

# OWNER'S MANUAL

## *M3-650x* *M3-770x*

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### Marine Coaxial Loudspeakers with Built-In RGB LED Lighting (optional)

*Thank you for purchasing a JL Audio Marine Coaxial Speaker System.*

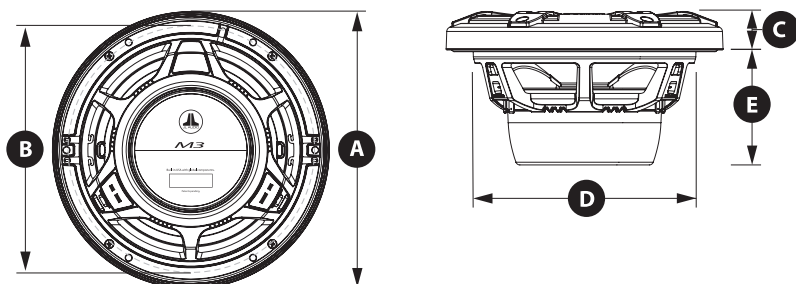
*With proper installation, your new speakers will deliver  
years of listening pleasure.*

*We strongly recommend that you have your new marine speakers  
installed by your authorized JL Audio dealer.*

*The installation professionals employed by your dealer have  
the necessary tools and experience to properly install your new speakers.*

*If you prefer to perform your own installation,  
please read this instruction manual completely before  
beginning the process.*





Physical Specifications	M3-650X	M3-770X
<b>Nominal Diameter</b>	6.50 in. / 165 mm	7.70 in. / 196 mm
<b>Outer Diameter (A)</b>	6.90 in. / 175 mm	7.70 in. / 196 mm
<b>Bolt Hole Circle (B)</b>	6.13 in. / 156 mm	6.92 in. / 176 mm
<b>Frontal Grille Protrusion-Classic* (C)</b>	0.97 in. / 25 mm	1.02 in. / 26 mm
<b>Frontal Grille Protrusion-Sport* (C)</b>	1.01 in. / 26 mm	1.10 in. / 28 mm
<b>Mounting Hole Diameter (D)</b>	5.00 - 5.25 in. / 127 - 133 mm	6.25 in. / 159 mm
<b>Mounting Depth (E)</b>	2.78 in. / 71 mm	3.17 in. / 81 mm

\* Frontal grille protrusion measured from mounting surface (Sport Grille pictured)

Specifications	M3-650X	M3-770X
<b>Mounting Application</b>	Infinite Baffle	Infinite Baffle
<b>Continuous Power Handling (RMS Method)</b>	60 watts / channel	70 watts / channel
<b>Recommended Amplifier Power</b>	20 - 120 watts / channel	20 - 140 watts / channel
<b>Frequency Response</b>	55 Hz - 25 KHz ( $\pm 3$ dB)	45 Hz - 25 KHz ( $\pm 3$ dB)
<b>Efficiency @ 1W/1m</b>	89.5 dB	90.5 dB
<b>Nominal Impedance</b>	4 ohms	4 ohms

Due to ongoing product development, all specifications are subject to change without notice.

## MARINE SPEAKER SPECIFICATIONS

**Woofers:** Injection-molded, mica-filled polypropylene cone bodies with UV inhibitors, 1.00-inch (25 mm) voice coils on M3-650X and 1.25-inch (32 mm) voice coils on M3-770X, low-profile/ progressive-roll spiders and synthetic rubber surrounds. DMA-optimized, long excursion design for enhanced output and bass response. UV-resistant polymer baskets and grilles. LED equipped models include built-in RGB LED lighting.

**Tweeters:** 0.75-inch (19 mm) on M3-650X and M3-770X, treated silk dome design, neodymium magnet, ferrofluid cooled and damped.

**Crossover Networks:** Natural woofer roll-off with 2nd order high-pass filter on tweeter. Solid-state tweeter protection circuit.

**Included Components and Parts:**

- Two Marine Coaxial Loudspeakers
- Two Polymer Woofer Grilles (attached to speaker)
- Two Treated Silk Dome Tweeters (mounted to grilles)
- Two 2nd order high-pass filters (mounted to grilles)
- Twelve #8 x 1 1/8-inch (29 mm) Phillips-head stainless-steel screws for speaker mounting
- Twelve #8 stainless-steel washers for speaker mounting
- Mounting Template
- Logo Badges
  - One Pair Black (Gunmetal Sport Models Only)
  - One Pair White (White Sport Models Only)

**LED Equipped Models:** Built-in, RGB LED lighting delivers beautiful accent illumination. LED functionality requires separate wiring at each speaker location. Adjustable control of RGB lighting requires the use of an RGB lighting controller (sold separately). For optimal performance, we recommend using the JL Audio marine lighting controller (MLC-RW).

**!! CAUTION**

Prolonged exposure to sound pressure levels in excess of 100dB can cause permanent hearing loss. This high-performance speaker can exceed this level. Please exercise restraint in its operation in order to preserve your ability to enjoy its fidelity.

**!! WARNING**

It is absolutely vital that your coaxial speaker system is connected as shown in this manual. Failure to connect the system as shown will result in damage to your speakers which is NOT covered under warranty. Do not substitute different crossover networks.

**!! WARNING**

Do not attempt to remove the tweeter or lighting LEDs from the grille. The tweeter and LEDs are permanently fixed to the grille and their wiring is permanently attached to the speaker frame. Attempting to remove the grille, tweeter or LEDs will damage the speaker and this damage will not be covered under warranty.

**!! CAUTION**

When installing speakers in your vessel, it is extremely important to secure them firmly. This applies not only to the speakers themselves, but also any structure they are mounted to. If not firmly attached, the speakers can become dangerous projectiles in a collision. Please review the mounting information carefully and use the supplied marine-grade hardware to mount this product.

**!! WARNING**

While these speakers are designed to be water and spray resistant, they are not designed to be submerged or to withstand high-pressure water spray. Do not install on submersibles, personal watercraft or any other vessel likely to be under water at any time. Please exercise care when washing your boat to avoid damaging your speaker. Avoid contact with harsh chemicals or cleaning agents to prevent damage to the speaker's finish that will not be covered under warranty. Wash with mild soap and rinse with freshwater only.

## INTEGRATED RGB LED LIGHTING

Illuminated speaker models are outfitted with multi-color LEDs to produce vibrant accent lighting. Embedded within each speaker grille are six RGB LEDs, positioned and concealed from direct sight. Wire leads exiting from behind the grille includes LED connections. Refer to the table below for individual RGB wire connection info.

**Note: Wiring connections at each speaker location are required for LED functionality.**

Wire Color	RGB LED Connection
Red	Red RGB LED Negative (-)
Green	Green RGB LED Negative (-)
Blue	Blue RGB LED Negative (-)
Yellow	Main RGB LED Positive (+12V)

Adjustable control of RGB lighting may be achieved with the use of an RGB lighting controller (sold separately). Refer to the instructions of your RGB lighting controller for specific connection info.

**Note: When selecting an RGB lighting controller, make sure that the total amperage demands of all LED circuits does not exceed the output capacity of the controller. Refer to the table below for the individual current draw amounts and sum (add) the total.** For optimal performance, we recommend using the JL Audio marine lighting controller (MLC-RW).

## RGB LED SPECIFICATIONS

Specification	M3-650X	M3-770X
LED Current Draw at 12V DC	108 mA	108 mA
Recommended Fuse Value	150 mA	150 mA
LED Voltage Range	10 - 14.4V DC	

## DIRECT LED WIRING

Alternatively, you may hard wire individual leads or a combination of leads to achieve up to seven different LED color assortments. Refer to the table below for the wire colors used to achieve specific LED colors.

LED Color	Wire Color(s)	Connection
Red	Red	Combine selected wires from all speakers and connect to negative ground or to the negative (-) battery post.
Green	Green	
Blue	Blue	
Yellow	Red and Green	
Pink	Red and Blue	
Aqua	Green and Blue	
White	Red, Green and Blue	

Combine all YELLOW (+12V) leads together (parallel) and connect to a switched +12V supply. See below for additional info.

## LED WIRING CONSIDERATIONS

- Do not connect to 24V electrical systems.
- Do not connect the speakers' LED lights to the vessel's navigational lighting circuits.
- For short-circuit protection, we recommend installing a fuse (not included) at EACH speaker's YELLOW (+12V) LED power connection lead. Refer to the **RGB LED Specifications** table (at left) for recommended fuse ratings.
- We recommend a minimum of 16AWG wire size for each speaker's LED connection circuits.
- In addition to the above, we recommend activating the speakers' LEDs thru a cabin/interior lighting circuit that supplies +12V via an existing switch. If an existing switched circuit is not available, you may install a dedicated toggle/rocker style switch that will supply positive (+12V) power. Fuse this main +12V connection according to the total amperage demands of all LED circuits. Refer to the **RGB LED Specifications** table (at left) for individual current draw amounts and recommended fuse ratings.

## TWEETER PROTECTION

The crossover networks are equipped with an advanced electronic tweeter protection circuit designed to minimize the possibility of tweeter failure. This electronic device monitors current going to the tweeter and will disconnect the tweeter from the signal when it senses overload. Should this occur while listening to the audio system, simply reduce the volume for a few seconds and the protection circuit will reset itself automatically.

## BEFORE YOU BEGIN INSTALLING

- Check with your local waterway authority for any regulations regarding the use of accent/speaker lighting on your vessel.
- Turn off the audio system. It is also advisable to disconnect your battery system whenever performing installation work.
- Before cutting, drilling or inserting any screw, check clearances on both sides of the planned mounting surface. Also check for any potential obstacles, such as wiring harnesses, fuel lines, hydraulic lines, etc. Check both sides of the vessel before cutting any holes.
- If you are running cables through bulkheads, drill holes for the cable and use a urethane or plastic grommet to protect the wire from chafing in the hole. Make sure that the cables will clear any mechanical devices in the boat and secure them with wire ties.
- Wear protective eyewear at all times and a dust mask and gloves when drilling or cutting.

## INSTALLING THE SPEAKERS

These speakers are specifically designed for infinite-baffle applications. In other words, this means that they are designed to operate without an enclosure behind them.

Once mounting locations have been established, run speaker cables from the amplifier outputs to the mounting locations. For LED equipped models, now is also a good time to run wires to each speaker location for LED activation.

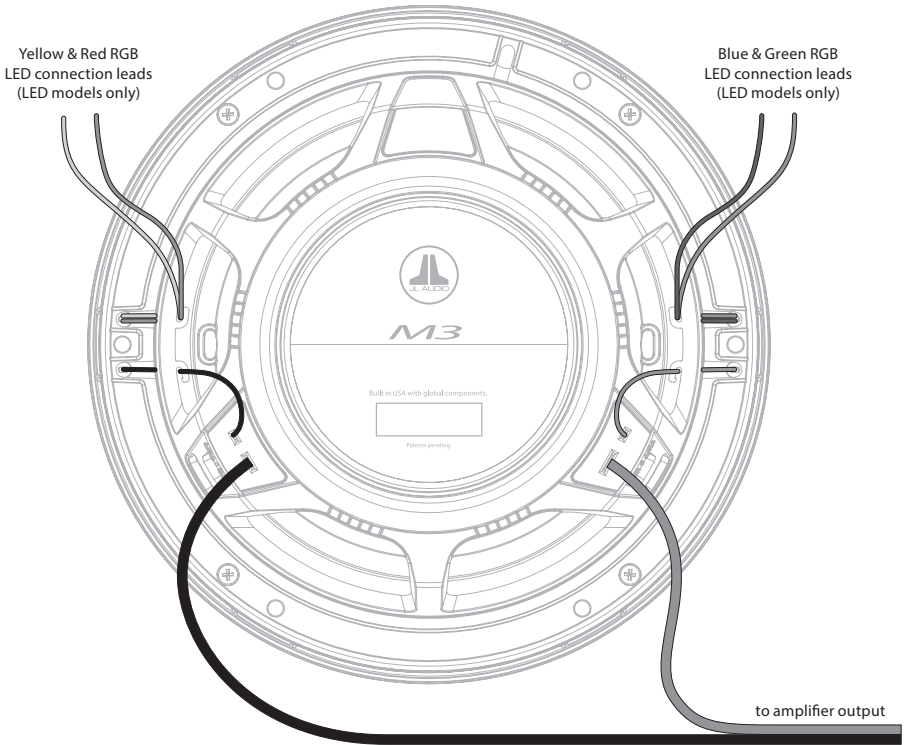
## INSTALLATION PROCEDURE

Diagrams A & B (page 7) shows typical installation procedures into a fiberglass panel, using the supplied hardware. Always follow proper safety procedures. Use eye-protection at all times and a dust mask and gloves when cutting.

- 1) Choose a flat mounting surface that has sufficient depth and air space behind it to accept the speaker.
- 2) Using a hole saw or jigsaw, cut a mounting hole for your respective speaker model (see "Mounting Hole Diameter (D)" specifications, page 2). If using a jigsaw, tracing the supplied mounting template will provide you with an accurate line on which to cut.
- 3) Place the speaker in the hole (or use the mounting template) and mark the screw hole locations using a sharp, pointed tool.
- 4) Remove the speaker and drill a pilot hole (see the Pilot Hole Recommendations chart on page 6) in each of the screw locations. It is also advisable to use a hand-driven countersink tool on each hole to further inhibit gel-coat cracking of fiberglass panels.
- 5) Connect the speaker wires from the amplifier to the woofer connections (see Speaker Connections on page 6).
- 6) If equipped, connect the LED circuit leads (see page 4).
- 8) Place the speaker into the opening.
- 9) While holding the speaker firmly in its mounting location, place a #8 screw (with washer) at each pilot hole location and snug in a criss-cross pattern, then tighten with a hand screwdriver in a criss-cross pattern.

Non-standard installations may require different hardware. Always use marine-grade, stainless-steel fasteners to ensure a secure, reliable installation.

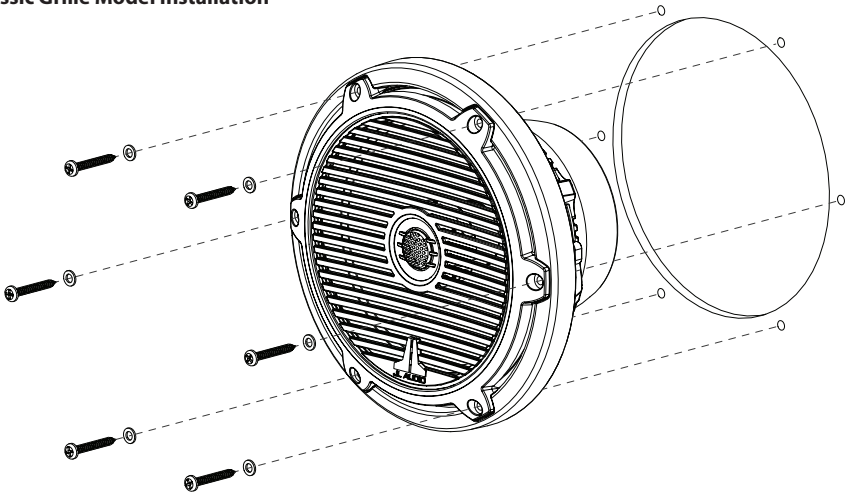
## SPEAKER CONNECTIONS



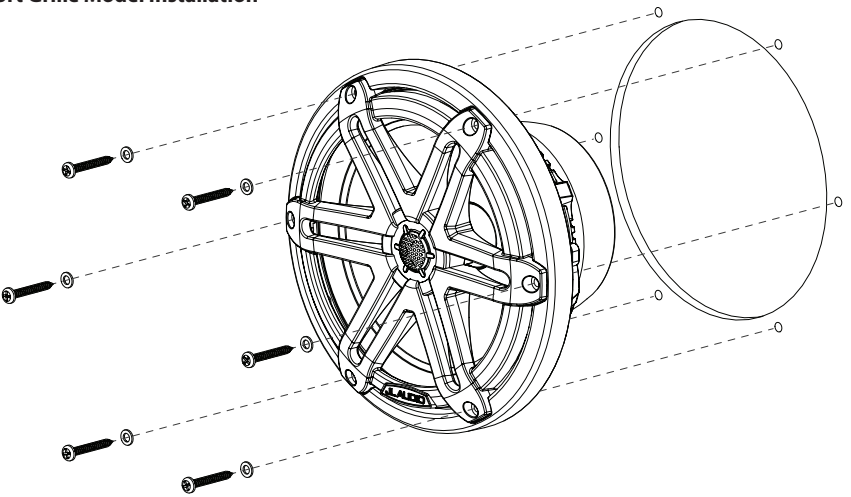
### #8 SCREW: PILOT HOLE RECOMMENDATIONS

Fiberglass Thickness	Recommended Pilot Hole Drill Size
0.312 in. (7.92 mm) or less	1/8 in. (3.18 mm) pilot hole
foam core / fiberglass sandwich	1/8 in. (3.18 mm) pilot hole
larger than 0.312 in. (7.92 mm)	9/64 in. (3.57 mm) pilot hole

**DIAGRAM A**  
**Classic Grille Model Installation**



**DIAGRAM B**  
**Sport Grille Model Installation**



**LIMITED WARRANTY - MARINE SPEAKER SYSTEMS (USA)**

JL AUDIO warrants this product to be free of defects in materials and workmanship for a period of two (2) years from the original date of purchase.

This warranty is not transferable and applies only to the original purchaser from an authorized JL AUDIO dealer. Should service be necessary under this warranty for any reason due to manufacturing defect or malfunction, JL AUDIO will (at its discretion), repair or replace the defective product with new or remanufactured product at no charge.

Damage caused by the following is not covered under warranty: accident, misuse, abuse, product modification or neglect, failure to follow installation instructions, unauthorized repair attempts, misrepresentations by the seller. This warranty does not cover incidental or consequential damages and does not cover the cost of removing or reinstalling the unit(s). Cosmetic damage due to accident or normal wear and tear is not covered under warranty.

Products installed as original equipment by boat manufacturers are covered by the boat manufacturer's warranty, not JL Audio, Inc.

**Warranty is void if the product's serial number has been removed or defaced.**

Any applicable implied warranties are limited in duration to the period of the express warranty as provided herein beginning with the date of the original purchase at retail, and no warranties, whether express or implied, shall apply to this product thereafter. Some states do not allow limitations on implied warranties, therefore these exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**If you need service on your JL AUDIO product:**

All warranty returns should be sent to JL AUDIO freight prepaid through an authorized JL AUDIO dealer and must be accompanied by proof of purchase (a copy of the original sales receipt.) Direct returns from consumers or non-authorized dealers will be refused unless specifically authorized by JL AUDIO with a valid return authorization number. Warranty expiration on products returned without proof of purchase will be determined from the manufacturing date code. Coverage may be invalidated as this date is previous to purchase date. Return only defective components. If one speaker fails in a system, return only that speaker component, not the entire system. Non-defective items received will be returned freight-collect. Customer is responsible for shipping charges and insurance in sending the product to JL AUDIO. Freight damage on returns is not covered under warranty.

**For Service Information in the U.S.A. please call**

**JL Audio Customer Service:** (954) 443-1100

9:00 AM – 5:30 PM (Eastern Time Zone)

**JL Audio, Inc**

10369 North Commerce Pkwy.

Miramar, FL 33025

**International Warranties:**

Products purchased outside the United States of America are covered only by that country's distributor and not by JL Audio, Inc.

