FUSION®

A Garmin Brand

SIGNATURE SERIES 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.

Disconnect the vessel's power supply before beginning to install this device.

⚠ **CAUTION**

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.

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.

After installing an audio system, you should run the connected speakers and subwoofers at low to medium volumes for the first few hours of use. This helps to improve the overall sound by gradually loosening up the moving components of new speakers and subwoofers, such as the cone, spider, and surround.

CE

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 mm^2) 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 mm^2) marine-grade, fully-tinned copper wire for the LED connections (LED models only).
- 3 A 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 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.

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

- 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 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. 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. For more information on speaker placement and specifications, go to garmin.com/manuals/speaker_placement.
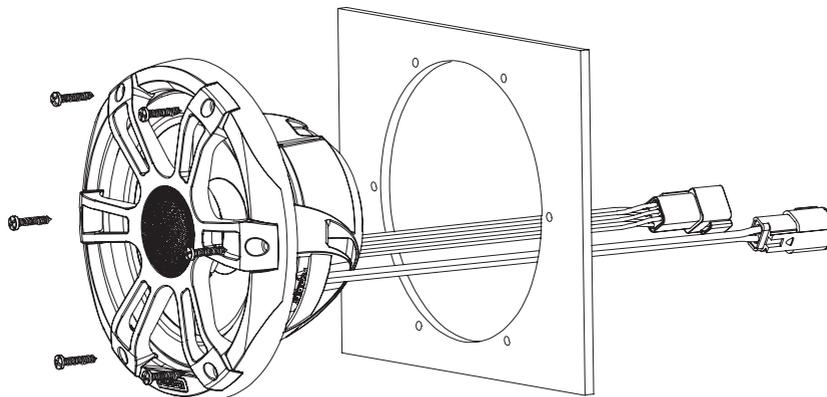
Mounting the Speakers

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 Fusion logo 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 4).
   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 4).
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.

18 Secure the speaker to the mounting surface using the included screws.
   NOTE: Some versions of sports model speakers include plastic washers you should install on the screws to protect the paint.
   NOTE: Do not over tighten the screws, especially if the mounting surface is not flat.

For a Classic model speaker, attach the grille (*Attaching the Grille to the Classic Model Speakers*, page 4).

Attaching the Grille to the Classic Model Speakers

NOTE: This feature is available only on the Classic model speakers.

1 With the speakers mounted, hold the grille with the Fusion logo at the bottom, or at the 6 o'clock position.
2 Turn the grille counter-clockwise about 10°, so the Fusion logo is at the 5 o'clock position.
3 Place the grille on the rim of the speaker.
4 Twist the grille clockwise to secure it.

Speaker Wiring

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

- The wires on each speaker are terminated using a connector, and you should use the provided wiring harnesses when connecting the speaker wires to the stereo or amplifier.
- Speaker wire is not included. You should use 16 AWG (1.3 through 1.5 mm^2) or larger speaker wire to connect the wiring harness to the amplifier.
- You should use a water-tight connection method when connecting speaker wire to the wiring harness.

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 (-)

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 Fusion CRGBW Wireless Remote Control module with these speakers to turn the LEDs on and off, change the colors, and create lighting effects. See your Fusion dealer or garmin.com for more information.

The LED wires on each speaker are terminated using a connector, and you should use the provided wiring harnesses when connecting the LED wires to a CRGBW Wireless Remote Control 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 of the LEDs by connecting the color LED wires from the harness to the negative (-) terminal of a 12 Vdc power source. You can splice the negative (-) wire to multiple LED wires to customize the LED color and tone. You must connect the black LED wire from the harness to the positive (+) terminal of the same power source to complete the circuit.

The LED wires on each speaker are terminated using a connector, and you should use the provided harnesses when connecting the LED wires directly to power.

You should use 20 AWG (0.5 through 0.75 mm^2) or thicker wire to connect the LED wires from the harness to the battery.

You must connect the positive (+) wire (black) for all of the speaker LEDs through a 3 A fuse near the power-source. You should also connect the positive (+) power 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 black 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 this wire through a 3 A fuse near the power source.

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

> **_NOTICE_**
> You must insulate any unused LED wires on the harness to avoid causing a short circuit.

LED Color	LED Harness Wire Color
Red	Red
Green	Green
Blue	Blue
Yellow	Red and green
Magenta	Red and blue
Cyan	Blue and green
Cool white	Turquoise
Warm white	Yellow

NOTE: You can connect the cool white or warm white wire to change the tone of any LED color combination.

3 Connect the harness to the speaker.

4 Repeat for other speakers, as needed.

Wire Strain Relief

NOTICE

Failure to secure the wiring-harness connections can damage the speaker.

The wires connected to the speaker and the included wiring harness use Amphenol™ AT Series™ connectors, and these connectors must be secured during installation to provide strain relief for the internal wire connections to the speaker. You can secure these connections using various methods.

- You can use cable ties or other third-party fastening devices to secure the connection to an appropriate location.
- You can use the various Amphenol A Series™ clips produced by Amphenol to secure the connection. You can check with your local electronics or marine dealer, or go to the Amphenol-Sine website for more information.

Speaker Information

True-Marine™ Products

True-Marine products are subjected to rigorous environmental testing under harsh marine conditions to surpass industry guidelines for marine products.

Any product that bears the True-Marine stamp of assurance has been designed for simplicity of use and combines advanced marine technologies to deliver an industry leading entertainment experience. All True-Marine products are supported by the Fusion 3-year worldwide limited consumer warranty.

Cleaning the Speakers

NOTE: When mounted correctly, these speakers are rated IP65 for dust and water ingress protection under normal conditions. They are not designed to withstand high pressure water spray, which may occur when you wash down your vessel. Failure to carefully spray-clean the vessel may damage the product and void the warranty.

NOTICE

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

Max. power (Watts)	230 W
RMS power (Watts)	75 W
Sensitivity (1 W/1 m)	90 dB
Frequency response	70 Hz to 22 kHz
Min. mounting depth (clearance)	79 mm (3 $^1/_8$ in.)
Mounting diameter (clearance)	136 mm (5 $^3/_8$ in.)
Compass-safe distance	310 cm (122 in.)

7.7″ Speakers

Max. power (Watts)	280 W
RMS power (Watts)	100 W
Sensitivity (1 W/1 m)	91 dB
Frequency response	60 Hz to 22 kHz
Min. mounting depth (clearance)	86 mm (3 $^7/_{16}$ in.)
Mounting diameter (clearance)	156 mm (6 $^1/_8$ in.)
Compass-safe distance	358 cm (141 in.)

8.8″ Speakers

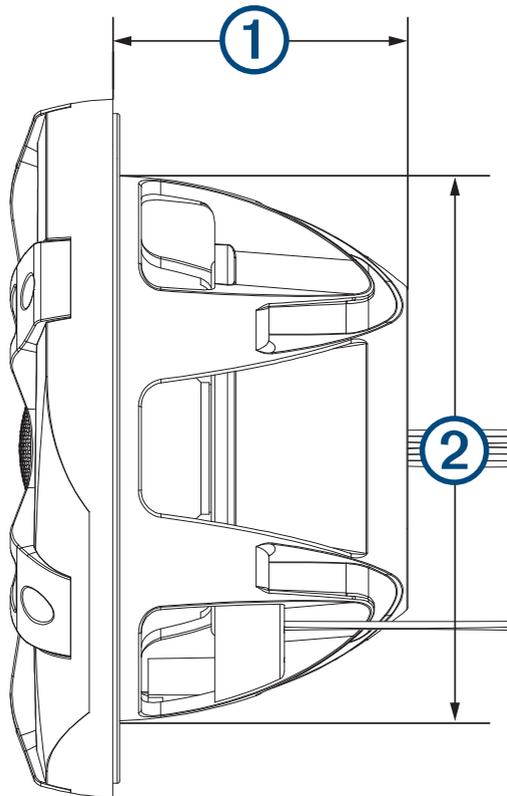|	
Max. power (Watts)	330 W
RMS power (Watts)	130 W
Sensitivity (1 W/1 m)	91 dB
Frequency response	50 Hz to 20 kHz
Min. mounting depth (clearance)	106 mm (4 $^3/_{16}$ in.)
Mounting diameter (clearance)	188 mm (7 $^7/_{16}$ in.)
Compass-safe distance	412 cm (162 in.)

All models

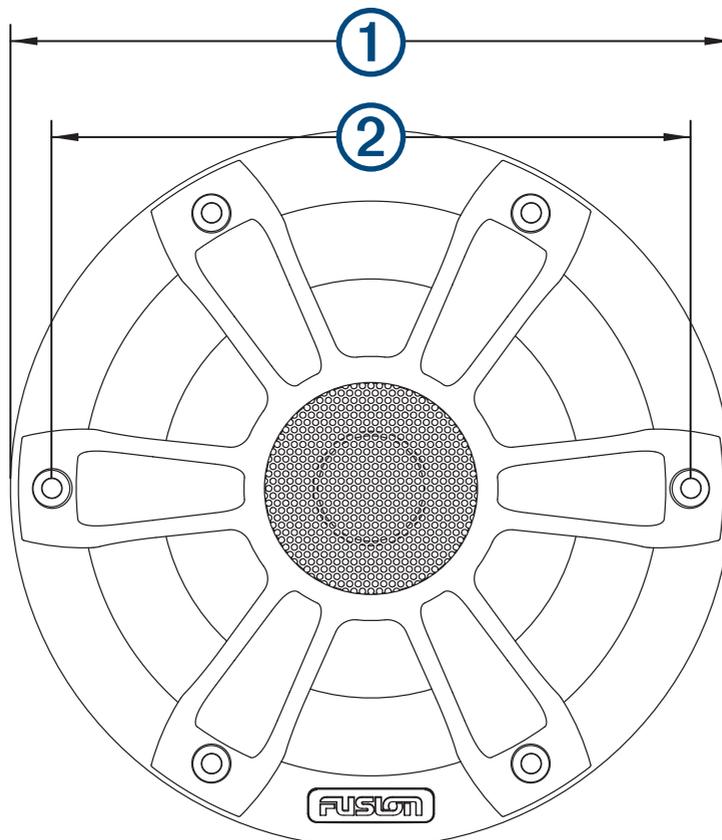| Impedance	4 ohms
LED Supply Voltage (LED speakers only)	From 10.8 to 16 Vdc
LED Load Current at 14.4 Vdc (max.) (LED models only)	300 mA
Operating temperature range	From 0 to 50°C (from 32 to 122°F)
Storage temperature range	From -20 to 70°C (from -4 to 158°F)
Cone material	CURV® cone with rubber surround
Tweeter type	Silk dome
Ingress protection rating	IEC 60529 IP65[1]
Wiring harness connector type	Audio: Amphenol AT Series AT 2-way LED: Amphenol AT Series AT 6-way

Dimension Drawings

Side View

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[1] Protected from dust and water ingress.

Dimension	6.5" Speakers	7.7" Speakers	8.8" Speakers
①	76 mm (3 in.)	83 mm (3 $\frac{1}{4}$ in.)	103 mm (4 in.)
②	133 mm (5 $\frac{1}{4}$ in.)	153 mm (6 in.)	185 mm (7 $\frac{1}{4}$ in.)

A Sports model speaker is shown, but the dimensions are the same for the Classic model speaker.
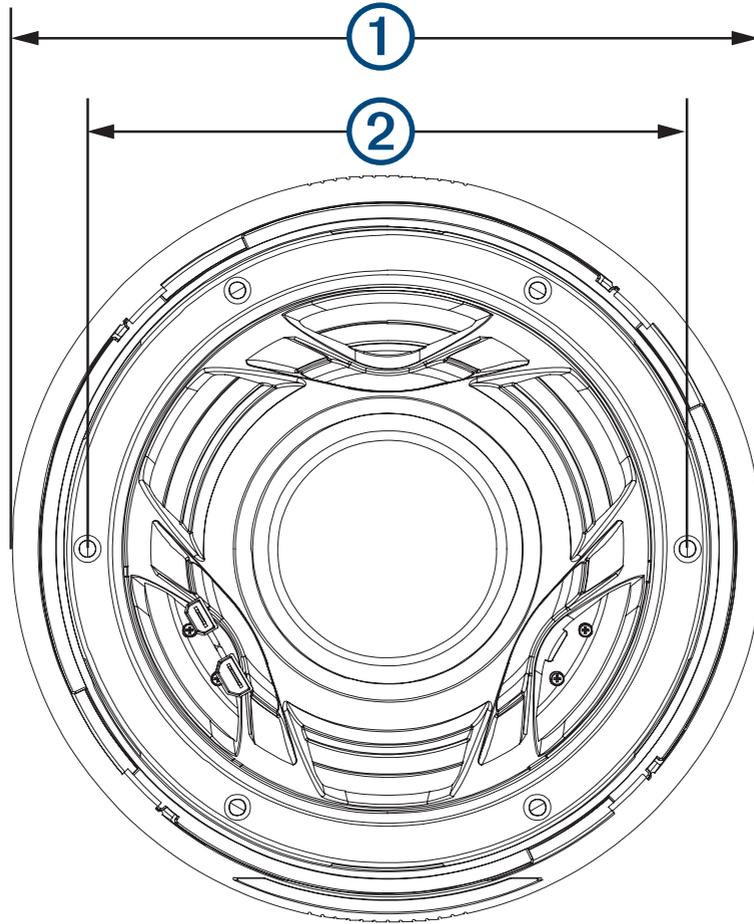
NOTE: You must allow at least 3 mm ($\frac{1}{8}$ in.) of clearance beyond the depth of the speaker.

Sports Model Front View

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

Classic Model Back View

Dimension	6.5" Speakers	7.7" Speakers	8.8" Speakers
①	200 mm (7 $^7/_8$ in.)	220 mm (8 $^{11}/_{16}$ in.)	247 mm (9 $^3/_4$ in.)
②	156 mm (6 $^1/_8$ in.)	176 mm (6 $^{15}/_{16}$ in.)	202 mm (7 $^{15}/_{16}$ in.)

Amplifier Power Rating Recommendations

6.5" Speakers	From 30 to 90 W RMS, playing music
7.7" Speakers	From 25 to 120 W RMS, playing music
8.8" Speakers	From 25 to 140 W RMS, playing music

Optimum Enclosure Recommendations

Specification	6.5" Speakers	7.7" Speakers	8.8" Speakers
Sealed enclosure volume[1]	18 L (0.64 ft.^{3})	20 L (0.71 ft.^{3})	22 L (0.78 ft.^{3})
Ported (Vented) enclosure volume[2]	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.)

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	O	O	O	O	O	O
磁钢	O	O	O	O	O	O
金属连接件	O	O	O	O	O	O
金属结构件（T 铁甲板）	O	O	O	O	O	O
电线	O	O	O	O	O	O
PC 混纺软件	O	O	O	O	O	O

本表格依据 SJ/T11364 的规定编制。

O: 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

X: 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

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[1] Fully filled with absorption material
[2] Lined with absorption material