

900-LFC Compact Low-Frequency Control Element



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900-LFC Operating Instructions, PN 05.246.005.01 C

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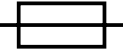


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IMPORTANT SAFETY INSTRUCTIONS


These symbols indicate important safety or operating features in this booklet and on the frame or chassis:


SYMBOLS USED

				
Dangerous voltages: risk of electric shock	Important operating instructions	Replaceable Fuse	Protective earth ground	Hot surface: do not touch
Gefährliche Spannungen: Stromschlaggefahr	Hinweis auf wichtige Punkte der Betriebsanleitung	Austauschbare Sicherung	Schutzerde	Heiße Oberfläche: nicht berühren
Pour indiquer les risques résultant de tensions dangereuses	Instructions d'utilisation importantes	Fusible remplaçable	Terre de protection	Surface chaude: ne pas toucher
Para indicar voltajes peligrosos	Instrucciones importantes de funcionamiento y/o Mantenimiento	Fusible reemplazable	Toma de tierra de protección	Superficie caliente: no tocar

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with Meyer Sound's installation instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. The AC mains plug or appliance coupler shall remain readily accessible for operation.
11. Only use attachments/accessories specified by Meyer Sound.
12. Use only with the caster rails or rigging specified by Meyer Sound, or sold with the apparatus. Handles are for carrying only.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. If equipped with an external fuse holder, the replaceable fuse is the only user-serviceable item. When replacing the fuse, only use the same type and the same value.
15. Refer all other servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug has been damaged; liquid has been spilled or objects have fallen into the apparatus; rain or moisture has entered the apparatus; the apparatus has been dropped; or when for undetermined reasons the apparatus does not operate normally.

 **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Do not install the apparatus in wet or humid locations without using weather protection equipment from Meyer Sound.

 **WARNING:** Class I apparatus shall be connected to a mains socket outlet with a protective earthing connection.

 **CAUTION:** Disconnect the mains plug before disconnecting the power cord from the loudspeaker.

English

- To reduce the risk of electric shock, disconnect the apparatus from the AC mains before installing audio cable. Reconnect the power cord only after making all signal connections.
- Connect the apparatus to a two-pole, three-wire grounding mains receptacle. The receptacle must be connected to a fuse or circuit breaker. Connection to any other type of receptacle poses a shock hazard and may violate local electrical codes.
- Do not install the apparatus in wet or humid locations without using weather protection equipment from Meyer Sound.
- Do not allow water or any foreign object to get inside the apparatus. Do not put objects containing liquid on or near the unit.
- To reduce the risk of overheating the apparatus, avoid exposing it to direct sunlight. Do not install the unit near heat-emitting appliances, such as a room heater or stove.
- If equipped with an external fuse holder, the replaceable fuse is the only item that can be serviced by the user. When replacing the fuse, only use the same type and value.
- This apparatus contains potentially hazardous voltages. Do not attempt to disassemble the unit. The only user-serviceable part is the fuse. All other repairs should be performed only by factory-trained service personnel.

Deutsch

- Zur Minimierung der Gefahr eines elektrischen Schlages trennen Sie das Produkt vor dem Anschluss von Audio- und/oder Steuerleitungen vom Stromnetz. Das Netzkabel darf erst nach Herstellung aller Signalverbindungen wieder eingesteckt werden.
- Das Produkt an eine vorschriftsgemäss installierte dreipolige Netzsteckdose (Phase, Neutraleiter, Schutzleiter) anschließen. Die Steckdose muss vorschriftsgemäß mit einer Sicherung oder einem Leitungsschutzschalter abgesichert sein. Das Anschließen des Produkts an eine anders ausgeführte Stromversorgung kann gegen Vorschriften verstossen und zu Stromunfällen führen.
- Das Produkt nicht an einem Ort aufstellen, an dem es direkter Wassereinwirkung oder übermäßig hoher Luftfeuchtigkeit ausgesetzt werden könnte, solange es sich nicht um ein Produkt handelt, dass mit der Meyer Sound Weather Protection Option ausgestattet ist.
- Vermeiden Sie das Eindringen von Wasser oder Fremdkörpern in das Innere des Produkts. Stellen Sie keine Objekte, die Flüssigkeit enthalten, auf oder neben dem Produkt ab.
- Um ein Überhitzen des Produkts zu verhindern, halten Sie das Gerät von direkter Sonneneinstrahlung fern und stellen Sie es nicht in der Nähe von wärmeabstrahlenden Geräten (z.B. Heizgerät oder Herd) auf.

- Bei Ausstattung mit einem externen Sicherungshalter ist die austauschbare Sicherung das einzige Gerät, das vom Benutzer gewartet werden kann. Verwenden Sie beim Austausch der Sicherung nur den gleichen Typ und Wert.
- Dieses Gerät enthält möglicherweise gefährliche Spannungen. Versuchen Sie nicht, das Gerät zu zerlegen. Der einzige vom Benutzer zu wartende Teil ist die Sicherung. Alle anderen Reparaturen dürfen nur von im Werk geschultem Servicepersonal ausgeführt werden.

Français

- Pour éviter tout risque d'électrocution, débranchez l'enceinte de la prise secteur avant de mettre en place le câble audio. Ne rebranchez le cordon secteur qu'après avoir procédé à toutes les connexions de signal audio
- Brancher l'appareil sur une prise secteur à trois fils et deux pôles avec mise à la terre. La prise doit être reliée à un fusible ou à un disjoncteur. Le branchement à tout autre type de prise présente un risque de choc électrique et peut enfreindre les codes locaux de l'électricité.
- N'installez pas l'enceinte dans des endroits humides ou en présence d'eau sans utiliser d'équipements de protection adéquats fournis par Meyer Sound.
- Ne laissez pas d'eau ou d'objet étranger, quel qu'il soit, pénétrer à l'intérieur de l'enceinte. Ne posez pas d'objet contenant du liquide sur ou à proximité de l'enceinte.
- Pour réduire les risques de surchauffe, évitez d'exposer directement l'enceinte aux rayons du soleil. Ne l'installez pas à proximité de sources de chaleur, radiateur ou four par exemple.
- S'il est équipé d'un porte-fusible externe, le fusible remplaçable est le seul élément qui peut être réparé par l'utilisateur. Lors du remplacement du fusible, n'utilisez que le même type et la même valeur.
- Cet appareil contient des tensions potentiellement dangereuses. N'essayez pas de démonter l'appareil. Le fusible est la seule pièce réparable par l'utilisateur. Toutes les autres réparations doivent être effectuées uniquement par du personnel de maintenance formé en usine.

Español

- Para reducir el riesgo de descarga eléctrica, desconecte el aparato de la red eléctrica antes de instalar el cable de audio. Vuelva a conectar el cable de alimentación sólo después de realizar todas las conexiones de señal.
- Conecte el aparato a una toma de corriente de tres hilos y dos polos con conexión a tierra. El receptáculo debe estar conectado a un fusible o disyuntor. La conexión a cualquier otro tipo de receptáculo representa un riesgo de descarga eléctrica y puede violar los códigos eléctricos locales.

- No instale el aparato en lugares húmedos o mojados sin usar el equipo de protección contra intemperie de Meyer Sound.
- No permita que penetre agua u otros objetos extraños en el interior del aparato. No coloque objetos que contengan líquido sobre o cerca de la unidad.
- Para reducir el riesgo de sobrecalentamiento del aparato, evite exponerlo a la luz solar directa. No instale la unidad cerca de aparatos que emitan calor, como un calefactor o una estufa
- Si está equipado con un portafusibles externo, el fusible reemplazable es el único elemento que puede ser reparado por el usuario. Cuando reemplace el fusible, use solamente el mismo tipo y valor.
- Este aparato contiene voltajes potencialmente peligrosos. No intente desmontar la unidad. La única pieza que el usuario puede reparar es el fusible. Todas las demás reparaciones deben ser realizadas únicamente por personal de servicio capacitado de fábrica.

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CHAPTER 1: INTRODUCTION

HOW TO USE THIS MANUAL

Make sure to read these instructions in their entirety before configuring a Meyer Sound loudspeaker system. In particular, pay close attention to material related to safety issues.

As you read these instructions, you will encounter the following icons for notes, tips, and cautions:



NOTE: A note identifies an important or useful piece of information relating to the topic under discussion.



TIP: A tip offers a helpful tip relevant to the topic at hand.



CAUTION: A caution gives notice that an action may have serious consequences and could cause harm to equipment or personnel, or could cause delays or other problems.

Information and specifications are subject to change. Updates and supplementary information are available at meyersound.com.

Meyer Sound Technical Support is available at:

- **Tel:** +1 510 486.1166
- **Tel:** +1 510 486.0657 (after hours support)
- **Web:** meyersound.com/support

900-LFC COMPACT LF CONTROL ELEMENT

Meyer Sound's 900-LFC compact low-frequency control element (Figure 1) reproduces low frequencies at high, continuous output levels with extremely low distortion. The 900-LFC offers the same sonic linearity as Meyer Sound's 1100-LFC low-frequency control element in a smaller, lighter cabinet, making it ideal for building scalable systems to suit touring applications or fixed installations of any size.

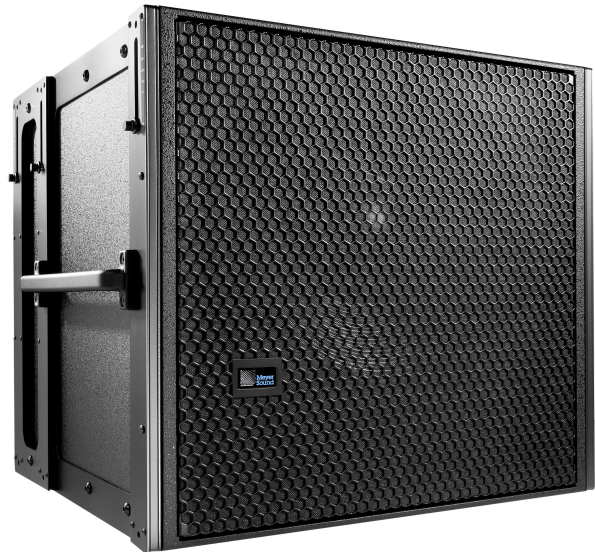


Figure 1: 900-LFC Compact Low-Frequency Control Element

A newly designed class D amplifier affords unprecedented efficiency to the 900-LFC, significantly lowering distortion while reducing power consumption and operating temperature. The onboard amplifier and control circuitry are contained in a single, field-replaceable module.

In addition to pairing with LEOPARD™ systems, the 900-LFC integrates easily with other Meyer Sound loudspeaker systems, including LEO-M™, LYON™, and UltraSeries™ loudspeakers.

LEOPARD and 900-LFC can be driven by Meyer Sound's Galileo GALAXY Network Platform which provides matrix routing, alignment, and processing for array components. To guarantee optimum performance, systems with the 900-LFC should be designed with Meyer Sound's MAPP™ software. LEOPARD and 900-LFC loudspeakers also work with Meyer Sound's RMS™ remote monitoring system which provides comprehensive monitoring of system parameters from a Mac® or Windows®-based computer.

The 900-LFC is available with or without Meyer Sound's QuickFly® rigging. When equipped with the optional MRK-900 rigging kit, the 900-LFC's captive GuideALinks™ allow it to be flown from the MG-LEOPARD/900-LFC Multipurpose Grid in LEOPARD arrays without a transition frame. 900-LFC loudspeakers can also be flown separately as a subwoofer array with variable splay angles from 0 to 5 degrees. The MG-LEOPARD/900-LFC grid can also be used for groundstacks with uptilt or downtilt.

Both versions of the 900-LFC can be transported in stacks with the optional MCF-900-LFC caster frame (Figure 2).



Figure 2: MG-LEOPARD/900-LFC Multipurpose Grid, 900-LFC Stack, and MCF-900-LFC Caster Frame

NATIVE MODE

LEOPARD and 900-LFC loudspeakers are optimized for use in certain flown and groundstacked configurations without any array compensation or other signal processing. This capability, called *Native mode*, allows LEOPARD/900-LFC systems to be deployed quickly with excellent results, without equalization, tuning, or use of presets.

To use LEOPARD and 900-LFC loudspeakers in Native mode, send an identical, unmodified signal to each element in the array. The simplest way to accomplish this task is by looping the same, unprocessed source signal through all array elements.

The following coplanar configurations can be used in Native mode (without any signal processing):

- Flown mixed arrays of LEOPARDs and 900-LFCs (Figure 3)
- Flown separate arrays of LEOPARDs and 900-LFCs (Figure 4)
- Mixed groundstacks of LEOPARDs and 900-LFCs (Figure 5)

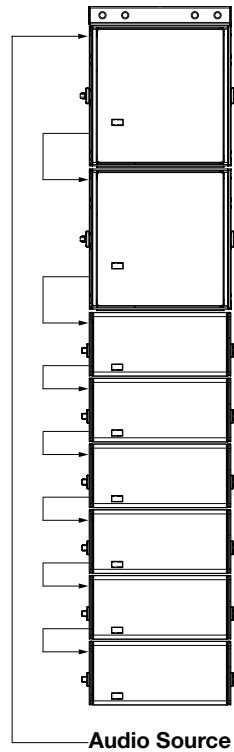


Figure 3: Flown Mixed Array

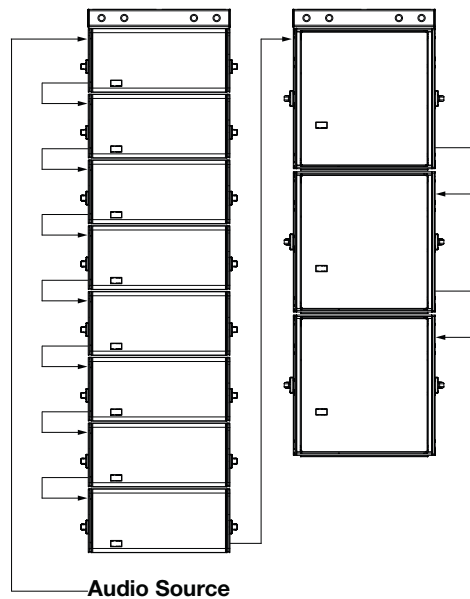


Figure 4: Flown Separate Arrays

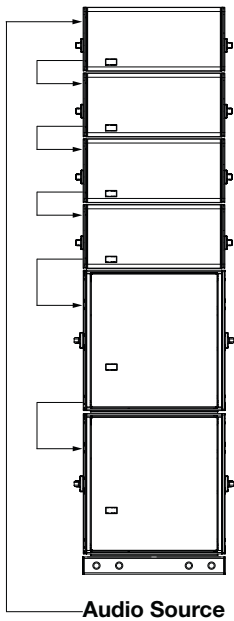


Figure 5: Mixed Groundstack

NOTE: Native mode should not be used with more advanced configurations, such as those where 900-LFCs and LEOPARDS are not coplanar, or those requiring delay offsets to align subsystems or to create directional low-frequency control. These systems require additional processing.

NOTE: For Native mode to work properly, the source signal must be correctly configured with the appropriate gain structure.

CAUTION: Make sure that all cabling for looped loudspeakers is wired correctly (Pin 1 to Pin 1, Pin 2 to Pin 2, and so forth) to prevent the polarity from being reversed. If one or more loudspeakers in a system have reversed polarity, frequency response and coverage will be significantly degraded.

CHAPTER 2: POWER REQUIREMENTS

The 900-LFC combines advanced loudspeaker technology with equally advanced power capabilities. Understanding power distribution, voltage and current requirements, and electrical safety guidelines is critical to the safe operation of the 900-LFC.

AC POWER DISTRIBUTION

All components in an audio system (self-powered loudspeakers, mixing consoles, and processors) must be properly connected to an AC power distribution system, ensuring that AC line polarity is preserved and that all grounding points are connected to a single node or common point using the same cable gauge (or larger) as the neutral and line cables.

CAUTION: Make sure the voltage received by the 900-LFC remains within its 90–264 V AC operating range. In addition, the ground line must always be used for safety reasons and the line-to-ground voltage should never exceed 250 V AC (typically 120 V AC from line to ground).

CAUTION: Before applying AC power to any Meyer Sound self-powered loudspeaker, make sure that the voltage potential difference between the neutral and earth-ground lines is less than 5 V AC when using single-phase AC wiring.

NOTE: Improper grounding of connections between loudspeakers and the rest of the audio system may produce noise or hum, or cause serious damage to the input and output stages of the system's electronic components.

120 V AC, 3-Phase Wye System (Single Line)

Line-Neutral-Earth/Ground

Figure 6 illustrates a basic 120 V AC, 3-phase Wye distribution system with the loudspeaker load distributed across all three phases, with each loudspeaker connected to a single line and common neutral and earth/ground lines. This system delivers 120 V AC to each loudspeaker.

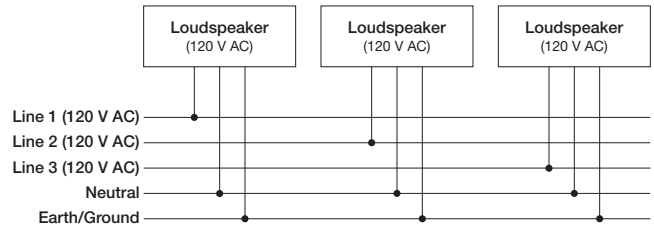


Figure 6: 120 V AC, 3-Phase Wye System (Single Line to Loudspeakers)

120 V AC, 3-Phase Wye System (Two Lines)

Line-Line-Earth/Ground

Figure 7 illustrates a 120 V AC, 3-phase Wye distribution system with each loudspeaker connected to two lines and a common earth/ground line. This configuration is possible because the 900-LFC tolerates elevated voltages from the ground line and does not require a neutral line. This system delivers 208 V AC to each loudspeaker.

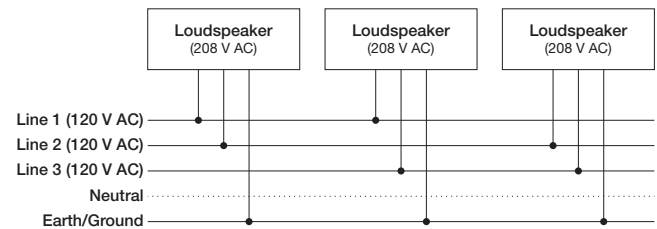


Figure 7: 120 V AC, 3-Phase Wye System (Two Lines to Loudspeakers)

TIP: The 120 V AC, 3-phase Wye system with two lines is recommended because it allows loudspeakers to draw less current than with single-line systems, thereby reducing voltage drop due to cable resistance. It also excludes the potential of varying ground to neutral voltages producing an audible hum.

230 V AC, 3-Phase Wye System (Single Line)

Line-Neutral-Earth/Ground

Figure 8 illustrates a basic 230 V AC, 3-phase Wye distribution system with the loudspeaker load distributed across all three phases, with each loudspeaker connected to a single line and common neutral and earth/ground lines. This system delivers 230 V AC to each loudspeaker.

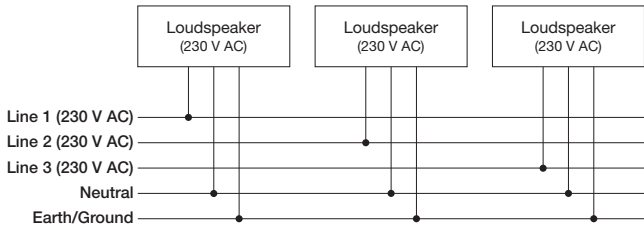


Figure 8: 230 V AC, 3-Phase Wye System (Single Line to Loudspeakers)

CAUTION: For 230 V AC, 3-phase Wye systems, never connect two lines to the AC input of the 900-LFC, as the resulting voltage would exceed the upper voltage limit (275 V AC) and will damage the loudspeaker.

AC CONNECTORS

The 900-LFC user panel includes two powerCON 20 connectors (Figure 9), one for AC Input (blue) and one for AC Loop Output (gray).

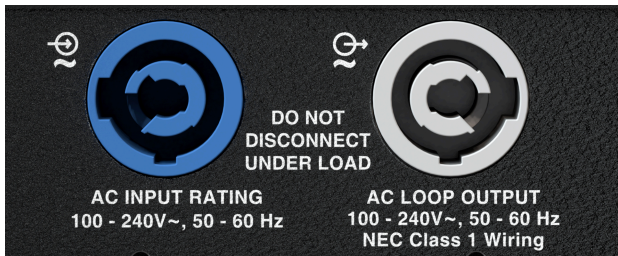


Figure 9: AC Input (Left) and AC Loop Output (Right) Connectors

AC Input (Blue)

The blue AC Input connector supplies power to the 900-LFC. The 3-conductor powerCON 20 is rated at 20 A and uses a locking connector that prevents accidental disconnections. A 10-foot AC power cable, rated at 15 A, is included with each loudspeaker. If you replace the included AC power cable, make sure to use a cable with the appropriate power plug (on the other end) for the area in which you will operate the loudspeaker. The 900-LFC requires a grounded outlet. To operate safely and effectively, it is extremely important that the entire system be properly grounded.

The AC Input connector also supplies power to any additional loudspeakers connected to the loudspeaker’s gray Loop Output connector.

CAUTION: When looping AC power for loudspeakers, do not exceed the current capability of the AC Input connector (20 A) or

the included AC power cable (15 A). Consider the total current draw for all loudspeakers on the circuit, including the first loudspeaker (Table 1).

AC Loop Output (Gray)

The gray AC Loop Output connector allows multiple 900-LFCs to be looped and powered from a single power source. The 3-conductor powerCON 20 is rated at 20 A and uses a locking connector that prevents accidental disconnections. For applications that require multiple 900-LFCs, connect the AC Loop Output of the first loudspeaker to the AC Input of the second loudspeaker, and so forth.

The maximum number of loudspeakers that can be looped from the AC Loop Output connector is determined by the voltage of the power source, the current draw of the looped loudspeakers, the circuit breaker rating, and the rating of the AC power cable connected to the first 900-LFC loudspeaker (Table 1).

Table 1: Maximum 900-LFCs that Can Be Looped with AC Power

Circuit Breaker/ Connector Rating	115 V AC	230 V AC	100 V AC
15 A / 16 A	2 looped (3 total)	5 looped (6 total)	1 looped (2 total)
20 A	3 looped (4 total)	7 looped (8 total)	2 looped (3 total)

NOTE: Current draw for the 900-LFC is dynamic and fluctuates as operating levels change. The indicated number of loudspeakers that can be looped assumes that operating levels are normal and not such that loudspeakers are constantly limiting.

The 900-LFC ships with a gray powerCON 20 cable mount connector, rated at 20 A, for assembling AC looping cables. Assembled AC looping cables are also available from Meyer Sound.

CAUTION: When looping AC power for loudspeakers, do not exceed the current capability of the AC Input connector (20 A) or the included AC power cable (15 A). Consider the total current draw for all loudspeakers on the circuit, including the first loudspeaker (Table 1).

WIRING AC POWER CABLES

The 900-LFC ships with a gray powerCON 20 cable mount connector (Figure 10), rated at 20 A, for assembling AC looping cables. The pins on the powerCON 20 cable mount connector are labeled as follows:

- L (Line)
- N (Neutral)
- PE (Protective Earth or Ground)

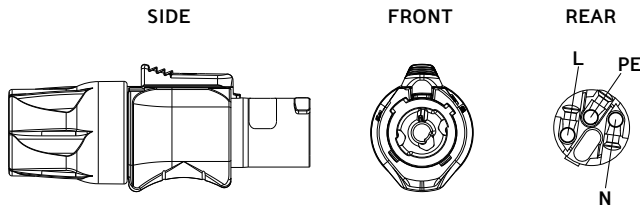


Figure 10: powerCON 20 Cable Mount Connector

How AC power cables are wired is determined by the type of AC power distribution system used (“AC Power Distribution” on page 13). When wiring AC power cables for single-line systems, use one of the wiring schemes described in Table 2 and illustrated in Figure 11:

Table 2: AC Wiring Scheme

Wire Color		Attach to the Following Terminal
U.S. / Canada 60 Hz	European 50 Hz	
Black	Brown	Hot or live (L)
White	Blue	Neutral (N)
Green	Green and Yellow	Protective earth / ground (E or PE)

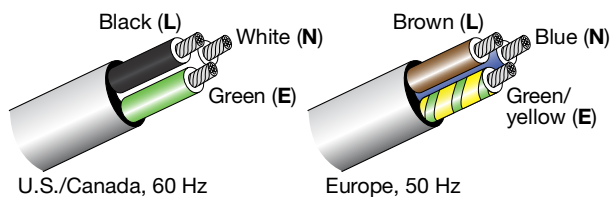


Figure 11: AC Wiring Scheme, illustrated

CAUTION: When wiring AC power cables and distribution systems, it is important to preserve AC line polarity and connect the earth ground on both ends of the cable. The 900-LFC requires a grounded connection. Always use a grounded outlet and plug. It is extremely important that the system be properly grounded to operate safely and properly. Do not ground-lift the AC cable.

900-LFC VOLTAGE REQUIREMENTS

The 900-LFC operates as intended when receiving AC voltage within the following range:

- 90–264 V AC, 50–60 Hz

If the voltage drops below 90 V, the loudspeaker uses stored power to continue operating temporarily; the loudspeaker powers off if the voltage does not return to its operating range.

If the voltage rises above 275 V, the power supply could become damaged.

CAUTION: The power source for the 900-LFC should always operate within the required operating range, at least a few volts from the upper and lower limits. This ensures that AC voltage variations from the service entry—or peak voltage drops due to cable runs—will not cause the loudspeaker’s amplifier to cycle on and off or cause damage to the power supply.

900-LFC CURRENT REQUIREMENTS

Current draw for loudspeakers is dynamic and fluctuates as operating levels change. Because different cables and circuit breakers heat up at varying rates, it is important to understand the following types of current ratings and how they affect circuit breaker and cable specifications.

- **Idle Current** — The maximum rms current during idle periods.
- **Maximum Long-Term Continuous Current** — The maximum rms current during a period of at least 10 seconds. The maximum long-term continuous current is used to calculate temperature increases for cables to ensure that the size and gauge of the cables conform to electrical code standards. The current rating is also used to select appropriately rated, slow-reacting thermal breakers, which are recommended for loudspeaker power distribution. In addition, the maximum long-term continuous current can be used to calculate the AC looping capability for 900-LFC loudspeakers.
- **Burst Current** — The maximum rms current during a period of around 1 second. The burst current is used as a rating for magnetic breakers. It is also used for calculating the peak voltage drop in long AC cable runs according to the following formula:

$$V_{pk}(\text{drop}) = I_{pk} \times R(\text{cable total})$$
- **Maximum Instantaneous Peak Current** — A rating for fast-reacting magnetic breakers.

Use the information provided in Table 3 as a guide for selecting the gauge of cables and the circuit breaker ratings for the system’s operating voltage.

Table 3: 900-LFC Current Draw

Current Draw	115 V AC	230 V AC	100 V AC
Idle	0.60 A rms	0.49 A rms	0.63 A rms
Maximum Long-Term Continuous	4.9 A rms	2.5 A rms	5.2 A rms
Burst	8.8 A rms	4.7 A rms	11.0 A rms
Maximum Instantaneous Peak	18.2 A peak	9.2 A peak	20.6 A peak

The minimum electrical service amperage required by a loudspeaker system is the sum of the maximum long-term continuous current for all loudspeakers. An additional 30 percent above the combined Maximum Long-Term Continuous amperages is recommended to prevent peak voltage drops at the service entry.

NOTE: For best performance, the AC cable voltage drop should not exceed 10 V (10 percent at 115 V and 5 percent at 230 V). This ensures that the AC voltage variations from the service entry—or peak voltage drops due to longer cable runs—do not cause the amplifier to cycle on and off.

INTELLIGENT AC POWER SUPPLY

The 900-LFC’s Intelligent AC™ power supply automatically selects the correct operating voltage (allowing the loudspeaker to be used internationally without manually setting voltage switches), eliminates high inrush currents with soft-start power up, suppresses high-voltage transients up to several kilovolts, filters common mode and differential mode radio frequencies (EMI), and sustains operation temporarily during low-voltage periods.

Powering on the 900-LFC

When powering on the 900-LFC, the following startup events take place over several seconds.

1. Audio output is muted.
2. Voltage is detected and the power supply mode is automatically adjusted as necessary.
3. The power supply ramps up.
4. On the user panel, the Active/Status LED flashes multiple colors successively.

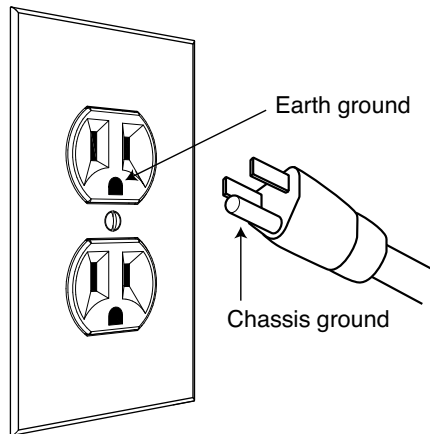
5. The Active/Status LED turns solid green, indicating the loudspeaker is unmuted and ready to output audio.

CAUTION: If the Active/Status LED does not turn solid green, or the 900-LFC does not output audio after 10 seconds, remove AC power immediately and verify that the voltage is within the required range. If the problem persists, contact Meyer Sound Technical Support.

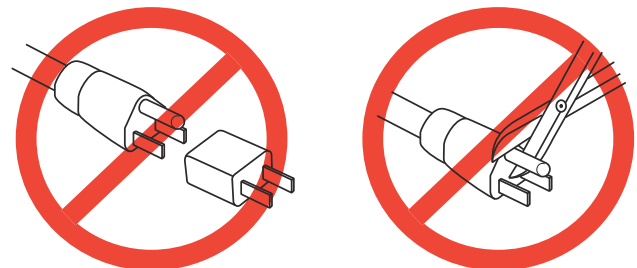
ELECTRICAL SAFETY GUIDELINES

Make sure to observe the following important electrical and safety guidelines.

- The powerCON 20 connector should not be engaged or disengaged when under load or energized. Either de-energize or disconnect the other end of the cable.
- The 900-LFC requires a grounded outlet. Always use a grounded outlet and plug.



- Do not use a ground-lifting adapter or cut the AC cable ground pin.



- Do not exceed the current capability of the 20 A AC Input connector for the loudspeaker. When looping loudspeakers, consider the total current draw for all loudspeakers on the circuit, including the first loudspeaker.

- Make sure the AC power cable for the loudspeaker has the appropriate power plug (on the other end) for the area in which you will operate the loudspeaker. In addition, the AC power cable must be rated for the total current draw of all loudspeakers looped from the power source.
- Do not operate the loudspeaker if the power cable is frayed or broken.
- Keep all liquids away from 900-LFC loudspeakers to avoid hazards from electrical shock.
- Use the cable rings (see “Cable Rings” on page 20) on the rear of the 900-LFC cabinet to reduce strain on the AC power cable (and audio cables). Do not use the cable rings for any other purpose.

CHAPTER 3: AMPLIFICATION AND AUDIO

The 900-LFC's drivers are powered by a proprietary two-channel, open-loop, class D amplifier. The audio signal is processed with correction filters for flat phase and frequency responses and by driver protection circuitry. Each channel has peak and rms limiters that prevent driver over-excursion and regulate voice coil temperatures.

The 900-LFC user panel (Figure 12) includes Input and Loop output connectors for audio, Limit and Active LEDs, and RMS connectors and controls (see Chapter 5, "RMS Remote Monitoring System").

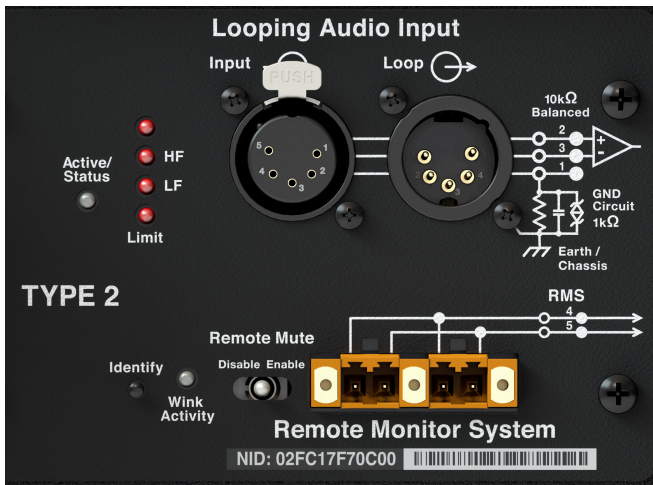


Figure 12: 900-LFC User Panel

AUDIO CONNECTORS

The 900-LFC is available with XLR 3-pin or 5-pin connectors for audio Input and audio Loop output (Figure 13 and Figure 14). XLR 5-pin connectors accommodate both balanced audio and RMS signals.



Figure 13: XLR 5-Pin Audio Connectors, Input and Loop Output




Figure 14: XLR 3-Pin Audio Connectors, Input and Loop Output


Audio Input (XLR 3-Pin or 5-Pin Female)

The XLR 3-pin or 5-pin female Input connector accepts balanced audio signals with an input impedance of 10 kOhm. The connector uses the following wiring scheme:

- **Pin 1** – 1 kOhm to chassis and earth ground (ESD clamped)
- **Pin 2** – Signal (+)
- **Pin 3** – Signal (-)
- **Pin 4** – RMS (polarity insensitive)
- **Pin 5** – RMS (polarity insensitive)
- **Case** – Earth (AC) ground and chassis


 **NOTE:** Pins 4 and 5 (RMS) are included only with XLR 5-pin connectors.

Pins 2 and 3 carry the input as a differential signal. Pin 1 is connected to earth through a 1 kOhm, 1000 pF, 15 V clamped network. This circuitry provides virtual ground lift for audio frequencies while allowing unwanted signals to bleed to ground. Make sure to use balanced XLR audio cables with pins 1–3 connected on both ends. Telescopic grounding is not recommended and shorting an input connector pin to the case may cause a ground loop, resulting in hum.

 **TIP:** If unwanted noise or hiss is produced by the loudspeaker, disconnect its input cable. If the noise stops, there is most likely nothing wrong with the loudspeaker. To locate the source of the noise, check the audio cable, source audio, AC power, and electrical ground.

Audio Loop Output (XLR 3-Pin or 5-Pin Male)


The XLR 3-pin or 5-pin male Loop output connector allows multiple loudspeakers to be looped from a single audio source. The Loop output connector uses the same wiring scheme as the Input connector (see “Audio Input (XLR 3-Pin or 5-Pin Female)” on page 19). For applications that require multiple 900-LFCs, connect the Loop output of the first loudspeaker to the Input of the second loudspeaker, and so forth.


 **NOTE:** The Loop output connector is wired in parallel to the Input connector and transmits the unbuffered source signal even when the loudspeaker is powered off.


Calculating Load Impedance for Looped Audio Signals

To avoid distortion when looping multiple loudspeakers, make sure the source device can drive the total load impedance of the looped loudspeakers. In addition, the source device must be capable of delivering approximately 20 dBV (10 V rms into 600 ohms) to yield the maximum SPL over the operating bandwidth of the loudspeakers.

To calculate the load impedance for the looped loudspeakers, divide 10 kOhms (the input impedance for a single loudspeaker) by the number of looped loudspeakers. For example, the load impedance for ten 900-LFCs is 1000 ohms (10 kOhms / 10). To drive this number of looped loudspeakers, the source device should have an output impedance of 100 ohms or less. This same rule applies when looping 900-LFCs with other Meyer Sound self-powered loudspeakers.

 **NOTE:** Most source devices are capable of driving loads no less than 10 times their output impedance.

 **TIP:** Audio outputs from Meyer Sound’s Galileo GALAXY Network Platform have an output impedance of 50 ohms. Each output can drive up to 20 Meyer Sound (10 kOhm) loudspeakers without distortion.

 **CAUTION:** Make sure that all cabling for looped loudspeakers is wired correctly (Pin 1 to Pin 1, Pin 2 to Pin 2, and so forth) to prevent the polarity from being reversed. If one or more loudspeakers in a system have reversed polarity, frequency response and coverage will be significantly degraded.

CABLE RINGS

Two cable rings are provided on the rear of the 900-LFC cabinet (Figure 15). Power and audio cables should be tied off to the rings to reduce strain on the cables and prevent damage to them during installation. The cable rings should not be used for any other purpose.

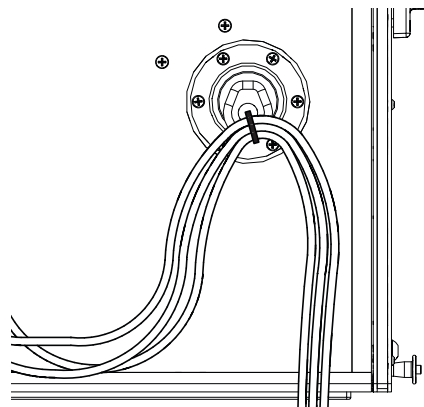



Figure 15: Cables Tied Off to Cable Ring

 **CAUTION:** 900-LFC cable rings should only be used to reduce strain on cables. The cable rings should not be used for any other purpose.

TRUPOWER LIMITING

The 900-LFC employs Meyer Sound’s advanced TruPower® limiting. Conventional limiters assume a constant loudspeaker impedance and set the limiting threshold by measuring voltage alone. This method is inaccurate because loudspeaker impedances change as frequency content in the source material changes, and as thermal

values for the loudspeaker's voice coil and magnet vary. Consequently, conventional limiters often begin limiting prematurely, which reduces system headroom and dynamic range.

In contrast, TruPower limiting anticipates varying loudspeaker impedances by measuring both current and voltage to compute the actual power dissipation in the voice coil. This approach improves performance, both before and during limiting, by allowing the driver to produce the maximum SPL across its entire frequency range, while also retaining signal peaks. TruPower limiting also eliminates power compression at high levels over lengthy periods, which helps regulate voice coil temperatures, thereby extending the life of the driver.

LF Limit LED

The low-frequency driver for the 900-LFC is powered by separate amplifier channels, one for each voice coil, that are routed to a single limiter. When a safe power level is exceeded in either channel, limiting is engaged for both channels and the LF Limit LED lights (Figure 16) on the user panel (the HF Limit LED is disabled for the 900-LFC).

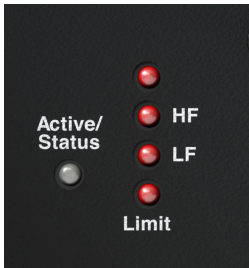


Figure 16: 900-LFC Limit LEDs (HF LED Disabled)

When engaged, the limiter not only protects the drivers but also prevents signal peaks from causing excessive distortion in the amplifier channels, thereby preserving headroom and maintaining smooth frequency response at high levels. When levels return to normal, below the limiter threshold, limiting ceases.

The 900-LFC performs within its acoustical specifications at normal temperatures when the LF Limit LED is unlit, or when the LED is lit for 2 seconds or less and then turns off for at least 1 second. If the LED remains lit for longer than 3 seconds, the loudspeaker enters hard limiting where:

- Increases to the input level have no effect
- Distortion increases due to clipping
- Drivers are subjected to excessive heat and excursion, thereby compromising their lifespan

CAUTION: The Limit LED indicates when a safe, optimum level is exceeded. If a 900-LFC loudspeaker system begins to limit before reaching the desired SPL, consider adding more loudspeakers to the system.

AMPLIFIER COOLING SYSTEM

The 900-LFC is convection cooled. The amplifier's heat sink provides natural convection cooling from the air flowing near its fins. When exposed to high ambient temperatures or when driven continuously at high output levels, a variable-speed fan circulates air internally to ensure that the 900-LFC remains operational.

CAUTION: To keep the 900-LFC from overheating, allow at least 6 inches behind the cabinet for proper ventilation.

CAUTION: The 900-LFC's heat sink can reach temperatures up to 80 °C (176 °F) during extreme operation. Wait 15 minutes for the loudspeaker to cool before touching.

ACTIVE/STATUS LED

During normal operation, when the 900-LFC is powered on, the Active/Status LED is solid green. If the loudspeaker encounters a hardware fault, or the loudspeaker begins to overheat, the LED flashes red. In some instances, the loudspeaker will continue to output audio while the LED flashes red, though with a reduction in the limiter threshold and acoustic output to protect the loudspeaker.

If a loudspeaker is overheating (for RMS-equipped loudspeakers, you can verify this situation in Compass RMS), a reduction in SPL may be necessary. If, after a reduction in SPL and an appropriate cooling period, the Active/Status LED continues to flash red (does not return to solid green), contact Meyer Sound Technical Support.

If the Active/Status LED flashes red and the loudspeaker does not output audio, contact Meyer Sound Technical Support immediately.

CAUTION: If a 900-LFC loudspeaker system consistently overheats before reaching the desired SPL, consider adding more loudspeakers to the system.

NOTE: During startup, the Active/Status LED flashes multiple colors successively. For more

information about the power on sequence, see “Intelligent AC Power Supply” on page 16.



TIP: When the 900-LFC is connected to an RMS network, the Compass RMS software provides additional feedback on the loudspeaker’s hardware status and operating temperature. For more information, see Chapter 5, “RMS Remote Monitoring System.”

CHAPTER 4: QUICKFLY RIGGING

IMPORTANT SAFETY CONSIDERATIONS!

When installing Meyer Sound loudspeakers and subwoofers, the following precautions should always be observed:

- All Meyer Sound products must be used in accordance with local, state, federal, and industry regulations. It is the owner's and user's responsibility to evaluate the reliability of any rigging method for their application. Rigging should only be carried out by experienced professionals.
- Use mounting and rigging hardware that has been rated to meet or exceed the weight being hung.
- Make sure to attach mounting hardware to the building's structural components (roof truss), and not just to the wall surface.
- Make sure bolts and eye bolts are tightened securely. Meyer Sound recommends using Loctite® on all threaded fasteners.
- Inspect mounting and rigging hardware regularly. Immediately replace any worn or damaged components.

900-LFC RIGGING OPTIONS

Table 4 summarizes the available rigging options for the 900-LFC.



NOTE: For complete information about rigging hardware, including dimensions, weight, configuration, and load ratings, refer to the MG-LEOPARD/900-LFC Assembly Guide (PN 05.243.080.01) available at meyersound.com/documents.



CAUTION: Always use the MAPP System Design Tool to verify load ratings for a particular application.

Table 4: 900-LFC Rigging Options

Model	Weight	Features	Required Quick-Release Pins	Required Shackles
MRK-900-LFC rigging kit (PN 40.246.168.01)	—	Allows the 900-LFC to be flown and groundstacked with the MG-LEOPARD/900-LFC grid; includes six captive GuideALinks and eight quick-release pins.	5/16 x 0.63-inch (black button), PN 134.024, qty 8 included	—
MG-LEOPARD/900-LFC multipurpose grid (PN 40.243.080.01)	60.5 lb (27.5 kg)	With some restrictions, flies up to 16 900-LFCs at a 5:1 safety factor; supports mixed arrays of LEOPARDS and 900-LFCs without transition hardware; accommodates a variety of pickup configurations with four corner and 13 center pickup points; includes attachment points to accommodate brackets and adapters for lasers and inclinometers; can also be used for groundstacking.	5/16 x 0.875-inch (red button), PN 134.025, qty 10 included	5/8-inch or 3/4-inch
MG-LEOPARD/900-LFC grid tilt kit (PN 40.243.163.01)	2 lb (0.9 kg)	Includes two angle feet that attach to the rear of the MG-LEOPARD/900-LFC grid that add from 3-8 degrees of tilt to groundstacks.	5/16 x 0.875-inch (red button), PN 134.025, qty 0 included; see note below.	—
MPK-POLE-35MM-M20 Adjustable Pole Kit (PN 40.010.973.01)	8 lb (3.63 kg)	Adjustable length 927–1524 mm (36.5–60 in), 35 mm (1.375 in) pole with assisted lift. Lower shaft fits 35 mm cups or use the removable M20 threaded lug for added stability. Upper shaft includes PAS-M20 Adapter Sleeve to fit loudspeakers with 35 mm and M20 internal pole mounts onto a 35 mm speaker stand. (Can also buy the PAS-M20 Adapter Sleeve separately). Additional 38 mm (1.5 in) adapter included.	—	—
MVP motor Vee plate (PN 40.215.184.01)	20 lb (9.1 kg)	Fine tunes the horizontal aim of arrays; compatible with MTG-LEO-M, MTG-LYON, MTG-1100, and MG-LEOPARD/900-LFC grids.	—	3/4-inch or 7/8-inch

Table 4: 900-LFC Rigging Options

PBF-LEOPARD pull-back frame (PN 40.243.185.01)	4.9 lb (2.2 kg)	Attaches to bottom of LEOPARD and 900-LFC arrays (to the bottom cabinet) and provides pull-back for extreme array downtilt; can also be used to add tilt to LEOPARDs groundstacked on the 900-LFC	5/16 x 0.63-inch (black button), PN 134.024, qty 2 included	1/2-inch
MCF-900-LFC caster frame (PN 40.246.130.01)	46 lb (20.9 kg)	Safely transports up to two 900-LFC cabinets, making it easy to assemble and disassemble arrays in blocks of two cabinets; configurable for cabinets with or without the MRK-900-LFC rigging kit	5/16 x 0.63-inch (black button), PN 134.024, qty 0 included; see note below.	—

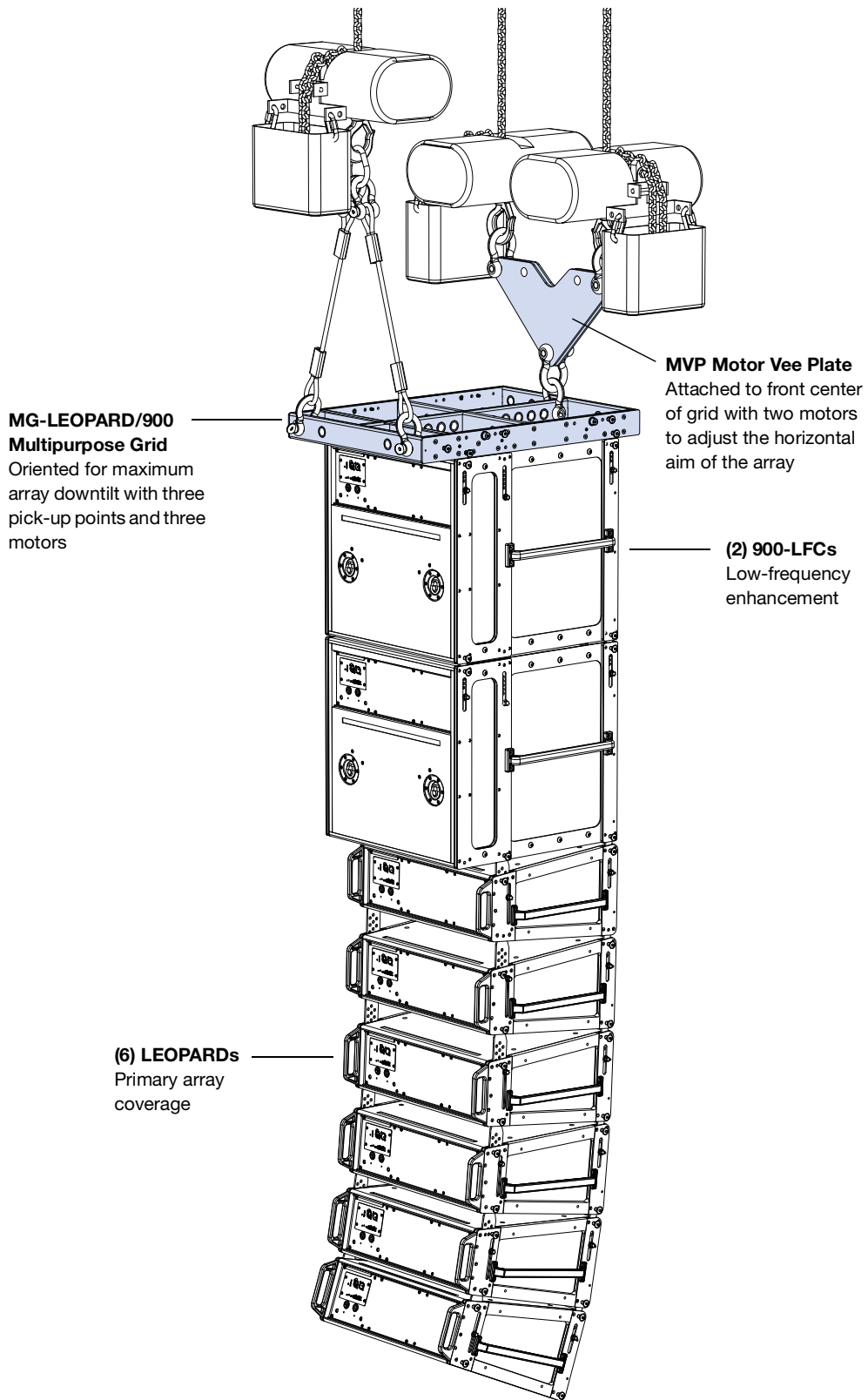


NOTE: The MCF-900-LFC caster frame does not include quick-release pins because it is secured with the quick-release pins included with the loudspeaker.



NOTE: The MG-LEOPARD/900-LFC grid tilt kit does not include quick-release pins because the angle feet are secured with the quick-release pins included with the grid.

Rigging Example, Mixed Array with 900-LFCs and LEOPARDS



GROUNDSTACKING 900-LFC LOUSPEAKERS

900-LFCs can be groundstacked up to three cabinets high, with or without the MRK-900-LFC rigging kit (Figure 17). Protective plastic skids are included on the bottom of the 900-LFC cabinet that align with the slots on the cabinet top. Loudspeakers can be stacked normally or reversed for cardioid configurations. When groundstacking 900-LFCs, make sure the skids for each cabinet align with the slots in the cabinet tops. When equipped with the MRK-900-LFC rigging kit, the 900-LFC can be groundstacked on the MG-LEOPARD/900-LFC grid with LEOPARDS for mixed groundstacks.

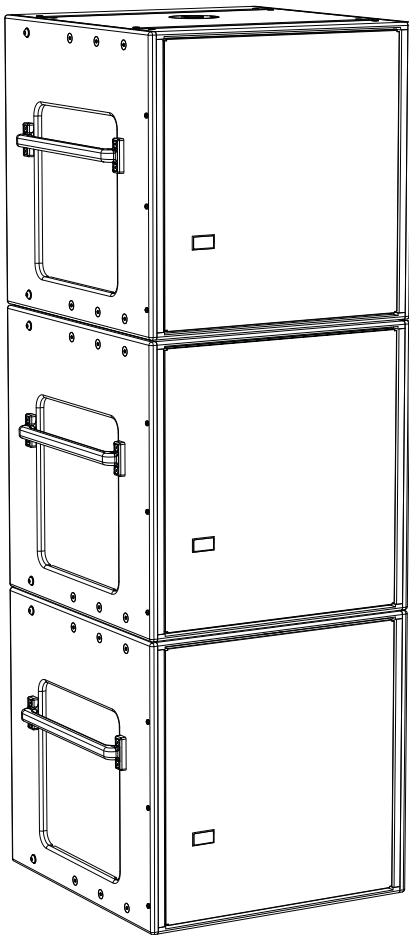


Figure 17: 900-LFC Groundstack (Without Rigging)



CAUTION: As a safety precaution, to avoid tipping, a maximum of three cabinets is supported for groundstacked 900-LFCs.



NOTE: 900-LFCs need not be equipped with the MRK-900-LFC rigging kit for secure groundstacking of up to three cabinets.

900-LFC CARDIOID ARRAYS

The 900-LFC can be configured in cardioid arrays to reduce output heard behind the loudspeakers (Figure 18). The loudspeaker's linearity ensures that cardioid patterns behave accurately even at very high levels. Cardioid arrays are achieved by placing three loudspeakers coplanar to each other (in either a groundstacked or flown array) with one loudspeaker facing the opposite direction. Polarity and delay processing is applied to the rear-facing loudspeaker, which yields output that cancels output from the other loudspeakers normally present behind the cardioid arrays. For example, on the rear-facing unit, reverse the polarity relative to the front-facing loudspeaker and add 3.8 ms relative to the front-facing units.

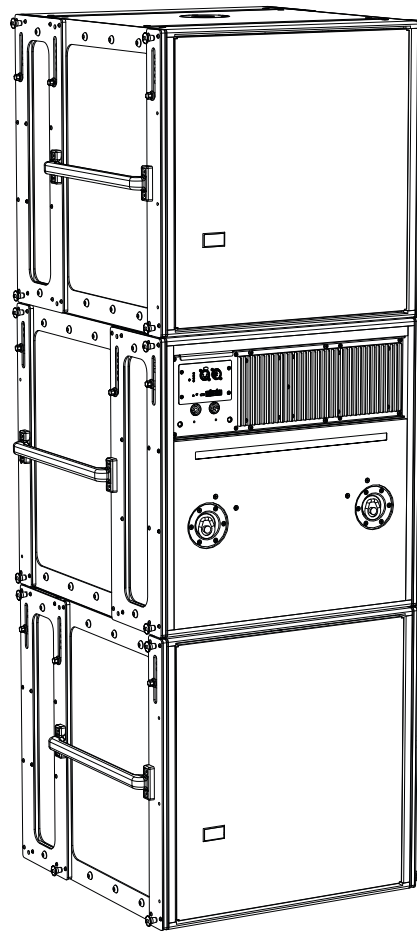




Figure 18: 900-LFC Cardioid Groundstack (With Rigging)



NOTE: 900-LFCs need not be equipped with the MRK-900-LFC rigging kit for groundstacked cardioid configurations of up to three cabinets.


 **NOTE:** 900-LFC cardioid arrays can also be flown from the MG-LEOPARD/900-LFC grid.

For more information, refer to the MG-LEOPARD/900-LFC Assembly Guide (PN 05.243.080.01) available at www.meysound.com.

 **NOTE:** To achieve an accurate cardioid pattern, Meyer Sound's MAPP System Design Tool and the Galileo® GALAXY Network Platform are required. Use MAPP to calculate the appropriate ratio of forward to rear-facing loudspeakers. A myriad of cardioid and directional configurations are possible and can be calculated and predicted with MAPP. For more information, contact Meyer Sound Technical Support.

MRK-900-LFC RIGGING KIT

The optional MRK-900-LFC rigging kit allows the 900-LFC to be flown and groundstacked with the MG-LEOPARD/900-LFC multipurpose grid. The kit also allows 900-LFCs to be flown and groundstacked with LEOPARD with no transition hardware. The rigging kit is available as a factory-installed option or as a field upgrade and uses rugged GuideALinks and intuitive quick-release pins to securely link adjacent loudspeakers in flown and groundstacked array configurations.

 **NOTE:** For more information about the MRK-900-LFC rigging kit, including its kit contents, weight, and installation instructions, refer to the MG-LEOPARD/900-LFC Assembly Guide (PN 05.243.080.01) available at meysound.com/documents.

900-LFC GUIDEALINKS

When equipped with the MRK-900-LFC rigging kit, the 900-LFC includes six captive GuideALinks and six mating link slots that link to adjacent loudspeakers in flown and groundstacked arrays. Located at the top of the cabinet, GuideALinks extend up and into the link slots of the cabinet above it (Figure 19 and Figure 20), or into the link slots of the MG-LEOPARD/900-LFC grid, making it easy to link cabinets when they are stacked. GuideALinks extend and retract with knobs and are secured with two quick-release pins: one each in the top and bottom cabinets. GuideALinks accommodate reversed loudspeakers for cardioid arrays. The MRK-900-LFC rigging kit includes eight 5/16 x 0.63-inch quick-release pins (black button) (PN 134.024).

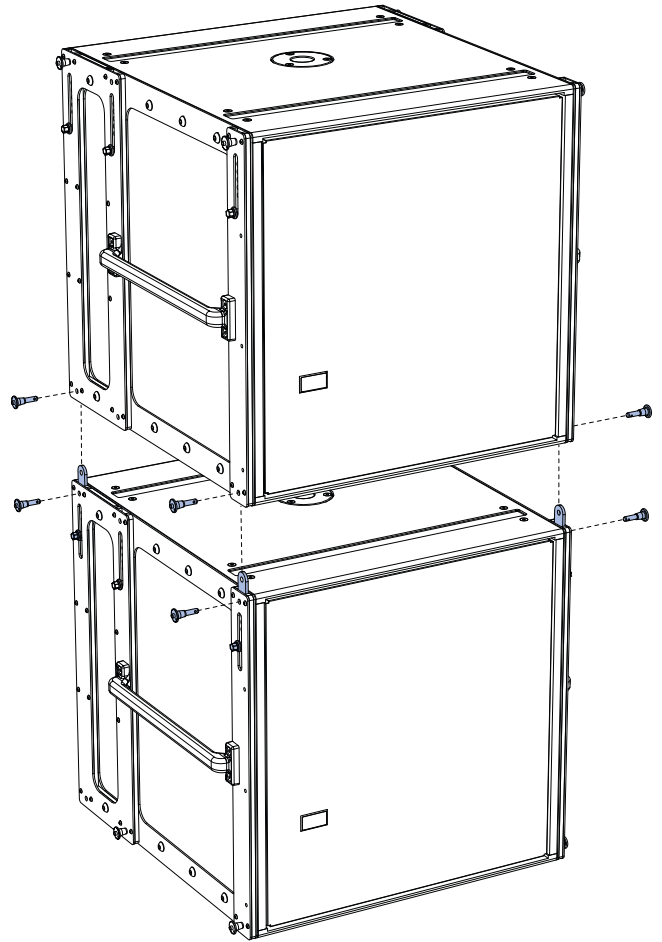


Figure 19: 900-LFCs with MRK-900-LFC Rigging Kit, GuideALinks, Exploded View

The 900-LFC's GuideALinks accommodate both 900-LFCs and LEOPARDS without transition hardware. The front and rear GuideALinks are used when flying the 900-LFC below the MG-LEOPARD/900-LFC grid, or when flying it below another 900-LFC (Figure 20). The configuration of the 900-LFC's GuideALinks, front and rear, determines its splay angle.

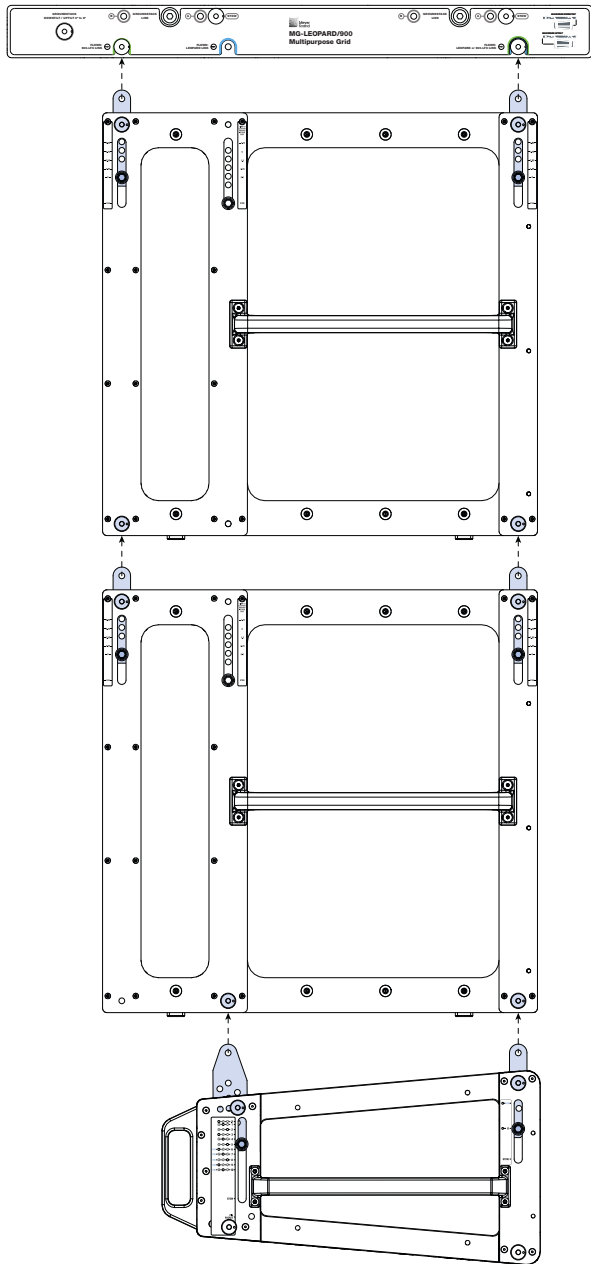


Figure 20: Flown 900-LFC with GuideALink Attachments

The 900-LFC's four corner link slots on the bottom of the cabinet accept GuideALinks from flown 900-LFCs. The front and middle link slots accept LEOPARD GuideALinks when flying LEOPARDS below the 900-LFC (Figure 20). The configuration of LEOPARD's GuideALinks, front and rear, determines its splay angle.

The 900-LFC's front and middle link slots also accept links from the MG-LEOPARD/900-LFC grid when groundstacking the 900-LFC (Figure 21). The configuration of the grid's links,

whether set to A or B, determines the angle of attachment for the groundstacked 900-LFC.

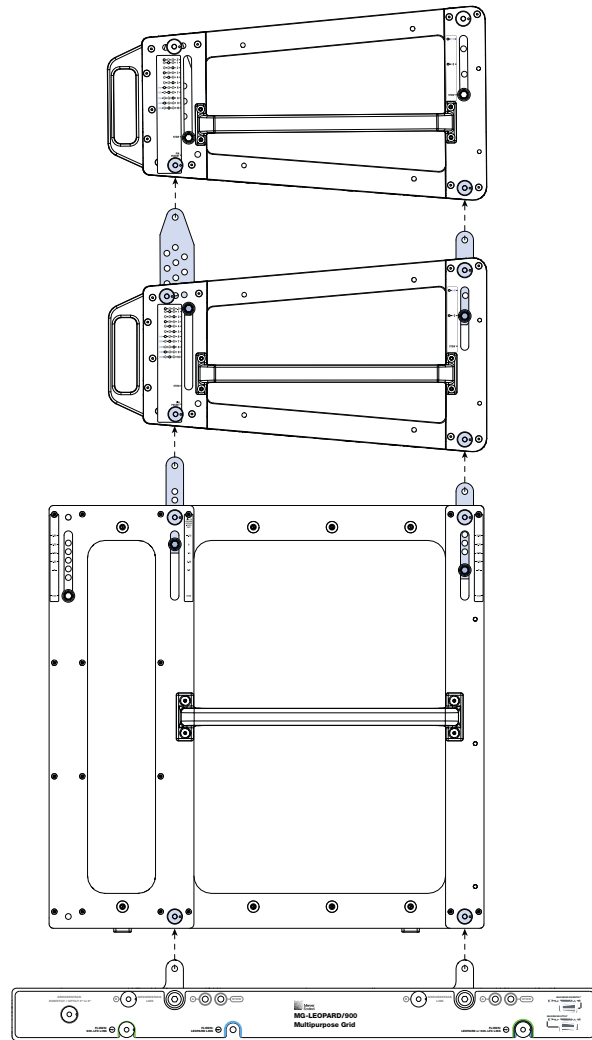


Figure 21: Groundstacked 900-LFC with GuideALink Attachments

The 900-LFC's front and middle GuideALinks are used when attaching a LEOPARD groundstack on top of the 900-LFC (Figure 21).

CAUTION: Do not use the middle GuideALinks when flying the 900-LFC below the MG-LEOPARD/900-LFC grid or when flying below another 900-LFC. Always use the front and rear GuideALinks when flying the 900-LFC.

NOTE: When flying the 900-LFC below the MG-LEOPARD/900 grid, a splay angle of 0 degrees is recommended for the top cabinet (rear GuideALinks set to 0, front GuideALinks set to 0) to ensure that the cabinet aligns with any lasers or inclinometers mounted on the grid. To add tilt to the

top cabinet, the actual grid should instead be tilted. For more information, refer to the MG-LEOPARD/900 Assembly Guide (PN 05.243.080.01) available at meyersound.com/documents.

900-LFC Splay Angles

The front and rear GuideALinks attach at angles of 0.00, 1.25, 2.50, 3.75, or 5.00 degrees, thereby allowing curved arrays for the 900-LFC. Because the cabinet and front and rear GuideALinks are symmetrical, the curved arrays can also include cardioid configurations.

The labels next to the front (Figure 22) and rear GuideALinks indicate the splay angle between cabinets (when the opposing links are set to 0 degrees). As the links are moved up, the splay angles increase. To stow the GuideALinks, move them all the way down to STOW and pin them.

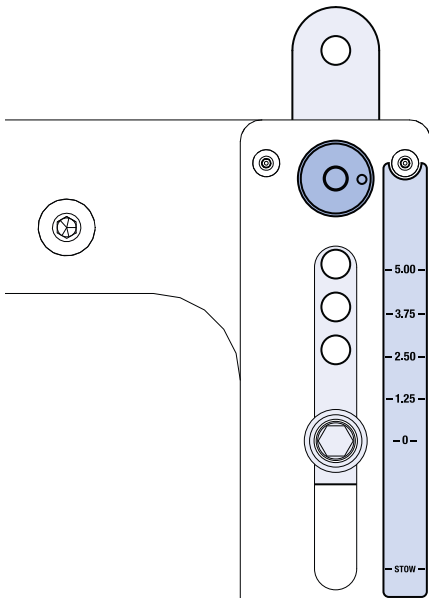


Figure 22: 900-LFC Front GuideALinks Label



NOTE: Curved 900-LFC arrays do not provide directionality for low-frequency content. The curved array capability of the 900-LFC is provided for aesthetic reasons, to complement, if desired, the curvature of LEOPARD, LYON, and LEO-M arrays and to not potentially shadow the HF output of an adjacent array.

POLE-MOUNT RECEPTACLE

You can mount a Meyer Sound loudspeaker on top of the 900-LFC with a third-party heavy-duty pole and pole-mount

adapter (Figure 23). The 900-LFC includes a 38 mm (1.5 in) (U.S.) or 35 mm (1.38 in) (E.U.) pole-mount receptacle.

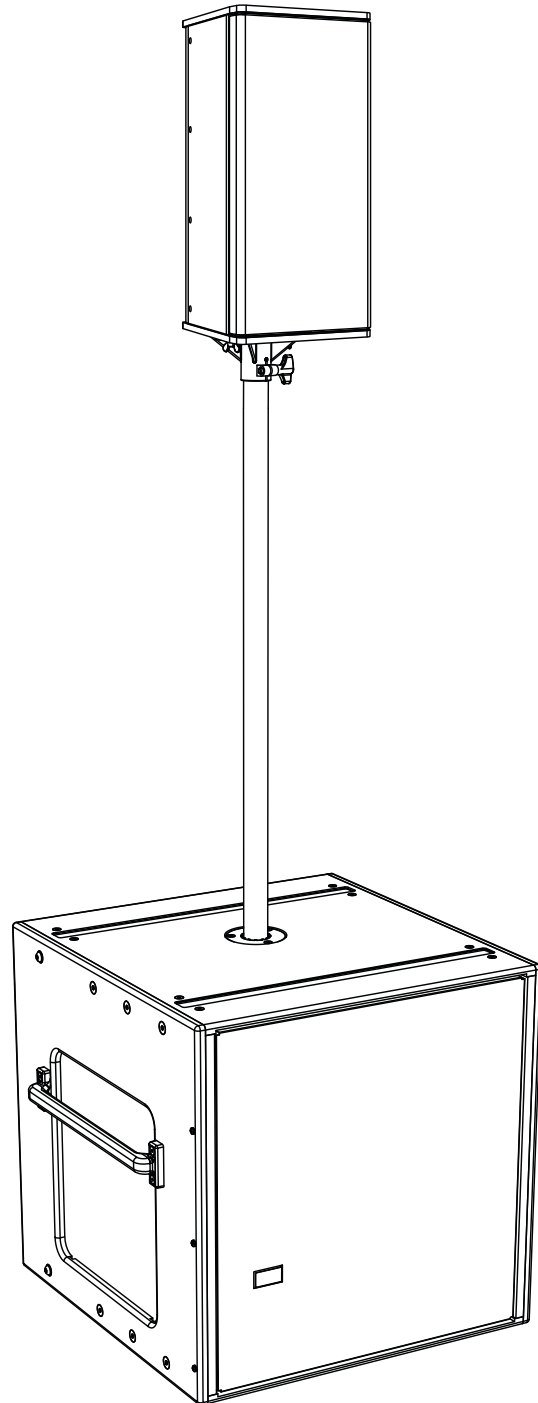


Figure 23: 900-LFC with Pole and Pole-Mount Adapter

The following Meyer Sound loudspeakers can be mounted on top of the 900-LFC. Make sure that the pole and pole-mount adapter can support the weight of the mounted loudspeakers

and that they are installed according to the manufacturer's instructions.

- (1) ULTRA-X40/42 (55 lb, 25 kg)
- (1) UPA-1P or UPA-2P (77 lb, 34.9 kg)
- (1) UPJ-1P (46 lb, 20.9 kg)
- (1) UPJunior (28 lb, 12.7 kg)
- (2) UPJuniors with MUB-UPJunior U-bracket and MAAM-UPJunior array adapter (70 lb, 31.8 kg)




CAUTION: Make sure the pole and pole-mount adapter can support the total weight of the mounted loudspeakers. In particular, heavier loudspeakers are less stable on taller pole mounts. Observe all safety precautions specified by the pole manufacturer.

CHAPTER 5: RMS REMOTE MONITORING SYSTEM

The 900-LFC includes an RMS remote monitoring system module, allowing the loudspeaker to be connected to an RMS network. RMS reports, in real time, the status and power usage of multiple Meyer Sound loudspeakers from a Mac or Windows-based computer. The RMS host computer communicates with Meyer Sound loudspeakers (equipped with RMS modules) via RMsServer™, a compact, Ethernet-based hardware unit with two FT-10 RMS data ports. RMsServer stores system configurations internally, eliminating most manual data entry. Systems can be monitored from a computer at front-of-house or backstage, or from a laptop anywhere within the venue over WiFi.

 **NOTE:** For the latest RMS system requirements, visit the Meyer Sound website (meyersound.com/products).

 **NOTE:** RMS does not control AC power.

COMPASS RMS SOFTWARE

Compass RMS™ software provides extensive system status and performance data for each loudspeaker, including amplifier voltage, limiting activity, power output, fan and driver status, as well as mute and solo capability. Loudspeakers are added to the RMS network and assigned a node name during a one-time discovery procedure. After loudspeakers are identified on the RMS network, they appear in Compass RMS as icons that can be customized to suit your needs (Figure 24).

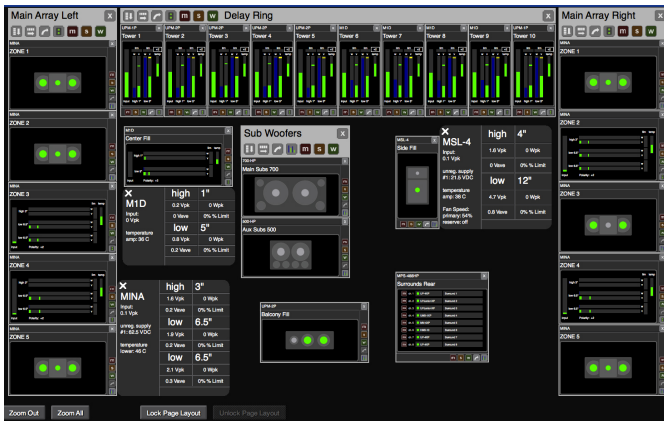


Figure 24: Compass RMS Window

Individual loudspeakers can be physically identified with the Wink option in RMS, which lights the Wink LED on the RMS module of that particular loudspeaker. Conversely, a

loudspeaker can be identified in Compass RMS by pressing the Identify button on the loudspeaker's RMS module.

Loudspeaker icons can be arranged in Compass RMS and saved as pages to represent how the loudspeakers have been deployed in the system. Multiple pages can be saved and recalled for specific performances and venues.

RMS MODULE

The 900-LFC RMS user panel includes an Identify button, Remote Mute switch, Wink/Activity LED, and two Network connectors (Figure 25).

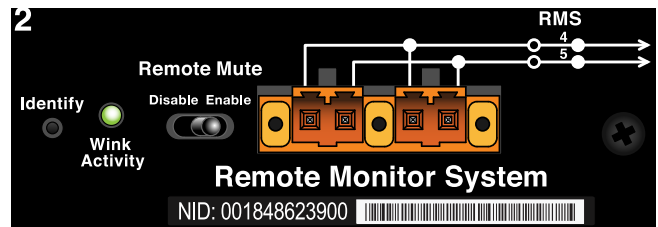




Figure 25: 900-LFC RMS Module

 **NOTE:** The Identify button and Wink/Activity LED on the RMS user panel are used exclusively by RMS and have no effect on the acoustical or electrical activity of the loudspeaker.

Identify Button

The Identify button serves the following functions:

- If the loudspeaker has not yet been discovered on the RMS network (Wink/Activity LED not lit), press the Identify button to discover it.
- To remove the loudspeaker from the RMS network, press and hold the Identify button during startup (see “Resetting the RMS Module” on page 32).
- To *wink* a discovered loudspeaker, press the Identify button. The Wink LED on the loudspeaker icon in Compass RMS lights up and the Wink/Activity LED on the loudspeaker's RMS user panel turns solid green. Press the Identify button again to unwink the loudspeaker.

 **TIP:** The Wink function is useful for identifying the physical loudspeaker corresponding to a loudspeaker icon in Compass RMS.

Wink/Activity LED (Green)

The green Wink/Activity LED indicates the status of the loudspeaker:

- During startup, the LED flashes green 10 times.
- If the loudspeaker has not yet been discovered on the RMS network, the LED is not lit after startup.
- If the loudspeaker has been successfully discovered on the RMS network, the LED flashes green continuously and flashes more rapidly with increased data activity.
- When the loudspeaker is winked, either by clicking the Wink button in Compass RMS or by pressing the Identify button on the RMS user panel, the LED is solid green. The LED remains solid green until the loudspeaker is unwinked.



TIP: The loudspeaker can also be winked by clicking the Wink button on the loudspeaker icon in Compass RMS.

Remote Mute Switch

The recessed Remote Mute switch (Figure 26) on the 900-LFC RMS module determines whether Compass RMS can control muting and soloing of the loudspeaker. The 900-LFC ships from the factory with the switch enabled.



Figure 26: Remote Mute Switch

- **Disable:** When the Remote Mute switch is set to Disable (to the left), the loudspeaker cannot be muted or soloed from Compass RMS.
- **Enable:** When the Remote Mute switch is set to Enable (to the right), the loudspeaker can be muted and soloed from Compass RMS.



NOTE: Compass RMS also allows you to disable Mute and Solo functions to eliminate any possibility of accidentally muting loudspeakers.

RMS Network Connectors

The Weidmuller 2-conductor, locking connectors transfer data to and from the RMS network. Two connectors are

provided to allow for easy connection of multiple (daisy-chained) loudspeakers on the network. Included with each RMS-equipped loudspeaker are RMS cable connectors and mounting blocks for constructing RMS cables. The RMS blocks allow the Weidmuller connectors to be securely attached to the RMS module with screws.

NEURON ID FOR RMS MODULE

Each RMS module has a unique 12-character Neuron ID (NID) that identifies the loudspeaker on the network. The NID is automatically detected by RMServer but can also be entered manually, if necessary, when configuring RMS systems in Compass RMS without loudspeakers present. The NID label is located on the RMS user panel near the orange Network connectors.

RESETTING THE RMS MODULE

Use the Identify button to reset the 900-LFC RMS module when powering on the loudspeaker. This action will cause the module to be removed from the RMS network.

To reset the RMS module:

1. Power down the loudspeaker.
2. Press and hold the Identify button.
3. While continuing to hold down the Identify button, power on the loudspeaker.
4. After the Wink/Status LED flashes on and off, release the Identify button. The RMS module is reset and the loudspeaker is removed from the RMS network.

CHAPTER 6: SYSTEM DESIGN AND INTEGRATION TOOLS

This chapter introduces MAPP, Meyer Sound's patented system design tool and the Galileo GALAXY Network Platform.

MAPP SYSTEM DESIGN TOOL

The MAPP System Design Tool (Figure 27) is a powerful, cross-platform application for accurately predicting the coverage pattern, frequency response, phase response, impulse response, and SPL capability of individual or arrayed Meyer Sound loudspeakers.

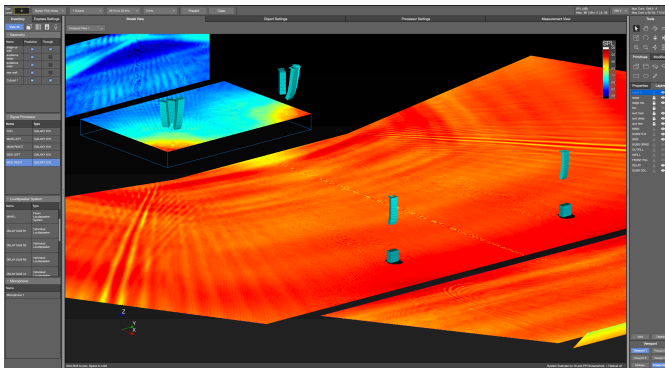


Figure 27: MAPP System Design Tool

Whether planning for fixed installations or for tours with multiple venues, use MAPP to accurately predict the appropriate loudspeaker deployment for each job, complete with coverage data, system delay and equalization settings, rigging information, and detailed design illustrations. MAPP's accurate, high-resolution predictions ensure that systems will perform as intended, thereby eliminating unexpected coverage problems and minimizing onsite adjustments.

The key to the accuracy of MAPP's predictions is Meyer Sound's exhaustive database of loudspeaker measurements. Performance predictions for each loudspeaker are based on 3-dimensional, 65,000+ 1/48th-octave-band measurements taken in the Meyer Sound anechoic chamber. The extraordinary consistency between Meyer Sound loudspeakers guarantees that predictions from MAPP will closely match their actual performance.

MAPP software allows for configuration of Meyer Sound loudspeaker systems and definition of the environment in which they operate, including air temperature, pressure, humidity, and the location of prediction surfaces. Importing both CAD (.DXF) and Sketchup (.SKP) files containing detailed venue information to act as an anchor model to the prediction surfaces and a visual aid to facilitate prediction data interpretation is also possible.



TIP: See meyersound.com/products for more information about and support for MAPP.

MAPP Capabilities

With MAPP, the user can:

- Simulate different loudspeaker configurations to refine system designs and determine the best coverage for intended audience areas
- Model loudspeaker interactions to locate constructive and destructive interferences so that loudspeakers can be re-aimed and repositioned as necessary
- Place microphones anywhere in the Model View space and predict loudspeaker frequency response, phase response, and sound pressure levels at each microphone position
- Determine delay settings for fill loudspeakers using the Inverse Fast Fourier Transform and phase response feature
- Preview the results of signal processing to determine optimum settings for the best system response
- Automatically calculate load information for arrays to determine necessary minimum rigging capacity, front-to-back weight distribution, and center of gravity location
- Generate and export system images and system PDF reports for client presentations
- Synchronize GALAXY processor output channel settings in real time with virtual or real GALAXY units, allowing in-the-field changes to be predicted during system alignments.

GALILEO GALAXY NETWORK PLATFORM

The Galileo GALAXY Network Platform is a sophisticated loudspeaker management tool for controlling all Meyer Sound speaker types. The GALAXY loudspeaker processor extends a high level of audio control in driving and aligning loudspeaker systems with multiple zones. It provides a powerful tool set for corrective equalization (EQ) and creative fine-tuning for a full range of applications from touring to cinema.

Users can readily program the GALAXY processor using Compass software running on a host computer or via the Compass Go application for the iPad. Connecting MAPP to the GALAXY processor will also allow the user to push output channel settings created in MAPP as a starting point. Compass Control Software includes custom-designed settings for each family of speakers, as well as to integrate families together. For example, the Product Integration feature matches the phase characteristics between Meyer speaker families to ensure the most coherent summation.

Processing tools for inputs and outputs include delay, parametric EQ and U-Shaping EQ. Output processing also includes polarity reversal, Low-Mid Beam control (LMBC), atmospheric correction, and All Pass filters.

The built-in summing and delay matrices allow a user to easily assign gain and delay values, respectively, at each cross point. This capability greatly facilitates using one loudspeaker to satisfy multiple purposes.

Front panel controls let a user intuitively and quickly operate a GALAXY processor without a computer during live use.

The GALAXY 408, GALAXY 816 and GALAXY 816-AES3 processor versions have the same audio processing capability with different I/O. See www.meyersound.com to locate their datasheets for more information.

APPENDIX A: MEYER SOUND WEATHER PROTECTION

The Weather Protection option from Meyer Sound is intended to increase the useful life of Meyer Sound loudspeakers when they are installed outdoors and exposed to different and often harsh weather conditions. Our Weather Protection includes a penetrating treatment to raw wood, use of special primers, and plating on all steel parts used (or alternatively, the use of stainless steel hardware). Weather Protection is designed to prevent malfunctions caused by harsh operating environments and slows the accelerated wear and tear that occurs in outdoor environments.

When Is Weather Protection Advisable?

Weather Protection is strongly recommended for all permanent outdoor installations where loudspeakers are directly exposed to the elements. This includes desert and semi-arid climates, where protection against dust and sand is important, and where infrequent rainstorms can contribute to deterioration of loudspeaker components.

Weather Protection is also recommended when the loudspeakers are sheltered from direct exposure to precipitation but are nevertheless exposed to prolonged high humidity, fog or mist. Examples would be installations on covered outdoor terraces or pavilions.

Weather Protection is further advisable for portable or touring systems when any significant outdoor use is anticipated. Even though standard procedures may call for using external protective measures, these are often not implemented in time to prevent moisture intrusions that could lead to premature performance degradation of the loudspeaker.

Climate Variation and Owner Maintenance

The wear and tear on a loudspeaker will vary significantly with different climatic conditions. For example, a weather-protected loudspeaker installed in a sunlight-exposed location on an ocean pier will experience much harsher conditions than a loudspeaker in a similar installation that is shaded by trees and exposed only to rainfall. The constant exposure to direct UV radiation and salt air environment will cause a loudspeaker to wear more quickly than one with partial UV shielding and exposed only to freshwater moisture.

Wear can eventually affect the performance of the loudspeaker. It also affects aesthetics. For example, in salt

air environments, the exterior grille can quickly show signs of oxidation, causing unsightly discoloration.

Apart from selecting suitable weather protection, the progress of wear and tear on the loudspeaker can be slowed by a regular schedule of inspection and cleaning. This maintenance is particularly necessary in harsh environments. Inspection and cleaning should include routine removal of any visible oxidation or environmental particulates, as these can accelerate metal corrosion or decay of the cabinet. If installed loudspeakers are not in use for an extended period, exterior protection or temporary removal and storage of the loudspeakers should be considered.

Benefits of Weather Protection

There are several benefits to selecting the Meyer Sound Weather Protection option:

Functionality - Weather Protection prolongs the service life of the loudspeaker by preventing premature degradation of internal components.

Safety - Weather Protection lessens the chance of electrical malfunctions or structural failures.



WARNING: IT IS THE RESPONSIBILITY OF PURCHASERS/USERS/OPERATORS TO SELECT WEATHER PROTECTION WHEN APPROPRIATE FOR THEIR USE AND TO PERIODICALLY INSPECT THEIR LOUDSPEAKER INSTALLATIONS FOR ANY DETERIORATION THAT MAY LEAD TO SAFETY CONCERNS.

Aesthetics - Weather Protection slows wear and tear on the exterior of the loudspeaker in harsh conditions. Early signs of wear and tear on the exterior of the loudspeaker indicate over-exposure to the elements.

Standards Compliance - Weather Protection helps in meeting IP ratings for loudspeakers. IP ratings are an internationally recognized standard often used in installations involving our products. A further explanation of IP ratings is given in the "IP Ratings" Section on page 37.

WEATHER PROTECTION COMPONENTS

Standard Weather Protection

Meyer Sound designs toward an IP rating of IPX4 (see “IP Ratings” on page 37) for Standard Weather Protection, which includes the following components:

- Wood treatment—Prior to cabinet manufacturing, the raw wood receives a special treatment that penetrates and stabilizes the wood fibers to withstand a wide range of temperatures and exposure to extreme humidity.
- Cabinet finishing—The assembled cabinets receive a highly impervious finish that includes a sealing primer and a finishing topcoat. The coatings are applied on both surfaces, with one coat on the interior and two on the exterior. The final step is a two-part modified acrylic urethane similar to that used in military applications.
- Driver treatment—All cone drivers are coated with a water-resistant sealant.
- Exterior protection—Grille frames are coated to resist corrosion, and all components that mount to the cabinet use custom gaskets and stainless steel fasteners.
- Removable rain hood—The rain hood is designed to shield connectors even in wind-driven rain.

Ultra Weather Protection

For installations in extremely harsh environments, Meyer Sound offers an Ultra Weather Protection option on a limited number of loudspeaker models. (For a list of products offered with this option, please contact Meyer Sound.) Meyer Sound designs toward an IP rating of IPX5 for Ultra Weather Protection, which includes all of the components of standard Weather Protection, plus the following:

- Extended cabinet finishing with extra thick proprietary coatings
- Special printed circuit board treatments
- Use of corrosion-resistant hardware

Ultra Weather Protection is recommended for applications where loudspeakers will experience exposure to a salt air environment or chemicals, that have no sheltering from corrosive spray or UV exposure, and that cannot be covered or removed during their service life. Examples would include cruise ship exterior areas, ocean-side visitor attractions, swimming pool areas, and themed attractions with wind-carried water spray.

INSTALLATION PRACTICES

Meyer Sound assumes normal and accepted installation practices are used when installing Meyer Sound Loudspeakers outdoors. Deviation from such practices may cause weather protection to be ineffective and void the warranty for the loudspeaker.

Examples of unacceptable and acceptable installation practices include:

- Loudspeakers installed outdoors should not face upward.
- Loudspeakers with a rain hood should be installed in such a way that the rain hood opening is not facing any direction but down.
- Meyer Sound-supplied rigging components should not be modified (for example, by drilling additional holes in a MUB for mounting to a wall). When an installer/integrator modifies a Meyer Sound supplied rigging component to support their installation method, it is considered compromised and out of warranty.
- All loudspeaker cabling must be installed with a "drip-loop" or equivalent method to ensure that rain/water is NOT wicked toward the loudspeaker.

If in doubt about an installation method, contact Meyer Sound Technical Support for assistance.

Always discuss the environmental conditions of your Meyer Sound installation with your Sales Manager, and verify the availability of Weather Protection for your selected loudspeaker models. The Sales Manager, together with Technical Support, will verify the appropriate level of weather protection for the loudspeakers and related rigging hardware.

IP RATINGS

IP stands for "Ingress Protection." The current format for expressing an IP rating is a 2-digit code. The first digit of an IP rating represents protection from solid objects. The second digit of an IP rating represents protection from water or moisture. Table 5 provides a chart of IP ratings and the corresponding definitions of the rating.



NOTE: IP ratings only apply to the "ENCLOSURE." A loudspeaker is considered an enclosure and as such we can apply an IP rating to it. Rigging hardware is not an enclosure and therefore IP ratings do not apply. Also, cable and cable-mount connectors used to connect to the loudspeaker are NOT part of the enclosure and therefore not part of the IP rating. Only the chassis-mounted part of the connector is considered part of the enclosure.

Table 5: IP Ratings Definition Chart

First Digit (Protection against solid objects)	Definition	Second Digit (Protection against liquids)	Definition
X	Characteristic numeral is not required to be specified.	X	Characteristic numeral is not required to be specified.
0	No protection	0	No protection
1	Protected against solid objects over 50mm.	1	Protected against vertically falling drops of water.
2	Protected against solid objects over 12 mm.	2	Protected against direct sprays up to 15° from the vertical.
3	Protected against solid objects over 2.5mm.	3	Protected against direct sprays up to 60° from the vertical
4	Protected against solid objects over 1 mm.	4	Protected against direct sprays from all directions. Limited ingress permitted
5	Protected against dust. Limited ingress permitted.	5	Protected against low-pressure jets of water from all directions. Limited ingress permitted.
6	Totally protected against dust.	6	Protected against strong jets of water from all directions. Limited ingress permitted.
		7	Protected against the effect of temporary immersion between 15cm and 1m.
		8	Protected against the effect of long-term submersion of 1m or more.

APPENDIX B: RAIN HOODS

Weather-protected 900-LFCs include a quick-clip removable rain hood for indoor/outdoor touring and sheltered outdoor installations.

900-LFC QUICK-CLIP RAIN HOOD

The 900-LFC quick-clip removable rain hood (Figure 28) is easily attached and removed with its two winghead studs.

To attach the 900-LFC quick-clip rain hood:

1. Connect any required cables to the 900-LFC loudspeaker.
2. Attach the rain hood to the user panel, slipping it under the rain hood retainer flange at the top of the user panel and securing it to the center of the panel with its two winghead studs.

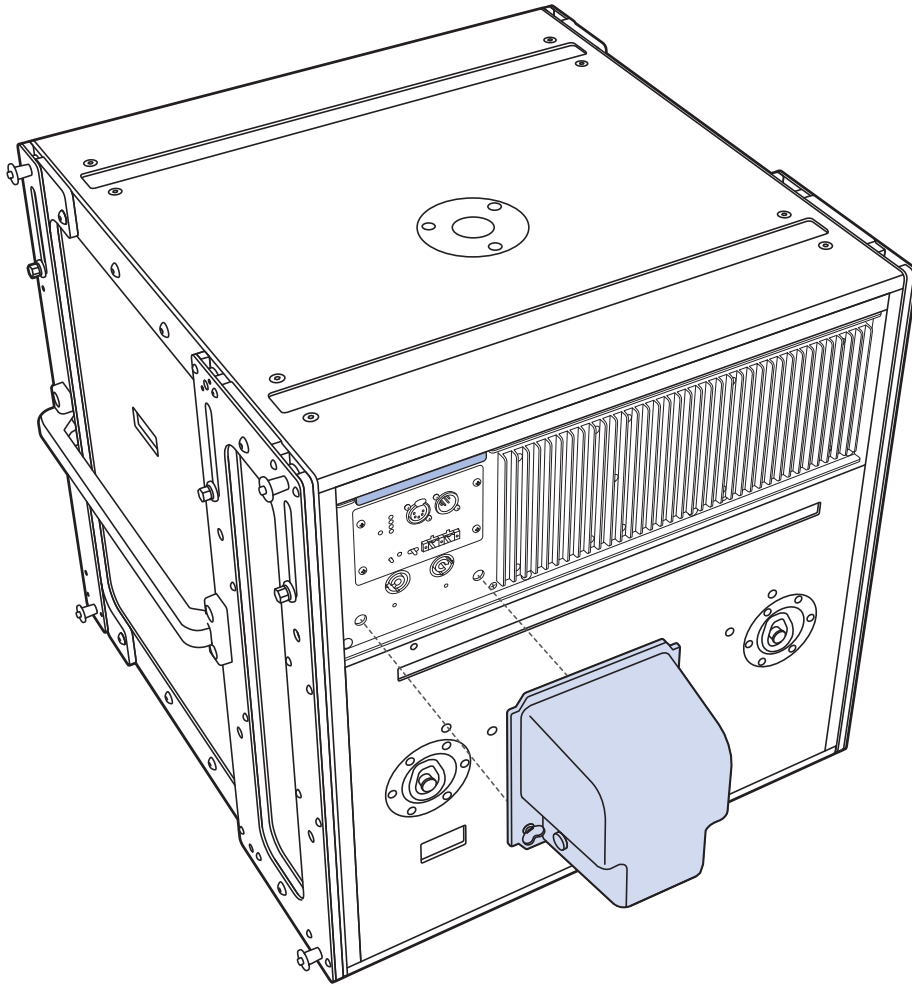


Figure 28: 900-LFC with Quick-Clip Rain Hood

3. Make sure to tighten the winghead studs one quarter turn so they fully lock.

900-LFC COLLAPSIBLE RAIN HOOD

Another option for weather-protected 900-LFC loudspeakers is the collapsible rain hood.

The 900-LFC collapsible rain hood () is easily attached and removed with its two screws.

To attach the 900-LFC collapsible rain hood:

1. Slip the rain hood under the rain hood retainer flange at the top of the user panel.
2. Secure the rain hood at the bottom of the panel with the two provided 6-32 x 0.75-inch stainless steel screws.
3. Make sure to tighten the screws to create a good seal against the user panel. The recommended torque value for rain hood screws is 10–12 in-lbs (1.1–1.4 N·m).

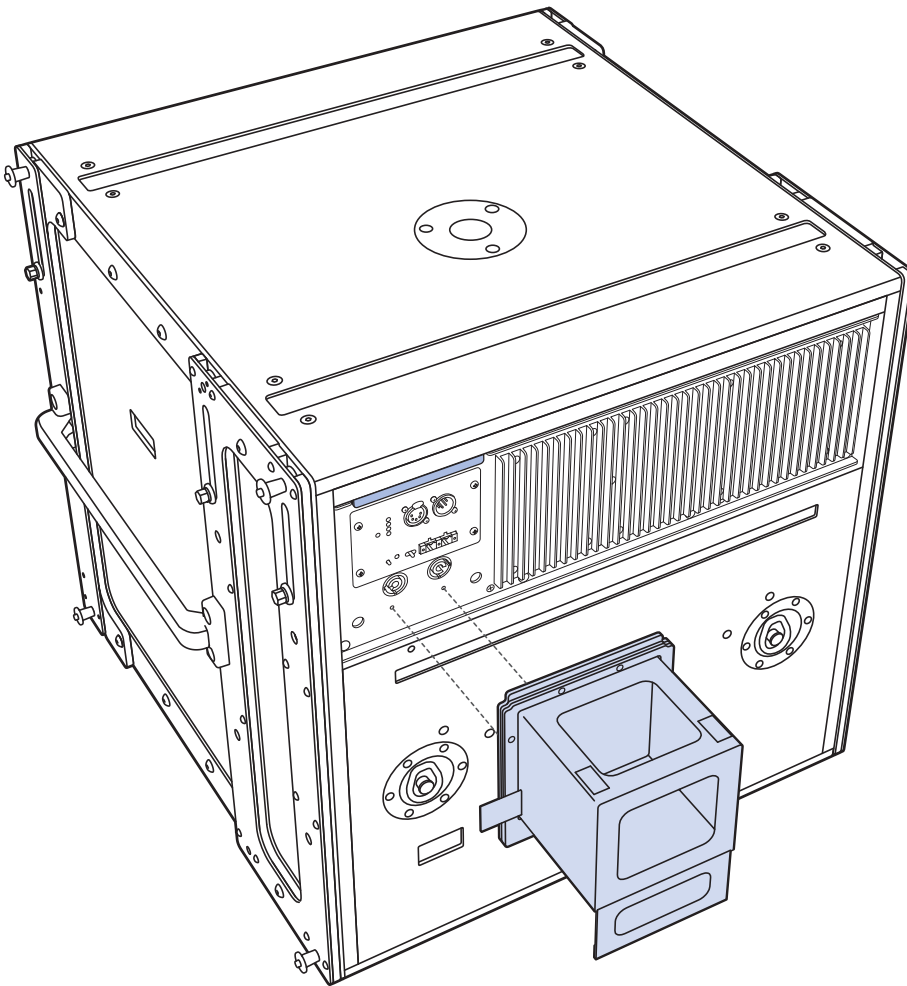


Figure 29: 900-LFC with Collapsible Rain Hood

To use the 900-LFC collapsible rain hood:

1. Detach the Velcro straps and extend the rain hood.
2. Extend the lower flap for splash protection.

3. Attach any required cables to the 900-LFC.

The clear windows let you easily locate the connectors on the user panel.

4. To stow the rain hood, reverse the steps.



NOTE: There is only one proper loudspeaker orientation once the rainhood is installed. The loudspeaker must be oriented so that all cabling exits from the bottom of the rain hood.



NOTE: The weather-protected 900-LFC must be mounted with a 0° tilt, or preferably with a slight down-tilt. This angle shields the driver from the elements and does not allow water to accumulate. Do not tilt the cabinet up, as the drivers and cabinet will accumulate water.

APPENDIX C: ULTRA WEATHER PROTECTION VERSION

Ultra Weather (UW) Protection is recommended for applications where loudspeakers will experience exposure to a salt air environment or chemicals, that have no sheltering from corrosive spray or UV exposure, and that cannot be covered or removed during their service life. Examples would include cruise ship exterior areas, ocean-side visitor attractions, swimming pool areas, and themed attractions with wind-carried water spray.

For installations in extremely harsh environments, Meyer Sound offers an IPX5-rated, Ultra Weather Protection version of the 900-LFC loudspeaker, which includes all of the components of standard Weather Protection, plus the following:

- Extended cabinet finishing with extra thick proprietary coatings
- Extra grille frame treatment with tighter weave mesh and acoustically transparent foam
- Special printed circuit board treatments
- Improved corrosion-resistant coatings and materials on select metallic components
- Rigging changes for improved corrosion resistance
- Rain hood splash guard for improved water resistance

Table 6 provides a list of the optional accessories and user-accessible hardware component differences for 900-LFC loudspeakers that ship from the factory as Ultra Weather Protection versions.

Table 6: LEOPARD Ultra Weather Protection Version Part Differences


900-LFC Part/Accessory	UW 900-LFC Accessory/Part	Comment
MG-LEOPARD/900-LFC Grid (PN 40.243.080.01)	MG-LEOPARD/900-LFC UW Grid, white (PN 40.243.180.05) or MG-LEOPARD/900-LFC UW Grid, black (PN 40.243.180.06)	See entries on “Grid to Loudspeaker Fasteners” and “Blanking Screws” in UW 900-LFC Accessory/Part column.
MG-LEOPARD/900-LFC Grid to Loudspeaker Quick-release pins (with lanyard) Red Button 5/16 in x 0.875 in with 6-inch lanyard (PN 134.025), qty 10	MG-LEOPARD/900-LFC Grid to Loudspeaker Fasteners UW lock pin clamp, 5/16-inch with gasket, qty 4 (PN 45.010.506.05), white OR (PN 45.010.506.06), black Hex head screw with washer 8-32 x 3/4-inch, qty 12 (PN 45.010.934.05), white OR (PN 45.010.934.06), black  CAUTION: These screws have a pre-applied thread-locking patch and cannot be reused. UW lock pin 5/16-in x 0.63-inch (PN 61.010.504.01), qty 4	The clamps, screws, and lock pin replace the quick-release pins (with lanyard). Torque screws to 12 in-lb (1.36 N-m).
Not applicable	MG-LEOPARD/900-LFC Blanking Screws 8-32 x 0.5-inch pan head Phillips stainless steel screw (PN 101.167), qty 12	Two of these “blanking screws” are inserted around each grid pin hole location to prevent corrosion at unused pin locations (Figure 30). Those at locations where the speaker links will be attached must be removed before attaching a speaker to the grid.

Table 6: LEOPARD Ultra Weather Protection Version Part Differences

900-LFC Part/Accessory	UW 900-LFC Accessory/Part	Comment
Rear cable ring and studs, qty 2	Rigging Plate, stainless steel, qty 2	The rear cable ring and studs (see Figure 15 on page 20) are replaced with a stainless steel plate (see Figure 36 on page 54).
900-LFC Loudspeaker to Loudspeaker Quick-release pins Black Button 5/16 in x 0.63 in (PN 134.024), qty 8	900-LFC Loudspeaker to Loudspeaker Fasteners UW lock pin clamp, 5/16-inch with gasket, qty 8 (PN 45.010.506.05), white OR (PN 45.010.506.06), black Hex head screw with washer 8-32 x 3/4-inch, qty 20 (PN 45.010.934.05), white OR (PN 45.010.934.06), black UW lock pin 5/16-in x 0.63-inch (PN 61.010.504.01), qty 8	The clamps, screws, and lock pin replace the quick-release pins (with lanyard). Torque screws to 12 in-lb (1.36 N·m) (See Figure 31).
GROUNDSTACK DOWNTILT KIT: MG-LEOPARD/900-LFC (PN 40.243.0163.01) (Kit does not include quick-release pins because the angle feet are secured with the quick-release pins included with the grid.)	GROUNDSTACK DOWNTILT KIT: MG-LEOPARD/900-LFC UW, white (PN 40.243.163.05) or MG-LEOPARD/900-LFC UW, black (PN 40.243.163.06)	These UW kits include: LEOPARD/900-LFC Grid Tilt Assembly (PN 45.243.163.05 or 45.243.165.06), qty 2 LEOPARD UW/900-LFC UW Grid Links, (PN 61.243.191.05 OR PN 61.243.191.06), qty 4. Shoulder bolts 5/16x1-inch with 1/4-20 thread (PN 101.529), qty 10. Hex Nut, 1/4-20 thread, self-locking (PN 109.107), qty 10. The shoulder bolts and hex nuts replace the grid quick-release pins.

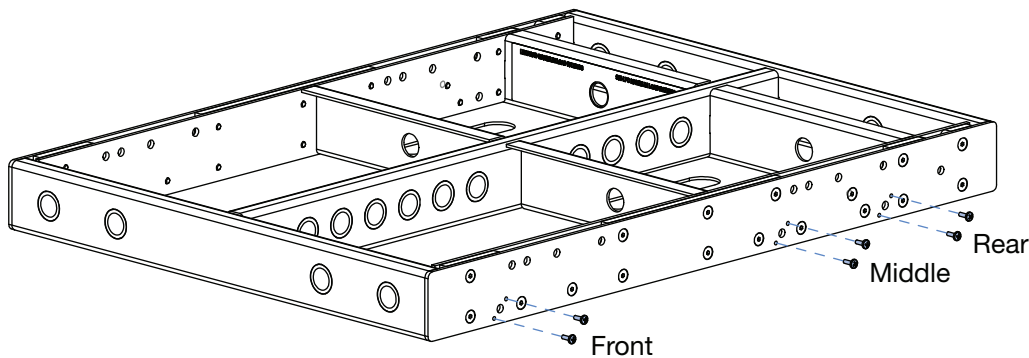


Figure 30: Blanking Screws (6 per side) to Prevent Corrosion at Unused Pin Locations for Ultra Weather Protection Grid

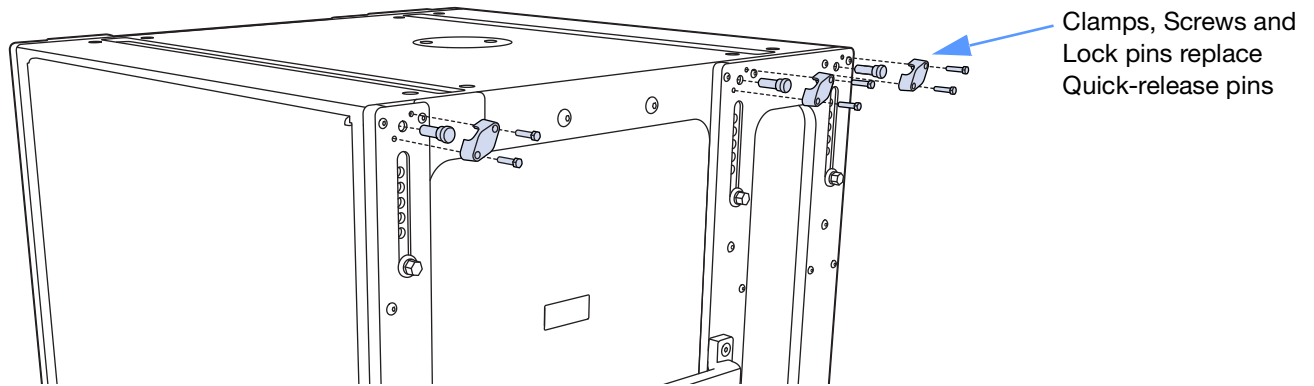


Figure 31: Ultra Weather Protection 900-LFC Loudspeaker Version has Clamps, Screws, and Lock pins that replace standard version quick-release pins



NOTE: For the 900-LFC UW loudspeaker version, the splay angles 0° and 1.25° are not available. Instead an angle of 0.65° is provided.



CAUTION: The use of corrosion resistant material reduces the strength of the 900-LFC ultra weather-protected loudspeaker compared to the standard or weather-protected versions. 900-LFC ultra weather-protected loudspeaker versions should not be rigged together with 900-LFC standard or weather-protected loudspeaker versions. Contact Meyer Sound for guidance on loading limitations.

APPENDIX D: ULTRA WEATHER LEOPARD/900-LFC RAIN HOOD KIT

The Ultra Weather Protection LEOPARD/900-LFC Rain Hood Kit includes the following parts:

- LEOPARD/900-LFC Quick Clip Rain Hood with Splash Shield Assembly (PN 45.243.241.01)
- LEOPARD Rain Hood Baffle (PN 64.243.104.01)
- 2 pan head Phillips 6-32 x 0.25-inch 316 stainless-steel screws (PN 101.405)

RAIN HOOD BAFFLE INSTALLATION

1. Gather the LEOPARD/900-LFC Rain Hood Baffle (PN 64.243.104.01) and the two pan head Phillips 6-32 x 0.25-inch stainless steel screws (PN 101.405).
2. Turn the loudspeaker so that the rear is accessible.
3. Locate the two screw holes beneath the powerCON connectors on the user panel (left side of the loudspeaker).
4. Attach the Baffle in the orientation shown in Figure 32 using the two provided screws. The recommended torque value for both screws is 10–12 in-lbs (1.1–1.4 N·m).

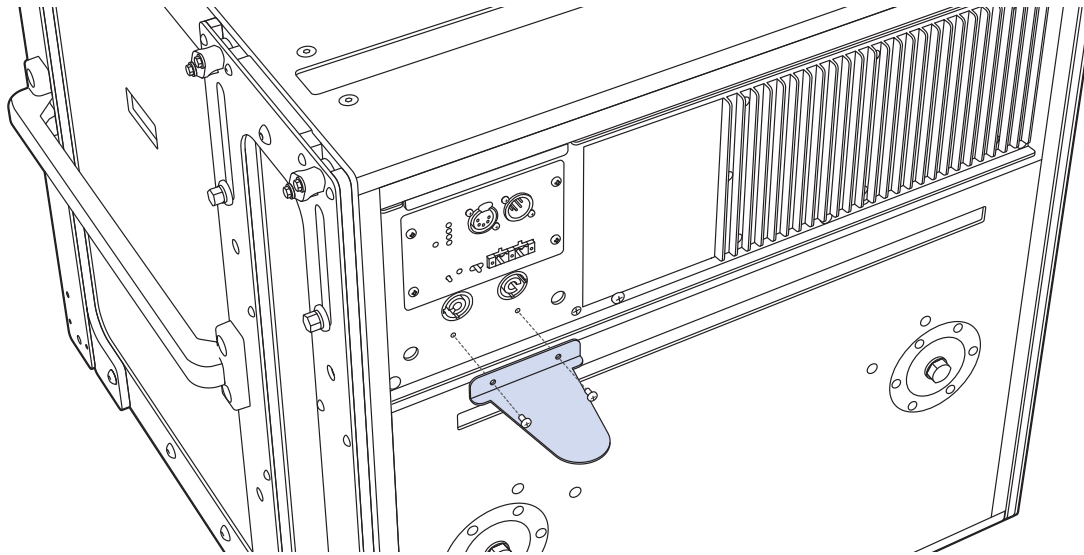


Figure 32: Attaching Rain Hood Baffle to LEOPARD Loudspeaker User Panel

ROUTING CABLES AND ATTACHING RAIN HOOD

5. Install the necessary audio and power cables.
6. Attach the rain hood to the user panel, slipping it under the rain hood retainer flange at the top of the user panel.
7. Route the cables through the rain hood on either side of the baffle and through the bottom of the rain hood.
8. Push the rain hood flush against the loudspeaker.
9. Secure it to the loudspeaker by giving the two captive wing-head stud fasteners on either side of the rain hood a quarter turn, so they fully lock.

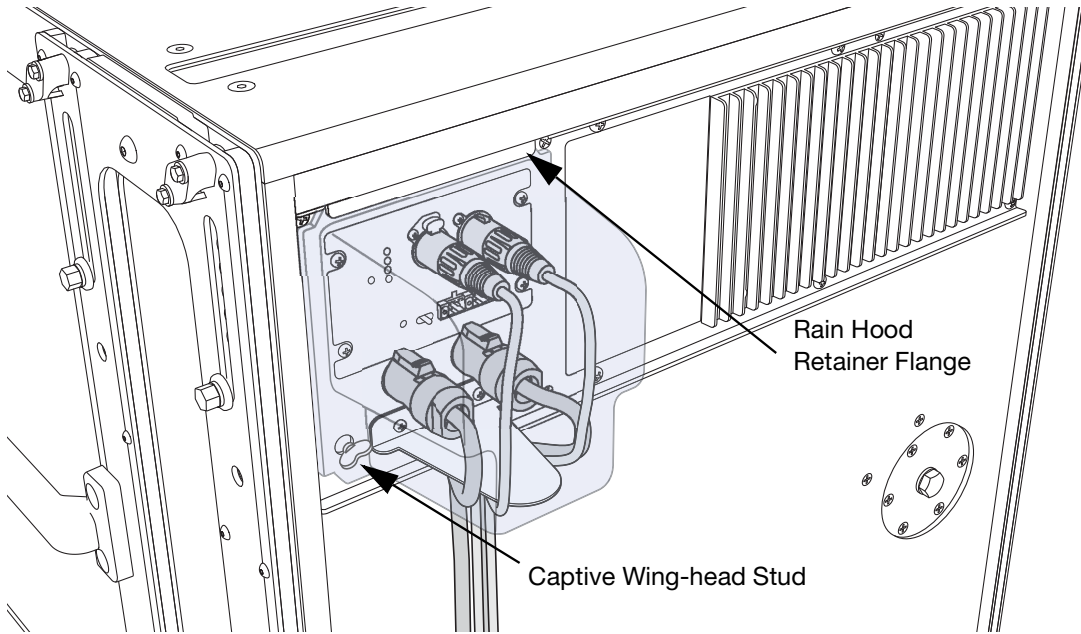


Figure 33: Routing Signal and Power Cables Through Rain Hood and Around Baffle



NOTE: Ultra Weather Protected units using the LEOPARD/900-LFC UW Rain Hood are rated IPX5 for water intrusion.

APPENDIX E: SPECIFICATIONS



NOTE: Loudspeaker system predictions for coverage and SPL are available in Meyer Sound's MAPP prediction software.


900-LFC Specifications

ACOUSTICAL	
Operating Frequency Range	30 Hz – 125 Hz Note: Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.
Frequency Response	32 Hz – 115 Hz ± 4 dB Note: Measured in half-space with pink noise at 4m, 1/3-octave frequency resolution.
Phase Response	40 Hz – 110 Hz $\pm 30^\circ$
Linear Peak SPL	133 dB with crest factor >10 dB (M-noise) , 133 dB (Pink Noise), 134.5 dB (B-noise) Note: Linear Peak SPL is measured in half-space at 4 m referred to 1 m. Loudspeaker SPL compression measured with M-noise at the onset of limiting, 2-hour duration, and 50-degree C ambient temperature is <2 dB. M-noise is a full bandwidth (10 Hz–22.5 kHz) test signal developed by Meyer Sound to better measure the loudspeaker's music performance. It has a constant instantaneous peak level in octave bands, a crest factor that increases with frequency, and a full bandwidth Peak to RMS ratio of 18 dB. The presence of a greater-than (>) symbol with regard to crest factor indicates it may be higher depending on EQ and boundary loading. Pink noise is a full bandwidth test signal with Peak to RMS ratio of 12.5 dB. B-noise is a Meyer Sound test signal used to ensure measurements reflect system behavior when reproducing the most common input spectrum, and to verify there is still headroom over pink noise.
COVERAGE	
	360° (single loudspeaker); varies with number of loudspeakers and configurations
TRANSDUCERS	
Low Frequency	One 18-inch dual-coil, long-excursion cone driver; 2 Ω nominal impedance
AUDIO INPUT	
Type	Differential, electronically balanced
Maximum Common Mode Range	± 15 V DC, clamped to earth for voltage transient protection
Connectors	XLR 5-pin female with male loop output; XLR 3-pin female connectors available to accommodate only balanced audio (no RMS signals)
Input Impedance	10 k Ω differential between pins 2 and 3
Wiring	Pin 1: Chassis/earth through 1 k Ω , 1000 pF, 15 V clamped network to provide virtual ground lift at audio frequencies Pin 2: Signal (+) Pin 3: Signal (-) Pin 4: RMS (polarity insensitive) Pin 5: RMS (polarity insensitive) Case: Earth ground and chassis Note: Pins 4 and 5 (RMS) included only with XLR 5-pin connector that accommodates both balanced audio and RMS signals.
Nominal Input Sensitivity	6.0 dBV (2.0 V rms) continuous is typically the onset of limiting for noise and music
Input Level	Audio source must be capable of producing +20 dBV (10 V rms) into 600 Ω to produce the maximum peak SPL over the operating bandwidth of the loudspeaker

900-LFC Specifications

AMPLIFIER			
Type	Two-channel, open-loop, class D		
Total Output Power	3100 W peak Note: Peak power based on the maximum unclipped voltage the amplifier will produce into the nominal load impedance.		
THD, IM, TIM	< 0.02%		
Cooling	Convection		
AC POWER			
Connectors	PowerCON 20 input with loop output		
Automatic Voltage Selection	90–265 V AC, 50–60 Hz		
Safety Agency Rated Voltage Range	100–240 V AC, 50–60 Hz		
Turn-on/off Points	Turn-on: 90 V AC; Turn-off: none; internal fuse protection above 265 V AC		
CURRENT DRAW			
Idle	0.60 A rms (115 V AC)	0.49 A rms (230 V AC)	0.63 A rms (100 V AC)
Maximum Long-Term Continuous (> 10 sec)	4.9 A rms (115 V AC)	2.5 A rms (230 V AC)	5.2 A rms (100 V AC)
Burst (< 1 sec)	8.8 A rms (115 V AC)	4.7 A rms (230 V AC)	11.0 A rms (100 V AC)
	Note: AC power cabling must be of sufficient gauge so that under burst rms current conditions, cable transmission losses do not cause the loudspeaker's voltage to drop below the specified operating range.		
Maximum Instantaneous Peak	18.2 A peak (115 V AC)	9.2 A peak (230 V AC)	20.6 A peak (100 V AC)
Inrush	< 20 A peak		
RMS NETWORK			
	Equipped with two-conductor twisted-pair network, reporting all operating parameters of amplifiers to system operator's host computer.		
PHYSICAL			
Enclosure	Premium multi-ply birch with slightly textured black finish		
Protective Grille	Powder-coated, hex-stamped steel with acoustical black mesh		
Rigging	Optional MRK-900 rigging kit that has endframes with captive GuideALinks secured with 5/16-inch x 0.63-inch black button quick release pins that allow 0°, 1.25°, 2.5°, 3.75°, or 5° splay angles; detachable side handles. Rigging supports ground-stacked, flown, and cardioid configurations.		
Pole Mount	U.S. version: 1.5 in (38 mm) E.U. version: 1.375 in (35 mm and M20 thread at the bottom)		
Load Ratings	MG-LEOPARD/900 multipurpose grid flies 17 900-LFCs at a 5:1 safety factor, with some restrictions		
Dimensions	27.43 in (697 mm) W	24.43 in (621 mm) H	24.89 in (632 mm) D
Dimensions (w/Rigging)	27.47 in (698 mm) W	24.43 in (621 mm) H	24.89 in (632 mm) D
Dimensions (w/Rigging and Rain Hood)	27.47 in (698 mm) W	24.43 in (621 mm) H	28.55 in (725 mm) D
Weight	136 lb (61.7 kg)		
Weight (w/Rigging)	159 lb (72.1 kg)		
Weight (UW version)	167 lb (75.8 kg)		

900-LFC Specifications

ENVIRONMENTAL		
Operating Temperature	0 °C to +45 °C	 <p>3K59 OR 3JK6 - COMMERCIAL AUDIO SYSTEM</p> <p>UL US LISTED</p> <p>CE</p>
Non Operating Temperature	-40 °C to +75 °C	
Humidity	To 95% at 45 °C (non-condensing)	
Operating Altitude	To 5,000 m (16,404 ft)	
Non Operating Altitude	To 12,000 m (39,000 ft)	
Shock	30 g 11 msec half-sine on each of 6 sides	
Vibration	10 Hz – 55 Hz (0.010 m peak-to-peak excursion)	

900-LFC DIMENSIONS

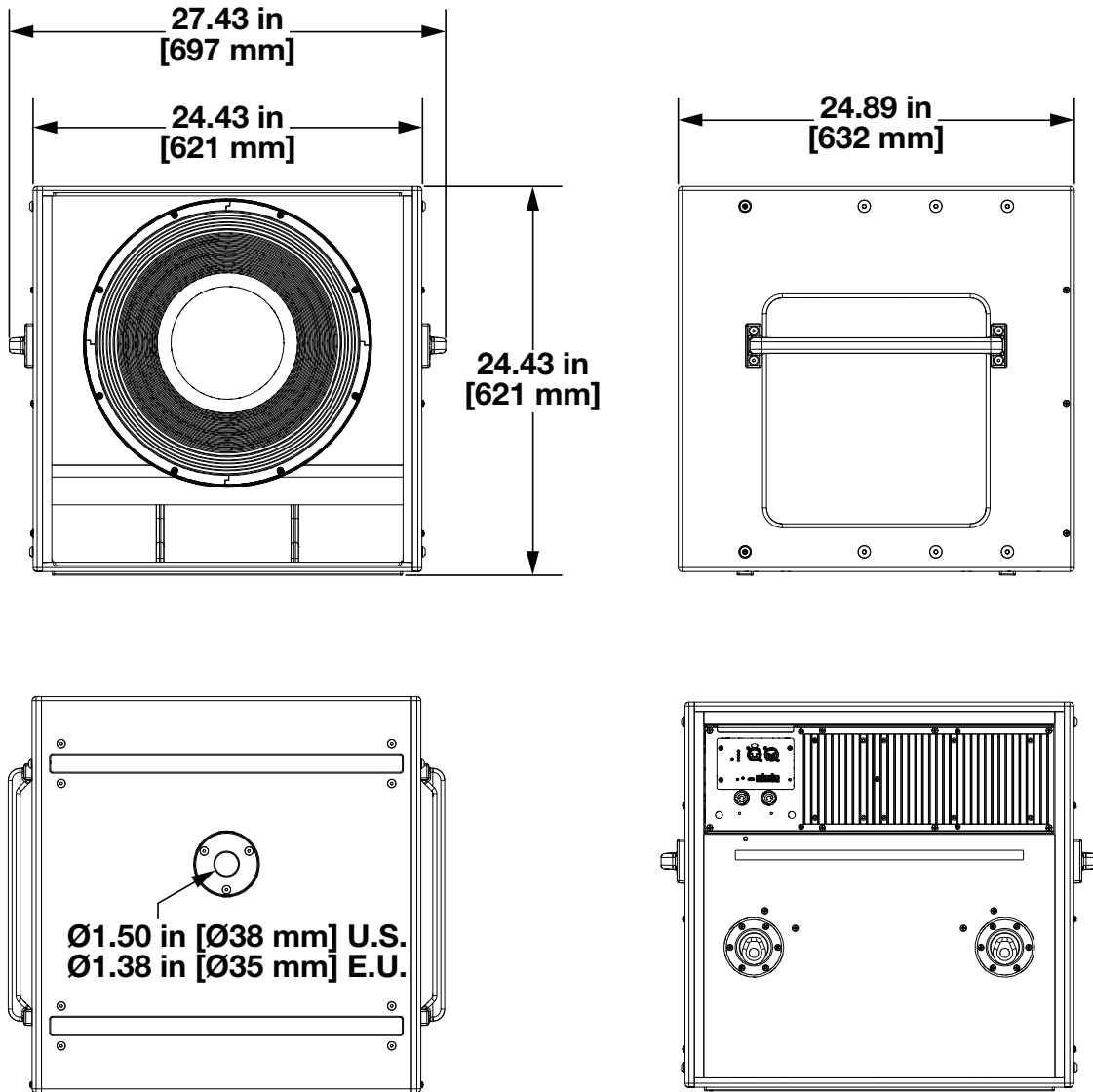


Figure 34: 900-LFC Loudspeaker Dimensions without Rigging

NOTE: For dimensions and weight for the MG-LEOPARD top grid and MCF-900 caster frame, refer to the MG-LEOPARD/900 Assembly Guide (PN 05.243.080.01) available at meyersound.com/documents.

900-LFC WITH RIGGING DIMENSIONS

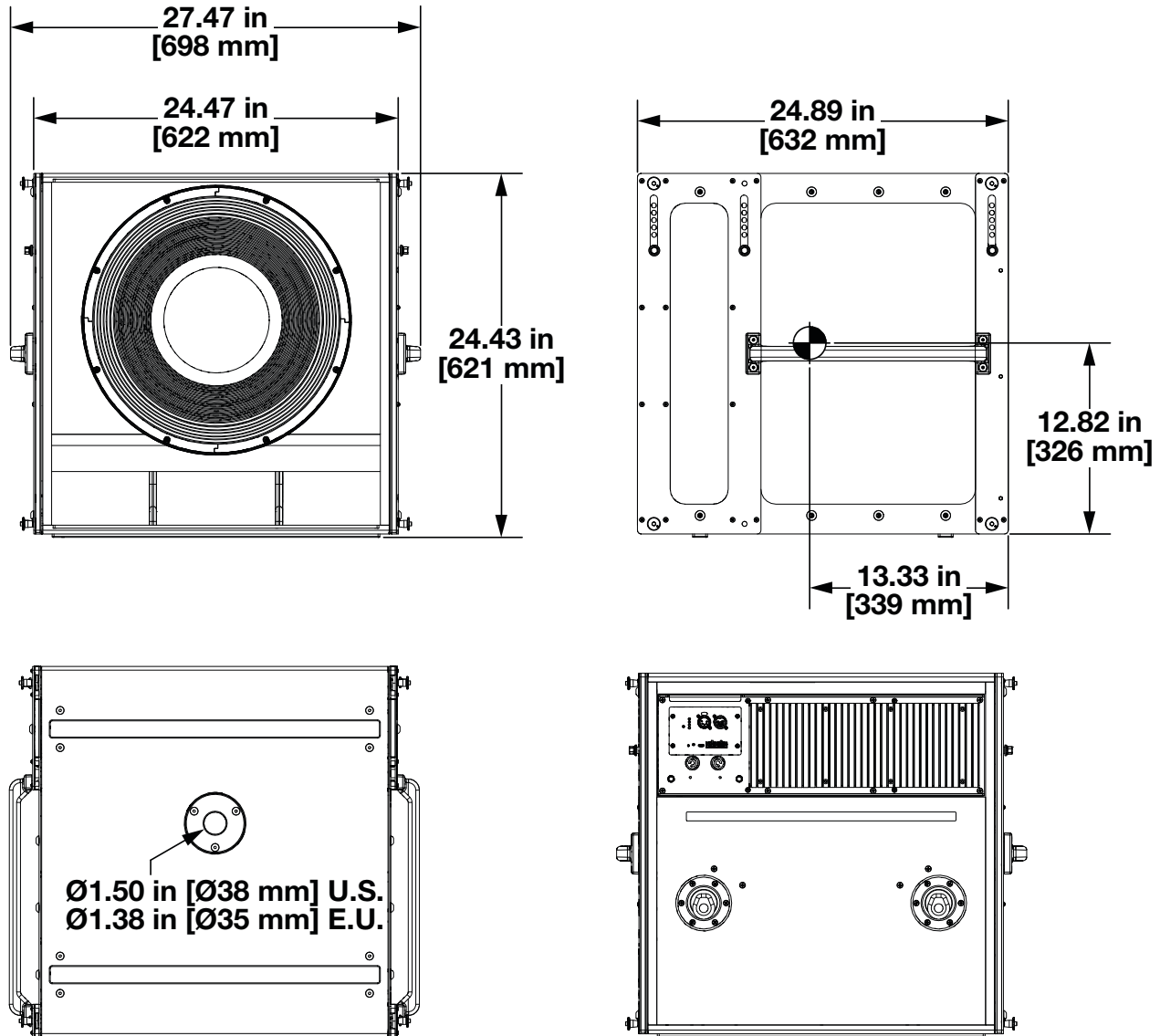


Figure 35: 900-LFCLoudspeaker Dimensions with Rigging

ULTRA WEATHER PROTECTION 900-LFC WITH RIGGING AND RAIN HOOD DIMENSION

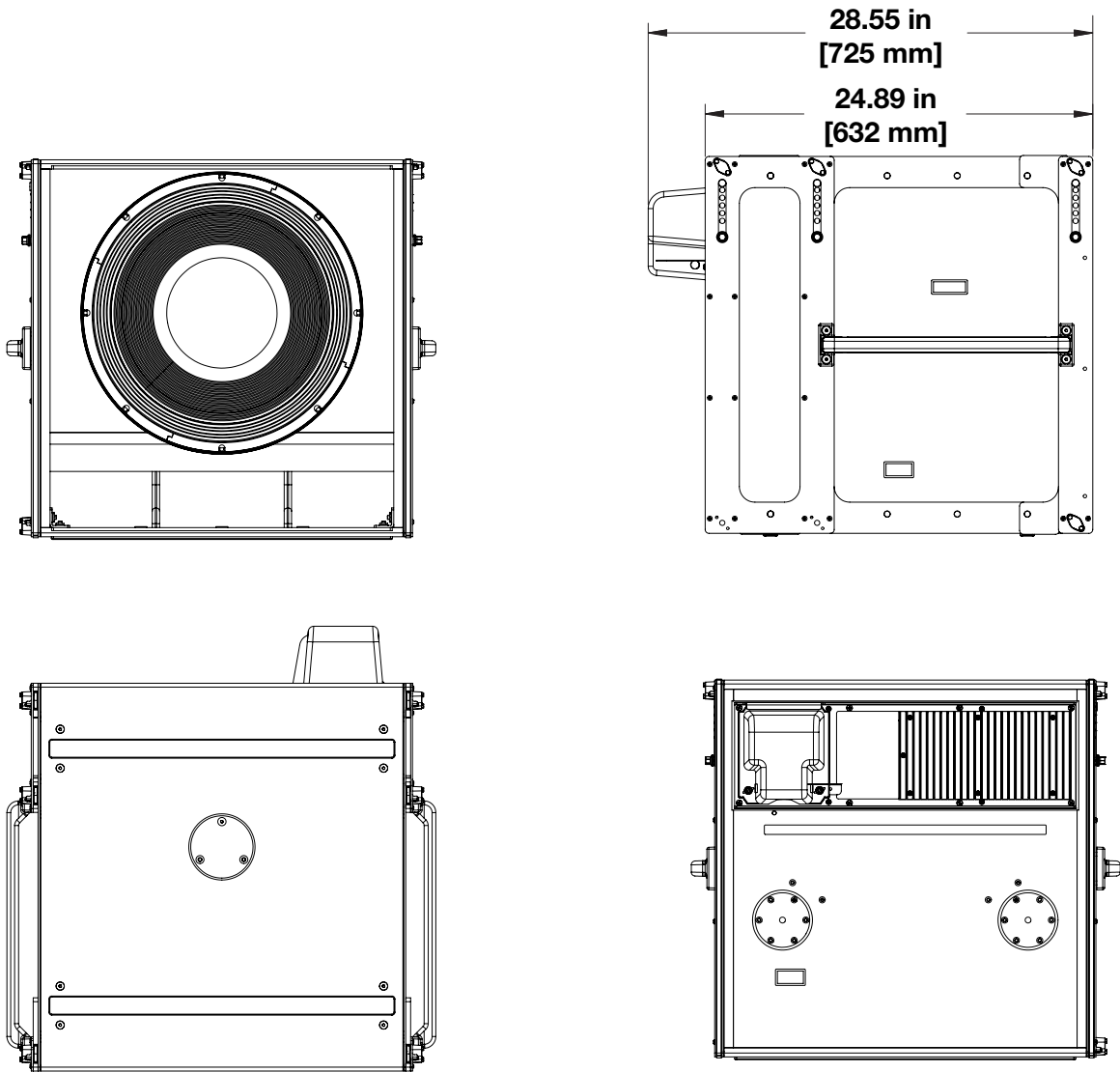


Figure 36: 900-LFC UW version Loudspeaker with Rain Hood Dimensions

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INDUSTRY CANADA COMPLIANCE STATEMENT

This Class A digital apparatus complies with Canadian ICES-003.

AVIS DE CONFORMITÉ À LA RÉGLEMENTATION D'INDUSTRIE CANADA

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

EN 55032 (CISPR 32) STATEMENT

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.



THINKING SOUND

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900-LFC Operating Instructions
PN 05.246.005.01 C