



FUSION APOLLO™ SPEAKERS

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.

This device must be installed according to these instructions to avoid serious personal injury or possible property damage.

Disconnect the vessel's power supply before beginning to install this device to avoid serious personal injury or possible property damage.

CAUTION

It is strongly recommended that you have your audio system installed by a professional installer to ensure optimum performance and to avoid personal injury or property damage.

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.

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

NOTICE

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

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

- Electric drill
- Drill bit (size varies based on surface material)
- Appropriate saw or utility knife to cut surface material
- Phillips screwdriver
- Wire strippers
- 16 AWG (1.3 through 1.5 mm²) or larger marine-grade, fully-tinned copper speaker wire
You can purchase this wire from your Fusion® or Garmin® dealer:
 - 010-12899-00: 7.62 m (25 ft.)
 - 010-12899-10: 15.24 m (50 ft.)
 - 010-12899-20: 100m (328 ft.)
- 20 AWG (0.5 through 0.75 mm²) marine-grade, fully-tinned copper wire for the LED connections (LED models only).
- Appropriately rated in-line fuse (LED models only)
- Solder and water-tight heat shrink tubing or water-tight, heat-shrink, butt-splice connectors (optional)
- Marine sealant (optional)

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 an 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.

When selecting a mounting location for the speakers, observe these considerations:

- You must select a mounting location that protects the rear of the speaker from moisture exposure.
- You must select mounting locations that provide 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 should protect the speaker wires from sharp objects and always use rubber 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 Speakers

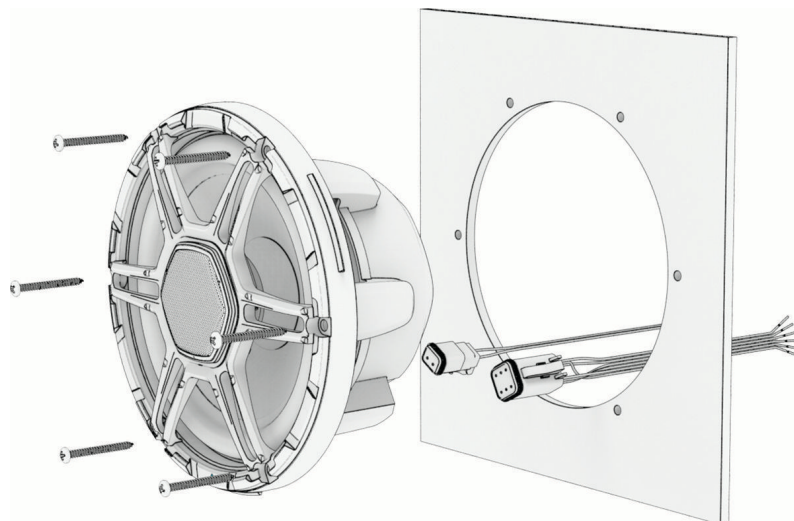
Before mounting the speakers, you must choose a location following the guidelines above.

- 1 Trim the template and make sure it fits in the selected location.
- 2 Orient the template so the text is level.
- 3 Secure the template to the selected location.
- 4 Using a drill bit appropriate for the mounting surface, drill a hole inside the dashed line on the template to prepare the mounting surface for cutting.
- 5 Using a jigsaw or rotary tool, cut the mounting surface along the inside of the line on the template.
- 6 Place the speaker in the cutout to test the fit.
- 7 If necessary, use a file and sandpaper to refine the size of the cutout.
- 8 After the speaker fits correctly in the cutout, ensure the mounting holes on the speaker line up with the pilot holes on the template.
- 9 If the mounting holes on the speaker do not line up, mark the new hole locations.
- 10 Using an appropriately sized drill bit for the mounting surface and screw type, drill the holes.

NOTICE

Do not drill the pilot holes through the holes on the speaker. Drilling through the speaker may damage it.

- 11 Remove the template from the mounting surface.
- 12 Route speaker wire (not included) from the source to the speaker location ([Speaker Wiring, page 5](#)).
NOTE: Avoid routing the speaker wire near sources of electrical interference.
- 13 For LED models, route the appropriate wire from the speaker location to the location of the LED controller or the battery ([LED Wiring, page 6](#)).
NOTE: Avoid routing the speaker wires bundled with the LED wires.
- 14 Connect the speaker wires to the included wiring harness while observing polarity.
- 15 For LED models, connect the LED wires to the included wiring harness.
- 16 Connect the wiring harnesses to the appropriate connectors on the speaker.
- 17 Place the speaker in the cutout with the connectors toward the bottom.



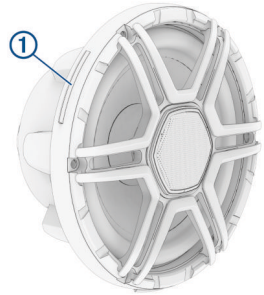
- 18 Secure the speaker to the mounting surface using the included screws.

Attaching the Grille

- 1 Locate the retention tabs on the edge of the speakers ①.

NOTE: When the speakers are installed with the connectors on the back at the bottom (with the Fusion logo on the front in the 6 o'clock position), the retention tabs are located at the 2 o'clock, 6 o'clock, and 10 o'clock positions on the edge of the speakers.

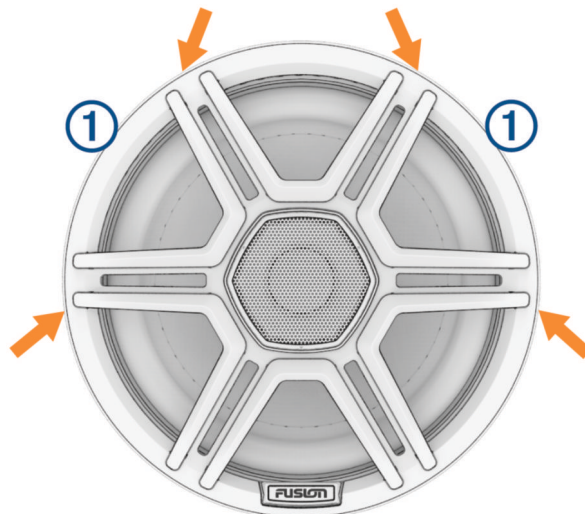
- 2 Aligning the notches on the inside of the grille with the retention tabs on the speaker, place the grille on the rim of the speaker.
- 3 Press on the grille to snap it in place.



Removing the Grille

You can remove the grille for cleaning or replacement.

- 1 Using both hands, squeeze the sides of the grille as shown so that the edges of the grille flex away from the retention tabs ①.

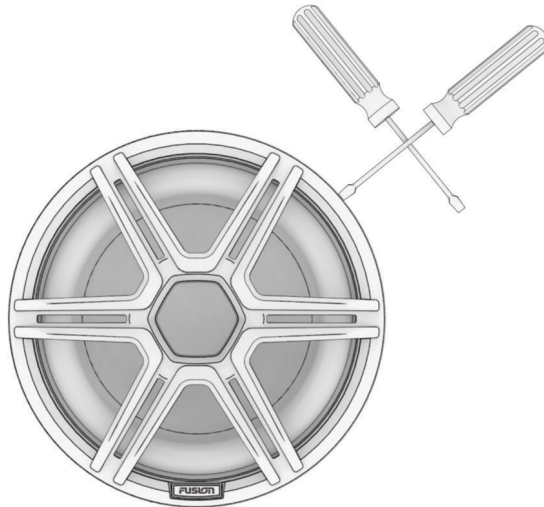


- 2 Pull the grille away from one of the retention tabs first, then another.
If necessary, move your hands to another position and squeeze until the grille lifts away from the tabs.
- 3 After you lift the grille away from two of the tabs, remove it entirely.
If you are unable to remove the grille by hand, you can use prying tools to remove the grille.

Removing the Grille Using Prying Tools

If the grille is too difficult to remove by hand, you can use prying tools, such as a pair of flathead screwdrivers, to remove it.

- 1 Locate the retention tabs by pressing the rim of the grille.
The grille flexes next to the tabs but not on top of them.
- 2 Insert one prying tool between the grille and the speaker at the edge of one retention tab, and use another tool as an axis to pry against.



NOTE: For the best results, avoid placing the prying tool in the middle of a retention tab. The grille is easier to remove when starting at either edge of a retention tab.

- 3 Pry the grille retention tab out of the slot.

NOTICE

Use care when removing the grille using prying tools to avoid damaging the grille, the speaker, or the mounting surface.

- 4 Repeat these steps on other retention tabs until the grille comes away from the speaker.

Speaker Wiring

You can connect speaker wire to the speakers using the included wiring harnesses or the integrated spade connectors. For the best results, use the included wiring harnesses to connect speaker wire to your speakers.

When connecting the speakers to your stereo or amplifier, observe these considerations.

- Speaker wire is not included. You should use 16 AWG (1.3 through 1.5 mm²) or larger speaker wire to connect the wiring harness to the stereo.
- You should use a water-tight connection method when making all connections.

Connecting the Speaker Wires Using Amphenol™ Connectors

You can use this table to identify the polarity of the wires on the provided harnesses.

Lead color	Polarity
White	Positive (+)
White with a black stripe	Negative (-)

- 1 Connect the harness wires to the speaker cables.
- 2 Plug the wiring harness into the socket on the speaker housing.

Connecting the Speaker Wires Using Spade Connectors

If you are not using the molded connector and wiring harness, you can use the integrated spade connectors to connect your speakers to your stereo or amplifier. The polarity indicators for the spade connectors are molded into the speaker housing next to the connectors.

You can use this table to identify the polarity and spade-connector sizes on the speaker.

Connector polarity	Spade connector size
Positive (+)	6.3 mm
Negative (-)	4.8 mm

NOTE: Connect speaker wires to the speaker using either the wiring harness or the spade connectors. It is not necessary to connect speaker wires to both at the same time.

- 1 Connect marine-grade spade connectors to the speaker cables.
- 2 Connect the spade connectors to the spades integrated into the speaker housing.

LED Wiring

NOTICE

Using certain LED colors on the speakers, such as red and green, may violate the laws, regulations, and standards related to the use and/or operation of marine navigation lights. It is the user's responsibility to comply with any such applicable laws, regulations, and standards. Garmin is not responsible for any fines, penalties, citations, or damages that may be incurred due to any such lack of compliance.

It is recommended to install a Garmin Spectra™ LED Controller module with these speakers to turn the LEDs on and off, change the colors, and create lighting effects. See garmin.com for more information.

You must use the provided wiring harnesses when connecting the LED wires to a Garmin Spectra LED Controller module or power source.

NOTE: LEDs are not available on all models.

Connecting the LED Wires Directly

If you do not install the recommended remote control, you can set the static color and tone of the LEDs by connecting specific color LED wires from the harness to the negative (-) terminal of a 12 Vdc power source. You must connect only the dark blue LED wire from the harness to the positive (+) terminal of the same power source to complete the circuit.

You must use the provided harnesses when connecting the LED wires directly to power.

You should use 20 AWG (0.5 through 0.75 mm²) or thicker wire to connect the LED wires from the harness to the battery.

You must connect the positive (+) wire (dark blue) for all of the speaker LED harnesses through an appropriately rated fuse (not included) near the power-source. You should also connect the positive (+) wire to the power source through an isolator switch or circuit breaker to turn the LEDs on and off. You can use the same isolator or circuit breaker controlling the power supply to your stereo, which allows you to turn the LEDs and the stereo on and off at the same time.

You should use a water-tight connection method when connecting wire to the LED wiring harness.

- 1 Connect the negative (-) wire from the same power source to the color wires on the LED harness according to the preferred LED color.

WARNING

To prevent property damage or personal injury, you must insulate any unused LED wires on the harness to avoid causing a short circuit.

Wire Color	Wire Use
Dark blue	LED power (+VE)
Black/light green	Cool white LED (-VE)
Black/red	Red LED (-VE)
Black/green	Green LED (-VE)
Black/light blue	Blue LED (-VE)
Black/yellow	Warm white LED (-VE)

NOTE: Individual colors can be combined to create new LED color tones if you are not using an LED controller.

- 2 Connect the dark blue wire on the LED harness to the positive (+) terminal of the power source .

NOTICE

To avoid damage to the speakers or the vessel, you must connect the dark blue positive wire through an appropriately rated fuse (not included) near the power source.

- 3 Connect the harness to the speaker.
- 4 Repeat for other speakers, as needed.

LED Fuse Installation

WARNING

You must install an inline fast-blow fuse on the positive wire at the power-source end of the LED cable for each speaker to protect the LEDs and the speaker from excessive electrical current. Failure to install a fuse could cause a fire resulting in property damage, serious personal injury, or death.

- The fuse must be installed in a fuse holder intended for marine use.
- The fuse must be installed on the positive wire on the power-source end of the LED cable.
- The fuse must be installed for use with any power source, including a lighting controller.
- Always use a fuse of the correct amperage rating and type for your speaker model.

Speaker Model	Fast-blow Fuse Rating
Fusion Apollo 6.5 in. Speakers with LED Lighting	500 mA
Fusion Apollo 7.7 in. Speakers with LED Lighting	500 mA
Fusion Apollo 8.8 in. Speakers with LED Lighting	700 mA

Speaker Information

Cleaning the Speakers

NOTICE

When mounted correctly, the fronts of these speakers are protected against dust and water ingress under normal conditions. They are not designed to withstand high pressure water spray, which may occur when you wash down your vessel. High-pressure spray on the speakers may damage the product and void the warranty.

Do not use harsh or solvent-based cleaners on the speakers. Using such cleaners may damage the product and void the warranty.

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

Specifications

6.5" Speakers

Peak power (Watts)	300 W
RMS power (Watts)	75 W
LED load current (at 14.4 Vdc)	130 mA per color per speaker
Sensitivity (1 W/1 m)	90 dB
Frequency response	70 Hz to 22 kHz
Min. mounting depth (clearance)	77 mm (3 in.)
Mounting diameter (clearance)	136 mm (5 ³ / ₈ in.)
Compass-safe distance	280 cm (110 ¹ / ₄ in.)

7.7" Speakers

Peak power (Watts)	400 W
RMS power (Watts)	100 W
LED load current (at 14.4 Vdc)	140 mA per color per speaker
Sensitivity (1 W/1 m)	91 dB
Frequency response	60 Hz to 22 kHz
Min. mounting depth (clearance)	86 mm (3 ³ / ₈ in.)
Mounting diameter (clearance)	156 mm (6 ¹ / ₈ in.)
Compass-safe distance	300 cm (118 ¹ / ₈ in.)

8.8" Speakers

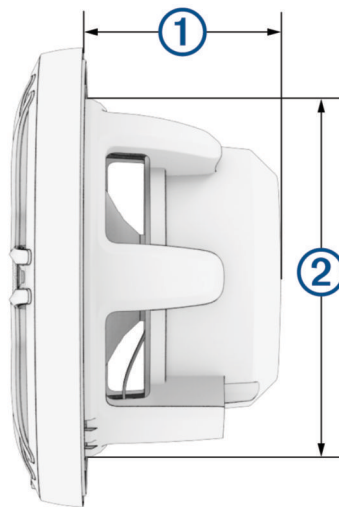
Peak power (Watts)	520 W
RMS power (Watts)	130 W
LED load current (at 14.4 Vdc)	180 mA per color per speaker
Sensitivity (1 W/1 m)	91 dB
Frequency response	50 Hz to 20 kHz
Min. mounting depth (clearance)	105 mm (4 ¹ / ₈ in.)
Mounting diameter (clearance)	180 mm (7 ¹ / ₁₆ in.)
Compass-safe distance	315 cm (124 in.)

All Models

Nominal impedance	4 ohms
LED Supply Voltage (LED speakers only)	From 10.8 to 16 Vdc
Operating temperature range	From -5 to 55°C (from 23 to 131°F)
Storage temperature range	From -20 to 70°C (from -4 to 158°F)
Ingress protection rating (front only when properly installed)	IEC 60529 IP66 and IPX7 ¹
Wiring harness connector type	Audio: Amphenol AT Series™ AT 2-way LED: Amphenol AT Series AT 6-way

Dimension Drawings

Side View

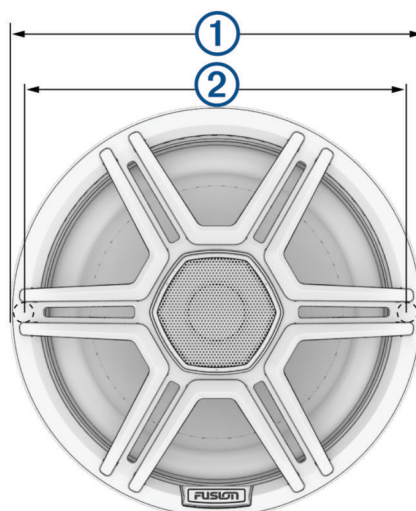


Dimension	6.5" Speakers	7.7" Speakers	8.8" Speakers
①	73.6 mm (2 ⁷ / ₈ in.)	81.9 mm (3 ¹ / ₄ in.)	100.9 mm (4 in.)
②	133 mm (5 ¹ / ₄ in.)	153 mm (6 in.)	177 mm (7 in.)

NOTE: You must allow at least 3 mm (¹/₈ in.) of clearance beyond the depth of the speaker. The above measurements are nominal. Refer to the specifications table for clearance measurements.

¹ The device withstands incidental exposure to water of up to 1 m for up to 30 min, and is protected against powerful jets of water. For more information, go to www.garmin.com/waterrating.

Front View



Dimension	6.5" Speakers	7.7" Speakers	8.8" Speakers
①	176 mm (6 ¹⁵ / ₁₆ in.)	196 mm (7 ¹¹ / ₁₆ in.)	224 mm (8 ¹³ / ₁₆ in.)
②	156 mm (6 ¹ / ₈ in.)	176 mm (6 ¹⁵ / ₁₆ in.)	202 mm (7 ¹⁵ / ₁₆ in.)

Recommended Amplifier Power (RMS)

6.5" Speakers	25 -150 W RMS per Ch
7.7" Speakers	30 -200 W RMS per Ch
8.8" Speakers	40 - 260 W RMS per Ch

Optimum Enclosure Recommendations

Specification	6.5" Speakers	7.7" Speakers	8.8" Speakers
Sealed enclosure volume ²	18 L (0.64 ft. ³)	20 L (0.71 ft. ³)	22 L (0.78 ft. ³)
Ported (Vented) enclosure volume ³	25 L (0.88 ft. ³)	30 L (1.06 ft. ³)	35 L (1.23 ft. ³)
Port diameter	76 mm (3 in.)	76 mm (3 in.)	76 mm (3 in.)
Port length	162 mm (6.4 in.)	160 mm (6.3 in.)	170 mm (6.7 in.)

² Fully filled with absorption material

³ Lined with absorption material

物質宣言

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
塑料件	○	○	○	○	○	○
磁钢	○	○	○	○	○	○
金属连接件	○	○	○	○	○	○
金属结构件(T 铁甲板)	○	○	○	○	○	○
电线	○	○	○	○	○	○
PC 混纺软件	○	○	○	○	○	○

本表格依据 SJ/T11364 的规定编制。

○: 代表此种部件的所有均质材料中所含的该种有害物质均低于 (GB/T26572) 规定的限量

✕: 代表此种部件所用的均质材料中, 至少有一类材料其所含的有害物质高于 (GB/T26572) 规定的限量

* 该产品说明书应提供在环保使用期限和特殊标记的部分详细讲解产品的担保使用条件。



产品

連絡地址

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