



User's Manual

LX series

LX-218C / LX-218C-R



Antes de utilizar el equipo, lea la sección "Precauciones de seguridad" de este manual. Conserve este manual para futuras consultas.

Before operating the device, please read the "Safety precautions" section of this manual. Retain this manual for future reference.

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Cajas acústicas pasivas / Passive loudspeaker enclosures

Conserve y lea todas estas instrucciones.

Siga todas las advertencias.

El signo de exclamación dentro de un triángulo indica la existencia de componentes internos cuyo reemplazo puede afectar a la seguridad.



Keep these instructions.

Heed all warnings. Follow all instructions.

The exclamation point inside an equilateral triangle indicates the existence of internal components whose substitution may affect safety.

El doble cuadrado indica equipo de Clase II.



The double square indicates Class II device.

Las especificaciones se encuentran en la etiqueta de la parte posterior del producto.

The specifications can be found on the rear label of the product.

No exponga este equipo a la lluvia o humedad. No exponga el equipo a salpicaduras ni coloque sobre él objetos que contengan líquidos, tales como vasos y botellas. Equipo IP-20.

Do not expose this device to rain or moisture. Do not place any objects containing liquids, such as bottles or glasses, on the top of the unit. Do not splash liquids on the unit. IP-20 equipment.

Este símbolo indica que el presente producto no puede ser tratado como residuo doméstico normal, sino que debe entregarse en el correspondiente punto de recogida de equipos eléctricos y electrónicos.



This symbol on the product indicates that this product should not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

Equipo diseñado para funcionar entre -25°C y 45°C. La humedad relativa máxima del 95%.

Working temperature ranges from -25°C to 45°C. The maximum relative humidity of 95%.

El cableado exterior conectado al equipo requiere de su instalación por una persona instruida o el uso de cables flexibles ya preparados.

The outer wiring connected to the device requires installation by an instructed person or the use of a flexible cable already prepared.

El equipo cuenta con dos conectores de entrada en paralelo para facilitar la conexión de varias cajas en paralelo.

Note that the two Speakon input connectors are wired in parallel to provide easy parallel connection of several enclosures.

No emplace altavoces en proximidad a equipos sensibles a campos magnéticos, tales como monitores de televisión o material magnético de almacenamiento de datos.



Do not place loudspeakers in proximity to devices sensitive to magnetic fields such as television monitors or data storage magnetic material.

El colgado del equipo sólo debe realizarse utilizando los herrajes de colgado recomendados y por personal cualificado. No cuelgue la caja de las asas.

The appliance should be flown only from the rigging points and by qualified personnel. Do not suspend the box from the handles.

No existen partes ajustables por el usuario en el interior de este equipo. Cualquier operación de mantenimiento o reparación debe ser realizada por personal cualificado. Es necesario el servicio técnico cuando el aparato se haya dañado de alguna forma, tal como que haya caído líquido o algún objeto en el interior del aparato, haya sido expuesto a lluvia o humedad, no funcione correctamente o haya recibido un golpe.

No user serviceable parts inside. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.

Limpie con un paño seco. No use limpiadores con disolventes.

Clean only with a dry cloth. Do not use any solvent based cleaners.

GARANTÍA

Todos nuestros productos están garantizados por un periodo de 24 meses desde la fecha de compra.

Las garantías sólo serán válidas si son por un defecto de fabricación y en ningún caso por un uso incorrecto del producto.

Las reparaciones en garantía pueden ser realizadas, exclusivamente, por el fabricante o el servicio de asistencia técnica autorizado.

Otros cargos como portes y seguros, son a cargo del comprador en todos los casos.

Para solicitar reparación en garantía es imprescindible que el producto no haya sido previamente manipulado e incluir una fotocopia de la factura de compra.

WARRANTY

All our products are warrantied against any manufacturing defect for a period of 2 years from date of purchase.

The warranty excludes damage from incorrect use of the product.

All warranty repairs must be exclusively undertaken by the factory or any of its authorised service centers.

To claim a warranty repair, do not open or intend to repair the product.

Return the damaged unit, at shippers risk and freight prepaid, to the nearest service center with a copy of the purchase invoice.



DECLARACIÓN DE CONFORMIDAD DECLARATION OF CONFORMITY

DAS Audio Group, S.L.

C/ Islas Baleares, 24 - 46988 - Pol. Fuente del Jarro - Valencia. España
(Spain).

Declara que *LX-218C* y *LX-218C-R*:

Declares that *LX-218C* and *LX-218C-R*:

Cumple con los objetivos esenciales de las Directivas:

Abide by essential objectives relating Directives:

- De Baja Tensión / Low Voltage 2014/35/UE
- RoHS 2011/65/UE
- RAEE (WEEE) 2012/19/UE

Y es conforme a las siguientes Normas Armonizadas Europeas:

In accordance with Harmonized European Norms:

- EN 60065:2014.- Audio, video and similar electronic apparatus. Safety requirements.
- EN 50581:2012.- Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

INTRODUCTION

The *LX series* subwoofers from DAS Audio are systems which use twin *LXN* long excursion loudspeakers incorporating light weight neodymium magnet assemblies and the efficient TAF (Total Air Flow) heat evacuation scheme. The units are ideal for applications requiring high level sub-bass extension in mid to large-scale outdoor/indoor events in arenas, stadiums or theaters. The *LX* enclosures are constructed of 18 mm birch plywood finished with the durable Iso-Flex black paint. The rectangular shape facilitates stacking and use in cardioid configurations and presents a bass-reflex configuration.

Two versions are available for this passive model, without rigging hardware or “R” version. The “R” version is equipped with a captive rigging system that is compatible with DAS Aero line array system accessories. So, the models will be *LX-218C* and *LX-218C-R*.

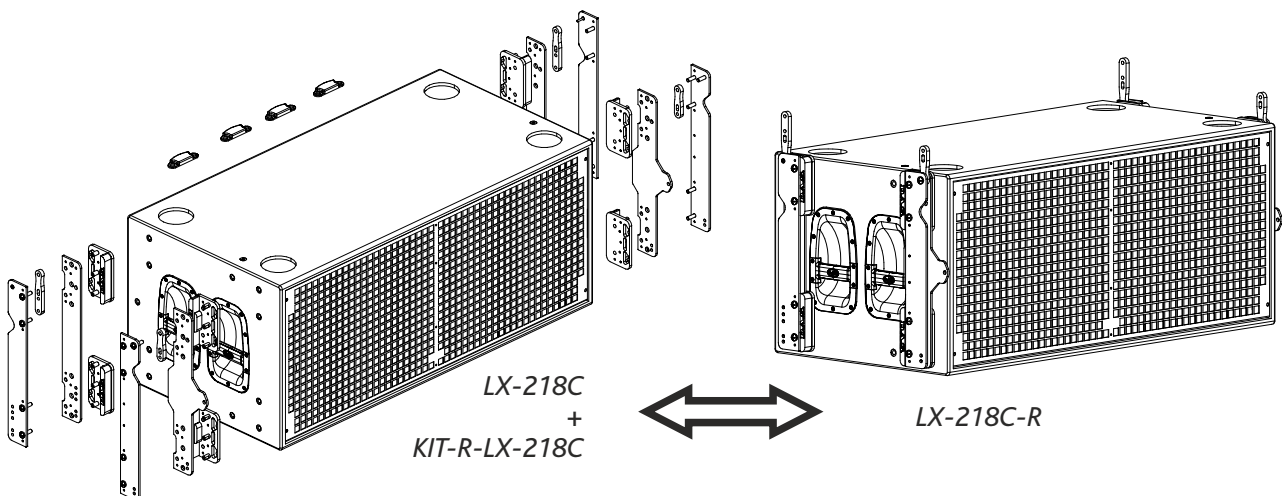
To make transporting the systems easier, the *LX-218C* and *LX-218C-R* systems have an optional dolly platform, the *PL-218CS*. The maximum number of units that can be stacked on a dolly is three.

The *LX-218C-R* is equipped with a front located dolly panel, the *PL-LX218C*, which is attached by way of the rigging hardware.

Other interesting accessories have been compiled in the Summary table of accessories (chart below). In the RIGGING SECTION, more detail is provided for the accessories mentioned below.

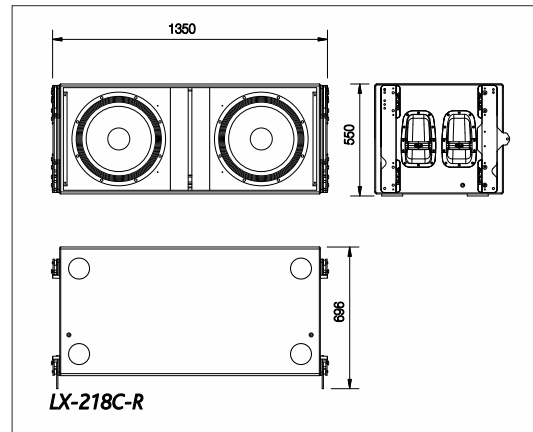
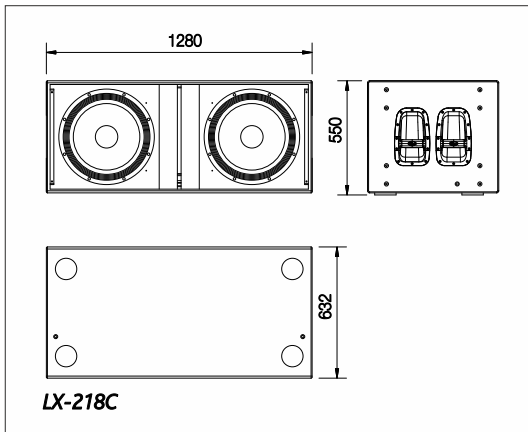
	LX-218C / LX-218C-R
Rigging (only 'R' version)	AX-AE50
Rigging Kit to convert to 'R' version	KIT-R-LX218C
To transport	KIT-W100 PL-218CS PL-LX218C (only 'R' version)
To combine with other systems (only 'R' version)	PICKUP-AX-AE50 AX-COMBO12

Summary table of accessories



Explanatory images of the 'R' version

LINE DRAWINGS



ALL DIMENSIONS IN MILLIMETERS

SPECIFICATIONS

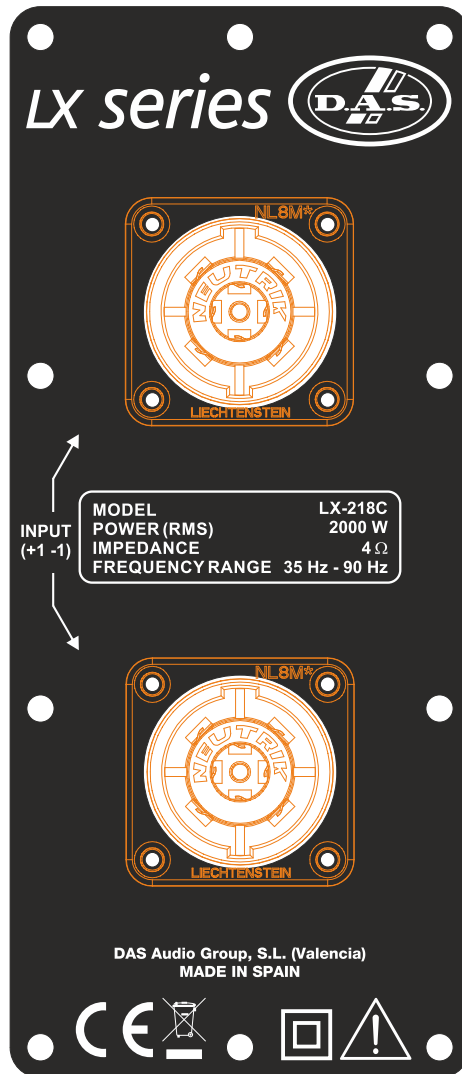
MODEL	LX-218C / LX-218C-R
Frequency Range (-10 dB)	28 Hz - 100 Hz
RMS (Average) Power Handling ⁽¹⁾	2000 W
On-Axis Sensitivity 1 W / 1 m	103 dB SPL
Rated Maximum Peak SPL at 1 m ⁽²⁾	142 dB
Transducers/Replacement Parts	2 x 18LXN/GM-18LX
Nominal Impedance	4 ohms
Recommended Amplifier Power	2 x 2400 W @ 4 ohms (2 units LX-218C)
Enclosure Geometry	Rectangular
Enclosure Material	Birch Plywood
Color/Finish	Black Paint
Rigging System	Ground Stackable Integrated in box design (R)
Connectors	2 X NL8 wired ± 1
Dimensions (H x W x D)	55x128x63.2 cm / 55x135x69.6 cm 22x51x24.9 in / 22x54x27.4 in
Weight	78.5 kg / 176.1 lb (LX-218C) 94.5 kg / 207.9 lb (LX-218CR)
Accessories	AX-AE50 Rigging Grid (R) AX-COMBO12 Rigging Adapter (R) KIT-R-LX218C Rigging Hardware Kit KIT-W100 Caster Kit PICKU-AX-AE50 PL-LX218C Dolly Panel (R included) PL-218CS Flat Bed Dolly

Notes: 1. Based on a 2 hour test continuously applying 6 dB crest factor pink noise (IEC shaped).
2. Maximum calculated Peak SPL based on sensitivity and RMS power handling.

INSTALLATION

Connectors

The **DAS LX-218C / LX-218C-R** are designed to facilitate the connection for installations, they have been provided with connectors, NL8 type, standard for professional audio equipment. These connectors are connected in parallel, so that we can carry the amplified audio signal up to a device and we can forward it to the next box, very easily. The polarity of the connectors and other important information for proper connection is indicated on the silkscreen.



Detail of the connectors and the silkscreen of *LX-218C* and *LX-218-R*.

Rigging system

This manual contains needed information for flying DAS Audio line array systems, description of the elements and safety precautions.

To perform any operations related to flying the system, read the present document first, and act on the warnings and advice given.

The goal is to allow the user to become familiar with the mechanical elements required to fly the acoustic system, as well as the safety measures to be taken during set-up and teardown.

Only experienced installers with adequate knowledge of the equipment and local safety regulations should fly speaker boxes.

It is the user's responsibility to ensure that the systems to be flown (including flying accessories) comply with state and local regulations.

The working load limits in this manual are the results of tests by independent laboratories. It is the user's responsibility to stay within safe limits. It is the user's responsibility to follow and comply with safety factors, resistance values, periodical supervisions and warnings given in this manual.

Product improvement by means of research and development is on going at DAS Specifications are subject to change without notice.

It's common practice to apply 5:1 safety factors for enclosures and static elements.

For slings and elements exposed to material fatigue due to friction and load variation the following ratios must be met; 5:1 for steel cable slings, 4:1 for steel chain slings and 7:1 polyester slings.

Thus, an element with a breaking load limit of 1000 kg may be statically loaded with 200 kg (5:1 safety factor) and dynamically loaded with 142 Kg (7:1 safety factor).

For the working load of each lift motor must be used a safety factor of 10:1.

When flying a system, the working load must be lower than the resistance of each individual flying point in the enclosure, as well as each box.

Hanging hardware should be regularly inspected and suspect units replaced if in doubt.

This is important to avoid injury and absolutely no risks should be taken in this respect. It is highly recommended that you implement an inspection and maintenance program on flying elements, including reports to be filled out by the personnel that will carry out the inspections.

Local regulations may exist that, in case of accident, may require you to present evidence of inspection reports and corrective actions after defects were found.

Absolutely no risks should be taken with regards to public safety. When flying enclosures from ceiling support structures, extreme care should be taken to assure the load bearing capabilities of the structures so that the installation is absolutely safe.

Do not fly enclosures from unsafe structures.

Consult a certified professional if needed.

All flying accessories that are not supplied by D.A.S. Audio are the user's responsibility.

Use at your own risk.

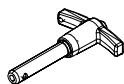
NOTE: DAS Audio recommends that you meet the essential objectives set out on Directive 2009/104/EC concerning the minimum safety and health requirements for the use of work equipment at work by workers. Specifically, for rigging systems, see the Annex I, point 3.2, and the Annex II, point 3, about lifting loads.

Accessories and rigging hardware

DAS Audio *LX-218C-R*, include two rigging structures on each side of the box. Manufactured from zinc plated steel they are painted black and are affixed to an internal plate with special crop resistant screws. Two special stainless steel cam links are assembled to each of the structures, allow for stacking or flying of boxes. On each cabinet are included six quick release pins.

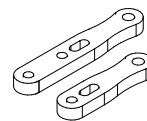
The front rigging guide is used to provide a rigid coupling of a unit and the box above. Whether stacked or flown, the rear guide is used to determine the splay angle between units depending on the hole in which the quick release safety pin is inserted.

Note: With the *LX-218C* only stacking is possible because is not equipped with rigging hardware.

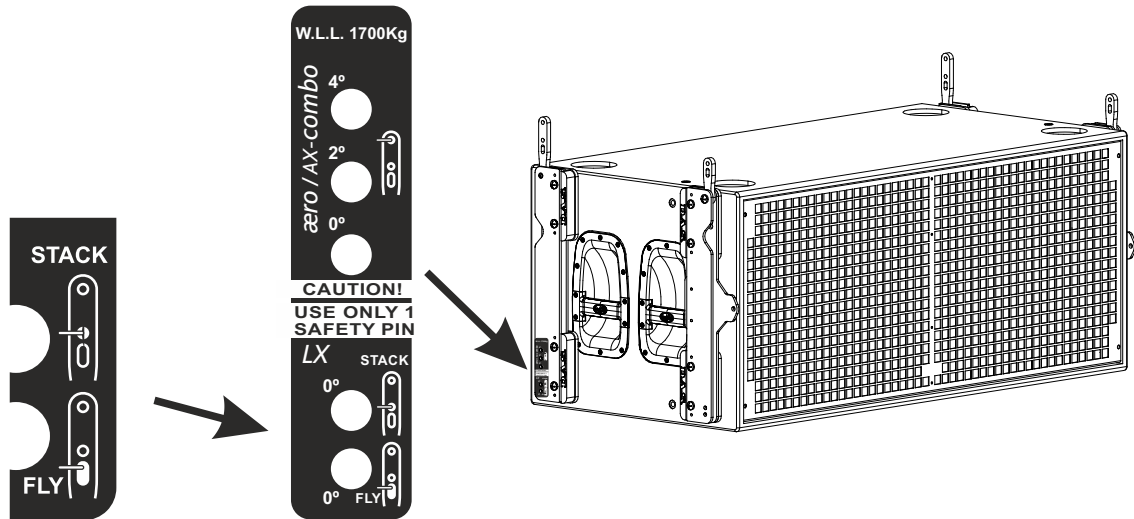


Ø=8mm ; L=35mm

Pasadores de seguridad
Quick release pin



Guías de LX series
LX series Guides



Etiqueta de los herrajes de LX-218C-R
LX-218C-R rigging hardware label

To facilitate the correct positioning of the guides in the corresponding angle hole of the upper unit (using the quick release safety pins), a sticker indicates the splay angle obtained whether stacked or flown. To secure the guides in the angle holes, 8 mm high resistance quick release safety pins are used (6 pins per unit).

To fly the systems and define the splay angles, the pin should be inserted in the slot of the rear guide. To stack the systems, the pin should be inserted in the hole of each guide.

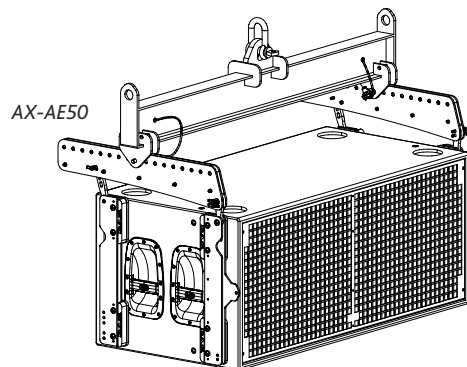
In most cases, to join one box to another the procedure described above will suffice. We will proceed to describe other accessories available for safe and simple stacking, transport and flying of the systems.

AX-AERO50

This accessory can be used with aero-50, also. This rigging structure is comprised of a steel central bar and two detachable side panels that are fixed using high resistance quick release safety pins.

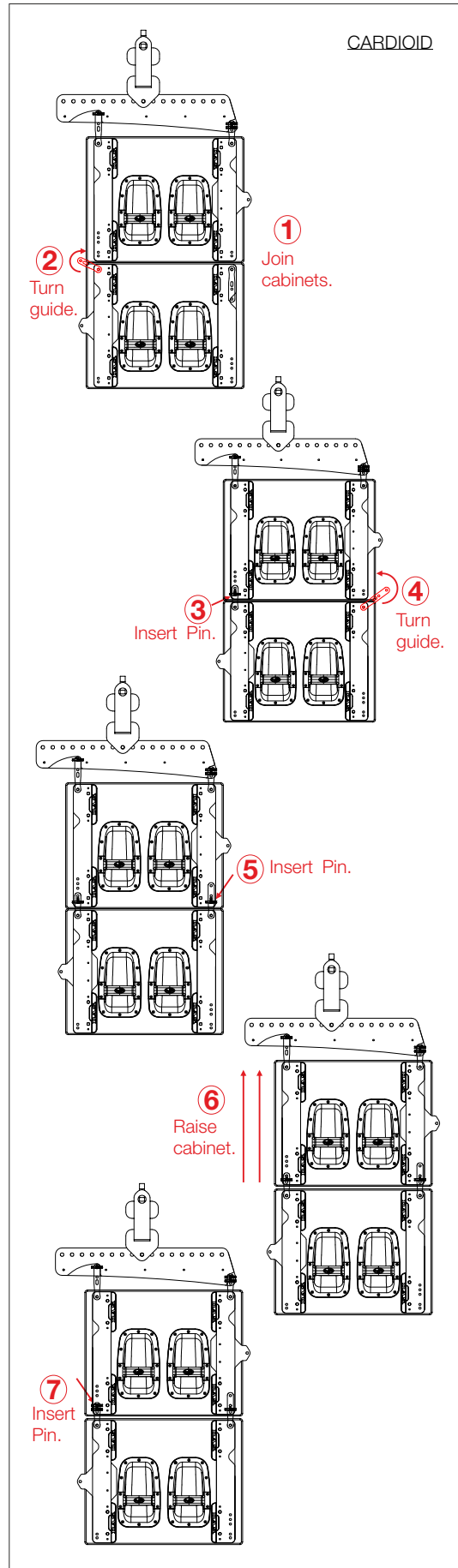
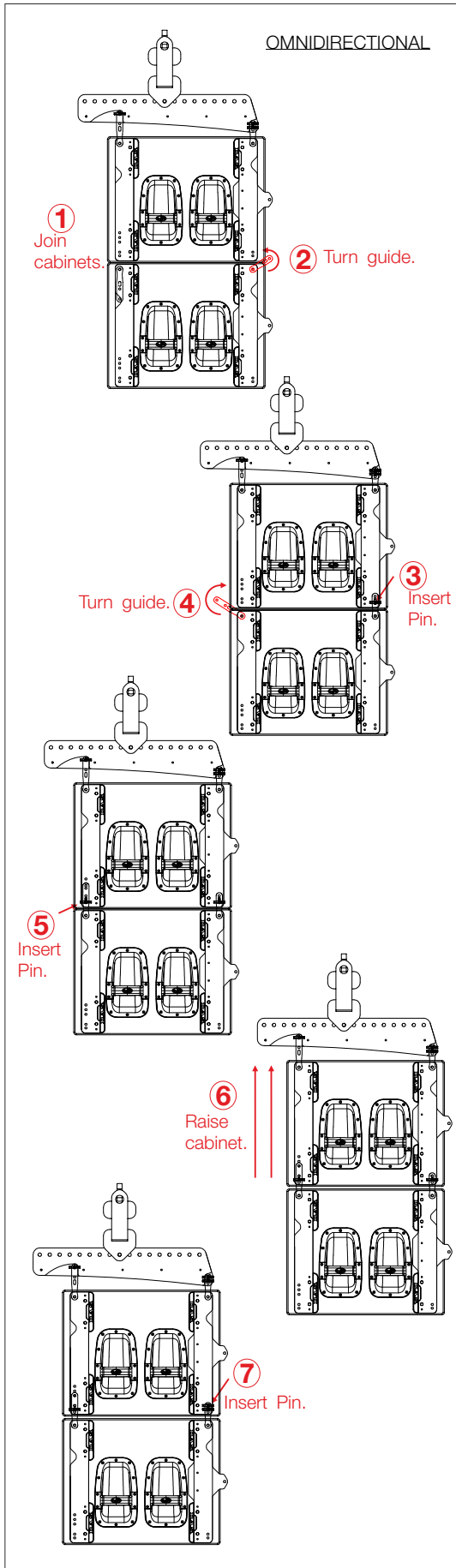
They have a centrally located reinforcement which is used to attach the lifting cables. Depending on the position of the safety pins, the array will achieve a different angle of inclination (see the positions marked on the side panels).

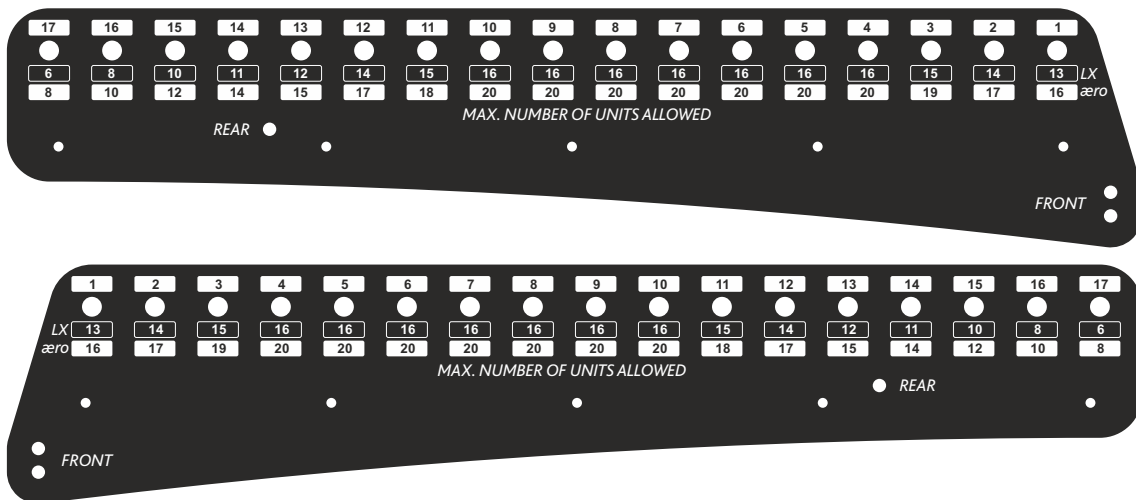
The first box will be attached to this structure using 6 safety pins according to the procedure described on the preceding pages. Once this is accomplished, the structure can be left with a vertical orientation taking into account the position of the safety pin. With the use of the EASE Focus simulation program, determine what position should be used to achieve the desired array inclination.



Peso: 51 Kg
Weight: 112.2 lbs
Dimensiones (Al x An x P): 430 x 1440 x 721 (mm)
Dimensions (H x W x D): 16.9 x 56.7 x 28.4 (in)
W.L.L.: 1700 kgf

We will show the cardioid configurations separately in order to appreciate the differences and similarities.

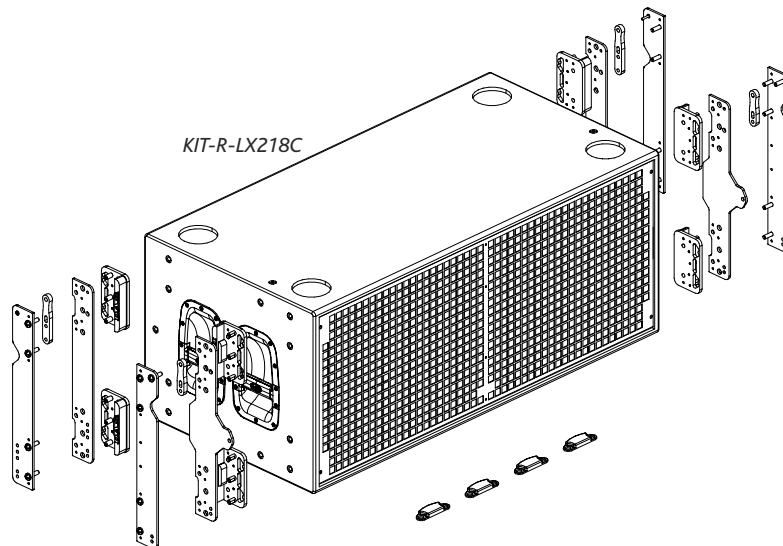




AX-AE50 silkscreen

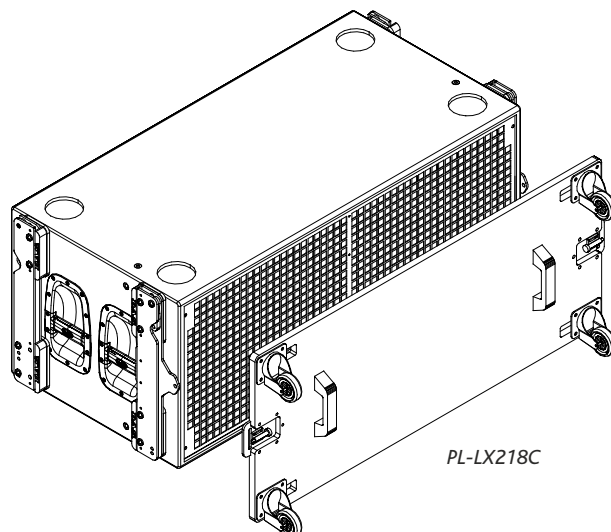
Rigging kit "R"

Kits are available to transform "stackable only" cabinets to flyable ones. For example, the LX-218C can be upgraded to an LX-218C-R by using the KIT-R-LX218C.



Front located dolly platforms PL-LX218C

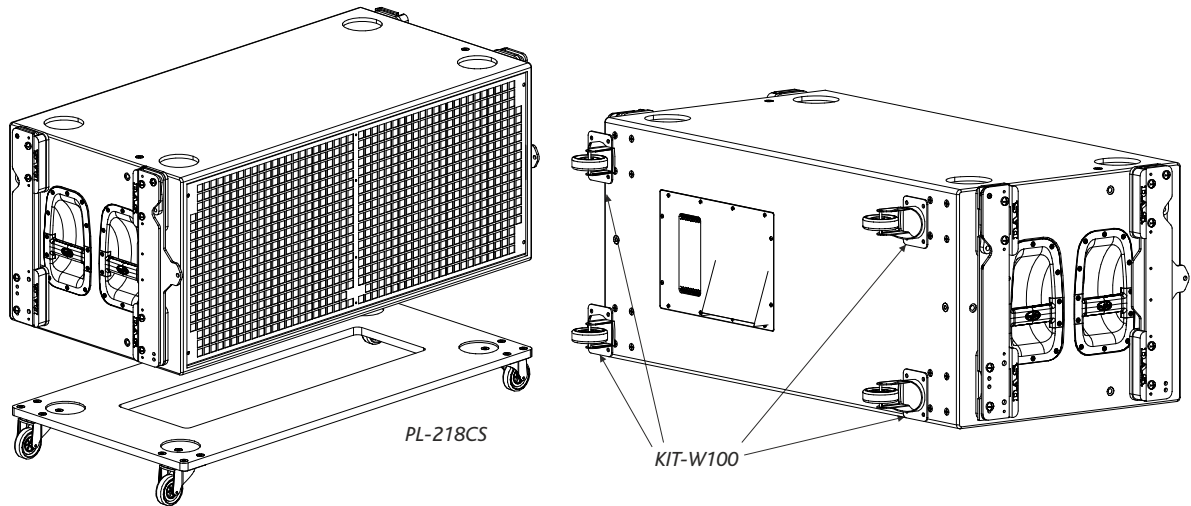
The front located dolly platforms are accessories available for the LX-218C. "R" versions include the front dolly. These platform dollies are used for the transport of individual units and to facilitate rigging. The platforms are attached to the front rigging hardware of each unit by way of captive pins located on the platform.



KIT-W100 & platform PL-218CS.

Transport accessories include the *KIT-W100* caster kit and *PL-218CS* dolly panel for the *LX-218C* and *LX-218C-R*.

The caster kit will not impede cabinet stacking as the wheels are attached to the rear panel of the cabinet. As a safety precaution when maneuvering cabinets, the dolly panels should not exceed a maximum of three (3) units.



ANNEX : Table for cable selection

This table shows the power loss in % and dB, for different cable lengths and sections shown. It is recommended that the losses do not exceed 30% in any case (around 3dB). Although it is recommended minimizing losses, the maximum acceptable losses are usually around 15% (approximately 1.4dB).

Longitud / Length		Calibre	Area	R	Perdida de potencia / Power Loss			
m	ft	AWG	mm2	Ohms	% @ 8 ohms	% @ 4 ohms	dB @ 8 ohms	dB @ 4 ohms
5	16,4	18	0,8	0,2250	2,74	5,33	-0,241	-0,475
		16	1,31	0,1374	1,69	3,32	-0,148	-0,293
		14	2,1	0,0857	1,06	2,10	-0,093	-0,184
		12	3,3	0,0545	0,68	1,35	-0,059	-0,118
		10	5,3	0,0340	0,42	0,84	-0,037	-0,073
		8	8,35	0,0216	0,27	0,54	-0,023	-0,047
10	33	18	0,8	0,4500	5,33	10,11	-0,475	-0,926
		16	1,31	0,2748	3,32	6,43	-0,293	-0,577
		14	2,1	0,1714	2,10	4,11	-0,184	-0,364
		12	3,3	0,1091	1,35	2,65	-0,118	-0,234
		10	5,3	0,0679	0,84	1,67	-0,073	-0,146
		8	8,35	0,0431	0,54	1,07	-0,047	-0,093
15	49	18	0,8	0,6750	7,78	14,44	-0,704	-1,354
		16	1,31	0,4122	4,90	9,34	-0,436	-0,852
		14	2,1	0,2571	3,11	6,04	-0,275	-0,541
		12	3,3	0,1636	2,00	3,93	-0,176	-0,348
		10	5,3	0,1019	1,26	2,48	-0,110	-0,218
		8	8,35	0,0647	0,80	1,59	-0,070	-0,139
25	82	18	0,8	1,1250	12,33	21,95	-1,143	-2,153
		16	1,31	0,6870	7,91	14,66	-0,716	-1,377
		14	2,1	0,4286	5,08	9,68	-0,453	-0,884
		12	3,3	0,2727	3,30	6,38	-0,291	-0,573
		10	5,3	0,1698	2,08	4,07	-0,182	-0,361
		8	8,35	0,1078	1,33	2,62	-0,116	-0,231
50	164	18	0,8	2,2500	21,95	36,00	-2,153	-3,876
		16	1,31	1,3740	14,66	25,57	-1,377	-2,565
		14	2,1	0,8571	9,68	17,65	-0,884	-1,686
		12	3,3	0,5455	6,38	12,00	-0,573	-1,110
		10	5,3	0,3396	4,07	7,83	-0,361	-0,708
		8	8,35	0,2156	2,62	5,11	-0,231	-0,456
75	246	18	0,8	3,3750	29,67	45,76	-3,057	-5,314
		16	1,31	2,0611	20,49	34,01	-1,991	-3,610
		14	2,1	1,2857	13,85	24,32	-1,295	-2,421
		12	3,3	0,8182	9,28	16,98	-0,846	-1,616
		10	5,3	0,5094	5,99	11,30	-0,536	-1,041
		8	8,35	0,3234	3,88	7,48	-0,344	-0,675
100	328	18	0,8	4,5000	36,00	52,94	-3,876	-6,547
		16	1,31	2,7481	25,57	40,72	-2,565	-4,542
		14	2,1	1,7143	17,65	30,00	-1,686	-3,098
		12	3,3	1,0909	12,00	21,43	-1,110	-2,095
		10	5,3	0,6792	7,83	14,52	-0,708	-1,362
		8	8,35	0,4311	5,11	9,73	-0,456	-0,889



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