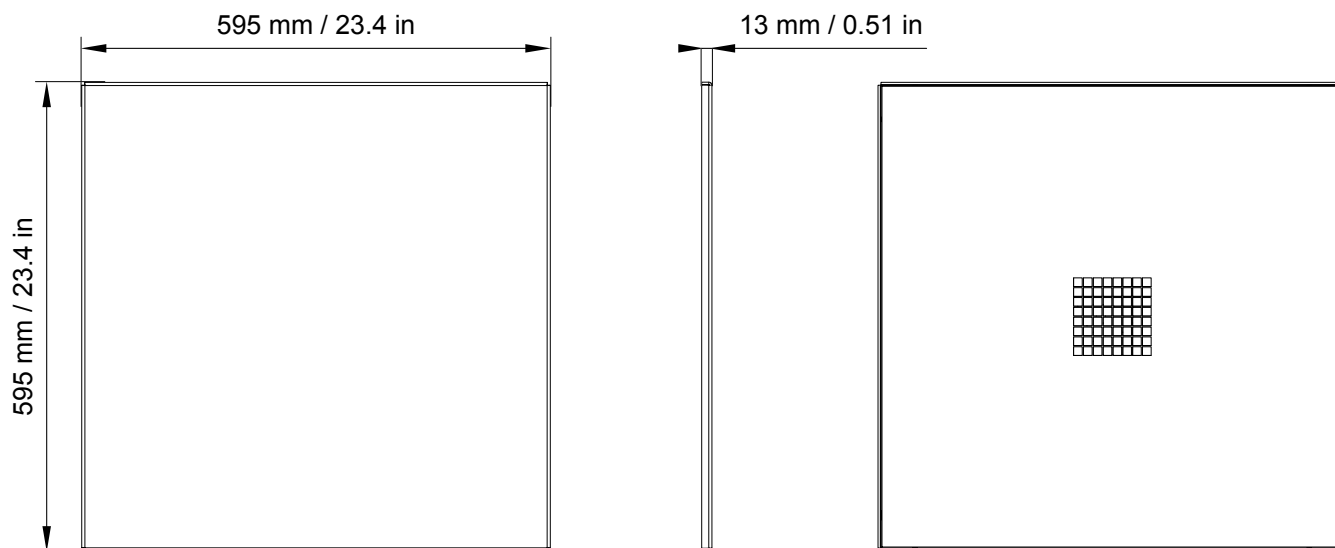


## X4r-Tilescreen specifications

---

<b>Description</b>	Tile ceiling screen for X4r
<b>Weight (net)</b>	3.1 kg / 6.8 lb
<b>Material</b>	steel with anti-corrosion coating acoustically neutral 3D fabric

### X4r-Tilescreen dimensions



## 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 <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

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:

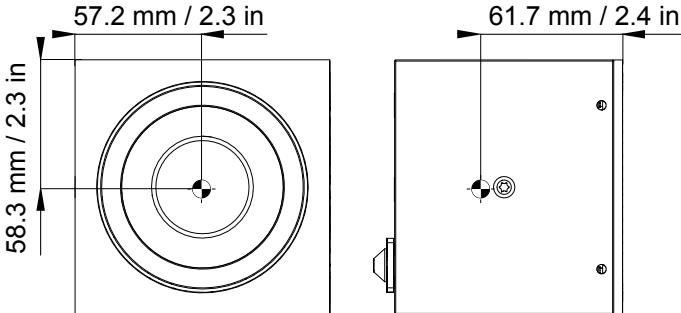
<https://www.l-acoustics.com/installation-tools/>

# Specifications for custom rigging

## Dimensions

Refer to [X4r dimensions](#) (p.38).

## Center of gravity




## Weight

X4r: 0.94 kg / 2.1 lb

## Threaded inserts and screws

### Use only rigging inserts to implement a custom rigging

Inserts marked with  can be used for rigging.

Inserts marked with  must not be used for custom rigging (reserved for screen mounting, maintenance purposes, L-Acoustics accessories, etc.).


### Grade of screws must be defined by a qualified person

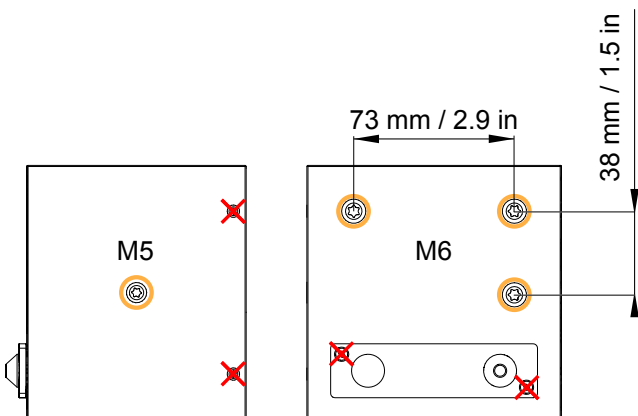
Take into consideration the number of inserts used, weight and center of gravity of enclosure(s), and resulting action forces.

Prevent screws from loosening (threadlocker, spring washer...).

X4r has **2 threaded M5 inserts** and **3 threaded M6 inserts** available for rigging.

	M5 inserts	M6 inserts
Ultimate Tensile Strength	280 N	
Ultimate Shear Strength	280 N	
Recommended screw length *	min. 15 mm / 0.6 in	min. 20 mm / 0.8 in
Recommended torque	5 N.m	

 \* Recommended screw length for a metal sheet with a thickness of 3 mm / 0.1 in. Adapt the length to the custom rigging design.





**L-Acoustics**

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**  
GROUP