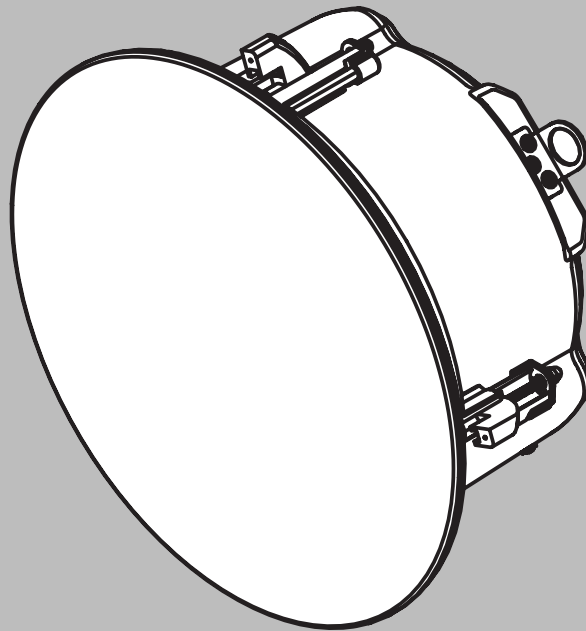


# **EVID-C-G2 Ceiling Loudspeakers**

EVID-C8.1S-G2





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# 1 Safety

**Warning!**

Suspending any object is potentially dangerous and should only be attempted by individuals who have a thorough knowledge of the techniques and regulations of suspending objects overhead. Electro-Voice strongly recommends that loudspeakers be suspended taking into account all current national, federal, state, and local laws and regulations. It is the responsibility of the installer to ensure all loudspeakers are safely installed in accordance with all such requirements. When loudspeakers are suspended, Electro-Voice strongly recommends the system be inspected at least once per year or as laws and regulations require. If any sign of weakness or damage is detected, remedial action should be taken immediately. The user is responsible for making sure the wall, ceiling, or structure is capable of supporting all objects suspended overhead. Any hardware used to suspend a loudspeaker not associated with Electro-Voice is the responsibility of others.

**Caution!**

Amplifier outputs may carry output voltages up to 100 V<sub>RMS</sub>. Touching uninsulated terminals or wiring may result in an unpleasant sensation. The external wiring of these terminals requires installation by an instructed person.

**Safety point**

As an added safety measure, it is strongly recommended to utilize a properly rated secondary safety cable (provided by the installer) to securely fasten the speaker from the safety point on its back to a secondary mounting structure on the building.

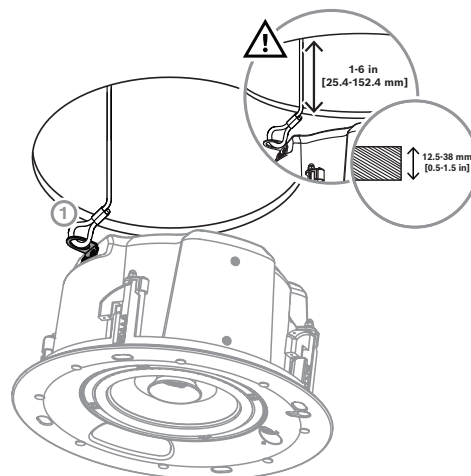
**Caution!**

The safety point (auxiliary support ring) is not intended for primary suspension of the loudspeaker. The safety point should only be used as a secondary safety point.

**Caution!**

Ceiling mount speaker's safety cable

The safety cable should be installed with 1-6 inches (25.4-152.4 mm) of slack.



**Notice!**

ATTENTION: UL SAFETY LISTING

All EVID ceiling speaker models are listed under UL standard UL 1480A as a signaling speaker. All models are also suitable for use in air handling spaces per UL 2043.

**1.1****Notices****Old electrical and electronic appliances**

Electrical or electronic devices that are no longer serviceable must be collected separately and sent for environmentally compatible recycling (in accordance with the European Waste Electrical and Electronic Equipment Directive).

To dispose of old electrical or electronic devices, you should use the return and collection systems put in place in the country concerned.

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All content including specifications, data, and illustrations in this manual are subject to change without prior notice.

## 2 Introduction

Thank you for purchasing EVID-C G2 Ceiling Loudspeakers. Read through this manual to familiarize yourself with features, applications, and precautions before you use these products.

EVID-C G2 Ceiling Loudspeakers use innovative design and materials to provide premium-level performance in a flush-mount ceiling format.

One model comprises the EVID-C G2 Series Ceiling Loudspeakers:

- EVID-C8.1S-G2, a true ceiling-mounted 8-inch subwoofer designed to augment and extend the full-range model's low-frequency response.

### 2.1 Model description

#### **EVID-C8.1S-G2**

The EVID-C8.1S-G2 packs an 8-inch subwoofer in a tuned high performance enclosure to give amazing low frequency performance down to 45 Hz. It is one of the few quick-mount ceiling true subwoofers available. Flexible installation and powerful low-end performance make it the ideal mate to any EVID-G2 ceiling model. The subwoofer is designed for use in passive, full range systems. Bi-amplification is not required.

### 3 System overview

#### 3.1 System features

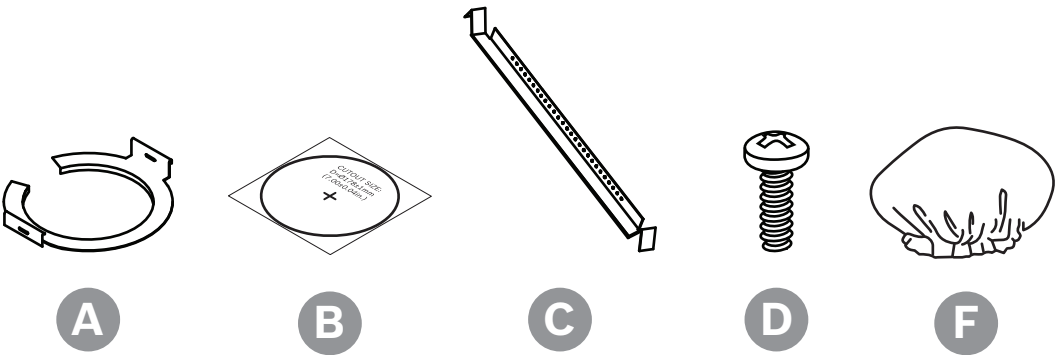
- EZ-install system for quick, safe, and reliable installation
- Bezel-less design with easy-attach grille
- Front baffle wattage tap adjustment
- Includes tile bridge and C-ring for easy installation
- UL 1480A, UL 2043, CSA C22.2 No. 205 and IEC 62368-1 certified

#### 3.2 Parts included

Make sure that all parts are included and not damaged. If the packaging or any parts are damaged, contact your shipper. If any parts are missing, contact your Sales or Customer Service Representative.

Quantity	Component
2	Ceiling loudspeaker
2	Loudspeaker connection cover (installed)
2	Magnetic grille
4	Ceiling tile rail
2	C-ring
4	Screw
1	Cutout template
2	Paint cover
1	Quick installation guide

#### 3.3 Product information



A	C-ring
B	Cardboard template
C	Ceiling tile rail
D	Screw

F	Paint cover
---	-------------



## 4 Installation and wiring

Our new Snap Lock System allows for quick, simple, and reliable mounting of the ceiling speaker, leaving both hands free to complete tightening the speaker to the ceiling. The wiring is on the side of the speaker, reducing the clearance space required to install the speaker, and making it easier to access while mounting the speaker from underneath, as well as on suspended ceiling grids where the speaker can be accessed from a side ceiling tile.

EVID-C G2 Ceiling Loudspeakers include typical installation hardware for either suspended ceilings or sheetrock ceilings. Mounting tabs securely grip the ceiling material and hold the ceiling speaker assembly in place. Input wiring is attached to a removable terminal block connector that can be prewired before speaker installation to speed up the installation process.

### Use of optional rough-in accessories

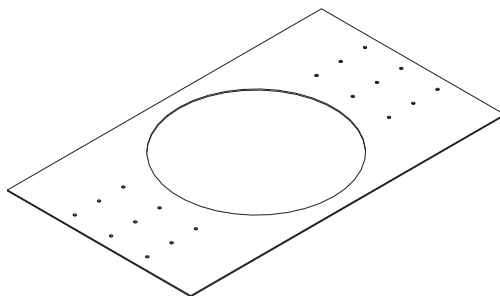
For most installations, no additional hardware is required. However, RR Series mounting plates aid in the installation of the EVID-C G2 Series Ceiling Loudspeakers in sheetrock or plaster ceiling installations. The rough-in accessories provide a cutout guide when many holes are to be made in a production-line style installation and to ensure the speakers are positioned correctly as the holes are cut in the sheetrock.

### RR Series mounting plates

RR series mounting plates are made of flat sheet metal with holes to attach to the joists or trusses of a building structure.

The mounting holes are provided for nails or screws at 16 inches (406 mm), 20 inches (508 mm) and 24 inches (610 mm) on-center. The installer can drill other holes as needed up to a maximum of 24-3/4 inches (630 mm) apart.

The sheetrock installs over the plate and the plate provides a template for a blind cutout of the hole in the sheet rock. A router-type cutting tool cuts the ceiling material using the plate ring as a cutout guide.



**Figure 4.1:** Speaker mounting plate



### Notice!

Controlling vibration

Because of their high performance, EVID-C G2 Ceiling Loudspeakers can generate substantial vibration, which can cause buzzing in loose sections of the ceiling structure. Depending on the character of the ceiling tile and related components, dampening material may be required under the tile rails or the edges of the tiles to eliminate rattles.

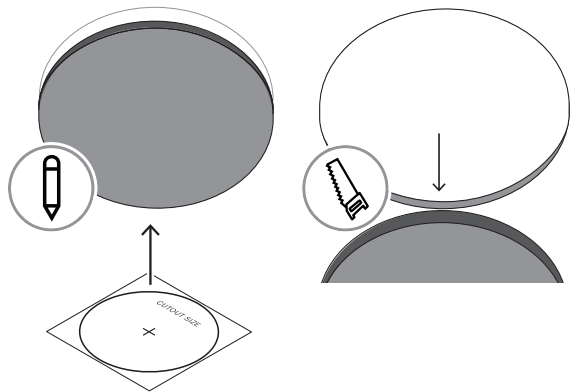
## 4.1 Cutting the hole

### Cutting the ceiling hole

To cut the hole in suspended tile or sheetrock ceilings:

- Trace the cardboard template
- Or
- Use a circular cutter set to the appropriate cutout size.

If the wire has been pre-installed, pull the wiring through the cutout hole.



### Cutout dimensions

	EVID-C8.1S-G2
Mounting cutout (in)	12.7 in
Mounting cutout (mm)	322 mm

## 4.2 Installing C-Ring and/or tile rails

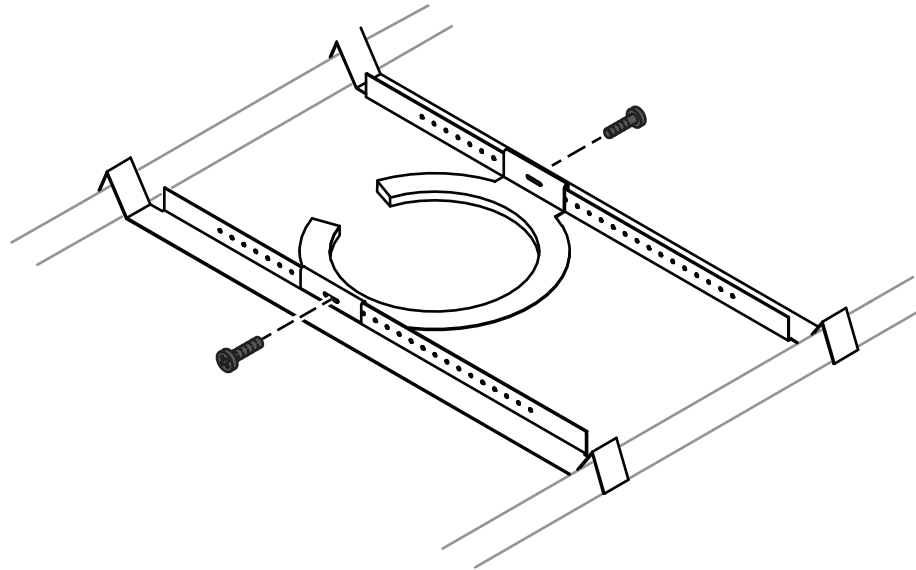
All EVID-C G2 Ceiling Loudspeakers include two types of backing hardware:

- One (1) C-Ring
- Two (2) tile rails

### Suspended ceiling installations

To install the C-Ring and the tile rails:

1. Insert the C-Ring through the hole cut in the ceiling tile.
2. Place the C-Ring around the hole with the tabs located.



3. Insert the tile rails through the cut hole in the ceiling tile.
4. Snap the two rails into the two tabs in the C-Ring and align the rails so that the ends extend over the T-channel grid on the side of the tile.
5. Secure the rails onto the C-Ring tabs by inserting a screw through each tab into the rail.

The tile rails fit either standard 24-inch-wide or 600-mm-wide tiles. The tile rail pieces do not actually attach to the T-grid struts. The ends of the rails sit over the T-grid strut.

Normally, the tile supports the rails.

The tile rails are pre-punched at regular intervals with holes along their length. This allows the C-ring to be positioned at any point along the rail. If the tile comes out or falls apart, the ends of the support rails fall onto the T-grid, which prevents the speaker assembly from falling.



#### **Warning!**

Always use all included support hardware when installing into suspended ceiling tiles to make sure the installation is secure.

#### **Sheetrock ceiling installations**

For sheetrock ceiling installations, use the C-ring by itself to reinforce the ceiling material and to spread out the pressure from the speaker hold-down tabs.

To install the C-Ring:

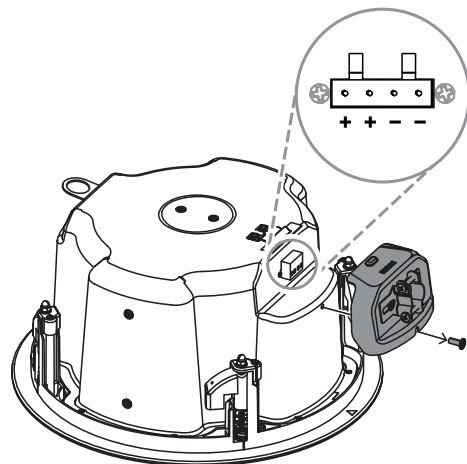
1. Guide the C-Ring through the cut hole in the ceiling.
2. Place the C-Ring on the back side of the hole before inserting the speaker.

## **4.3**

### **Attaching wiring to the terminal connector**

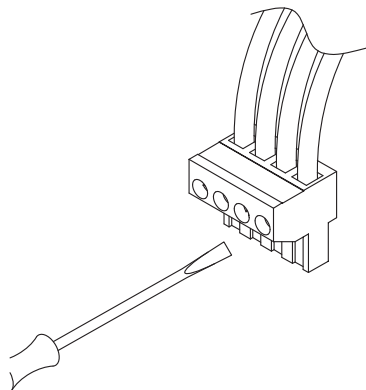
To attach the wiring to the terminal connector:

1. Remove the terminal cover plate.
2. Remove the input connector.
3. Run the wire through the terminal clamp before attaching the connector.

**Notice!**

The four terminals in the input connector are marked.

4. Insert the bare end of the wire into the appropriate connector terminals.
5. Screw down the hold-down screw until tight, using a small screwdriver.



**Figure 4.2:** Tighten with screwdriver

**Wiring guidelines**

From left to right, Pin 1 is connected to Pin 2 and Pin 3 is connected to Pin 4 inside the speaker. Pins 1 and 4 are used as daisy-chain connections to other loudspeakers.

There are two possible layouts for wiring a group of speakers:

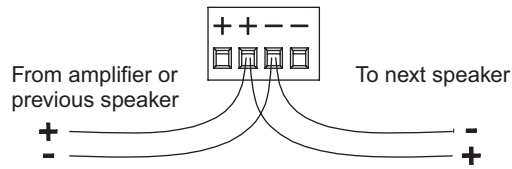
- Wiring in parallel
- Daisy-chaining

**Caution!**

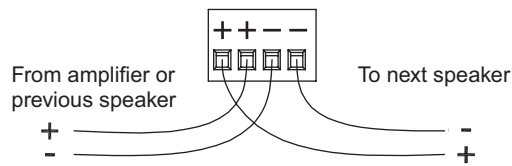
Amplifier outputs may carry output voltages up to 100 V<sub>RMS</sub>. Touching uninsulated terminals or wiring may result in an unpleasant sensation. The external wiring of these terminals requires installation by an instructed person.

**Wiring in parallel**

- ▶ Connect the wire pair of the subsequent speaker to pins 2 and 3.  
When one input connector is removed, subsequent speakers will remain connected.

**Figure 4.3:** Parallel wiring**Daisy-chaining**

- ▶ Connect the wire pair of the subsequent speaker to pins 1 and 4.  
When one input connector is removed, subsequent speakers will also be disconnected.

**Figure 4.4:** Daisy-chain wiring**Plugging in the connector**

To plug in the connector:

1. Plug the input connector into the socket in the speaker's terminal cup.
2. Tighten all screws to eliminate vibration.

**4.4****Securing the cable to the speaker**

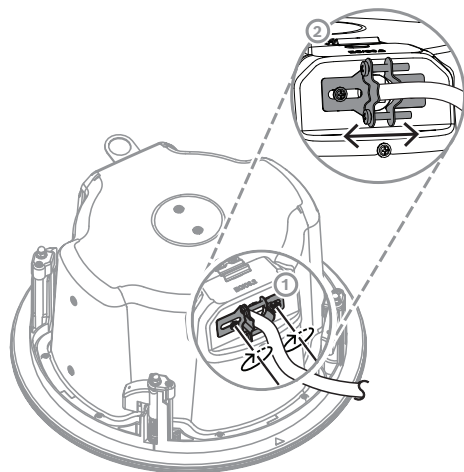
To secure the cable to the speaker:

1. Fully loosen the horizontal screw.
2. Fully loosen the strain relief screws.
3. Run the wires through the opening in the fitting.
4. Follow instructions on *Attaching wiring to the terminal connector*, page 11.
5. Plug the input connector into the speaker's terminal block.
6. Tighten the strain relief fitting as appropriate to the cable used:
  - Plenum cable
  - Alternate conduit fitting

**Plenum cable**

1. Slide the wiring through the strain relief fitting on the terminal cover plate.
2. Follow instructions on *Attaching wiring to the terminal connector*, page 11.
3. Hold the strain relief fittings tight around the cable.
4. Tighten the strain relief screws first, then the horizontal screw.

In the cases of insulated speaker wire and plenum cable, it is often possible to provide acceptable strain relief force by simply tightening the strain relief screws onto the terminal cover plate.

**Alternate conduit fitting**

If the installation uses flexible (BX) conduit, it is possible to use an alternate conduit fitting.

**Notice!**

Alternate fittings are available through most electrical suppliers.

1. Remove the existing fitting by unscrewing the two hold-down screws.  
This will expose a 7/8-inch (22 mm) knockout hole.
2. Install the alternate fitting.

**Warning!**

Always use a listed fitting in accordance with your area's building codes and regulations.

**Refer to**

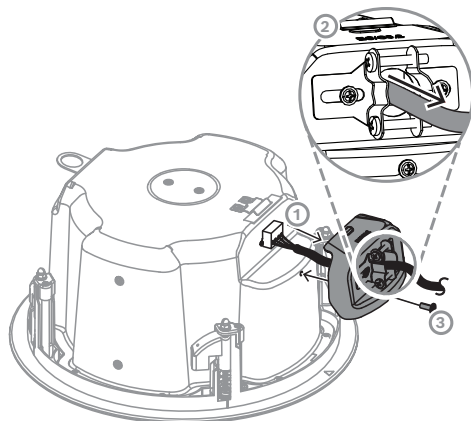
- *Attaching wiring to the terminal connector, page 11*

## 4.5

### Reinstalling the terminal cover plate

To reinstall the terminal cover plate:

1. Thread the wire through the strain relief fitting on the terminal cover plate.
2. Attach the wire to the input connector.
3. Connect the input connector to the speaker.
4. Guide the terminal cover plate into the terminal cover latch.
5. Insert the terminal cover locking screw into the terminal cover plate.
6. Tighten the terminal cover locking screw.  
Ensure the terminal cover plate is secure. Do not over tighten the terminal cover locking screw.



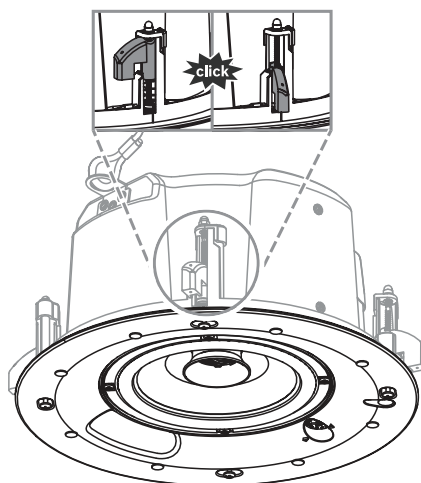
## 4.6 Mounting the speaker into the ceiling

To mount the speaker into the ceiling:

1. Push the speaker into the ceiling hole until the front baffle is flush with the ceiling and you hear the mounting tabs click.

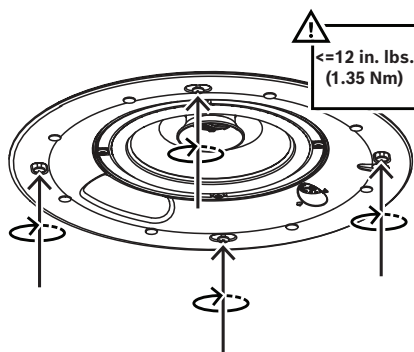
Make sure that the mounting tabs are loose before installing.

Once the speaker is in the ceiling, it will hold in place without additional help, allowing both hands to be removed from the speaker.



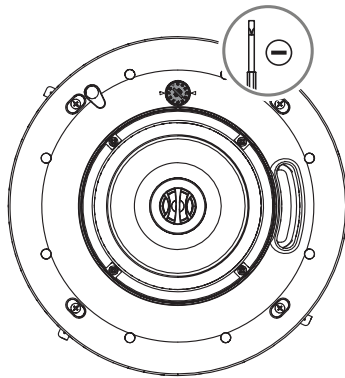
2. Tighten the mounting tabs by turning the screws clockwise until the speaker is tight against the ceiling surface.

Do not overtighten.



### 4.7 Adjusting the tap selector

The tap selector switch is located on the front baffle. Adjust the speaker to the appropriate tap setting before installing the grille. In some 70V/100V constant voltage installations it is advisable to leave the grilles off if final speaker audio level balance adjustments are to be made later. After the levels are adjusted the grilles can then be installed.



Transformer tap specifications

	EVID-C8.1S-G2
70 V	60 W 30 W 15 W 7.5 W 3.75 W
100 V	60 W 30 W 15 W 7.5 W

### 4.8 Attaching the grille



**Notice!**

Grille safety tether

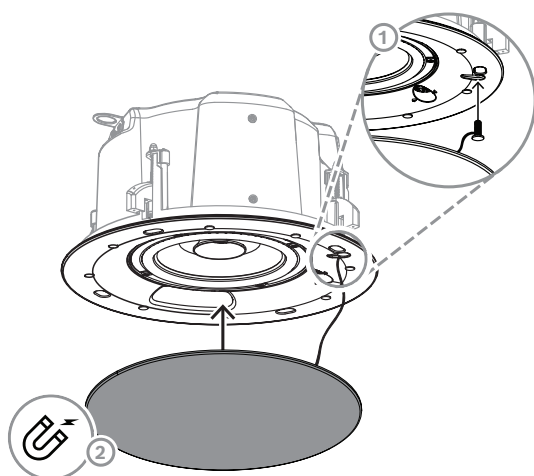
EVID-C G2 Ceiling Loudspeakers grilles feature a safety tether to prevent the grille from falling if the grille is removed or comes loose after installation. The safety tether comes attached to the grille and must be installed on the speaker.

To attach the grille:

1. Push the fastener of the safety tether into the hole in the front of the baffle.
2. Push the grille against the baffle, making sure that it is centered and flat against the baffle.

The magnetic grille will attach to the speaker.





To remove the grille:

1. Grasp the edges of the grille with your fingertips.
2. Pull down.

## 5 Troubleshooting

Problem	Possible Causes	Action
No output	Amplifier	<p>Ensure the amplifier channel is being fed an input signal (preferably via a signal input indicator on the amplifier).</p> <p>Verify the amplifier channel's volume is turned up.</p> <p>Connect the loudspeaker and cable, which had no output to another amplifier channel, ensuring an input signal is fed to the new amplifier channel. If you then get output, the problem was the amplifier channel. If not, then the problem is either the cable or the loudspeaker.</p>
	Loudspeaker cables(s)	Replace the cable(s) connecting the loudspeaker system and amplifier.
Questionable or intermittent output, such as crackling	Faulty connection	Ensure all cabling for proper connector contact. A bad connection can result in intermittent contact or dramatically increased resistance, which in turn can cause reduced output or noises unrelated to the signal.
	Improper power tap setting	Verify the power tap setting under the loudspeaker grille is appropriate for the installation and amplifier chosen.
Constant noise such as buzzing, hissing, or humming	A faulty electronic device in the signal chain	Loudspeakers cannot generate these sounds by themselves; you may have a faulty electronic device in the signal chain.
	Poor system grounding	Check and correct the system grounding, as required.
Poor low-frequency output	Out-of-polarity connection between multiple loudspeakers	When two loudspeakers are connected out of polarity (out of phase), the low frequencies cancel each other out. Try reversing the polarity of one of the loudspeakers either by turning around a dual-banana plug at the amplifier or by reversing the tip/sleeve leads on the jack. Which ever condition results in greater low-frequency output is the in-polarity condition.

If these suggestions do not solve your problem, contact your nearest Electro-Voice dealer or Electro-Voice distributor.

## 6

## Technical data

EVID-C8.1S-G2

Frequency range (-10 dB) (Hz) <sup>1</sup>	45 Hz – 380 Hz
Maximum SPL (continuous) (dB) <sup>2</sup>	113 dB
Maximum SPL (peak) (dB) <sup>2</sup>	119 dB
Sensitivity (1 W, 1 m) <sup>3</sup>	90 dB SPL 1 W, 1 m
Coverage angle omnidirectional (°)	360°
Power handling (continuous) (W) <sup>4</sup>	180 W
Power handling (peak) (W) <sup>4</sup>	720 W
Long term power handling (continuous) W) <sup>5</sup>	150 W
Long term power handling (peak) W) <sup>5</sup>	600 W
Nominal impedance (Ω) (Low Z)	8 Ω
Transformer taps 70 V line (W) <sup>6</sup>	60 W; 30 W; 15 W; 7.5 W; 3.75 W
Transformer taps 100 V line (W) <sup>6</sup>	60 W; 30 W; 15 W; 7.5 W
LF transducer size (in)	8 in
Material	Steel
Grille material	Powder coated steel
Connector type	4-pin Euroblock Input + Pass through
Wire size (AWG)	12AWG (maximum)
Wire diameter (mm <sup>2</sup> )	3.3 mm <sup>2</sup> (maximum)
Color	White; Customized colors
Color (RAL)	RAL 9003 Signal white
Mounting cutout (in)	12.70 in
Mounting cutout (mm)	322 mm
Dimensions (Ø x D) (in)	13.9 in x 9.9 in
Dimensions (Ø x D) (mm)	353 mm x 249.1 mm
Mounting depth (in)	9.5 in
Mounting depth (mm)	241 mm
Ceiling thickness (in)	0.5 in - 1.5 in
Ceiling thickness (mm)	12.5 mm - 38 mm
Weight (lb) <sup>7</sup>	16 lb
Weight (kg) <sup>7</sup>	7.25 kg
Shipping weight (lb) <sup>8</sup>	40.8 lb
Shipping weight (kg) <sup>8</sup>	18.5 kg

IP rating	IP34
Weatherization	Indoor
Operating temperature (°F)	32 °F – 122 °F
Operating temperature (°C)	0 °C – 50 °C
Safety agency ratings	UL 1480A, safe for use in air-handling spaces per UL 2043, CSA C22.2 No. 205 certified, IEC 62638

<sup>1</sup>Half-space (in-ceiling mounted) - UL tested (20 Hz to 20 kHz)

<sup>2</sup>Calculated

<sup>3</sup>Half-space (1 W/1 m)

<sup>4</sup>Continuous pink noise (2 hours)

<sup>5</sup>Continuous pink noise (100 hours)

<sup>6</sup>Continuous pink noise (20 Hz to 20 kHz)

<sup>7</sup>Single product

<sup>8</sup>Pair of products

## 7 Appendices

### 7.1 Painting the speaker grille

If the speaker is installed in an area where the interior design requires a color match, our bezelless design makes this painting process very simple.

To paint the speaker grille:

- ▶ Simply remove the grille and paint it using an enamel-based spray paint.

#### Painting Process

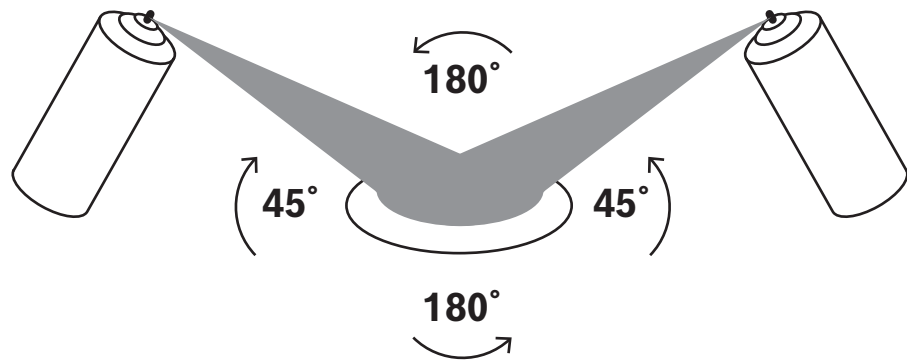
1. Remove the grille from the speaker.



#### Warning!

Do not use gasoline, kerosene, acetone, or other harsh solvents or chemicals, and do not use abrasive products such as sandpaper or steel wool.

2. Spray the grille at a 45-degree angle, applying a single light coat moving from left to right, and then a secondary coat from right to left.
3. Let the paint dry and, if needed, repeat the step above.



**Figure 7.1:** Spray painting angles

4. Reinstall the grille on the speaker.

### 7.2 Protecting the speaker grille while painting the room

#### To protect the speaker grille from paint:

1. Remove the grille from the speaker.
2. Cover the grille with the paint cover.
3. Reinstall the grille with the cover.

#### After painting the room:

1. Remove the grille from the speaker.
2. Remove the paint cover from the grille.
3. Reinstall the grille on the speaker.

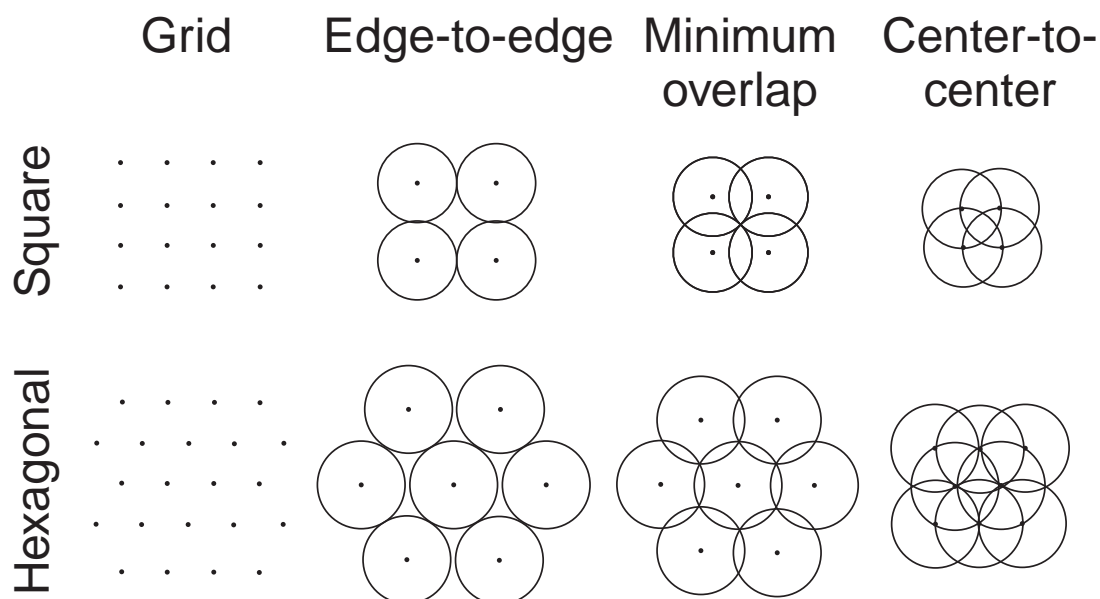
## 7.3 System design guide

### 7.3.1 Selecting and positioning ceiling loudspeakers

Several key criteria determine the type and quantity of ceiling speakers to employ in a job. Specific EVID Ceiling Series models accommodate each job, depending on how these criteria are specified.

- Room size
- Coverage density desired
- Coverage angle specification of the speaker
- Ceiling height
- Audio program material being played

The information below, and the free design program downloadable from [www.electrovoice.com](http://www.electrovoice.com), will help you optimize your EVID design. In the traditional approach to overhead distributed systems, loudspeakers are placed in a grid whose dimensions are dictated by the room height and the directivity of the speaker elements. Two basic placement patterns prevail: square spacing and hexagonal (or crisscross) spacing.



**Figure 7.2:** Coverage patterns

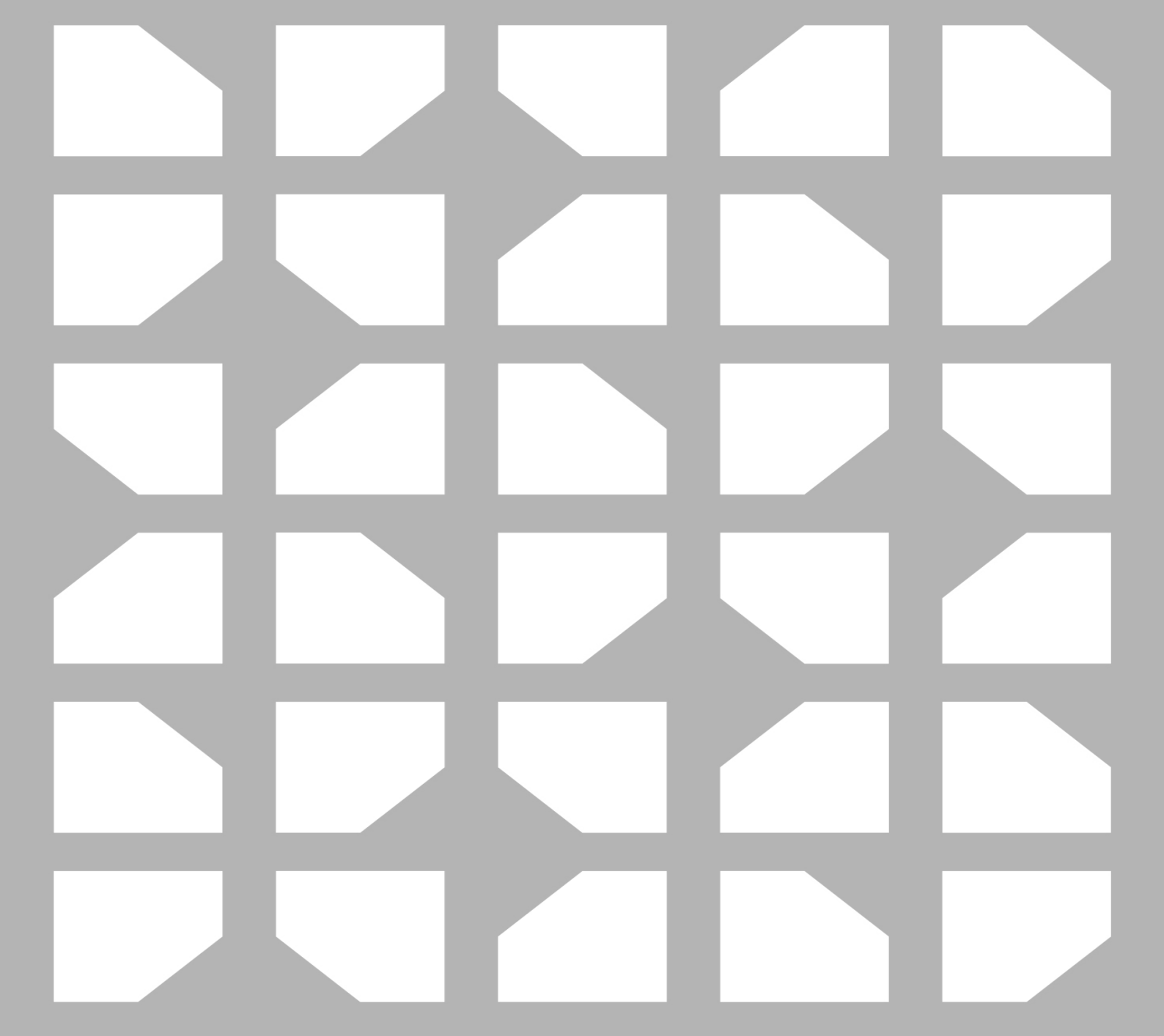
In addition to the spacing pattern, the designer must choose between three coverage density types, designated respectively as edge-to-edge, minimum overlap and center-to-center. The greater the overlap, the more uniform the coverage. The Size vs coverage illustration shows these various layout patterns.

### 7.3.2 Use of subwoofers

The EVID-C8.1S-G2 subwoofer can add considerable low frequency performance to any EVID-G2 installation. It is important to note that the EVID-C8.1S-G2 subwoofer depends on the ceiling and walls to properly load itself and to reinforce its bass output. Correct positioning is important to get maximum impact.

In smaller rooms when a single EVID-C8.1S-G2 is used, a center or near-center position is best. This gives the most even coverage. For larger rooms where more than one EVID-C8.1S-G2 are employed, the added effect of the room's walls can be used. In such a space, position the subwoofers evenly throughout the room and a few feet from the wall or corners. The added loading of the walls will enhance the response in these larger areas.





**Bosch Security Systems, LLC**

130 Perinton Parkway  
Fairport, NY 14450  
USA

**[www.electrovoice.com](http://www.electrovoice.com)**

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**EU importer:**

**Bosch Sicherheitssysteme GmbH**

Robert-Bosch-Platz 1  
70839 Gerlingen  
Germany

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