

# GARMIN®



## FUSION® APOLLO™ SUBWOOFER INSTALLATION INSTRUCTIONS

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### 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](https://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
- 12 AWG (3 through 4 mm<sup>2</sup>) or larger marine-grade, fully-tinned copper speaker wire  
You can purchase this wire from your Fusion or Garmin® dealer:
  - 010-12898-00: 7.62 m (25 ft.)
  - 010-12898-10: 15.24 m (50 ft.)
  - 010-12898-20: 100m (328 ft.)
- 20 AWG (0.5 through 0.75 mm<sup>2</sup>) 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 Considerations

### NOTICE

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

If you intend to mount the subwoofer outside the boat, you must mount it in a location well above the waterline, where it is not submerged or damaged by docks, pilings, or other pieces of equipment. When mounted correctly, this subwoofer is rated for protection from the front of the speaker. Water exposure and damage to the rear of the subwoofer voids the warranty. This includes situations when the subwoofer is mounted in a sealed enclosure, especially if it is 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 subwoofer.

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 subwoofer, observe these considerations:

- You must select mounting locations that provide sufficient clearance for the mounting depth of the subwoofer as specified in the product specifications.
- You should select a flat mounting surface for the best seal.
- You should select a location where the surface material is thick enough to support the weight of the subwoofer. It's important to note that when in use, the subwoofer exerts a pushing and pulling effect on the surface, so if the material is thin, it can result in excess vibration and negatively affect the sound quality.
- 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 subwoofer closer to a compass than the compass-safe distance value listed in the product specifications.

Selecting the correct mounting location optimizes the performance of the subwoofer. Fusion 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 Subwoofer

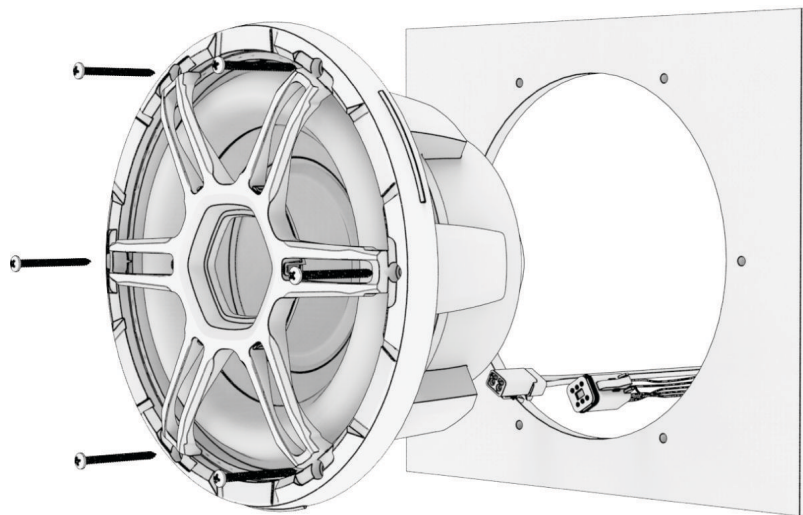
Before mounting the subwoofer, you must choose a location following the guidelines above.

- 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 jigsaw or rotary tool, cut the mounting surface along the inside of the line on the template.
- 5 Place the subwoofer in the cutout to test the fit.
- 6 If necessary, use a file and sandpaper to refine the size of the cutout.
- 7 After the subwoofer fits correctly in the cutout, ensure the mounting holes on the subwoofer line up with the pilot holes on the template.
- 8 If the mounting holes do not line up, mark the new hole locations.
- 9 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 subwoofer. Drilling through the subwoofer may damage it.

- 10 Remove the template from the mounting surface.
- 11 Route speaker wire (not included) from the source to the subwoofer location ([Speaker Wiring, page 4](#)).  
**NOTE:** Avoid routing the speaker wire near sources of electrical interference.
- 12 For LED models, route the appropriate wire from the speaker location to the location of a Garmin Spectra™ LED Controller or the battery ([LED Wiring, page 5](#)).  
**NOTE:** Avoid bundling the speaker wire and LED wire together.
- 13 Connect the speaker wires to the included wiring harness while observing polarity.
- 14 For LED models, connect the LED wires to the included wiring harness.
- 15 Connect the wiring harnesses to the appropriate connectors on the subwoofer.
- 16 Place the subwoofer in the cutout with the connectors at the bottom.



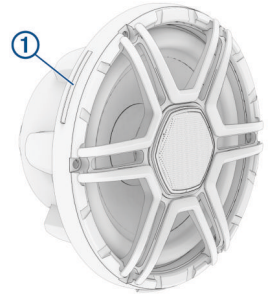
- 17 Secure the subwoofer to the mounting surface using the included screws.  
**NOTE:** Do not over tighten the screws.

## Attaching the Grille to the Subwoofer

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

**NOTE:** When the subwoofer is 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 subwoofer.

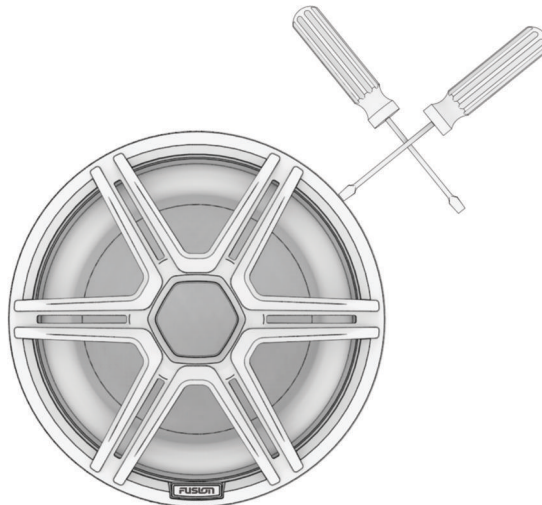
- 2 Aligning the notches on the inside of the grille with the retention tabs on the subwoofer, place the grille on the rim of the subwoofer.
- 3 Press on the grille to snap it in place.



## 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 subwoofer using the included wiring harness or the integrated spade connectors. For the best results, use the included wiring harness to connect speaker wire to your subwoofer.

When connecting the subwoofer to your amplifier, observe these considerations.

- Speaker wire is not included. You should use 12 AWG (3 through 4 mm<sup>2</sup>) or larger speaker wire to connect the wiring harness to the amplifier.
- 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 harness.

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 spade-connector sizes on the subwoofer.

Connector polarity	Spade connector size
Positive (+)	6.3 mm
Negative (-)	6.3 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 this speaker to turn the LEDs on and off, change the colors, and create lighting effects. See [garmin.com](http://garmin.com) for more information.

You must use the provided wiring harness 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 mm<sup>2</sup>) 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.

# Speaker Information

## Cleaning the Subwoofer

### NOTICE

When mounted correctly, the front of this subwoofer is 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 subwoofer may damage the product and void the warranty.

Do not use harsh or solvent-based cleaners on the subwoofer. 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

### 10" Subwoofer

Peak power	600 W
RMS power	300 W
LED current draw per color (at 14.4 Vdc)	0.19 A
Sensitivity (1 W/1 m)	86 dB
Nominal impedance	4 ohms
Nominal voice coil diameter	50 mm
Min. mounting depth (clearance)	135 mm (5 <sup>5</sup> / <sub>16</sub> in.)
Mounting diameter (clearance)	223 mm (8 <sup>3</sup> / <sub>4</sub> in.)
Amplifier power-rating recommendation	50 to 300 W RMS per Ch
Compass-safe distance	410 cm (161 <sup>1</sup> / <sub>2</sub> in.)

### 12" Subwoofer

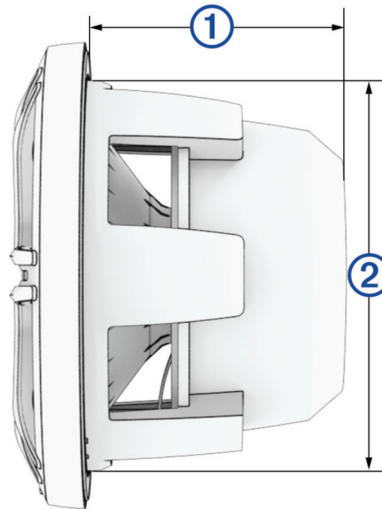
Peak power	1400 W
RMS power	700 W
LED current draw per color (at 14.4 Vdc)	0.27 A
Sensitivity (1 W/1 m)	86 dB
Nominal impedance	4 ohms
Nominal voice coil diameter	100 mm
Min. mounting depth (clearance)	198 mm (7 <sup>13</sup> / <sub>16</sub> in.)
Mounting diameter (clearance)	301 mm (11 <sup>7</sup> / <sub>8</sub> in.)
Amplifier power-rating recommendation	200 to 700 W RMS per Ch
Compass-safe distance	580 cm (228 <sup>1</sup> / <sub>3</sub> in.)

## All Models

LED Supply Voltage (LED models only)	From 10.8 to 16 Vdc
Operating temperature range	-5 to 55°C ( 23 to 131°F)
Storage temperature range	-20 to 70°C ( -4 to 158°F)
Ingress protection rating	IEC 60529 IP67 <sup>1</sup>
Wiring harness connector type	Audio: Amphenol AT Series™ ATP 2-way LED: Amphenol AT Series AT 6-way

## Dimension Drawings

### Side View

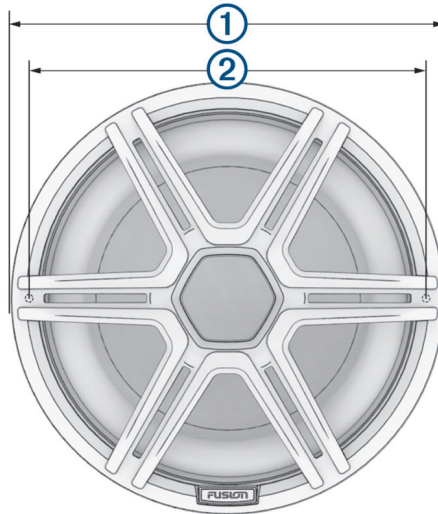


Measurement	10" Subwoofer	12" Subwoofer
①	131.4 mm (5 <sup>3</sup> / <sub>16</sub> in.)	193.9 mm (7 <sup>5</sup> / <sub>8</sub> in.)
②	220 mm (8 <sup>11</sup> / <sub>16</sub> in.)	298 mm (11 <sup>3</sup> / <sub>4</sub> in.)

<sup>1</sup> The device is protected against the ingress of dust and withstands incidental exposure to water of up to 1 m for up to 30 min..



## Front View



Measurement	10" Subwoofer	12" Subwoofer
①	275 mm (10 <sup>13</sup> / <sub>16</sub> in.)	356 mm (14 in.)
②	247 mm (9 <sup>3</sup> / <sub>4</sub> in.)	325 mm (12 <sup>13</sup> / <sub>16</sub> in.)

## Optimum Enclosure Recommendations

Specification	10" Subwoofer	12" Subwoofer
Sealed enclosure volume <sup>2</sup>	27 L (0.95 ft. <sup>3</sup> )	≥ 60 L (2.12 ft. <sup>3</sup> )
Ported (vented) enclosure volume <sup>3</sup>	45 L (1.6 ft. <sup>3</sup> )	250 L (8.83 ft. <sup>3</sup> )
Port diameter	104 mm (4.1 in.)	101.6 mm (4 in.)
Port length	265 mm (10 <sup>7</sup> / <sub>16</sub> in.)	127 mm (5 in.)

<sup>2</sup> Fully filled with absorption material.

<sup>3</sup> 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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