GARMIN®

JL AUDIO® M6-8TIB LUXE SUBWOOFER

Installation Instructions

Important Safety Information

⚠ WARNING

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

You must install this device securely according to these instructions. Failure to install this device in accordance with these instructions could result in serious personal injury, damage to the device and/or vessel, or poor product performance.

To avoid possible serious personal injury or damage to the device and the vessel, you must disconnect the power supply to the vessel's audio system before beginning to install the device.

Continuous exposure to sound pressure levels over 100 dBA may cause permanent hearing loss. The volume is typically too loud if you cannot hear people speaking around you. Limit the amount of time you listen at high volume. If you experience ringing in your ears or muffled speech, stop listening and have your hearing checked.

The product contains magnets that may interfere with medical devices. Consult your physician and medical device manufacturer with questions.

⚠ CAUTION

To avoid possible personal injury, always wear safety goggles, ear protection, and a dust mask when drilling, cutting, or sanding.

NOTICE

The product contains magnets that may cause damage to some electronic devices. Use caution using the product near electronic devices.

When drilling or cutting, always check what is on the opposite side of the surface to avoid damaging the vessel.

It is strongly recommended that you have your audio system installed by a professional installer to ensure optimum performance.

You must read all installation instructions before beginning the installation. If you experience difficulty during the installation, go to support.garmin.com for product support.

Tools Needed

- Appropriate saw or cutting tool to cut the surface material
- Marine sealant such as 3M™ 4200 or 5200
- 4.8 mm and 6.3 mm female spade connectors
- Torque screwdriver with a Phillips bit
- #2 Phillips screwdriver
- Drill and drill bits
- Wire cutter
- Wire strippers
- Crimping tool
- Speaker wire (*Speaker Wire Gauge Guide*, page 3)

NOTE: For customized installations, additional tools and materials may be needed.

Mounting Location and Water Resistance

⚠ WARNING

The front of the speaker is protected from water ingress. The rear of the speaker, including all connected components and wires, is not waterproof and must be protected against moisture exposure. Moisture exposure to the rear of the speaker can lead to speaker component failure which can cause a fire resulting in property damage, serious personal injury, or death.

NOTICE

When mounting the speaker in an area exposed to weather or water, you must mount the speaker on a vertical surface. If you mount the speaker on a horizontal surface facing up, water can gather in and around the speaker, causing damage over time.

If you intend to mount the speakers outside the boat, you must mount them in a location well above the waterline, where they are not submerged or damaged by docks, pilings, or other pieces of equipment. When mounted correctly, these speakers are rated for protection from the front of the speaker. Water exposure and damage to the rear of the speaker voids the warranty. This includes situations when the speakers are mounted in a sealed enclosure, especially if they are exposed to wash down. Using an enclosure with a port or vent exposed to the outside environment may allow water to collect and damage the speaker.

You must turn off the audio system before making any connections to the source unit, amplifier, or speakers. Failure to do so could result in permanent damage to the audio system.

You should protect all terminals and connections from grounding and from each other. Failure to do so could result in permanent damage to the audio system and void the product warranty.

The mounting method and materials used can vary depending on the vessel application.

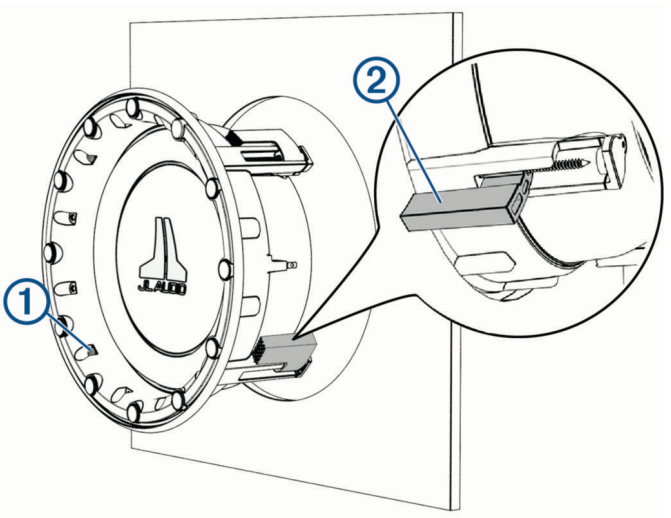
When mounting the speakers, observe these considerations.

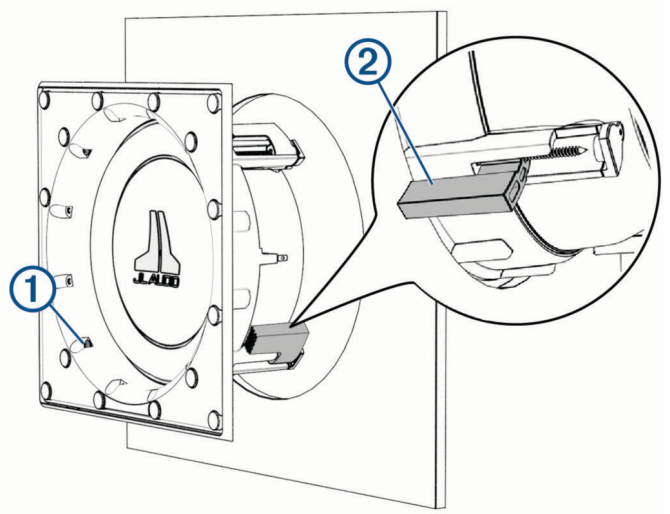
- You must select a mounting location that protects the rear of the speaker from moisture exposure.
- You must select a mounting location that has sufficient clearance for the mounting depth of the speakers as specified in the product specifications.
- You should select a flat, vertical mounting surface for the best seal.
- You must select a mounting location where the panel thickness is not thinner or thicker than specified in the product specifications.
- You should protect the speaker wires from sharp objects, and always use grommets when wiring through panels.
- To avoid interference with a magnetic compass, you should not mount the speakers closer to a compass than the compass-safe distance value listed in the product specifications.

Selecting the correct mounting location optimizes the performance of each speaker. The speakers are designed to perform in the widest possible range of mounting locations, but the more you plan the installation, the better the speakers' sound will be.

Mounting the Speaker

1. Select a mounting location, according to the mounting considerations.
2. Place the included mounting template on the mounting location.
3. Use a saw or cutting tool to cut the hole for the speaker.
4. Connect the speaker wires while observing polarity (*Speaker Wire Gauge Guide*, page 3).
5. Apply marine sealant on the speaker and the mounting surface.
6. Place the speaker in the cutout.
7. Using a #2 Phillips screwdriver, turn the screws ① to extend the mounting tabs ② to lightly hold the speaker to mounting surface.





NOTICE

Although you may use a power screwdriver to initially turn the screws on the mounting tabs, you must use a torque screwdriver to complete the installation. Using power tools to fully tighten the screws could result in permanent damage to the speaker and void the product warranty.

8 Using a torque screwdriver, tighten the screws by hand to 1.69 N-m (1.25 lbf-ft).

9 After the speaker has been mounted, place the grille onto the speaker.

Speaker Wire Gauge Guide

You should use 16 AWG (1.3 through 1.5 mm^2) oxygen-free copper (OFC) speaker wire. You can use these tables to determine if you need to use a larger gauge of wire. These tables account for terminal connection resistance.

NOTICE

Do not use copper-clad aluminum (CCA) wire for this installation. CCA wire is more prone to breaking and its use could also result in poor product performance.

8 Ohm Load (1 Speaker)

Distance between the amplifier and speaker	Wire gauge
From 0 to 28 ft. (from 0 to 8.5 m)	16 AWG (1.3 through 1.5 mm^2)
From 28 to 69 ft. (from 8.5 to 21 m)	12 AWG (3 through 4 mm^2)

4 Ohm Load (2 Speakers in Parallel)

Distance between the amplifier and speaker	Wire gauge
From 0 to 14 ft. (from 0 to 4 m)	16 AWG (1.3 through 1.5 mm^2)
From 14 to 35 ft. (from 4 to 10.5 m)	12 AWG (3 through 4 mm^2)

Troubleshooting

Before you contact your JL Audio® dealer or service center, you should perform a few simple troubleshooting steps to help diagnose the problem.

If the JL Audio speaker has been installed by a professional installer, you should contact the installer so a technician can assess the problem and advise you about possible solutions.

There is no sound coming from the speakers

- Verify that all connections from the source device and/or the amplifier are connected correctly to the speaker terminals.

The system lacks bass or high frequencies

- Verify that the correct wire polarity is observed between the source and speakers.

  The wires should be connected positive to positive and negative to negative.
- Verify that the speakers are attached firmly to the mounting surface.

The audio is distorted

- Verify that the source volume is not too loud for the speaker, and reduce the volume if necessary.
- Verify that the panels surrounding the speaker are not rattling.
- Verify that the source device or the amplifier are connected to the speaker terminals correctly.
- If the speaker is connected to an amplifier, verify that the input level of the amplifier is matched to the output level of the stereo.

  For more information, see the owner's manual for the amplifier.

Cleaning the Speaker

⚠ WARNING

When mounted correctly, the front of the speaker is protected against dust and water ingress under normal conditions. It is not designed to withstand high pressure water spray, which may occur when you wash your speaker. High pressure water spray can result in moisture exposure to the rear of the speaker, which can lead to speaker component failure, which can cause a fire, resulting in property damage, serious personal injury, or death.

NOTICE

Do not use harsh or solvent-based cleaners on the speaker. Using such cleaners may lead to corrosion, damage the product, and void the warranty.

1. Clean all residue from the speaker with a damp cloth soaked in fresh water.
2. Use a mild detergent to remove a heavy buildup of residue or stains.

Enclosure Applications

This subwoofer is designed for infinite-baffle operation using a large volume of air behind it, without a dedicated enclosure. For best performance, the compartment or area behind the mounting location must remain empty. If you decide to build a dedicated enclosure, refer to a design below.

Recommended Sealed Enclosure Specifications

Volume (NET internal)	56.66 L (2.00 $ft.^3$)
-3 dB cutoff frequency (F3)	40.9 Hz
System resonance (Fc)	53.66 Hz
System Q at resonance (Qtc)	0.784

NOTE: The enclosure volume listed is the net internal volume only. You must add the enclosure volume and brace displacement to obtain the final gross internal volume.

Recommended Ported Enclosure Specifications

Volume (NET internal)	42.5 L (1.50 ft.^{3})
-3 dB cutoff frequency (F3)	29.6 Hz
Box tuning frequency (Fb)	37 Hz
Port diameter	102 mm (4.00 in.)
Port length	343 mm (13.50 in.)

NOTE: The enclosure volume listed is the net internal volume only. You must add the enclosure volume, port displacement, and brace displacement to obtain the final gross internal volume.

Specifications

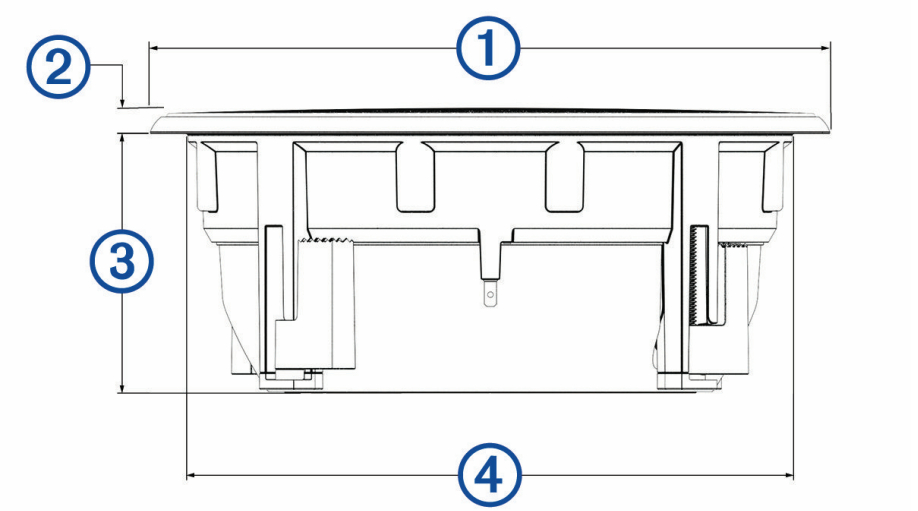
RMS power	250 W
Recommended amplifier power (RMS)	50 to 250 W
One-way linear excursion (Xmax)	10 mm (0.40 in.)
Efficiency (1 W/1 m)	83.2 dB
Nominal impedance	8 ohms
Min. sealed enclosure volume (NET)	47 L (1.66 ft.^{3})
Min. panel thickness	6 mm (0.25 in.)
Max. panel thickness	41 mm (1.625 in.)
Compass-safe distance	235 cm (93 in.)
Water rating	IEC 60529 IPX5 [1]

Parameters

Fs	37.98 Hz
Qes	0.731
Qms	9.471
Qts	0.679
Vas	17.31 L (0.611 ft.^{3})
Sd	0.0211 m^2 (32.705 in.^{2})
Re	7.24 ohms
Displacement	1.53 L (0.054 ft.^{3})
Net weight	3.4 kg (7.5 lb.)

[1] The device is protected against low-pressure jets of water.

Speaker Dimensions



1	Round (diameter): 254 mm (10 in.) Square: 254 × 254 mm (10 in.)
2	Round: 10.2 mm (0.40 in.) Square: 8.6 mm (0.34 in.)
3	96.5 mm (3.8 in.)
4	228.6 mm (8.96 in.)

MN: JLMA03875, JLMB03875