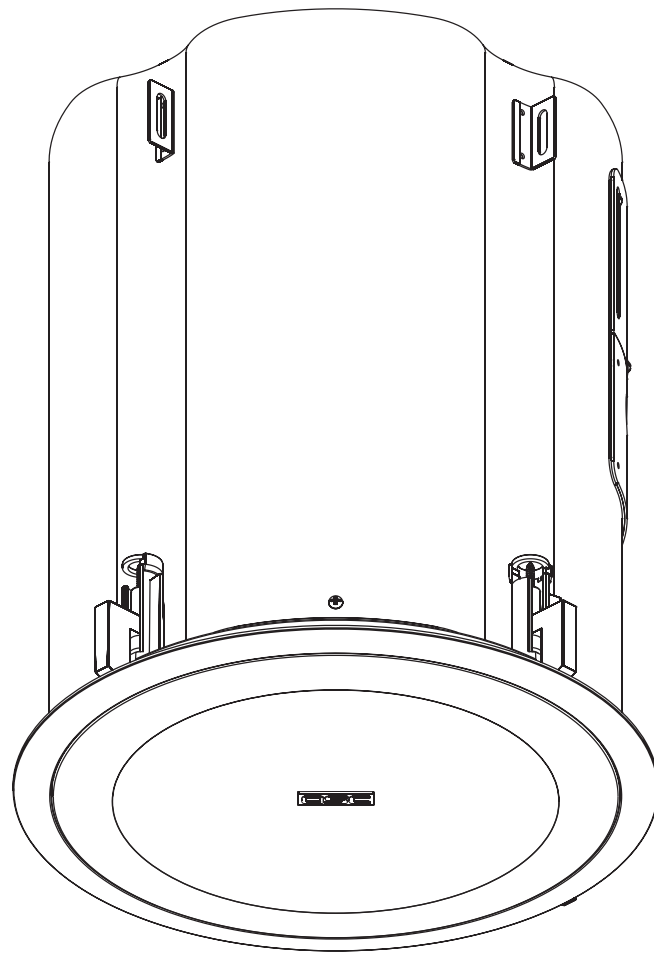




AcousticDesign™ In-ceiling Loudspeakers User Manual

AD-C81Tw

203 mm (8") Subwoofer



TD-000264-00-B



IMPORTANT SAFETY PRECAUTIONS & EXPLANATION OF SYMBOLS

- 1- Read these instructions.
- 2- Keep these instructions.
- 3- Heed all warnings.
- 4- Follow all instructions.
- 5- Clean only with a dry cloth.
- 6- Install in accordance with QSC Audio Product's instructions and a licensed, professional engineer.
- 7- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 8- Only use attachments/accessories from QSC Audio Products, Inc.
- 9- Use only with mounts or brackets specified by QSC Audio Products.
- 10- Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous" voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to humans.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in this manual.



WARNING! Before placing, installing, rigging, or suspending any speaker product, inspect all hardware, suspension, cabinets, transducers, brackets and associated equipment for damage. Any missing, corroded, deformed or non-load rated component could significantly reduce the strength of the installation, placement, or array. Any such condition severely reduces the safety of the installation and should be immediately corrected. Use only hardware which is rated for the loading conditions of the installation and any possible short-term unexpected overloading. Never exceed the rating of the hardware or equipment. Consult a licensed, professional engineer when any doubt or questions arise regarding a physical equipment installation.

Warranty (USA only; other countries, see your dealer or distributor)

Disclaimer

QSC Audio Products, Inc. is not liable for any damage to amplifiers, or any other equipment that is caused by negligence or improper installation and/or use of this loudspeaker product.

QSC Audio Products 3 Year Limited Warranty

QSC Audio Products, Inc. ("QSC") guarantees its products to be free from defective material and / or workmanship for a period of three (3) years from date of sale, and will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use - provided the unit is returned to our factory or one of our authorized service stations via pre-paid transportation with a copy of proof of purchase (i.e., sales receipt). This warranty provides that the examination of the return product must indicate, in our judgment, a manufacturing defect. This warranty does not extend to any product which has been subjected to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced. QSC shall not be liable for incidental and/or consequential damages. This warranty gives you specific legal rights. This limited warranty is freely transferable during the term of the warranty period.

Customer may have additional rights, which vary from state to state.

In the event that this product was manufactured for export and sale outside of the United States or its territories, then this limited warranty shall not apply. Removal of the serial number on this product, or purchase of this product from an unauthorized dealer, will void this limited warranty.

Periodically, this warranty is updated. To obtain the most recent version of QSC's warranty statement, please visit www.qscaudio.com.

Contact us at 800-854-4079 or visit our web site at www.qscaudio.com.

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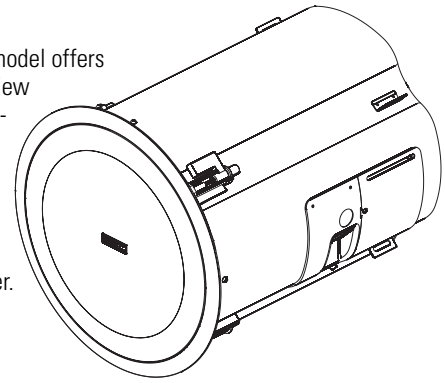
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Introduction

Congratulations and thank you for your ceiling loudspeaker purchase. The AD-C81Tw model offers excellent acoustic performance in an easy-to-install and attractive package. Please review these instructions carefully and follow the recommendations. Consult a licensed installation professional if you are uncertain about any mounting issues.

The AD-C81Tw models feature a 8" low frequency (LF) driver in a ported enclosed. The AD-C81Tw is equipped with an audio transformer suitable for 70V and 100V distributed systems, as well as a tap-selector switch which can bypass the transformer for 8 ohm applications. The AD-C81Tw also includes a bypassable 120Hz low pass filter.



What's Included

Your ceiling loudspeaker box contains:

- the loudspeaker cabinet
- the protective grill assembly
- two support brackets for suspended ceiling installations
- C-ring bracket for suspended ceilings and other ceiling reinforcing applications
- Self-tapping screws(M4.2 X 1.4 X 10mm) for securing the C-ring-to-support brackets
- grill clip used for clipping the plastic grill retaining lines together
- phoenix connector assembly for connecting signal and daisy-chaining
- paint shield
- grille cloth

Installation Options

The AcousticDesign in-ceiling loudspeakers can be mounted in suspended ceilings, as well as non-suspended types. We recommend an installation professional be consulted for safety assurance, quality installation, and optimum acoustic performance.

For suspended ceiling applications, the suspended ceiling support brackets must be used with the C-ring bracket. The suspended ceiling support brackets are designed to accommodate 24" or 600 mm t-channel grid spacing. The brackets do not attach to the t-channel; the angled "V" bend sits over the t-channel and will catch the t-channel in the event of a tile failure or fall-out.

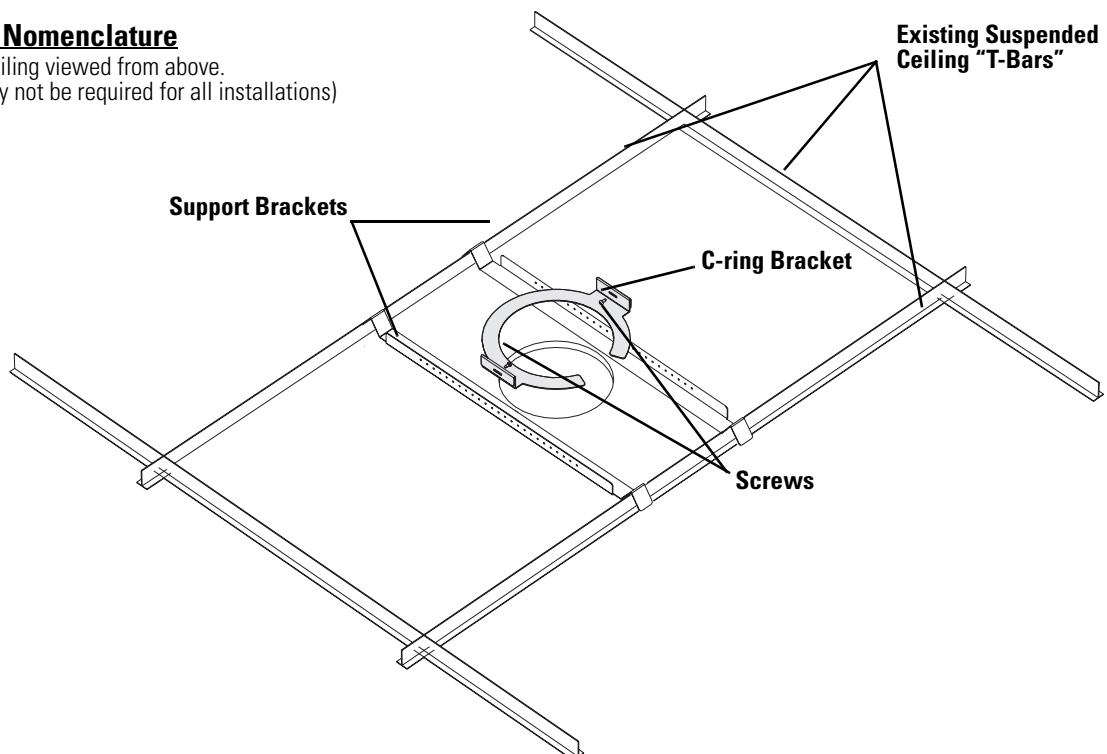
For other ceiling types, the C-ring bracket can be used to reinforce the mounting surface. If the ceiling is suitably strong, the loudspeaker can be secured in the cutout hole without additional reinforcement.

Audio connections are made directly to the ceramic terminal block or by using terminal block type connectors. Two sets of terminals are provided; one set for the signal connection and another for pass-through (or daisy chain) connection to other loudspeakers on the same distribution circuit.

Two safety features are provided, an enclosure-retaining safety tab and a grill-retaining safety tether. The enclosure tab is a metal tab near or on top of the enclosure suitable for securing the loudspeaker to building framing; this provides maximum safety in the event the ceiling structure fails for any reason. The grill's safety tether prevents the grill from falling in the event it should vibrate loose.

Hardware Nomenclature

Suspended ceiling viewed from above.
(hardware may not be required for all installations)



Grill Safety Clip

The cabinet and the grill both have a small loop of plastic line. The grill's loop has a clip attached. Using the grill clip, attach the grill to the cabinet's loop. This will help prevent the grill from falling should it become detached.

Use the Secondary Support Tab!

Loudspeakers can potentially generate substantial vibration. In addition to ensuring all hardware is properly installed and secured, you must use the secondary support tab on the enclosure to secure the loudspeaker to an appropriate structural support. This will minimize the chance of the loudspeaker falling from the ceiling in the event the primary mount fails. Any cable or wire used as a secondary support line must be strong enough to support several times the weight of the loudspeaker. Do not use rope, string, twine or other textile-based line in the secondary support system as it is easily cut or burned. The secondary support attachment point and any fasteners used on the building's structure must also be strong enough to support several times the weight of the loudspeaker.

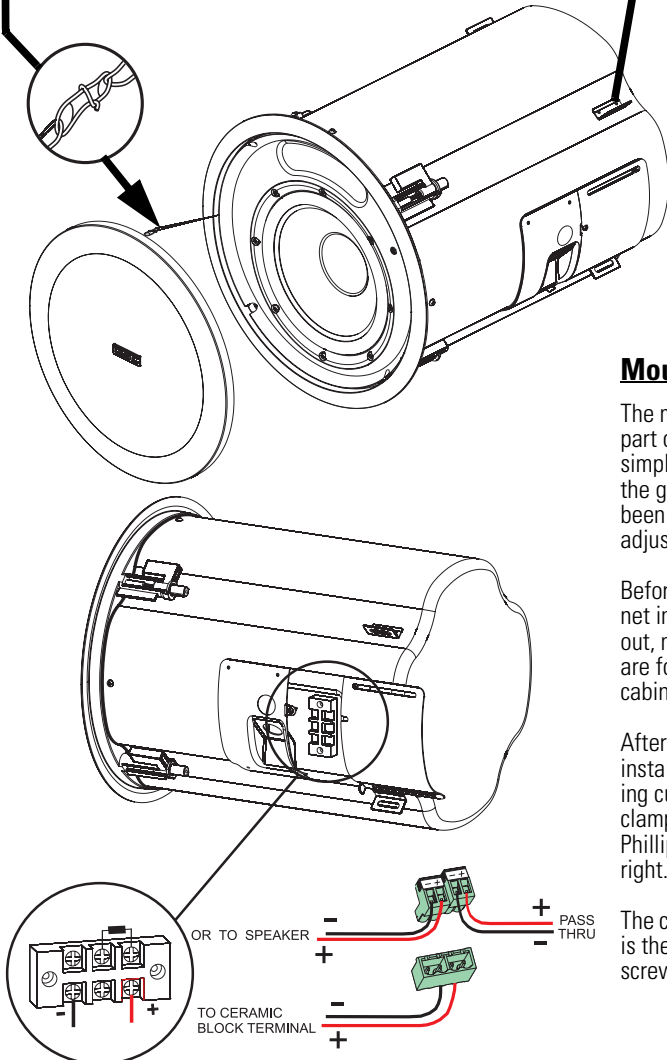
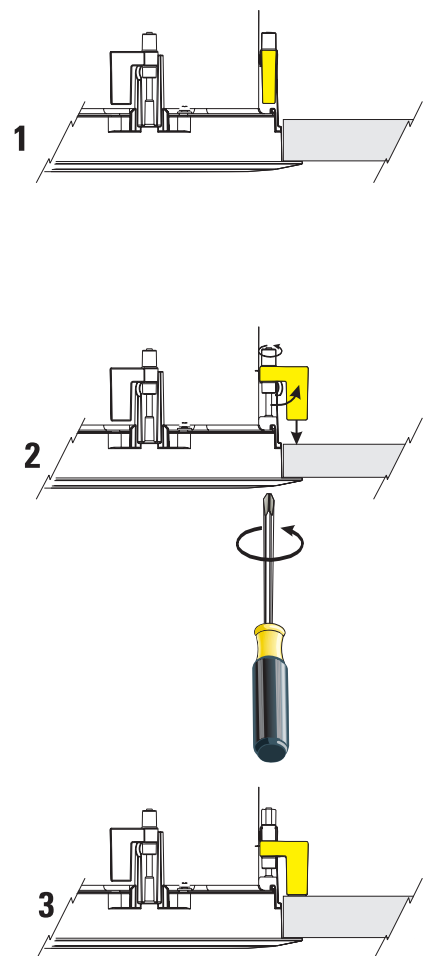
Mounting Clamps

The mounting clamps are part of the assembly for simple use. Do not install the grill until clamps have been tightened and any adjustments made.

Before inserting the cabinet into the mounting cutout, make sure the clamps are folded in against the cabinet, see 1, right.

After the cabinet is installed into the mounting cutout, tighten each clamp's screw using a #2 Phillips screwdriver, see 2, right.

The clamp rotates 90° and is then pulled tight by the screw, see 3, right.



Connections

Connect signal wires either directly to ceramic terminal block noting correct polarity or to the supplied plastic terminal block assembly. When using the plastic terminal assembly, connect the four pin receptacle to the ceramic block observing polarity. Connect the signal wires to the screw terminals of one of the two pin plugs observing correct polarity. The other two pin plug can then be used as pass through to daisy chain the signal to another speaker or it can be left unused.

Other Recommendations and Important Information

- Grill removal: The grill can be removed by carefully prying around its outer edge or inserting a small, metal pin or hook into the grill's openings and pulling evenly around its perimeter.
- If rattles or buzzing is heard during operation, it may be necessary to put vibration dampening material between the support rails and the ceiling tiles and/or t-channels.
- The support rails have holes along their usable length to attach the C-ring bracket. This allows for the cutout to be placed in many positions along the ceiling tile width.

Installation Procedure

1- Using the included C-ring or the dimensions provided, trace a cutout pattern onto the ceiling surface.

2- Cut the mounting hole. Use a sharp tool to avoid stressing or cracking the mounting surface.

3- Pull the wires through the hole.

4- Pass the two suspended ceiling support brackets through the hole and place as shown in the illustration. Make sure the part of the bracket that is flat against the tile is toward the hole. If installing in a non-suspended ceiling application, these brackets are not required.

5- Pass the C-ring bracket through the hole. Slide the cutout slot into the hole first, and then rotate the bracket so it passes through the hole. Be sure the wires pass through the ring.

6- Position the support brackets, and secure the C-ring bracket to each of the support brackets using the screws provided. If installing in a non-suspended ceiling application, skip this step.

7- Loosen the connection cover plate retaining screw and swing the cover open. Install an fitting into the hole provided on the cover plate.

8- Temporarily support the enclosure so the wires may be passed through the enclosure top with enough slack to prepare and terminate the wires.

9- Locate the terminal block connectors included with the loudspeaker. Loosen the wire retaining screws fully.

10- Strip the wire ends approximately 10 mm (0.4") and insert each wire into its proper connector position. Tighten the wire retaining screws fully.

11- Rotate the connection cover plate closed, making sure not to stress the connections or pinch the wires. Tighten the cover plate's retaining screw.

12- Adjust the wiring at the entry point, if necessary, and properly secure fitting. This prevents wire stress and strain from pulling the connections/connectors loose.

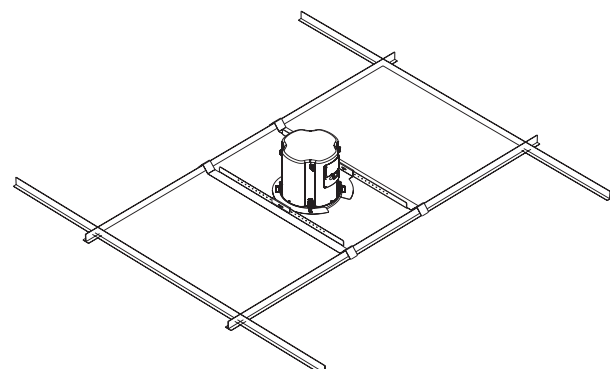
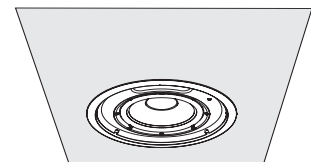
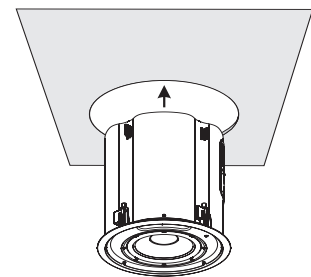
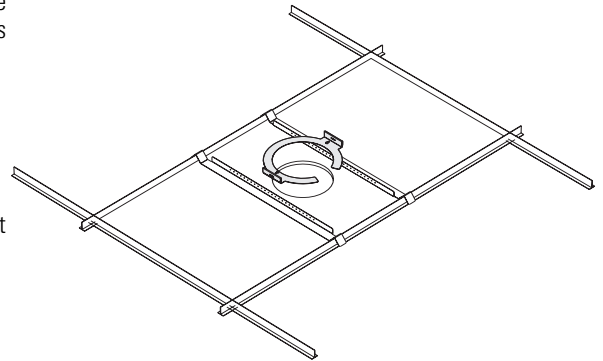
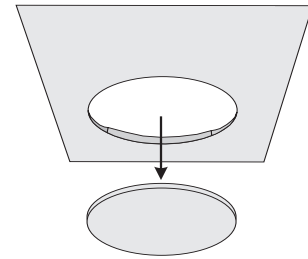
13- Attach a safety cable (secondary support cable) from the enclosure's attachment tab to an appropriate support point. This cable and the attachment points must be strong enough to support many times the weight of the loudspeaker in the event the primary mounting system fails.

14- Insert the enclosure into the ceiling cutout, making sure any brackets used remain properly positioned. Tighten the loudspeaker's mounting clamp screws.

15- Set the tap selector switch to the desired position. 70V systems, all four positions may be used. Do not use highest tap setting with 100V systems. 8 ohm systems, set selector to 8 ohm position.

16- If desired set the 120 Hz low pass filter to the "In" position. This will allow only frequencies below 120 Hz to reach the loudspeaker. If the switch is in the "out" position, all frequencies in the input signal will reach the loudspeaker. If the AD-C81Tw is being used with the low-pass filter set to "out" it is recommended that the input signal be filtered before it enters the loudspeaker.

17- Make sure all tests and adjustments are complete before installing the grills. Locate the loudspeaker's grill. The cabinet and the grill both have a small loop of plastic line. Using the clip on the grill's line, attach the grill's safety loop to the cabinet's loop. Carefully work the grill into its retaining slot and press firmly into place. Work the grill in slowly and evenly to avoid damage. Make sure all tests and adjustments are complete before installing the grills.



Specifications

AD-C81Tw

Frequency Response¹:	50- 200k Hz (-3 dB), 25- 200 Hz (-10 dB)
Maximum Output²: (calculated)	112 dB SPL continuous rms output 118 dB SPL peak output
Transducers:	LF: 203 mm (8"), 19 mm (0.75") voice coil;
Nominal Coverage:	180° conical (average 2.5 kHz - 10 kHz)
Impedance (ohms):	8.0 nom./ 8.3 min. @ 42 Hz.
Power Rating³:	
rms (IEC 100 hrs):	100 watts rms (100 watts)
recommended amp power:	200 watts rms, maximum
Sensitivity:	92.0 dB, 1 watt, 1 meter, flush mounted (2 pi)
Bass Loading:	ported, tuned to 42 Hz
Optional Processing:	125 Hz. low pass >12 dB/octave xover.
Dimensions:	see drawings
Net Weight:	AD-C81Tw: 9.1 kg (20.0 lb.)
Enclosure:	Corrosion-resistant power coated steel enclosure with injection-molded plastic baffle. Press on metal grille
Mounting System:	Captive, integral mounting clamps. Insert enclosure into cutout, and tighten. Suspended ceiling C-ring and support bars included.
Connectors:	Ceramic block connector inputs and terminal block "through" connectors (rated for 400W max).
Controls:	Transformer "tap" selector/ bypass (8 ohm) switch, settings: 7.5, 15, 30, and 60 watts (15, 30, 60 watts for 100V) and 8 ohms. Averaged over 50Hz - 20kHz bandwidth (60W tap). Transformer Distortion: less than .01% THD above 100Hz, 0.2% @ 50Hz (30W tap). Bandwidth: 40 - 20k Hz (-1dB, all taps).
Agency Listings:	CE, UL 1480 (commercial/professional use, outdoor damp), UL 2043 (air handling spaces).

Specification Notes:

- 1- All frequency ranges specified refer to measured half-space response (2 pi).
- 2- Calculated maximum peak SPL at 1 m, half-space, speaker operating at rated rms power pink noise input, 50 Hz to 20 kHz.
- 3- Maximum input power tested in accordance with IEC recommendations; 50 Hz to 20 kHz band limiting, 6 dB signal crest factor.

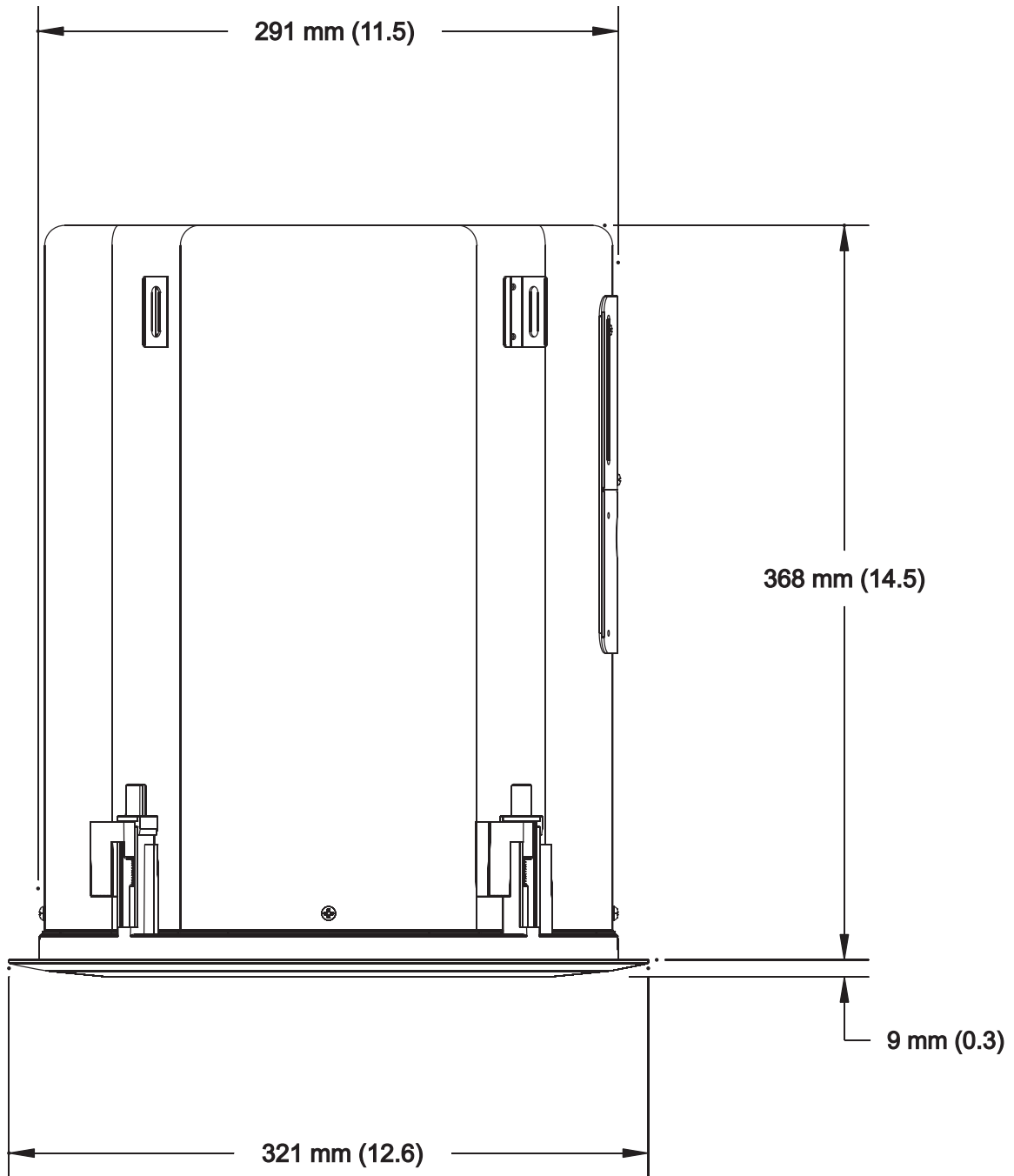
Specifications are subject to change without notice.

For detailed information, visit QSC's web site at <http://www.qscaudio.com> or call us at 1-800-854-4079 (toll-free USA only)

AD-C81Tw Dimensions

CUTOUT HOLE DIAMETER = 191 mm (7.50") USE C-RING FOR TEMPLATE

MATERIAL THICKNESS RANGE FOR CLAMP MOUNTING = 5.6 - 19.0 mm (0.22" - 0.75")



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