



MiniRay™ 652 300W

Active Line Array Speakers (604926)

MiniRay™ 12 700W

Active Line Array Subwoofer (604912)

MiniRay™ A1

Line Array Suspension Bracket (604900)

User's Manual and Suspension Guide

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SAFETY WARNINGS AND GUIDELINES

Please read this entire manual before using this device, paying extra attention to these safety warnings and guidelines. Please keep this manual in a safe place for future reference.

- This line array system is intended for indoor use only.
- Do not expose this speaker system to water or moisture of any kind. If moisture does get in or on the system, immediately unplug it from the power source and allow it to fully dry before reapplying power.
- Do not touch the system, the power cord, or any other connected cables with wet hands.
- If operating this speaker system in a humid environment, ensure that no condensation occurs. Condensation could cause damage to the speaker cones and could cause a short in the amplifier, which in turn could cause fire or severe electric shock.
- Do not expose this system to excessively high temperatures. Do not install it in direct sunlight.
- This system dissipates excessive heat from the heat sink on the rear. Do not cover the heat sink and ensure that there is at least 12" space behind the speaker to allow for adequate air flow.
- Keep flammable materials at least 3 feet from the heat sink on the rear of these speakers.
- This system has no user serviceable parts. Do not attempt to open, service, or modify any part of it.
- Before attempting to suspend the MiniRay™ System, please read and understand this safety information. Never attempt to outwit your own common sense. If you do not understand how to rig or suspend heavy equipment, DON'T DO IT!
- Always consult with a licensed structural engineer regarding placement and load points of the facility to which this system will be attached. Monoprice assumes no liability for damages or injury due to improper rigging techniques. Anyone using this information assumes all liability arising from use.

- All information presented herein is based upon common materials and practices. The installer must comply with all local/state regulations regarding the suspension of active sound systems. Users should consult with engineering and regulatory authorities for specific guidelines.
- Before suspending any speaker system always inspect all components (enclosure, rigging frames, pins, etc.) for cracks, deformations, corrosion, missing, or loose or damaged parts that could reduce the strength and safety of the system. Do not suspend speakers until the proper corrective action has been taken. Use only load-rated hardware when suspending any loudspeakers.
- Any hardware used in an overhead suspension application must be load rated for the intended use. Local hardware stores do not usually stock these products. Purchase additional suspension hardware from rigging supply houses; industrial supply catalogs, or specialized rigging distributors.
- A licensed Structural Engineer must approve the placement and method of attachment to structures prior to installation of any overhead object. Your Structural Engineer must answer to the following codes: Uniform Building Code, Municipal Building Code, and Seismic Code, as applicable. Installation of hardware and the method of attachment must be carried out in the manner specified by the Structural Engineer. Improper installation may result in damage, injury, or death.
- Your MiniRay™ System should be inspected for structural integrity at least annually. The inspection should include a visual survey of all corners and load bearing surfaces for signs of cracking, deformation, water damage, delamination, or any other condition that may decrease the strength of the loudspeaker enclosure. Suspension hardware should be surveyed for signs of corrosion, bending, or any other condition that may decrease the strength of the fastener. For other fittings used, refer to the manufacturer's inspection and maintenance guidelines for the specific process.

- Monoprice is not responsible for the application of its products for any purpose or the misuse of this information for any purpose. Monoprice is not responsible for the abuse of its products caused by avoiding compliance with inspection and maintenance procedures or any other abuse. Prior to suspending the system, an expert, trained and experienced in suspending loudspeaker systems, should inspect all rigging parts and components.
- MiniRay™ Active Line Array loudspeakers must only be suspended using the MiniRay A1 Line Array Suspension Bracket (604900). This system is designed for the suspension of the MiniRay Active Line Array by a qualified person familiar with rigging hardware and industry practices. Improper installation will result in damage, injury, or death.
- The MiniRay A1 Line Array Suspension Bracket is only rated for suspending 2x MiniRay 12 Line Array Subwoofers above 8x MiniRay 652 Line Array Speakers or 12x MiniRay 652 Line Array Speakers.
- Hearing damage can occur when subjected to prolonged exposure to excessive sound pressure levels (SPL). MiniRay loudspeakers are capable of generating sound pressure levels (SPL) sufficient to cause permanent hearing damage to performers, production crew, and audience members. Caution should be taken to avoid prolonged exposure to SPL in excess of 90 dB.

If you are new to rigging, you should do the following:

- Know the rules for safe rigging.
- Attend a safe rigging seminar. Most rigging supply stores provide one-day sessions.
- Meet and establish a relationship with a licensed mechanical or structural engineer. Get in the habit of asking them questions instead of guessing about their answers. Learn from what they tell you.
- Let your insurance carrier know you are suspending a new speaker system.
- Research and understand the codes, practices, and requirements of the facilities and cities where you intend to operate your sound system.

INTRODUCTION

Thank you for purchasing this MiniRay™ Line Array Audio System! This system includes a 700-watt subwoofer and a 300-watt full range speaker. It is suitable for installation in facilities that seat up to 1000 people. You can ground stack the system or fly it using the dedicated suspension bracket. The speakers can be splayed from 0-16.8° in 1.2° increments. It provides 100° of horizontal dispersion and as little as 10° of vertical dispersion, depending on how the system is deployed. The subwoofer has a built-in variable low-pass filter and the speaker has an optional high-pass filter at 150Hz.

FEATURES

- Easily connected and operated high fidelity sound system for audiences up to 1000 people
- Ground stack or fly ready using the MiniRay™ A1 Line Array Suspension Bracket (604900)
- 100° horizontal dispersion
- Variable vertical dispersion from 10°, depending on how the system is deployed
- 0-16.8° splay in 1.2° increments

CUSTOMER SERVICE

The Monoprice Customer Service department is dedicated to ensuring that your ordering, purchasing, and delivery experience is second to none. If you have any problem with your order, please give us an opportunity to make it right. You can contact a Monoprice Customer Service representative through the Live Chat link on our website

www.monoprice.com during normal business hours (Mon-Fri: 5am-7pm PT, Sat-Sun: 9am-6pm PT) or via email at **support@monoprice.com**

PACKAGE CONTENTS

Please take an inventory of the package contents to ensure you have all the items listed below. If anything is missing or damaged, please contact Monoprice Customer Service for a replacement.

604926 MiniRay 652 300W Active Line Array Speaker

- 1x MiniRay™ 652 Active Line Array Speaker (hereafter referred to as MR652)
- 1x AC Power Cord NEMA 5-15P to NAC3FCA
- 1x AC Jumper NAC3FCA to NAC3FCB
- 1x Audio Jumper XLR-F to XLR-M
- 1x User's Manual

604912 MiniRay 12 700W Active Line Array Subwoofer

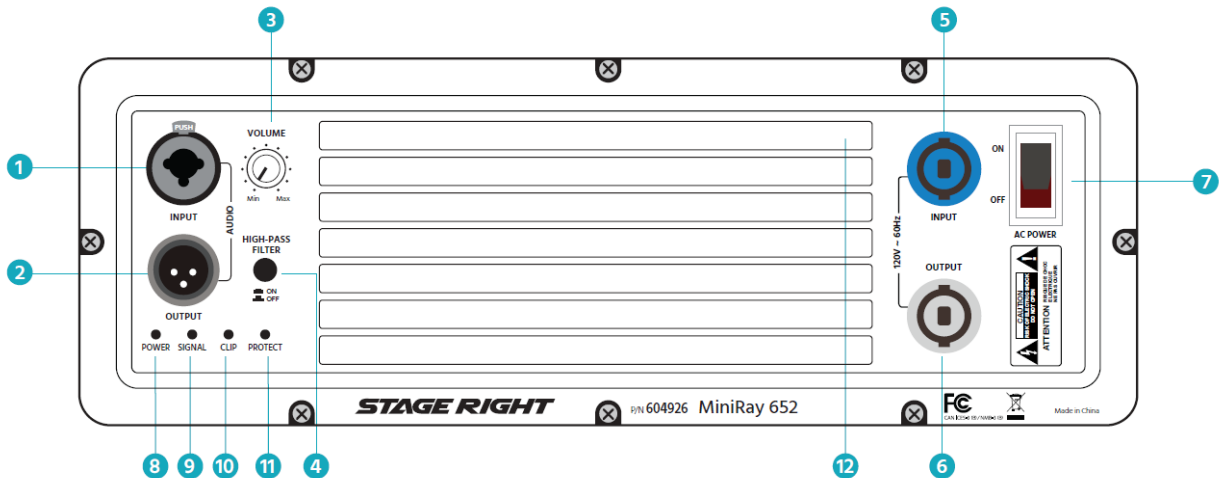
- 1x MiniRay 12 Active Line Array Subwoofer (hereafter referred to as MR12)
- 1x AC Power Cord NEMA 5-15P to NAC3FCA
- 1x AC Jumper NAC3FCA to NAC3FCB
- 1x Audio Jumper XLR-F to XLR-M
- 1x User's Manual

604900 MiniRay A1 Line Array Suspension Bracket

- 1x MiniRay A1 Line Array Suspension Bracket (hereafter referred to as MRA1)
- 1x User's Manual

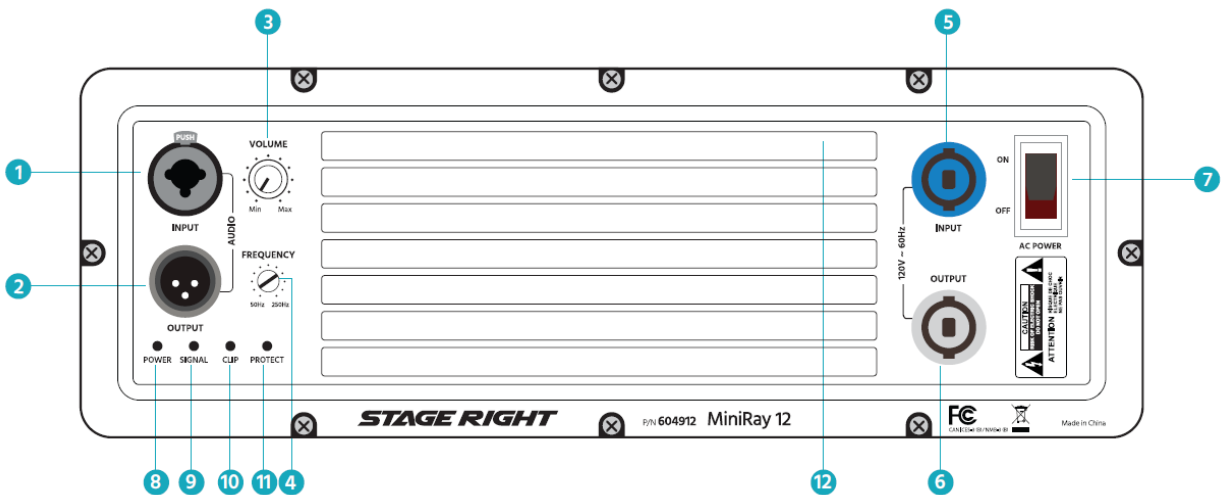
PRODUCT OVERVIEW

MR652 MiniRay™ 652 300W Active Line Array Speaker (604926)



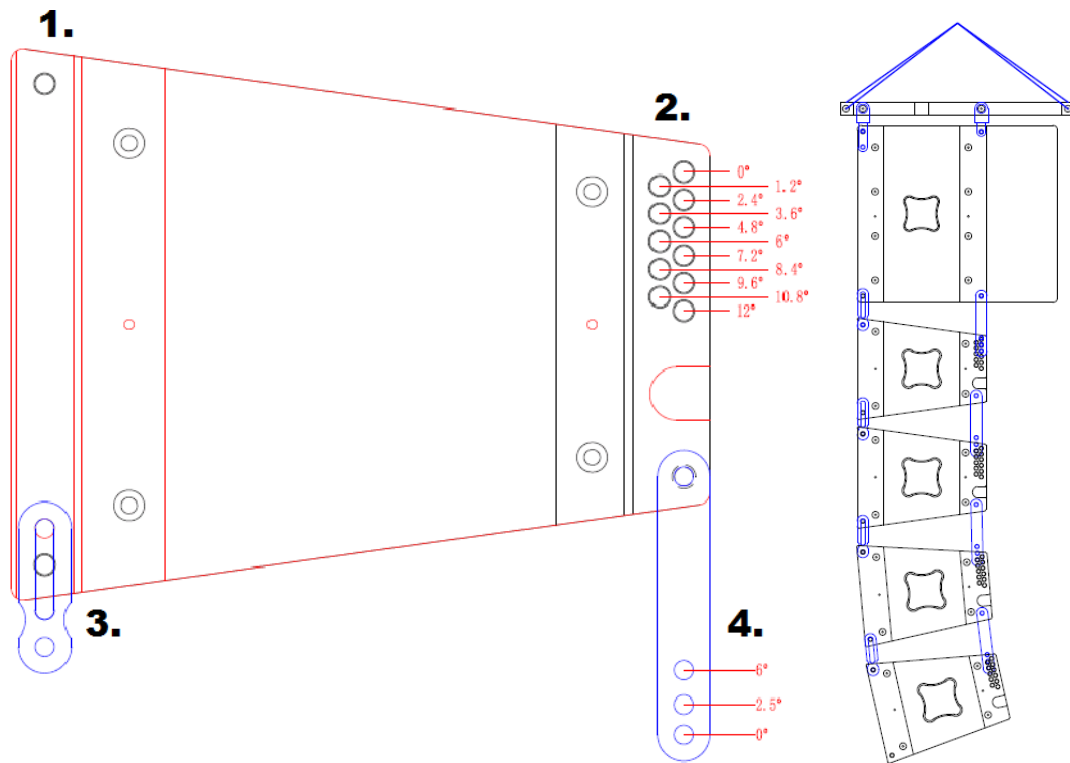
1. **Input:** Combination XLR / 1/4" TRS balanced line input.
2. **Output:** XLR balanced through output.
3. **Volume:** Adjusts the output volume.
4. **High-Pass Filter:** Enables the 150Hz high-pass filter, which removes low frequencies from the MR652.
5. **Input:** NC3 AC power input.
6. **Output:** NC3 AC power throughput supports up to 1x MR12 and 4x MR652 or 6x MR652 per run.
7. **AC Power:** Switches power on and off.
8. **Power:** LED indicator illuminates when power is applied.
9. **Signal:** LED indicator illuminates when an audio signal is present.
10. **Clip:** LED indicator illuminates when the audio material is clipping. Decrease the volume or lower the output volume of the source material.
11. **Protect:** Overheat protection LED indicator illuminates when the unit is too hot. The unit will automatically shut down until it is safe to operate again.
12. **Passive Heat Sink:** Dissipates heat. Do not cover and allow at least 12" clearance.

MR12 MiniRay™ 12 700W Active Line Array Subwoofer (604912)



1. **Input:** Combination XLR / 1/4" TRS balanced line input.
2. **Output:** XLR balanced through output.
3. **Volume:** Adjusts the output volume.
4. **Frequency:** Variable low-pass filter sets the level at which frequencies higher than the level are removed from the MR12. Can be set from 50 ~ 250 Hz.
5. **Input:** NC3 AC power input.
6. **Output:** NC3 AC power throughput supports up to 1x MR12 and 4x MR652 or 6x MR652 per run.
7. **AC Power:** Switches power on and off.
8. **Power:** LED indicator illuminates when power is applied.
9. **Signal:** LED indicator illuminates when an audio signal is present.
10. **Clip:** LED indicator illuminates when the audio material is clipping. Decrease the volume or lower the output volume of the source material.
11. **Protect:** Overheat protection LED indicator illuminates when the unit is too hot. The unit will automatically shut down until it is safe to operate again.
12. **Passive Heat Sink:** Dissipates heat. Do not cover and allow at least 12" clearance.

ATTACHING CABINETS



The **MR12** and **MR652** cabinets must be suspended using the **MRA1 Line Array Suspension Bracket (604900)** by a qualified Structural Engineer using industry practices. Improper installation will result in damage, injury, or death.

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The bracket supports suspension of the following configurations:

maximum 2x MR12 subwoofers above 8x MR652 speakers OR 12x MR652 speakers

1. The **Set Pin (1)** connects to the **Set Bracket (3)** at the front of the cabinet.
2. Insert the **Set Pin** in one of the **Angle Positions (2)** for the desired angle, then connect to one of the holes in the **Angle Bracket (4)**. Add the angles for the **Set Pin** at the **Angle Position (2)** to the hole used in the **Angle Bracket (4)** to get the total splay angle for the rear of the cabinet.

RIGGING AND SUSPENSION

Before attempting to suspend the MiniRay™ System, please read and understand this safety information. Never attempt to outwit your own common sense. If you do not understand how to rig or suspend heavy equipment, DON'T DO IT!

Always consult with a licensed structural engineer regarding placement and load points of the facility to which this system will be attached. Monoprice assumes no liability for damages or injury due to improper rigging techniques. Anyone using this information assumes all liability arising from use.

All information presented herein is based upon common materials and practices. Installers must consult with all local/state regulations regarding the suspension of active sound systems. Users should consult with engineering and regulatory authorities for specific guidelines.

Before suspending any speaker system always inspect all components (enclosure, rigging frames, pins, etc.) for cracks, deformations, corrosion, missing, or loose or damaged parts that could reduce the strength and safety of the system. Do not suspend speakers until the proper corrective action has been taken. Use only load-rated hardware when suspending any loudspeakers.

Rigging Novices

If you are new to rigging, you should do the following:

- Know the rules for safe rigging.
- Attend a safe rigging seminar. Most rigging supply stores provide one-day sessions.
- Meet and establish a relationship with a licensed mechanical or structural engineer. Get in the habit of asking them questions instead of guessing about their answers. Learn from what they tell you.
- Let your insurance carrier know you are suspending a new speaker system.
- Research and understand the codes, practices, and requirements of the facilities and cities where you intend to operate your sound system.

Rigging/Suspension Hardware

Any hardware used in an overhead suspension application must be load rated for the intended use. Local hardware stores do not usually stock these products. Purchase additional suspension hardware from rigging supply houses, industrial supply catalogs, or specialized rigging distributors.

Hanging Points

A licensed Structural Engineer must approve the placement and method of attachment to structures prior to installation of any overhead object. Your Structural Engineer must answer to the following codes: Uniform Building Code, Municipal Building Code, and Seismic Code, as applicable. Installation of hardware and the method of attachment must be carried out in the manner specified by the Structural Engineer. Improper installation may result in damage, injury, or death.

MAINTENANCE

Your MiniRay™ System should be inspected for structural integrity at least annually. The inspection should include a visual survey of all corners and load bearing surfaces for signs of cracking, deformation, water damage, de-lamination, or any other condition that may decrease the strength of the loudspeaker enclosure. Suspension hardware should be surveyed for signs of corrosion, bending, or any other condition that may decrease the strength of the fastener. For other fittings used, refer to the manufacturer's inspection and maintenance guidelines for the process.

Monoprice is not responsible for the application of its products for any purpose or the misuse of this information for any purpose. Monoprice is not responsible for the abuse of its products caused by avoiding compliance with inspection and maintenance procedures or any other abuse. Prior to suspending the system, an expert, trained and experienced in suspending loudspeaker systems, should inspect all rigging parts and components.

CONNECTING THE SYSTEM

Your MiniRay™ Active Line Array system is designed to run as a simple full-range audio solution with no need for any outboard processing. Simply connect XLR cables from the output of your mixing console to the input of the MiniRay speakers, then daisy-chain to the next ones. The **Output (2)** delivers full-range audio to all downstream speakers. The active amplifiers contain their own respective active crossover networks with either a High-Pass Filter (MR652) or Variable Low-Pass Filter (MR12). For extra control of the sound you may use an outboard active 2-way crossover and connect LF output to the MR12s and HF to the MR652s. When used as a full-range system, engage the **High-Pass Filter (4)** on the MR652s and adjust the **Low Pass Filter (4)** on the MR12s to your liking.

Connecting for Full-Range Operation

Perform the following steps to connect the system for Full-Range operation using the internal filters:

1. Ensure that all equipment to be connected is powered off and unplugged before making any connections.
2. Using an XLR or 1/4" TRS cable (not included), connect one end to the output of your mixer, then connect the other end to the **Input (1)** on the first MR652 speaker in the chain.
3. Using the included XLR Jumper Cable, plug one end into the **Output (2)** on the first MR652 speaker, then plug the other end into the **Input (1)** on the next MR652 speaker or MR12 subwoofer in the chain. Repeat until all speakers and subwoofers are connected.
4. Using the included AC Power Cord, plug the NAC3FCA end into the power **Input (5)** connector on one of the speakers or subwoofers. Do not plug it into a power outlet yet.
5. Either repeat step 4 for each speaker and subwoofer or, using the included AC Jumper, plug one end into the **Output (6)** on the first speaker or subwoofer, then into the **Input (5)** on the next speaker or subwoofer in the chain. You can connect

up to 1x MR12 subwoofer and 4x MR652 speakers or 6x MR652 speakers in a single power chain.

6. Repeat steps 4 and 5 until each MR652 speaker and MR12 subwoofer has a power connection.
7. Ensure that the **AC Power (7)** switch on each MR652 speaker and MR12 subwoofer is in the OFF position and that the **Volume (3)** knob is fully counterclockwise (minimum).
8. Enable the **High-Pass Filter (4)** switch on each MR652 speaker, then set the **Variable Low-Pass Filter (4)** knob on each MR12 subwoofer to the mid position.
9. For each speaker or subwoofer with an AC Power Cord connection, plug the NEMA 5-15 connector into an AC power outlet.
10. Power on your mixer.
11. Starting with the first MR652 speaker or MR12 subwoofer in each power chain, place the **AC Power (7)** switch to the ON position. Continue down the chain so that power is applied to each cabinet one at a time. This prevents the power surge from each cabinet from overloading the AC circuit. Continue until all cabinets are powered on.
12. Start playback of familiar audio material, preferably of the same type as will be used for the performance.
13. On each speaker and subwoofer, adjust the **Volume (3)** knob to the desired volume level. Adjust the **Variable Low-Pass Filter (4)** on each subwoofer to attain the desired blend of sound from the speakers and subwoofers. Reduce the volume level if the **Clip (10)** LED illuminates.

Congratulations, your Line Array system is now installed and ready for a performance!

Connecting using an Outboard Active Crossover

Perform the following steps to connect the system using an outboard active crossover:

1. Ensure that all equipment to be connected is powered off and unplugged before making any connections.
2. Following the instructions that came with your crossover, connect the output of your mixer to the input on your crossover.
3. Using an XLR or 1/4" TRS cable (not included), connect one end to the Low Frequency (LF) output of your crossover, then connect the other end to the **Input (1)** on the first MR12 subwoofer in the chain.
4. Using the included XLR Jumper Cable, plug one end into the **Output (2)** on the first MR12 subwoofer, then plug the other end into the **Input (1)** on the next MR12 subwoofer in the chain. The system supports a maximum of two MR12 subwoofers.
5. Using an XLR or 1/4" TRS cable (not included), connect one end to the High Frequency (HF) output of your crossover, then connect the other end to the **Input (1)** on the first MR652 speaker in the chain.
6. Using the included XLR Jumper Cable, plug one end into the **Output (2)** on the first MR652 speaker, then plug the other end into the **Input (1)** on the next speaker in the chain. Repeat until all speakers are connected to the audio chain.
7. Using the included AC Power Cord, plug the NAC3FCA end into the power **Input (5)** connector. Do not plug it into a power outlet yet.
8. Either repeat step 4 for each MR652 speaker and MR12 subwoofer or, using the included AC Jumper, plug one end into the **Output (6)** on the first speaker or subwoofer, then into the **Input (5)** on the next speaker or subwoofer in the chain. You can connect up to 1x MR12 subwoofer and 4x MR652 OR 6x MR652 speakers in a single power chain.
9. Repeat steps 7 and 8 until each speaker and subwoofer has a power connection.
10. Ensure that the **AC Power (7)** switch on each speaker and subwoofer is in the OFF position and that the **Volume (3)** knob is fully counterclockwise (minimum).

11. Disable the **High-Pass Filter (4)** switch on each MR652 speaker, then set the **Variable Low-Pass Filter (4)** knob on each MR12 subwoofer to the full clockwise position.
12. For each speaker or subwoofer with an AC Power Cord connection, plug the NEMA 5-15 connector into an AC power outlet.
13. Power on your mixer, then power on your active crossover.
14. Starting with the first speaker or subwoofer in each power chain, place the AC **Power (7)** switch to the ON position. Continue down the chain so that power is applied to each cabinet one at a time. This prevents the power surge from each cabinet from overloading the AC circuit. Continue until all cabinets are powered on.
15. Start playback of familiar audio material, preferably of the same type as will be used for the performance.
16. On each speaker and subwoofer, adjust the **Volume (3)** knob to the desired volume level. Reduce the volume level if the **Clip (10)** LED illuminates. Adjust your external crossover to achieve the desired audio blend of the speakers and subwoofers.

Congratulations, your Line Array system is now installed and ready for a performance!

TROUBLESHOOTING

Q1: There is no sound coming from the speakers.

A1: Check the power switch and the power LED to verify that the speaker system is powered on. Check that the AC power cable is plugged in to an AC power outlet. Verify that the outlet is live by plugging in a different device, such as a lamp. Check the fuse to ensure that it is not blown. Check the audio source cable connections. Verify that the audio source is producing audio material.

Q2: There is no sound coming from the speakers and all connections and power are good.

A2: Check that the Protect LED is not illuminated.

Q3: The sound is severely distorted and the Limit LED is illuminated or blinks rapidly.

A3: Try reducing the output volume level. Try reducing the level of the audio source. Try using a different audio source to see if the distortion is in the source or not. You can also reduce the bass on the mixer or EQ to get more volume without distorting the system.

Q4: There is a 60Hz hum in the sound.

A4: Verify that the system is properly grounded. Try using a different AC power outlet.

TECHNICAL SUPPORT

Monoprice is pleased to provide free, live, online technical support to assist you with any questions you may have about installation, setup, troubleshooting, or product recommendations. If you ever need assistance with your new product, please come online to talk to one of our friendly and knowledgeable Tech Support Associates. Technical support is available through the online chat button on our website **www.monoprice.com** during regular business hours, 7 days a week. You can also get assistance through email by sending a message to **tech@monoprice.com**

GENERAL SPECIFICATIONS

Model	604926	604912
Speaker Type	Two-way active line array loudspeaker	Active line array subwoofer
Rated Power Output (Program)	300 watts	700 watts
Frequency Response (-10dB)	85 Hz ~ 20 kHz	45 Hz ~ 800 Hz
Filter	150 Hz low-cut	40 Hz ~ 200 Hz variable high-cut
Sensitivity (1W@1m)	99dB	99dB
Line Input Sensitivity	0dB	0dB
Main Driver(s)	2x 6.5" cones	1x 12" cone
Tweeter	1x 1.5" compression driver	n/a
Horizontal Dispersion (-6dB)	90°	n/a
Vertical Dispersion (-6dB)	10°	n/a
Enclosure	15mm birch	15mm birch
Dimensions (WxHxD)	24.4" x 9.0"/5.9" x 11.4" (620 x 230/150 x 290 mm) (trapezoidal)	24.4" x 15.7" x 17.7" (620 x 400 x 450 mm)
Weight	39.2 lbs. (17.8 kg)	68.1 lbs. (30.9 kg)

ELECTRICAL SPECIFICATIONS

Model	MR12 Subwoofer	MR652 Speaker
Input Voltage	120 VAC, 60Hz	120 VAC, 60Hz
Quiescent Power Draw	17W	15W
Power Consumption at 1/3 Power, Pink Noise	350W, 3A RMS	120W, 1.2A RMS
Power Consumption at 1/8 Power, Pink Noise	115W, 1A RMS	40W, 0.3A RMS
Maximum Power Consumption	500W	200W
Inrush Current	12A	3A
AC Connector	16AWG	16AWG
Input Connector Rating	5A	5A
Output Connector Rating	7A	7A

REGULATORY COMPLIANCE

Notice for FCC



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.

Modifying the equipment without Monoprice's authorization may result in the equipment no longer complying with FCC requirements for Class B digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Notice for Industry Canada

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

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

MiniRay™ is a trademark of Monoprice Inc.

