



Wharfedale Pro LX & LX-E Series User Manual

LX & LX-E SERIES MULTIPURPOSE LOUDSPEAKER SYSTEMS

LX-12, LX12M, LX15, LX15M, LX-215 full range multipurpose loudspeaker systems

LX-15B, LX-18B, LX-18MB, LX218B subwoofers

LX-12E, LX12ME, LX15E, LX15ME, LX-215E full range multipurpose loudspeaker systems

LX-15BE, LX-18BE, LX-18MBE, LX218BE subwoofers



Declaration of Conformity

The following apparatus is manufactured in the China by Wharfedale International Limited of IAG House, Sovereign Court, Ermine Business Park, Huntingdon, Cambs, PE29 6XU and conforms to the protection requirements of the European Electromagnetic Compatibility Standards and Directives relevant to Domestic Electrical Equipment. The apparatus is designed and constructed such that electromagnetic disturbances generated do not exceed levels allowing radio and telecommunications equipment and other apparatus to operate as intended, and, the apparatus has an adequate level of intrinsic immunity to electromagnetic disturbance to enable operation as specified and intended.

Details of the Apparatus: Wharfedale Pro Loudspeaker

Model Number: LX12,LX12M, LX15, LX15M, LX215, LX15B, LX18B, LX18MB, LX218B, LX12E,LX12ME, LX15E, LX15ME, LX215E, LX15BE, LX18BE, LX18MBE, LX218BE

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Welcome

Thank-you for choosing a Wharfedale Pro Loudspeaker for your application. Since 1932, Wharfedale Loudspeakers have been at the forefront of loudspeaker technology. Our innovative designs combined with over seventy years of manufacturing audio systems make Wharfedale Pro products second to none.

Every component of every loudspeaker is designed and made in our own factories. We control all the variables to make sure every finished product complies with our standard of excellence.

We put in a lifetime of experience – you get out a lifetime of performance.

The LX Series

The LX(E) series from Wharfedale Professional is a range of high powered, high performance trapezoidal enclosures capable of extremely high sound pressure levels and exceptional sonic quality, with wide dynamic range and bandwidth. Exceptional features of the series include the large elliptical waveguide which provides superior control over HF coverage, with reduced distortion, greater output and smoother frequency response; the use of cast frame, large voice coil woofers for sustained output capability and minimal power compression under extended high power use. The LX Series is also available as an 'E' version, the difference between the LX and LX-E are as follows:

LX : Enclosure is built from a combination of particle and MDF with a black carpet finish

LX - E: Enclosure is built from plywood with a black painted finish. LX12-E and LX15-E feature 12 x M10 rigging points

LX218-E: Four castors for easy transportation (LX218 has no castors)

LX15B and LX18B feature crossover and high pass output for full range enclosures.

Features:

- Proprietary designed, high efficiency, high power Wharfedale Pro full-range drive units
- 50mm Titanium compression driver
- Elliptical Waveguide Technology
- Sophisticated crossover design enables smooth power and frequency response control through crossover region.
- Speakon™ connectors
- Protective full steel 1.5mm grille
- High power output and low distortion
- Trapezoidal array design
- Pole mount socket (LX12, LX15, LX15B, LX18B, LX18MB) for portable sound system use
- PRO-TECH™ Integral High Frequency Driver Overload protection*

* PRO-TECH™: The LX & LX-E series speakers are equipped with The PRO-TECH™ System - a dynamic tweeter protection circuit, composed of an accurate and sensitive protection lamp. When high signal levels are present that may pose a dangerous overload for the tweeter coil the protection circuit will activate immediately to limit the power sent to the transducer.

Unpacking

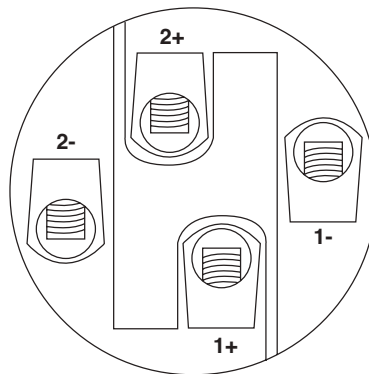
All Wharfedale products are fully tested and inspected before leaving the factory. After unpacking your loudspeaker please inspect it for any physical damage. In the unlikely event of damage caused in transit please contact your Wharfedale dealer immediately so that a written claim for damages can be made. Please retain the shipping carton and all packing materials in case the unit needs to be returned.

Cables and connections

All Wharfedale LX loudspeakers are fitted with a pair of 4-pole Neutrik Speakon™ Connectors. The two connectors on each loudspeaker are wired in parallel allowing two cabinets to be wired together from a single amplifier. When choosing speaker cable a professional grade of cable with an overall round sheath will be harder wearing and easier to handle than hi-fi figure-of-eight cables. Cables should always be coiled freely and not coiled over the hand and elbow which forces the conductors to twist within the outer sheath making the cable difficult to handle. Speaker leads should be made with a minimum of 2.5mm csa (12 gauge) cable. However for cable runs over 50m a minimum of 4mm (10 gauge) cable should be used.

Speakon Pin Assignment

- 1+ Full Range +
- 1- Full Range -
- 2+ No Connection
- 2- No Connection



Amplification & Power Handling

Wharfedale Pro loudspeakers should be driven by professional quality amplifiers capable of providing adequate headroom when operating at high levels. A low powered amplifier with insufficient drive capability will not allow the full performance of the loudspeaker to be realised. A low powered amplifier is also more likely to be driven into clip and damage to your loudspeakers.

Amplifier clipping commonly occurs when amplifiers are used that are too small for the loudspeakers. If these amplifiers are driven beyond their maximum recommended limit the output from the amplifier is clipped. If a clipped signal is fed to a loudspeaker, it will not only detract from the sound quality, but can cause permanent damage. [Clipped waveforms tend to heat up the speaker voice coil while driving it out of the magnetic gap resulting in the loudspeaker overheating and failing]. Some amplifiers have a soft clip function which helps to round off the edges of clipped waveforms. However, an external

limiter, or crossover with limiting built in, will stop amplifier clipping and ensure long life from your enclosures. [Note: Limiters must be adjusted to suit amplifier sensitivity. Refer to limiter or crossover manufacturer's literature.]

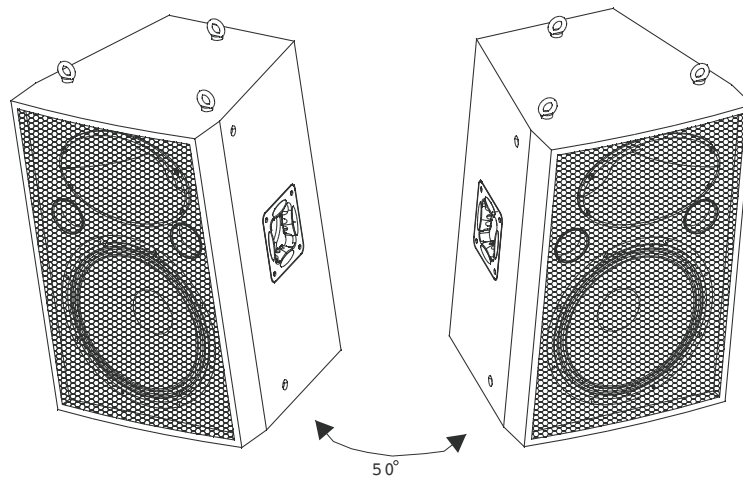
Equalisation

Wharfedale LX(E) loudspeakers are designed to have a flat frequency response that does not require any equalisation to compensate for design inadequacies. Only need small levels of equalisation may be needed to compensate for difficult acoustic environments. Over equalisation can reduce system headroom, and introduce phase distortion resulting in more problems than it cures. If equalisation is required then it should be applied gently and smoothly using a professional quality graphic or parametric equaliser.

Arraying - LX (E)

When building arrays of loudspeaker cabinets it is important that the coverage patterns of each loudspeaker do not overlap each other. This creates an effect known as comb-filtering resulting in an uneven frequency response that varies as you move around the room. It is much better to point each loudspeaker to a different area of the room rather than to face them all the same way.

To create a seamless wide (130 degree) horizontal coverage using two LX -E cabinets they should be arranged as shown below with an angle of approximately 50 degrees between the cabinets. By placing the cabinets as shown minimal dispersion pattern overlap is achieved, guaranteeing an even frequency response throughout the listening area. It is also possible to stack the cabinets vertically where greater vertical dispersion is required.



Rigging

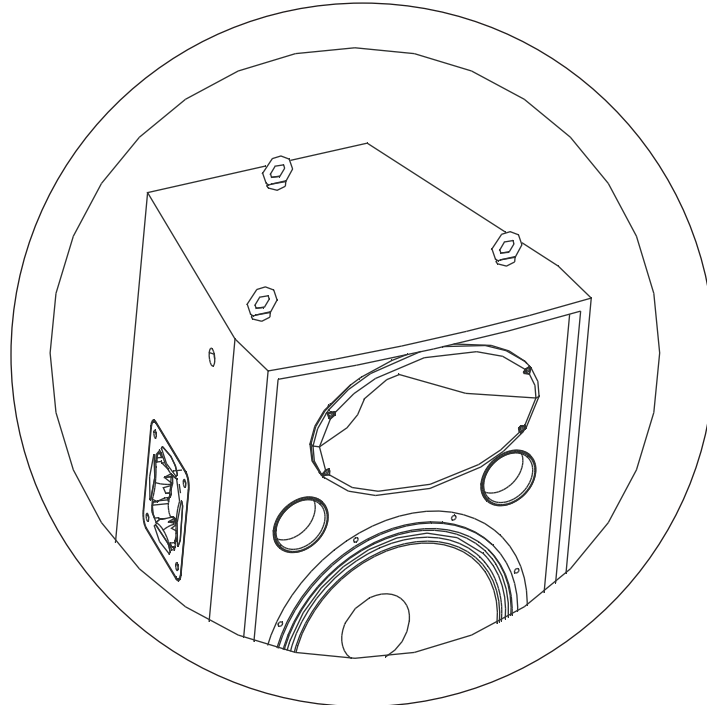
The installation of Wharfedale Pro loudspeakers should only be carried out by fully qualified installers, in accordance with all the required safety codes and standards that are applied at the place of installation.

Whenever a Wharfedale Pro loudspeaker is fixed in an installation the installer must ensure that the fixing method used is capable of safely and securely supporting the load. Secure fixings to the building structure are vital. Seek help from architects, structural engineers or other specialists if in any doubt.

As a minimum safety requirement the industry design standard of 5:1 is recommended. Therefore to suspend a 20kg loudspeaker the suspension method must be rated for at least 100kg, (5 times 20kg). This applies to static systems only. In addition to the primary fixing method a secondary "safety" fixing should also be employed should the first fixing fail.

WARNING: As the legal requirements for flying change from country to country, please consult your local safety standards office before installing any product. We also recommend that you thoroughly check any laws and bylaws prior to commencing work.

The Wharfedale LX12-E and LX-15E loudspeakers are fitted with M10 flying inserts. One of the simplest and most reliable methods of flying a loudspeaker cabinet is to use eyebolts screwed into these M10 inserts. Various types of eyebolts are available but for the purposes of suspending a loudspeaker cabinet on only a forged shoulder eyebolt with product traceability should be considered. Always use eyebolts according to the manufacturer's instructions.





LX(E) SERIES MULTI-PURPOSE LOUDSPEAKER SYSTEMS

Specifications

Model name	LX-12(E)	LX-12M(E)	LX-15(E)	LX-15M(E)
Features	2-way	2-way monitor	2-way	2-way monitor
Freq resp +/- 3 db	50-20kHz	60-20kHz	40-20kHz	55-20kHz
Sensitivity 1w@1m	97dB	97dB	98dB	98dB
Nom coverage Horiz.	90	90	90	90
Nom coverage Vert.	45	45	45	45
Power: watts	IEC noise 6db crst			
Continuous	400	350	400	350
Music	800	700	800	700
Peak	1600	1400	1600	1400
Max spl peak	129dB	128dB	130dB	129dB
Nom impedance	4 or 8 Ω	8 Ω	4 or 8 Ω	8 Ω
Carton dimensions mm				
H	677	460	753	535
W Front/Rear	461/297	654/654	535/349	722/722
D	432	468	488	511
Product dimensions mm				
H	630	618	700	685.5
W Front/Rear	396/269	426/426	470/319	500/500
D	396	450	450	493
Weight Net standard/E version	26.5/27.8KG	21.5/22.5KG	33.5/34.6KG	28.4/29.5KG
Weight Gross standard/E version	28.1/30.4KG	23.1/25.1KG	35.7/38.3KG	30.6/32.9KG
L F driver size - inches	12"	12"	15"	15"
HF SECTION:				
Coil size mm/inches	50/2"	50/2"	50/2"	50/2"
Exit size mm/inches	35/1.4"	35/1.4"	35/1.4"	35/1.4"
HF Diaphragm matl	titanium	titanium	titanium	titanium
HF Horn Type	elliptical	elliptical	elliptical	elliptical
HF Protect Type	bulb	bulb	bulb	bulb
CROSSOVER SECTION:				
Crossover Frequency	1.8k	1.8k	1.8k	1.8k
System Fb	50Hz	60Hz	40Hz	55Hz
Hi Pass Out	-	-	-	-
Finish LX	Black carpet	Black carpet	Black carpet	Black carpet
Finish LX-E	Black Paint	Black Paint	Black Paint	Black Paint
Construction material LX	MDF/Particle	MDF/Particle	MDF/Particle	MDF/Particle
Construction material LX-E	15mm plywood	15mm plywood	15mm plywood	15mm plywood
Handles qty	2	2	2	2
Rigging	12 x M10 flying inserts (LX-12E only)	-	12 x M10 flying inserts LX-15E only)	-
Grille	1.5mm full steel	1.5mm full steel	1.5mm full steel	1.5mm full steel
Stand adaptor	yes	no	yes	no
Input connector				
Speakon™ NL4 type	2	2	2	2
Castors	no	no	no	no



LX(E) SERIES MULTI-PURPOSE LOUDSPEAKER SYSTEMS

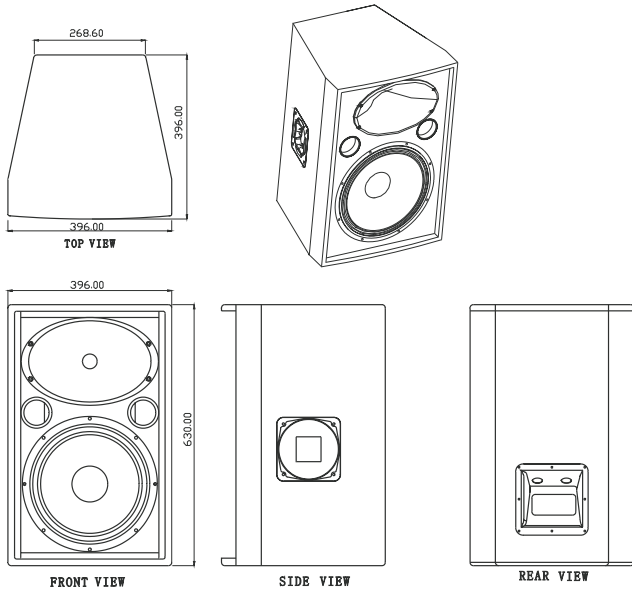
LX-215(E) Quasi 3-way	LX-15B(E) subwoofer	LX-18B(E) subwoofer	LX-18MB(E) subwoofer	LX218B(E) subwoofer
40-20kHz	42-170kHz 42-2kHz (LX-15BE)	38-150kHz 38-1.5kHz (LX-18BE)	38-1.5kHz	30-1.5kHz
101dB	98dB	99dB	99dB	100dB
-	-	-	-	-
-	-	-	-	-
700	700	800	800	1600
1400	1400	1600	1600	3200
2800	2800	3200	3200	6400
135dB	132dB	134dB	134dB	138dB
4 Ω	4 or 8Ω	4 or 8Ω	4 or 8Ω	4Ω
1193	668	768	600	594
570/385	535/302	635/365	581/581	1142/1142
500	590	690	686	686
1138	615	715	545	541
506/356	470/275	570/336	545/545	1041/1041
461	559	652	650	650
59.0/60.6KG	33.5/35.6KG	45.5/47.9KG	39.0/40.4KG	67.5/70.8KG
63.2/66.8KG	36.3/40.1KG	48.7/52.9KG	42.2/44.6KG	74.4/78.9KG
15"	15"	18"	18"	18"
50/2"	-	-	-	-
35/1.4"	-	-	-	-
titanium	-	-	-	-
elliptical	-	-	-	-
bulb	-	-	-	-
1.8k	170Hz(LX-15B only)	150Hz(LX18B only)	-	-
40Hz	42Hz	38Hz	38Hz	30Hz
-	120Hz(LX-15B only)	120Hz(LX-18B only)	-	-
Black carpet	Black carpet	Black carpet	Black carpet	Black carpet
Black Paint	Black Paint	Black Paint	Black Paint	Black Paint
MDF/Particle	MDF/Particle	MDF/Particle	MDF/Particle	MDF/Particle
18mm plywood	18mm plywood	18mm plywood	18mm plywood	18mm plywood
3	2	4	2	4
-	-	-	-	-
1.5mm full steel	1.5mm full steel	1.5mm full steel	1.5mm full steel	1.5mm full steel
no	yes	yes	yes	yes
2	2	2	2	2
2	no	no	no	4 (LX218E only)

Wharfedale Pro Limited Warranty*

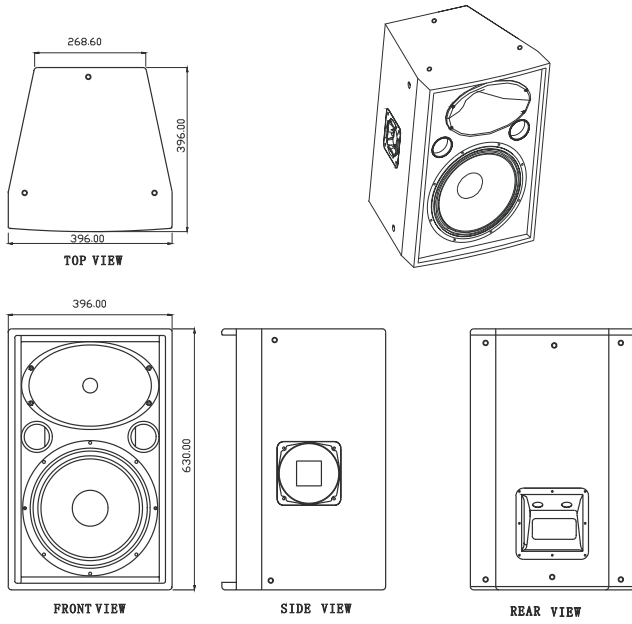
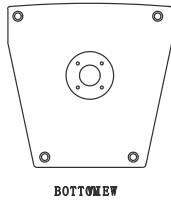
Wharfedale LX (E) Series loudspeaker systems are warranted to the original end purchaser against manufacturing or materials defects for a period of three years from the original date of purchase. Faults arising from misuse, unauthorised modifications or accidents are not covered under this warranty. No other warranty is expressed or implied.

In the event of malfunction, contact your authorised Wharfedale Pro dealer or distributor for information.

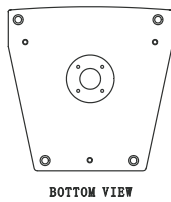
*Be aware that warranty details may differ from country to country. Contact your dealer or distributor for information. These terms do not infringe your statutory rights.

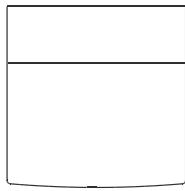


LX 12

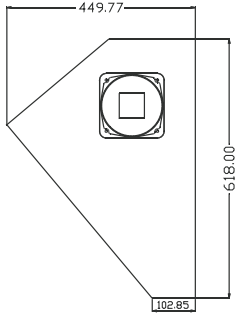


LX 12E

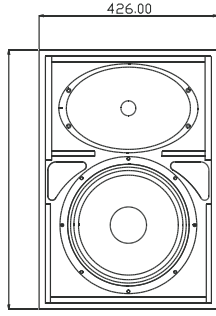




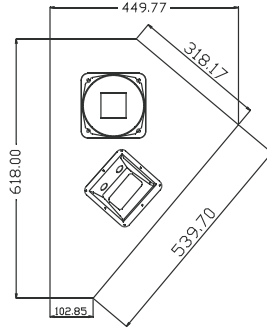
TOP VIEW



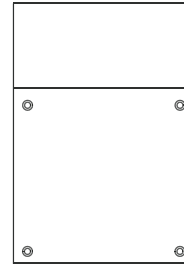
LEFT SIDE VIEW



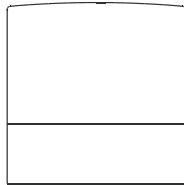
FRONT VIEW



RIGHT SIDE VIEW

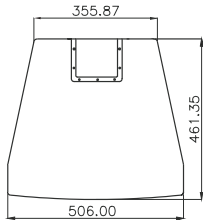


BOTTOM VIEW

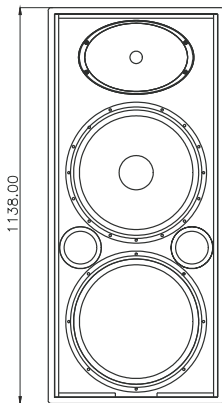


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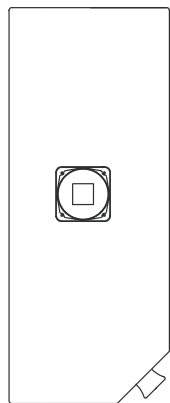
LX 12M / 12ME



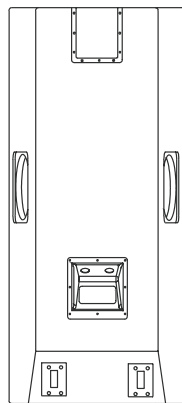
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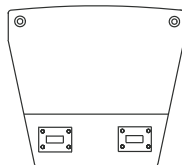
FRONT VIEW



SIDE VIEW

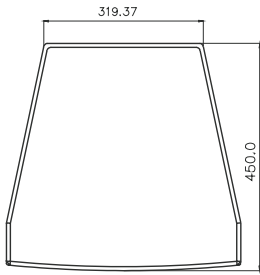


REAR VIEW

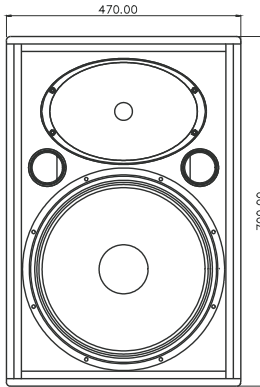
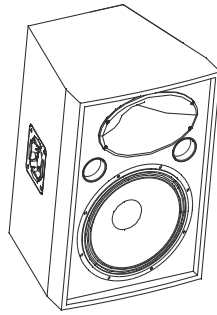


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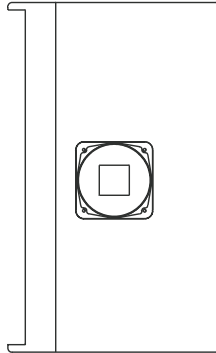
LX 215 / 215E



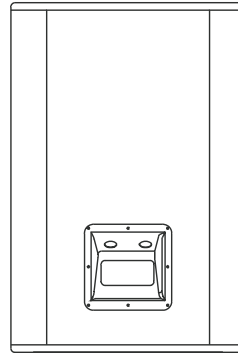
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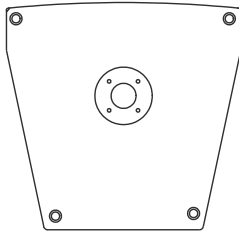
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SIDE VIEW

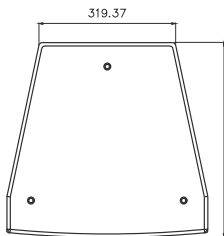


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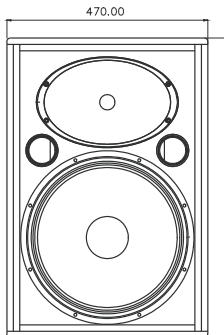
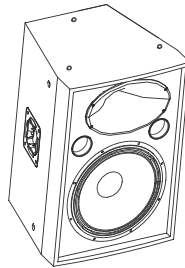


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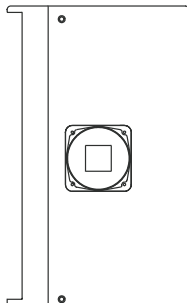
LX 15



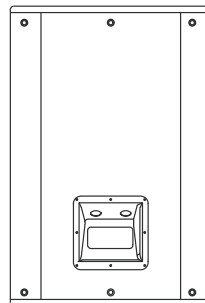
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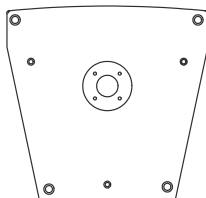
FRONT VIEW



SIDE VIEW

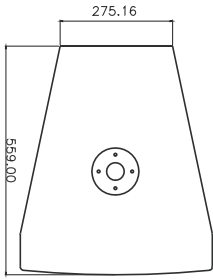


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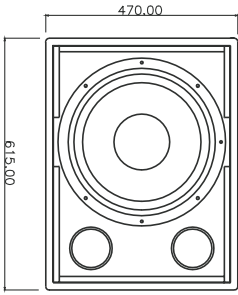


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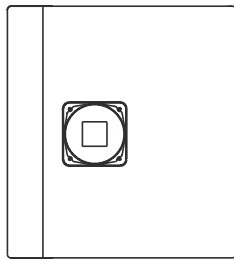
LX 15E



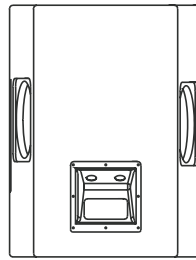
TOP VIEW



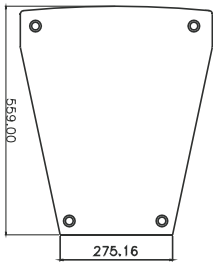
FRONT VIEW



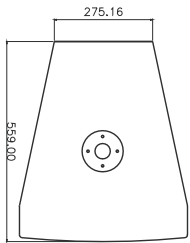
SIDE VIEW



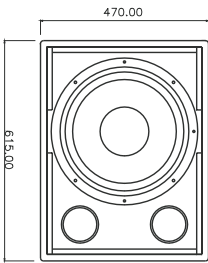
REAR VIEW



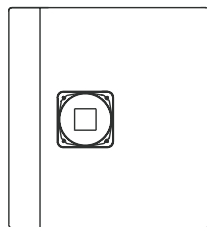
LX 15BE



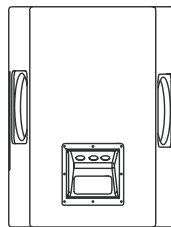
TOP VIEW



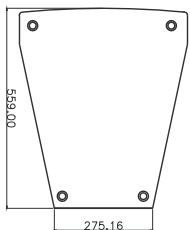
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SIDE VIEW

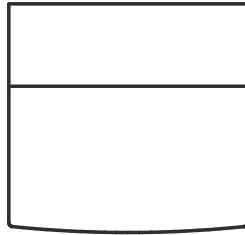


REAR VIEW

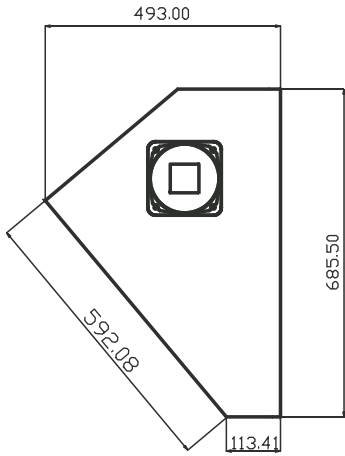


LX 15B

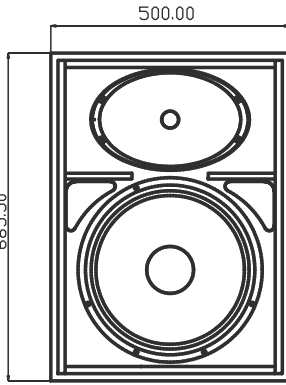
LX 15 / 15ME



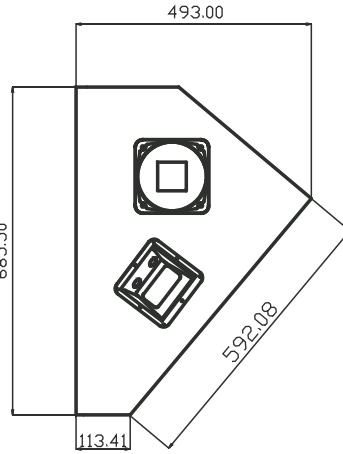
TOP VIEW



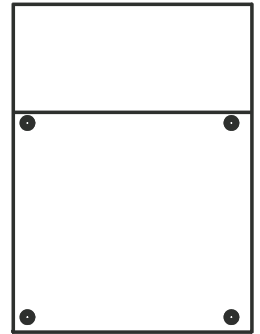
LEFT SIDE VIEW



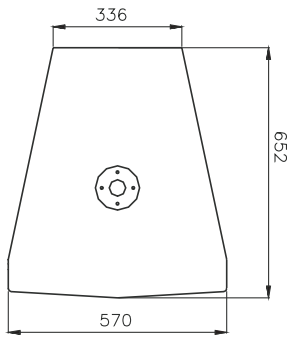
FRONT VIEW



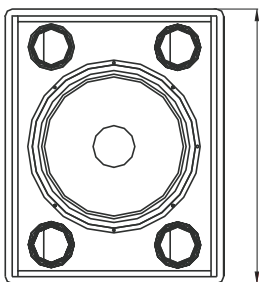
RIGHT SIDE VIEW



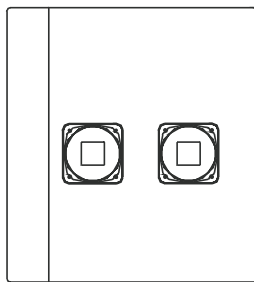
BOTTOM VIEW



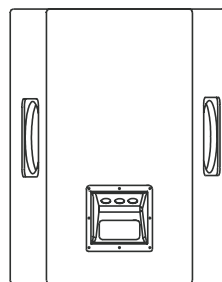
TOP VIEW



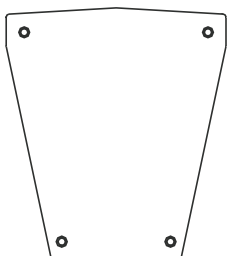
FRONT VIEW



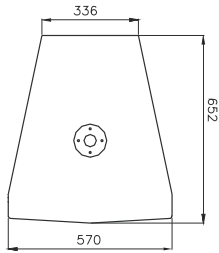
SIDE VIEW



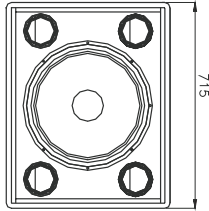
REAR VIEW



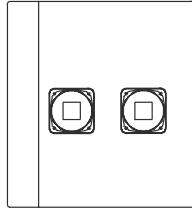
LX 18B



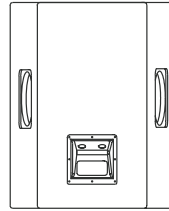
TOP VIEW



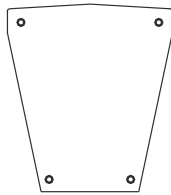
FRONT VIEW



SIDE VIEW

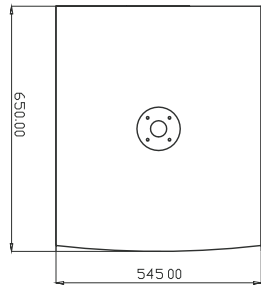


REAR VIEW

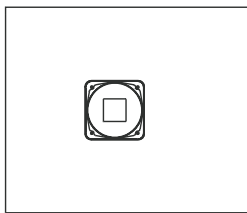


BOTTOM VIEW

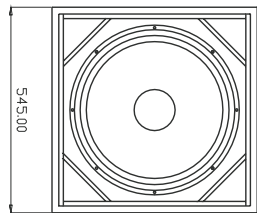
LX 18BE



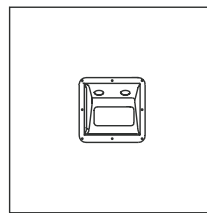
TOP VIEW



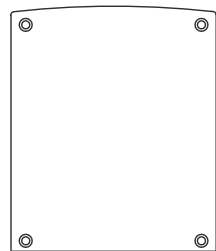
SIDE VIEW



FRONT VIEW

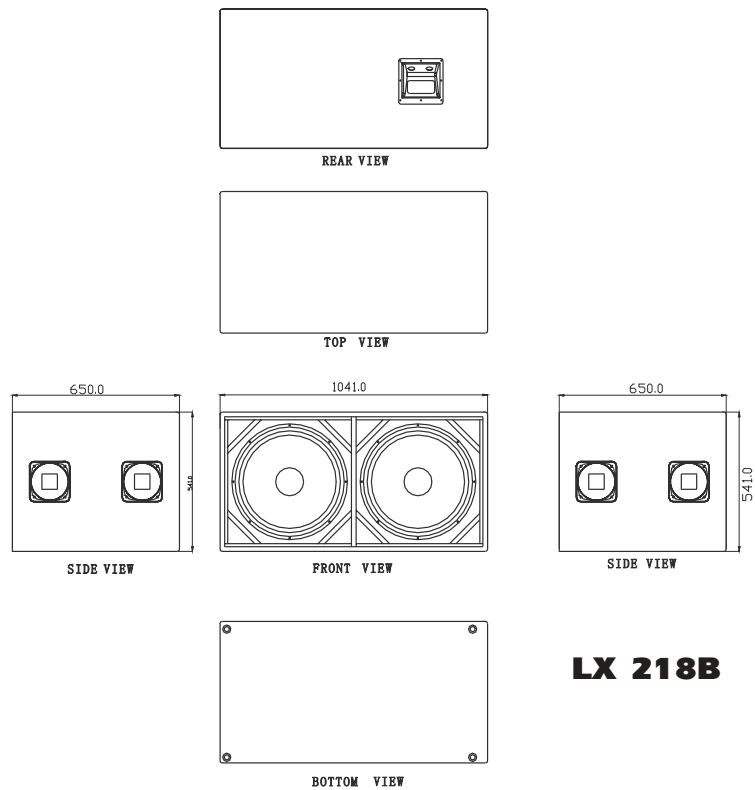


REAR VIEW

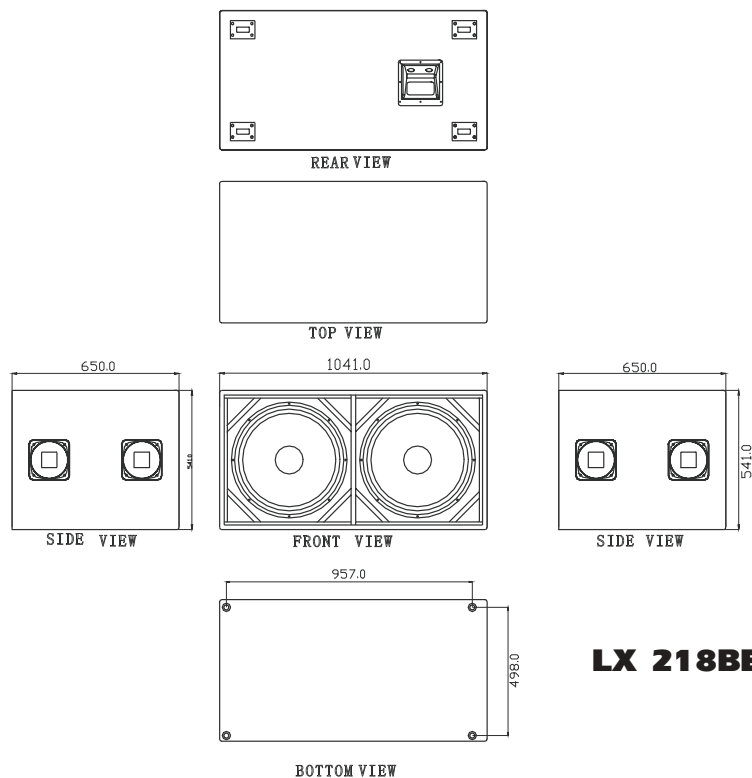


BOTTOM VIEW

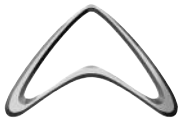
LX 18 / 18MBE



LX 218B



LX 218BE



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