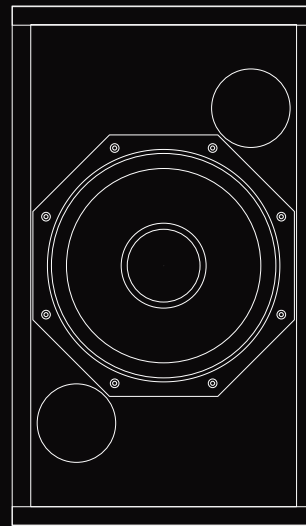
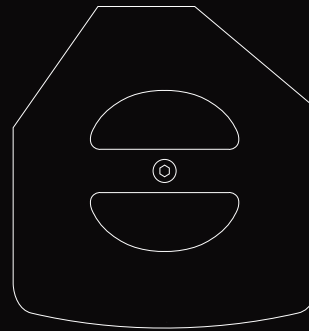


M

MULTI FUNCTION SERIES

User Manual



M8 CX

MULTI FUNCTION VERY COMPACT LOUDSPEAKERS

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General information

M SERIES Manual

Version: 1.0 Polistena March 6 2024

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Keep this document with the product or in a safe place so that it is available for future reference.

We recommend you to regularly check the LSS.it website for the latest version of this document.

If you require additional documents for this purpose, you can order them from LSS.

LSS Advanced Speakers Systems, viale degli Artigiani Zona PIP 89024 Polistena (RC) Italy

Introduction

Thank you for purchasing an LSS Multifunction Loudspeaker System. The M8CX is a high-performance loudspeaker enclosures for mobile and fixed installation applications, especially where high SPL is needed. M8CX is a coaxial system for live monitoring and short throw sound reinforcement applications with invisible visual impact.

This user's guide covers the M Series models offered by LSS, which are designed for flexible operation with inside a specially crossover network to optimize sound quality for various applications.

Unpacking and Inspection

Before using your M8CX speaker, please take a moment to inspect the package carefully upon delivery. At LSS, every unit is meticulously checked and tested in our facility to ensure it meets our high standards of quality. Once the product leaves our factory, however, it is packaged with the appropriate protective materials for transit.

Please note that any damage incurred during shipping is not the responsibility of LSS. We strongly recommend that you inspect all components of the package immediately after opening. If you find any damage or missing items, please contact your distributor right away to report the issue.

By checking the package contents at the time of receipt, you help ensure that your product has arrived in perfect condition and can perform at its best.

Cabinet Option

Cabinet options

The custom color (CC) version of the cabinet is available in all colors of the RAL color table. The respective openings of the cabinet are covered by plates in cabinet color. The connector type is NL4.

M8CX overview

The M8CX is a coaxial system for live monitoring and short throw sound reinforcement applications with invisible visual impact.

M8CX

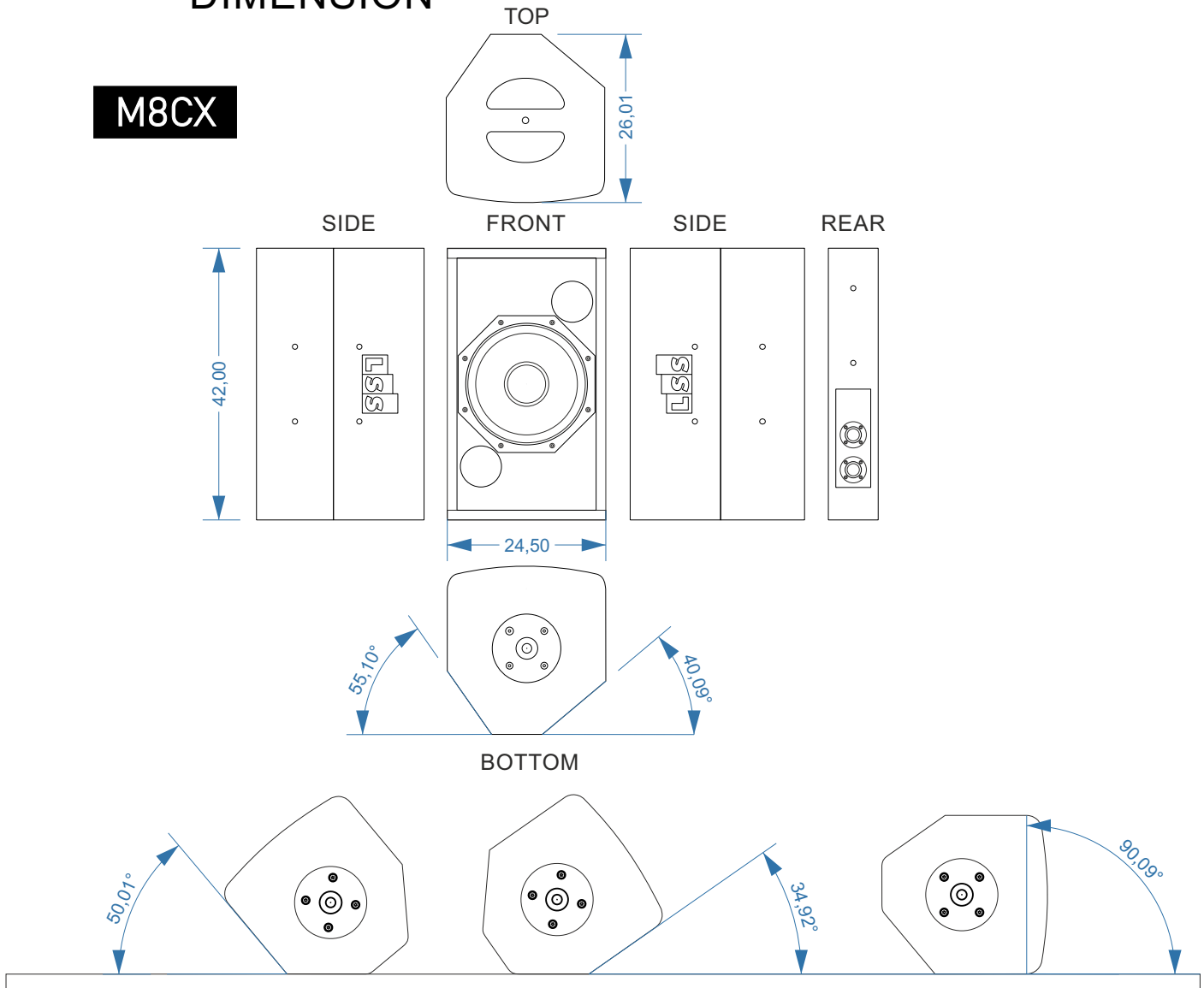
Component Low: 8" 2.56" voice coil woofer
Component High: 1.5" diaphragm compression driver
Loading Low: Bass-reflex
Loading High: 1,5" Coax 90° coverage



M8CX

DIMENSION

M8CX



DESCRIPTION

The M8CX is a multi-function very compact loudspeaker for mobile and fixed installation applications, especially where high SPL is needed. M8CX is a coaxial system for live monitoring and short throw sound reinforcement applications with invisible visual impact. The M8CX uses a 8" coax driver coupled with a 1.5" diaphragm HF compression driver loaded in a bass-reflex cabinet. M8CX operates from 50 Hz to 20 kHz. The coaxial transducer produces a 90° directivity output with a neutral flat response free of secondary lobes over the entire frequency range. M8CX uses an internal passive crossover network with custom filters by LSS. The cabinet is made of Baltic birch plywood protected, in the front side, by a resonance-free steel grill coated in epoxy powder with an acoustically transparent foam. Every cabinet is coated with high-tech black textured polywater scratch free finish and custom RAL is available on request. The system includes mounting hardware, compatible with various separately available mounting brackets.

FACILITIES

Live Music, auditorium, concert halls, houses of worship, shopping centers, conference rooms, sport facilities, retail stores, industrial, commercial and leisure projects, pubs, bars and cafes, small theatrical installations, schools malls hotels.

APPLICATIONS

The M8CX is an ideal compromise for live monitor systems. M8CX has a high SPL capability and extended LF resources in a very compact cabinet. The coaxial transducer generates a wide conical directivity pattern with excellent spatialization also at a minimum listening distance. The very low profile system design for invisible fill applications is ideal for high SPL requirements. M8CX is also ideal for application in a Mini PA System, Foreground Music Systems, Background Music Systems, Paging Systems, Delay and Stage front fill and Floor monitor system.

PERFORMANCE

Frequency Response -10 dB 50 Hz – 20 kHz
 Nominal Dispersion 90° (H x V)
 Impedance (Nom) 8 Ω
 Watts AES Continuous 300 W/Peak 800 W
 Maximum SPL Output calculated 129dB SPL

PHYSICAL

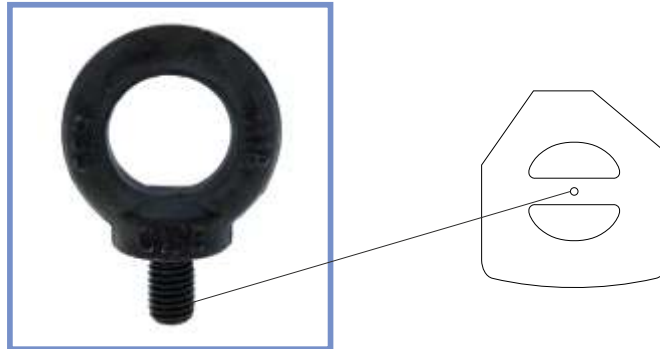
Component Low 8" 2.56" voice coil woofer
 Component High 1.5" diaphragm compression driver
 Loading Low Bass-reflex
 Loading High 1,5" Coax 90° coverage
 Connectors 2 x NL4 PAR Pins 1+/1-
 Cabinet Material Baltic birch plywood
 Cabinet Finish Black polywater coating
 Grill Epoxy powder coated
 Installation Points 10 x M6
 Pole Mount M20 socket
 Height 420 mm
 Width 245 mm
 Depth 260mm
 Weight 9kg

Accessories

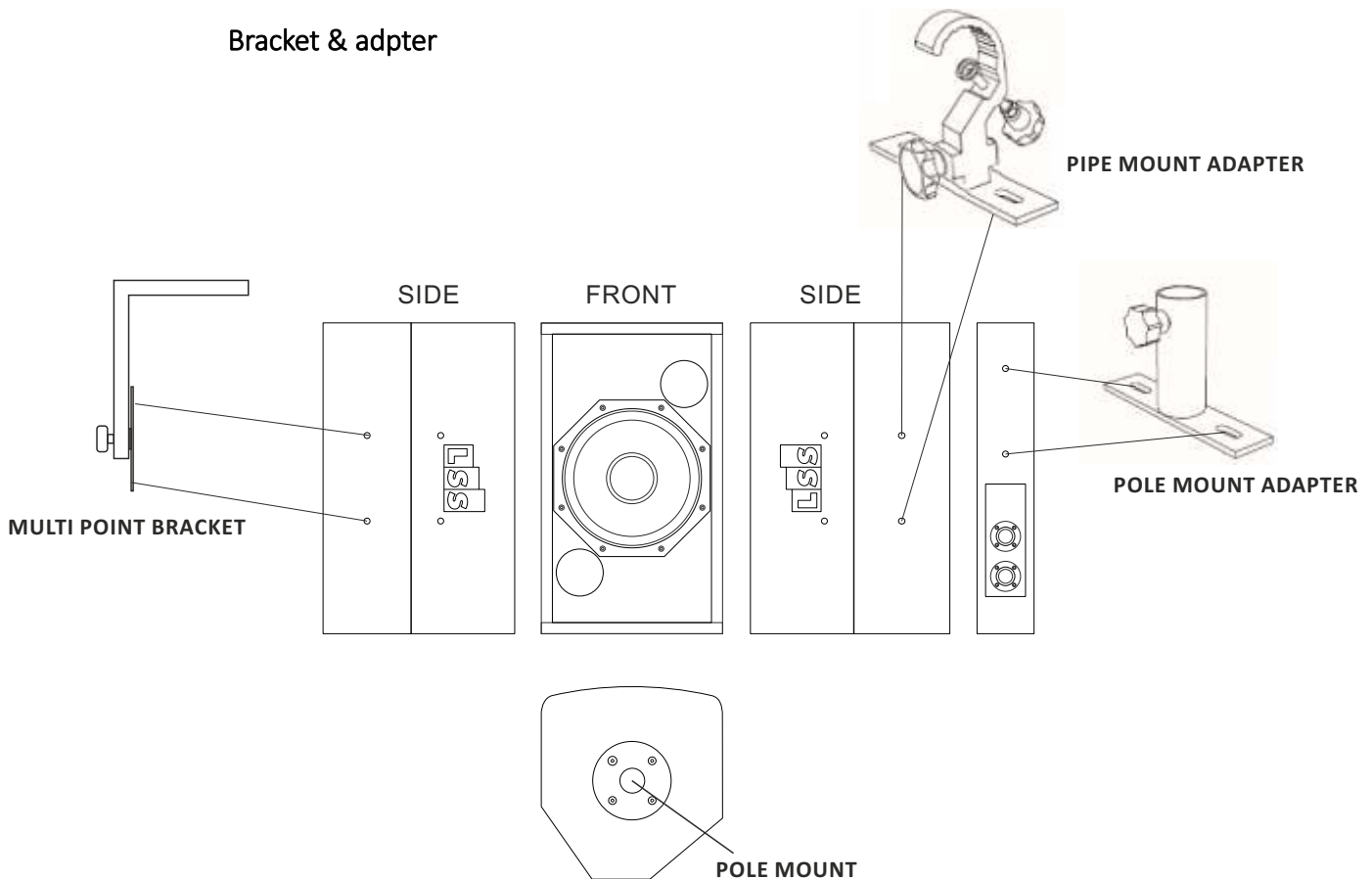
The LSS M8CX loudspeaker is designed with precision threaded inserts for fixed suspended applications. Each cabinet is supplied with 1 x M8 insert allowing you to attach custom suspension hardware or mount using eye bolts, there are also a number of M6 fixing inserts on all sides allowing you to screw in a variety of adapter types. It is essential that these fittings are made from forged steel or machined and shouldered types certified to safely support loads greater than the weight of the cabinet. Do not opt for cheap DIY formed steel inserts as they do not provide the security needed to suspend heavy speaker cabinets. The M8CX can be installed in any position using special brackets supplied on request by LSS.

The photos show examples of suspensions.

Eye Bolts



Bracket & adpter



Safety first

The use of professional audio systems requires attention and awareness to ensure maximum safety. Please read the following guidelines carefully for the safe use of M Series speakers.

Sound Levels and Hearing Protection

M Series speakers can generate high sound pressure levels, so it is important to use them with caution. Prolonged exposure to levels above 90 dB can cause hearing damage, which accumulates over time. Avoid standing too close to the speakers when they are operating at high volumes to prevent any risk.

Stacking

Stability and Positioning

- Always ensure that the surface where you place the speakers is stable and sturdy.
- When used outdoors, consider wind as a potential risk factor and ensure that the stacking is secure.
- High-power speakers may experience slight vibrations and shifts during use. To prevent unwanted movement, use anti-slip materials between the speakers and the floor or secure them with safety straps.

Rigging and suspension

Warning: Suspended mounting must only be performed by qualified personnel, following strict safety procedures. All mounting points must be securely anchored to an appropriate structure. If in doubt, consult industry experts such as structural engineers or specialized technicians.

M Series speakers are designed for versatile installation. Each unit is equipped with threaded mounting points for use with dedicated accessories. However:

- It is not permitted to suspend one speaker directly from another.
- Only forged or machined steel shoulder eye bolts with a thread length of at least 30 mm must be used for anchoring.
- Low-quality eye bolts, made by simply bending a metal rod, do not provide the necessary safety and must not be used.
- An inclined installation creates forces that are not aligned with the thread axis. It is therefore essential to use certified equipment capable of withstanding such stresses.

By following these guidelines, you can ensure maximum safety when using your M Series speakers, protecting both people and equipment.

Amplification

HOW TO CHOOSE THE RIGHT AMPLIFIER FOR YOUR SPEAKERS

Choosing the right amplifier is essential to get the best performance from the M Series speakers by LSS. An unsuitable amplifier can compromise sound quality and shorten the system's lifespan. Here are the key factors to consider:

1. POWER: MATCHING AMPLIFIER AND SPEAKER

The amplifier must provide the right amount of power to drive the speakers without causing distortion or damage.

- **Recommended Power:**
- To ensure optimal performance and good dynamic headroom, the amplifier should deliver 1.5 to 2 times the RMS power rating of the speaker.
- Example: If a speaker has a 500W RMS rating, the amplifier should provide between 750W and 1000W per channel.
- **Why not use an underpowered amplifier?**
- A weak amplifier clips earlier, generating distortion that can damage the driver.
- It is better to have a more powerful amplifier with a properly set limiter rather than an underpowered one.

2. LOAD IMPEDANCE: AMPLIFIER-SPEAKER COMPATIBILITY

Each amplifier has a range of impedance levels it can safely operate with.

- The amplifiers to driver the M series must be designed to work at:
- 8Ω, 4Ω, and in some cases, 2Ω.
- Impedance changes with different speaker connections:
- Two 8Ω speakers in parallel → 4Ω total.
- Four 8Ω speakers in parallel → 2Ω total.
- Two 8Ω speakers in series → 16Ω total.

⚠ Warning: Using a load too low (e.g., 2Ω on an amplifier not designed for it) can overheat the system and activate protection circuits.

3. AMPLIFIER CLASS: WHICH ONE IS BEST FOR YOUR NEEDS?

Amplifiers are categorized by their operating class, affecting efficiency and sound performance.

- Class AB:
- Superior sound quality, suitable for Hi-Fi systems or recording studios.
- Higher heat dissipation and lower efficiency compared to other classes.
- Class D (recommended for PA and installations):
- High efficiency (90%+), lightweight, lower heat generation.
- Perfect for live sound, nightclubs, and fixed installations.

4. CONNECTIONS: CHECK COMPATIBILITY WITH YOUR AUDIO SYSTEM

- Inputs: The amplifier must be compatible with the audio source (Mixer, DSP, Controller).
- Balanced XLR: Best for long cables with no interference.
- TRS Jack/RCA: Used in less professional contexts.
- Speaker Outputs:
- Speakon (NL4/NL2): Professional standard for secure connections.
- Binding post: More versatile connections, commonly used in fixed installations.

5. COOLING AND RELIABILITY CONSIDERATIONS

An amplifier designed for live environments or nightclubs must guarantee thermal stability.

- Forced ventilation with temperature sensors → Smart cooling system.
- Aluminum heatsinks and efficient circuits → Longer lifespan.

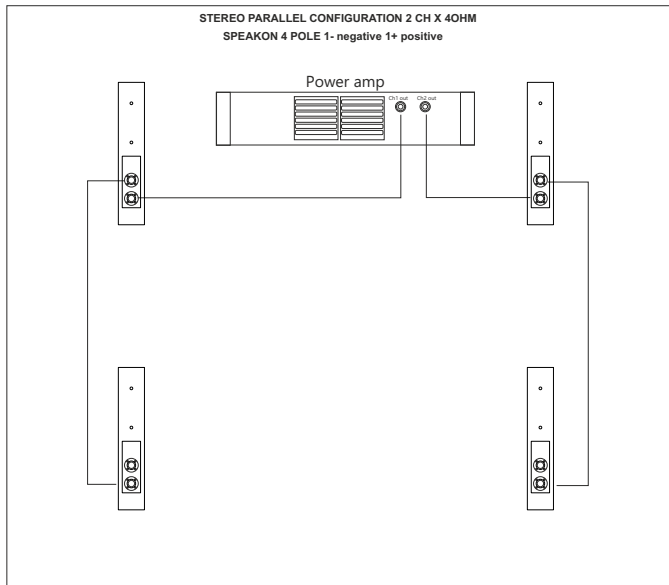
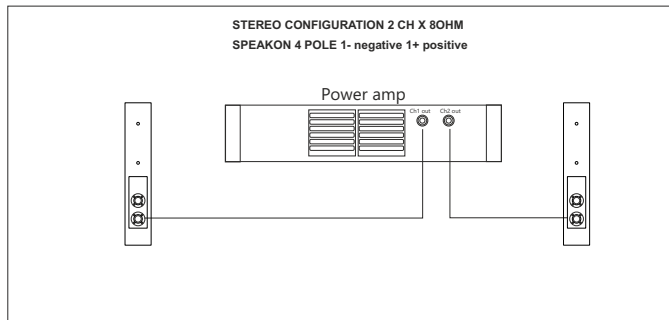
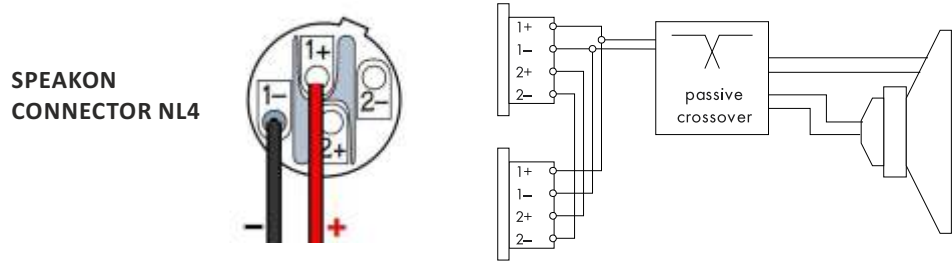
Tip: Always leave space around amplifiers in racks to allow for proper heat dissipation.

Recommended Amplifiers

Model	AES Power	Peak Power	Ideal amplifier rating		Minimum rating	
	Rating	Rating	4Ω	8Ω	4Ω	8Ω
M8CX	300W	800W	1600W	800W	800W	400W

Connections

On the back of the speaker you have a connector panel has two Neutrik Speakon connectors wired in parallel with each other. The second connector allows use of a short link to drive another, parallel M loudspeaker. The connectors are wired as follows:



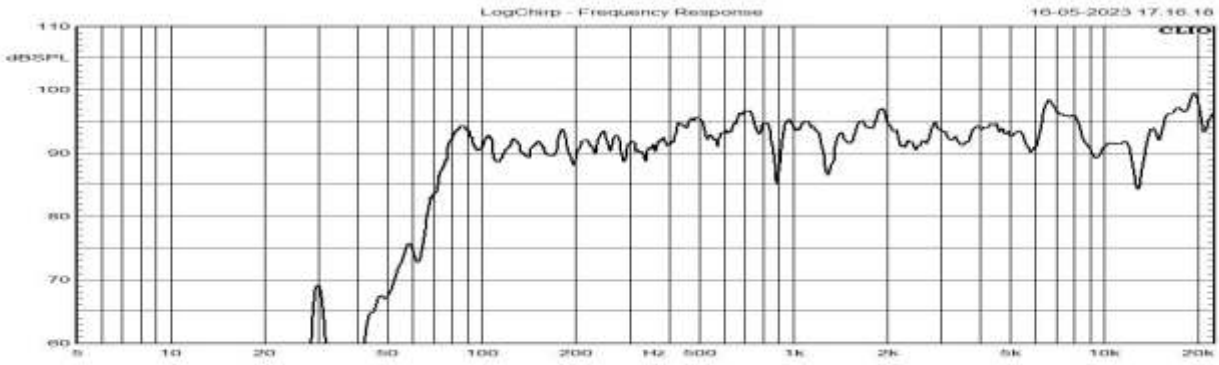
Cable lengths

Here you have a simple suggestion to wire cables systems to an amplifier, it is recommended that the return resistance of the cable used is less than one tenth of the nominal impedance of the system or systems in parallel. The table below gives an indication of the maximum permissible cable runs for various conductor cross-sectional areas.

Conductors	Maximum Cable Run		
	4 ohms	8 ohms	16 ohms
1.0mm ²	11m	22m	44m
1.5mm ²	17m	34m	68m
2.0mm ²	22m	44m	88m
2.5mm ²	29m	58m	116m
4.0mm ²	44m	88m	176m
6.0mm ²	66m	132m	264m

Frequency Response

M8CX



Warranty

This product is warranted by LSS for a period of twelve (12) months from the date of purchase under the terms and conditions of this warranty. The LSS covers material and manufacturing defects. The warranty comes into force only if the warranty certificate is fully and correctly completed by a LSS dealer.

The manufacturer's warranty does not cover:

- speakers
- damage resulting from improper handling, lack of care accidents or normal wear
- possible consequential damage resulting e.g. from defects, use, inaccuracy
- transport.

In case of defects covered by the warranty, your product will be repaired by LSS or authorized LSS dealer.

Any further claims against LSS e.g. compensation for damage, withdrawal from the purchase contract or refund of the purchase price are excluded. Your dealer carries responsibility only for any other guarantees.

The warranty becomes void in the event of servicing or repair of the product by any person not duly authorized by LSS or its representatives.

The above manufacturer's warranty does not effect the purchaser's rights against the seller nor any other statutory rights the purchaser may have.

CE Declaration

The Manufacturer LSS Advanced Speakers Systems, with office in viale degli Artigiani Zona PIP 89024 Polistena (RC) Italy

DECLARES

That the speakers

MODEL M8CX

are compliant with essential requirements according to relevant directive and designated standard:

LVD 2014/35/EU directive

- EN 62368-1:2014

RoHS 2011/65/EC directive

WEEE 2012/19/EC directive

- EN50419

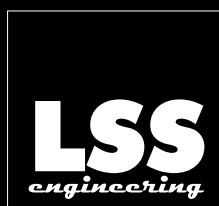
Polistena, March 6 2023

Legal Representation
(Giuseppe Laruffa)



M

MULTI FUNCTION SERIES



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