



## QSC CP Series Loudspeaker System User Manual

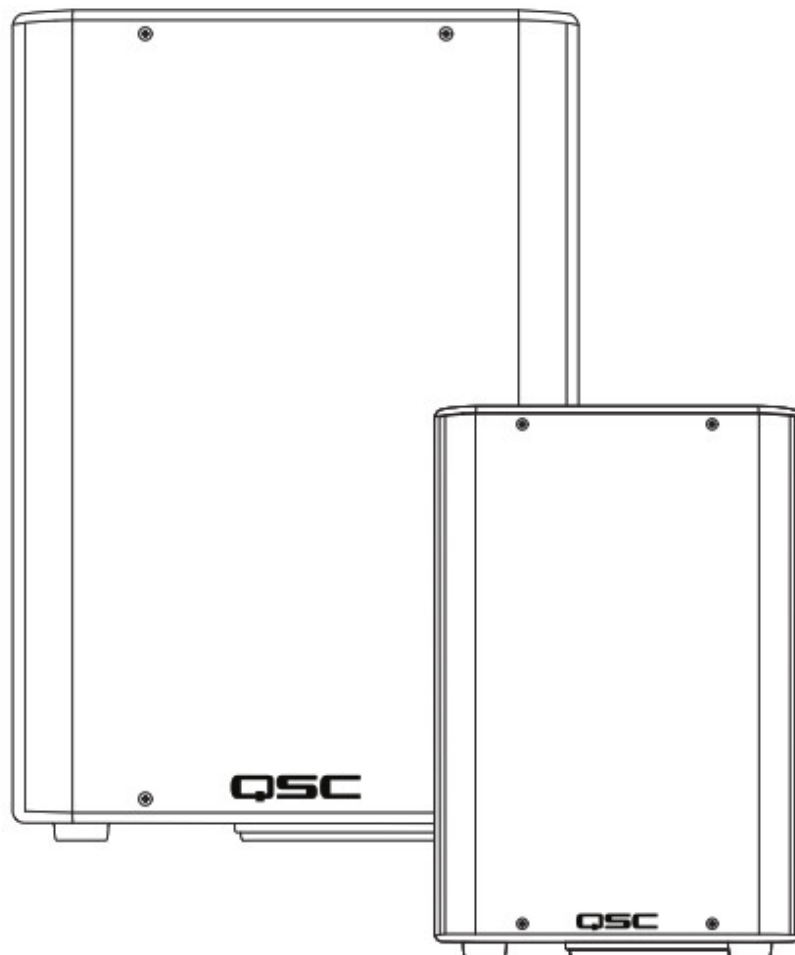
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### CP Series User Manual

**CP8** - 90° 1000 W active 8 inch (200 mm) 2-way loudspeaker system

**CP12** - 75° 1000 W active 12 inch (300 mm) 2-way loudspeaker system



TD-001571-01-B



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## EXPLANATION OF SYMBOLS

The term "WARNING!" indicates instructions regarding personal safety. If the instructions are not followed the result may be bodily injury or death. The term "CAUTION!" indicates instructions regarding possible damage to

physical equipment. If these instructions are not followed, it may result in damage to the equipment that may not be covered under the warranty. The term "IMPORTANT!" indicates instructions or information that are vital to the successful completion of the procedure. The term "NOTE" is used to indicate additional useful information.



**NOTE:** The intent of the lightning flash with arrowhead symbol in a triangle is 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.



**NOTE:** The intent of the exclamation point within an equilateral triangle is to alert the user to the presence of important safety, and operating and maintenance instructions in this manual.



## **IMPORTANT SAFETY INSTRUCTIONS**



**WARNING!** TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. DO NOT USE THIS APPARATUS NEAR WATER.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation opening. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other.  
A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. The appliance coupler, or the AC Mains plug, is the AC mains disconnect device and shall remain readily operable after installation.
15. Adhere to all applicable, local codes.
15. To prevent electrical shock, the power cord shall be connected to a mains socket outlet with a protective earthing connection.

16. Consult a licensed, professional engineer when any doubt or questions arise regarding a physical equipment installation.
17. Do not use any aerosol spray, cleaner, disinfectant or fumigant on, near or into the apparatus. Clean only with a dry cloth.
18. Do not unplug the unit by pulling on the cord, use the plug.
19. Do not submerge the apparatus in water or liquids.
20. Keep ventilation opening free of dust or other matter.

## WARRANTY

For a copy of the QSC Limited Warranty, visit the QSC website at [www.qsc.com](http://www.qsc.com)

## MAINTENANCE AND REPAIR



**WARNING!** Advanced technology, e.g., the use of modern materials and powerful electronics, requires specially adapted maintenance and repair methods. To avoid danger of subsequent damage to the apparatus, injuries to persons and/or the creation of additional safety hazards, all maintenance or repair work on the apparatus should be performed only by a QSC authorized service station or an authorized QSC International Distributor. QSC is not responsible for any injury, harm or related damages arising from any failure of the customer, owner or user of the apparatus to facilitate those repairs.

**Life Cycle:** 7 years, Storage Temperature range: -20 C to +70 C, Relative Humidity range: 5 – 85% RH


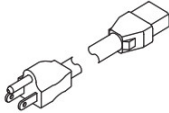




## FCC STATEMENT



**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

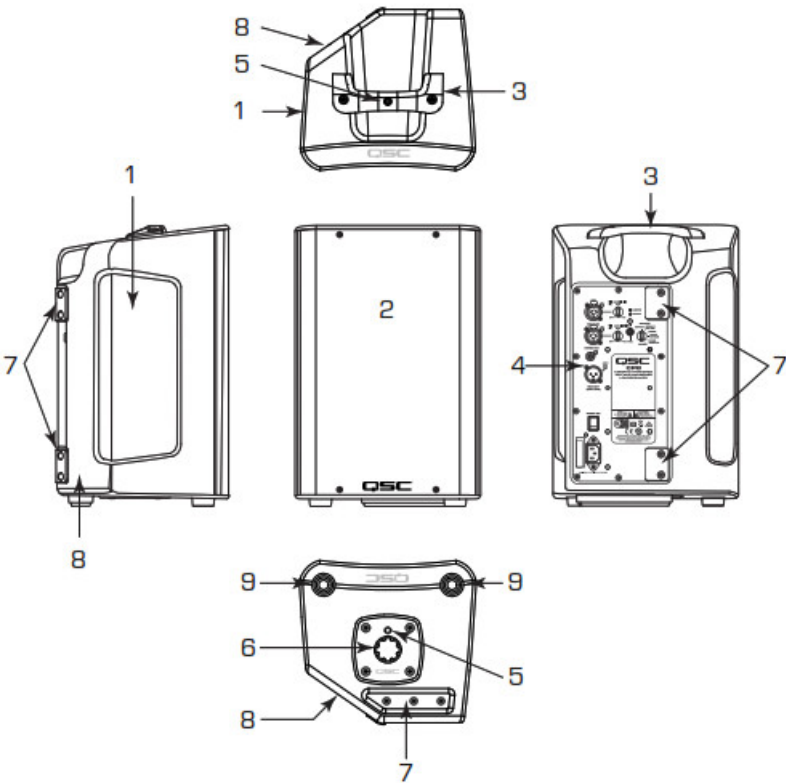
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: · Reorient or relocate the receiving antenna. · Increase the separation between the equipment and receiver. · Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. · Consult the dealer or an experienced radio/TV technician for help.

## WHAT'S IN THE BOX

	1 CP Series Loudspeaker		1 AC Power cord		1 White QSC Logo decal
	1 QSC Limited Warranty		1 CP Series Quick Start Guide		1 Active Loudspeaker Safety Sheet

FEATURES

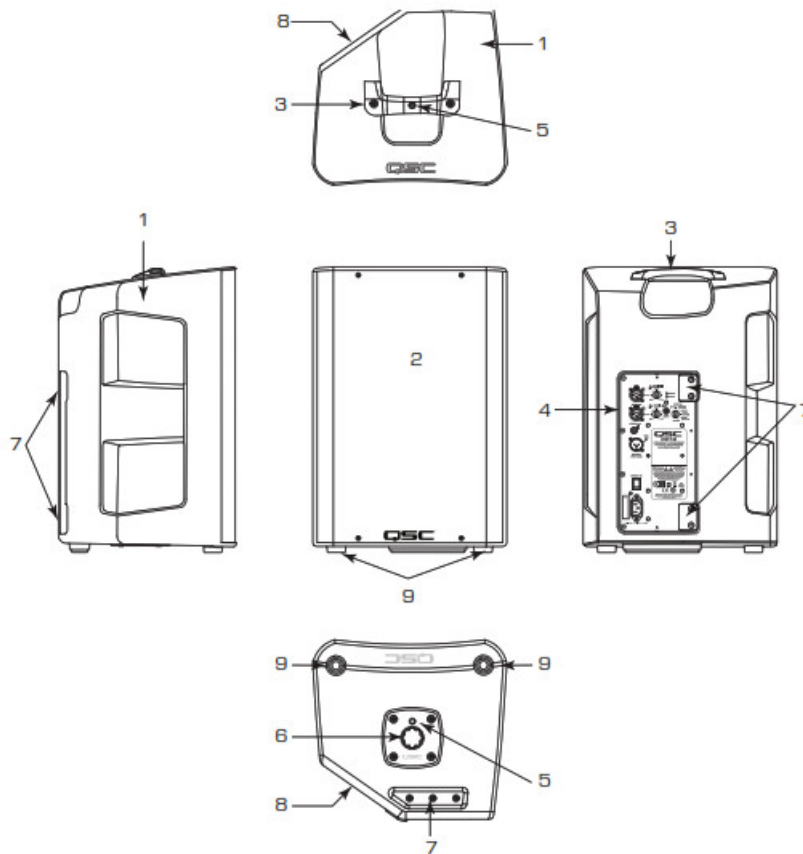
CP8



— Figure 1 —

1. Plastic enclosure	4. Power module	7. Slip-resistant feet
2. Steel grille	5. M8 yoke-attachment points	8. Angled back for use as a floor monitor
3. Plastic handle	6. Vertical pole socket	9. Plastic feet

CP12



— Figure 2 —

1. Plastic enclosure	4. Power module	7. Slip-resistant feet
2. Steel grille	5. M8 yoke-attachment points	8. Angled back for use as a floor monitor
3. Plastic handle	6. Vertical pole socket	9. Plastic feet

## PLACEMENT AND APPLICATIONS



**WARNING!** Before placing, installing, rigging, or suspending any loudspeaker 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 or placement. Any such condition severely reduces the safety of the installation and should be immediately corrected. Use only hardware that 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.

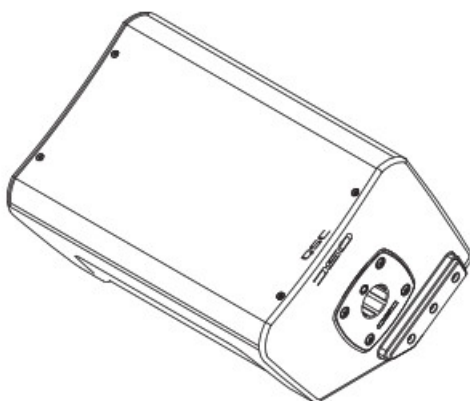
Consult a licensed, professional engineer regarding physical equipment installation. Ensure that all local, state and national regulations regarding the safety and operation of loudspeakers and related equipment are understood and adhered to.

The CP Series is primarily designed for portable audio reinforcement. This includes a variety of uses in reinforcement for entertainers and presenters. Both models are designed to perform well on their own in full-range

audio. They can be used as a single unit, in stereo pairs, or in distributed or delayed systems.

### Free Standing

Refer to Figure 3



— Figure 3 —

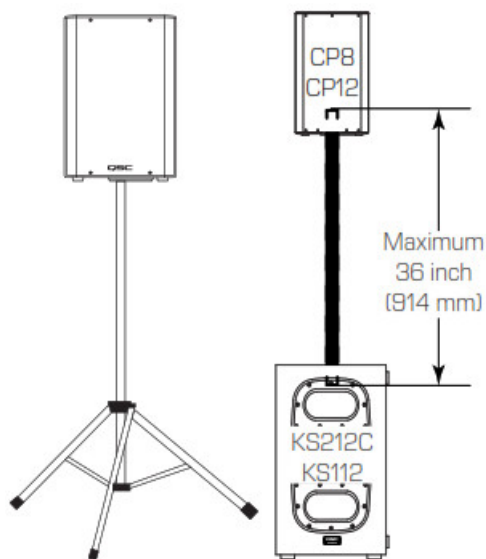
Use the angled side for floor monitor applications, or placed vertically on a stage, subwoofer or floor.

### Pole Mounting

CP8 CP12

Refer to Figure 4 and Figure 5

Both models are equipped with a 35 mm pole socket that allows use on a loudspeaker stand or over a subwoofer with a 35 mm pole socket capable of supporting the loudspeakers. Refer to Table 1 for specifics about pole mounting the loudspeaker over a subwoofer.



— Figure 4 —

— Figure 5 —



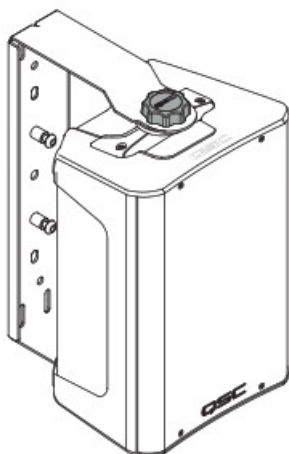
**WARNING!** Do not use a loudspeaker support pole longer than specified in Table 1, when supported by a subwoofer.

**Subwoofers**

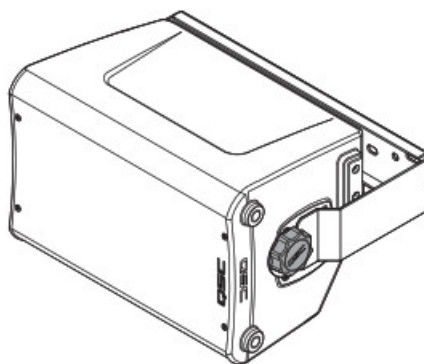
CP Series	KS212C	KS112
CP8	36 inch (914 mm)	36 inch (914 mm)
CP12	36 inch (914 mm)	36 inch (914 mm)

## Yoke Mounting

The CP Series loudspeakers have yoke accessories that attach to the top and bottom of the loudspeakers. The yokes allow for rigid mounting to structure surfaces and loudspeaker rotation. (Models CP8 YOKE / CP12 YOKE) For portable installations, use the Yoke Knob to quickly, and easily mount the loudspeakers on the yoke. Use the Yoke Mounting Bolt for more permanent installations. Each yoke has threaded inserts to store either the Yoke Knob or the Yoke Mounting Bolt. Refer to the CP Series Yoke Mounting Quick Start Guide for details.



— Figure 6 —



— Figure 7 —

## Suspension

The CP Series loudspeakers are not designed to be suspended with eyebolts. However, the optional Yoke bracket can be mounted to a suspended fixture.

## OPERATION

### Cooling

This is a powered loudspeaker, containing an internal power amplifier that produces heat. Allow a minimum of 6 inches (152 mm) clearance at cabinet back for convection cooling. Keep anything that might restrict airflow away from the rear of the enclosure (i.e draperies, walls, etc.)

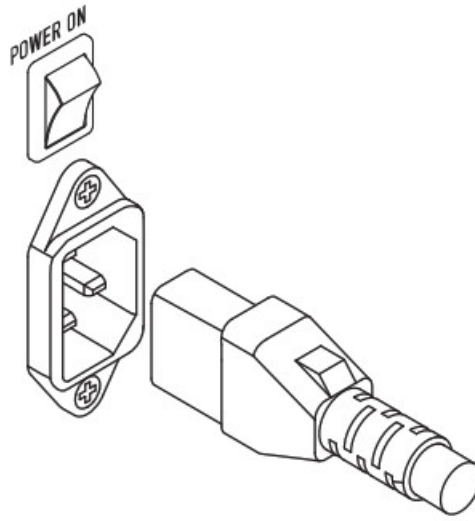


**CAUTION!** Do not install enclosures with their rear panels exposed to direct sunlight. Direct sunlight will heat the amplifier module and reduce its ability to produce full output. Maximum ambient temperature for full performance to specification is 35° C (95° F). Do not install enclosures in locations that are exposed to rain or other water sources. The enclosure is not weatherproof. Outdoor installations must provide protection from the elements.

### AC Mains

Refer to Figure 8 Connect the AC power cord to the socket on the back of the amplifier. Make sure the plug is fully inserted into the socket on the power amplifier module.





— Figure 8 —

**NOTE:** Make sure that the AC power switch is in the OFF position before connecting AC power cord to the AC source.

Connect the AC Power cord to the facility's AC outlet.

If the QSC-supplied cord is lost or damaged, a standard 18-gauge IEC power cord may be used. Replacements are available from QSC.

The CP Series loudspeakers are equipped with a universal power supply that can use input AC power voltages ranging from 100 240 VAC at 50 60 Hz.



**WARNING!** Use only the power cable that is correct for your location.

### AC Mains Disconnection

Push in on the bottom of the rocker switch to turn the powered loudspeaker off. Unplug the AC cable from the power source. Unplug the cable from the amplifier.

### Power Switch

Push in on the top of the rocker switch to apply AC mains power to the amplifier.

### Rear LED POWER Indicator

The green LED POWER indicator on the rear panel will illuminate when AC Power is applied (AC cord connected, power switch on). The rear LED POWER indicator will extinguish when AC Power has been removed.

If the rear LED POWER indicator does not illuminate within the first 15 seconds after power is applied, verify the AC mains line cord is properly attached to the loudspeaker and plugged into the AC outlet. Verify the AC outlet is functioning properly.



**NOTE:** If the AC mains cord is usable and the AC mains outlet is operating properly, but the unit fails to operate, the loudspeaker may require servicing. Contact QSC's Technical Services department.

### System Power Sequencing

Proper power turn-on/turn-off sequencing can help to prevent unexpected sounds emanation from the system (pops, clicks, thumps). Always follow the rule that loudspeakers are "last on, first off".

### Power-On Sequence:



**NOTE:** Steps 3 and 4 below are interchangeable depending on the order in which the top box and the subwoofer are wired.

1. Bring the output level control of the mixer, or other audio sources feeding your loudspeakers, to its minimum position.
2. Turn on all source devices. (CD players, mixers, instruments)
3. Turn on subwoofer.
4. Turn on the “top boxes”. (CP8 / CP12) 5. The level controls on the mixer may now be brought up.

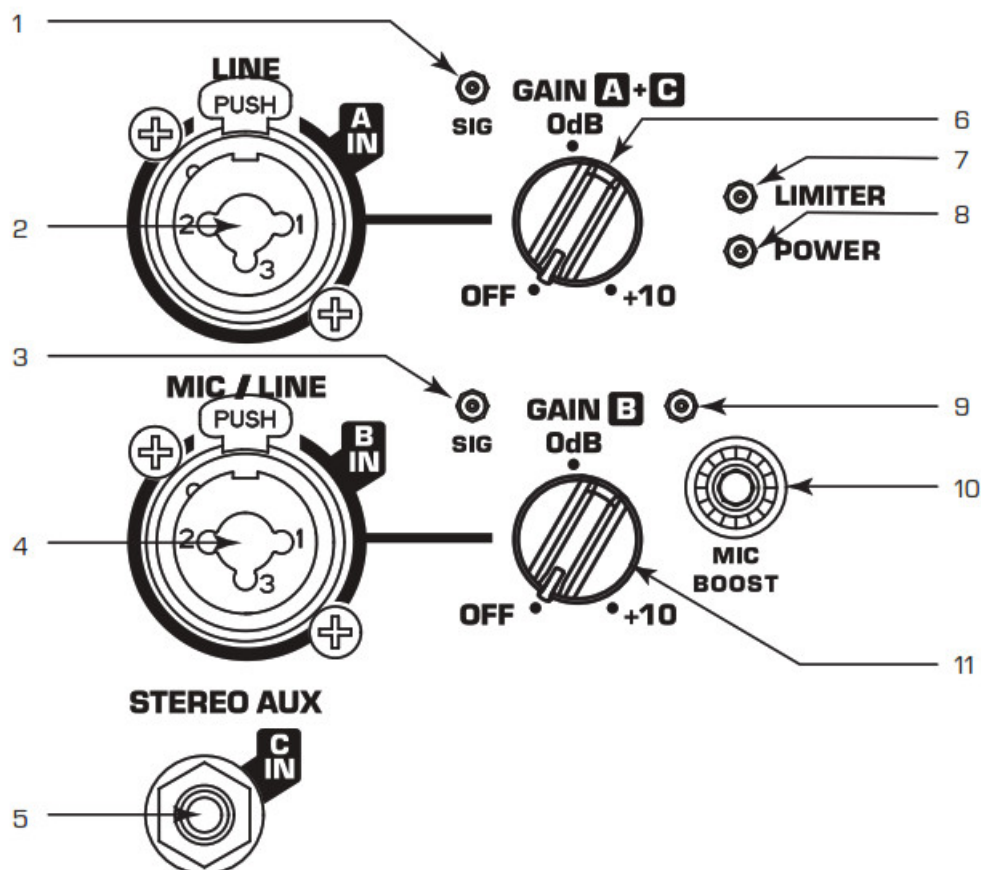
#### Power Off Sequence:



**NOTE:** Steps 1 and 2 below are interchangeable depending on the order in which the top box and the subwoofer are wired.

1. Turn off “top boxes”.
2. Turn off subwoofer.
3. Turn off all source devices.

#### Inputs



— Figure 9 —

1. Input A SIG LED When illuminated (green), it indicates a signal is present. If this LED is not illuminated, the input signal is missing or too low to detect.
2. Input A Combination XLR 1/4 inch TRS connector. Balanced XLR and 1/4 inch input. Accepts line-level inputs.
3. Input B SIG LED When illuminated (green), it indicates a signal is present. If this LED is not illuminated, the input signal is missing or too low to detect.

4. Input B Combination XLR 1/4 inch TRS connector. Balanced XLR and 1/4 inch input.  
Accepts line-level and mic-level inputs.
5. Input C Stereo 1/8 inch (3.5 mm) TRS connector Accepts line-level stereo input. Stereo input received at Input C is summed to mono.
6. Input A + C GAIN knob Sets the gain of Input A and Input C that controls the signal level sent to the amplifier and the MIX OUT (POST GAIN) output.
7. LIMITER LED Illuminates (red) when the built-in limiter is activated to avoid damage to the amplifier or loudspeaker. If the signal level at any frequency is too high, or the amplifier is too hot, the limiter is activated and the LED is illuminated.
8. POWER LED Illuminates (green) when power is applied to the unit and the ON/OFF switch is in the ON position.
9. MIC BOOST LED When illuminated (yellow) it indicates the input is configured to provide a +25 dB boost for microphones requiring a higher input gain. When not illuminated, it indicates the input is configured for a line-level input including microphones that provide a standard line-level output. The MIC BOOST setting should only be used if a microphone is connected directly to the MIC/LINE input.



**NOTE:** The MIC/LINE input does not provide phantom power.






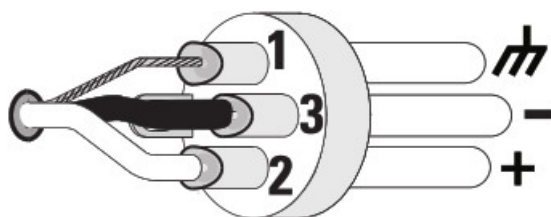
**CAUTION!** The MIC BOOST setting should only be used if a microphone is connected directly to the MIC/LINE input. Using the MIC BOOST setting for line-level may introduce distortion. Use caution when changing to the MIC BOOST selection as the output level increases significantly when MIC BOOST is selected.

10. MIC BOOST button Switches between MIC BOOST level input and line-level input. When engaged, MIC BOOST LED is illuminated, and MIC BOOST level (+25 dB) is selected for Input B. When disengaged, line-level is set for Input B.
11. Input B GAIN knob Sets the gain of Input B that controls the signal level sent to the amplifier and the MIX OUT (POST GAIN) output.

## Balanced Inputs




Connect the XLR plug as shown in Figure 10.

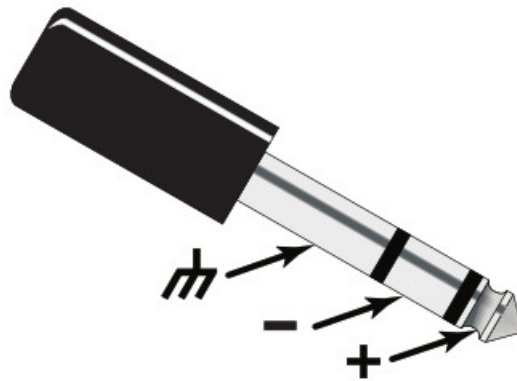
1.  Shield (ground)
2.  Positive
3.  Negative



— Figure 10 —

Connect the TRS (Tip Ring Sleeve) plug as shown in Figure 11. Do not use a TS 1/4 inch jack for balanced input.




1.  Shield (ground) (Sleeve)
2.  Negative (Ring)
3.  Positive (Tip)

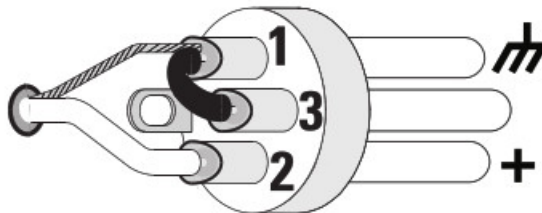


— Figure 11 —

### Unbalanced Inputs




Connect the XLR plug as shown in Figure 12. (Jumper pins 1 and 3.)

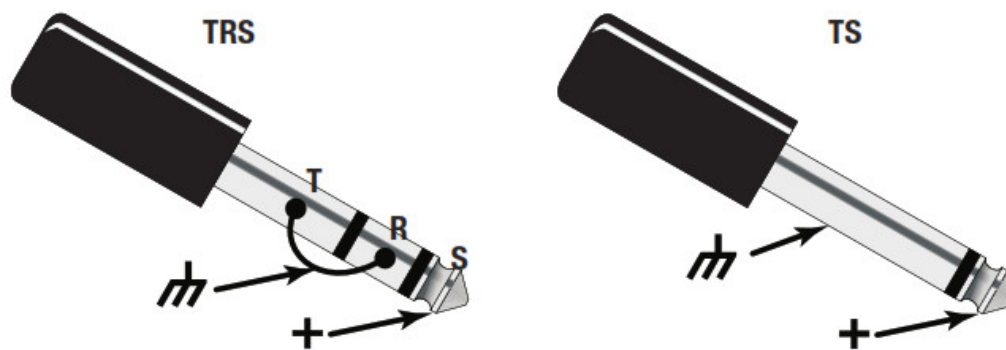
1.  Shield (Jumper to negative)
2.  Positive
3.  Negative (Jumper to ground)



— Figure 12 —

Connect the TRS (Tip Ring Sleeve) or TS (Tip Sleeve) plug as shown in Figure 13.

1.  Shield (for TRS jumper Sleeve to Ring)
2.  Negative (for TRS jumper Ring to Sleeve)
3.  Positive



— Figure 13 —

## Outputs

MIX OUT (Post Gain) output XLR is a mix of Channels A, B, and C. Produces a line-level output signal that is Post Gain. Any adjustments made to the gain of any of the three channels affects this output signal. This output does not contain any DSP processing.



— Figure 14 —

### Connect an Extension Loudspeaker to the MIX OUT (Post Gain)

Set the Gain controls of all inputs on the extension loudspeaker to 0 dB. When the Gains on the extension loudspeaker are set to 0 dB, the extension's output level is the same as the master's output level. Control both master and extension outputs using the master's Gain controls.



**CAUTION!** Do not connect the MIX OUT (Post Gain) of a CP Series loudspeaker to any INPUT on the same unit. This output is designed to send the mixed signal to OTHER CP Series units or to other audio equipment.

### CP SERIES CONTOUR SELECTIONS

The CP Series loudspeakers offer six different voicing contours to use with specific applications. Below is a list of these contours and a description of each. The contour settings affect both inputs (exceptions are documented in the text and the table below).

- Default - The standard, factory voicing of the loudspeaker for use with live music, program music, or instruments.
- Default Ext Sub - The standard, factory voicing of the loudspeaker with an 80 Hz high-pass filter for use with live music, program music, or instruments, and an external subwoofer, for example, the KS112.
- Dance - A voicing with low-frequency enhancement and mid/high clarity more suitable for program material

playback like pop or electronic music. (When MIC BOOST is selected, input B contour changes to “Speech” while input A remains as “Dance.”)

- Dance Ext Sub - A voicing with low-frequency enhancement and mid/high clarity more suitable for program material playback like pop or electronic music, with an 80 Hz high-pass filter for use with an external subwoofer, for example, the KS112. (When MIC BOOST is selected, input B contour changes to “Speech” while input A remains as “Dance.”)
- Floor Monitor - A voicing for a full, balanced sound when used as a floor monitor, giving added stability when live microphones are nearby.
- Speech - A voicing (Input B only) that gives clarity and stability when used with either a hand-held dynamic microphone or headset microphone. Input A/C remains on the Default voicing so that music or audio can pass through the loudspeaker simultaneously without the Speech voicing being applied to it.

## MIC BOOST



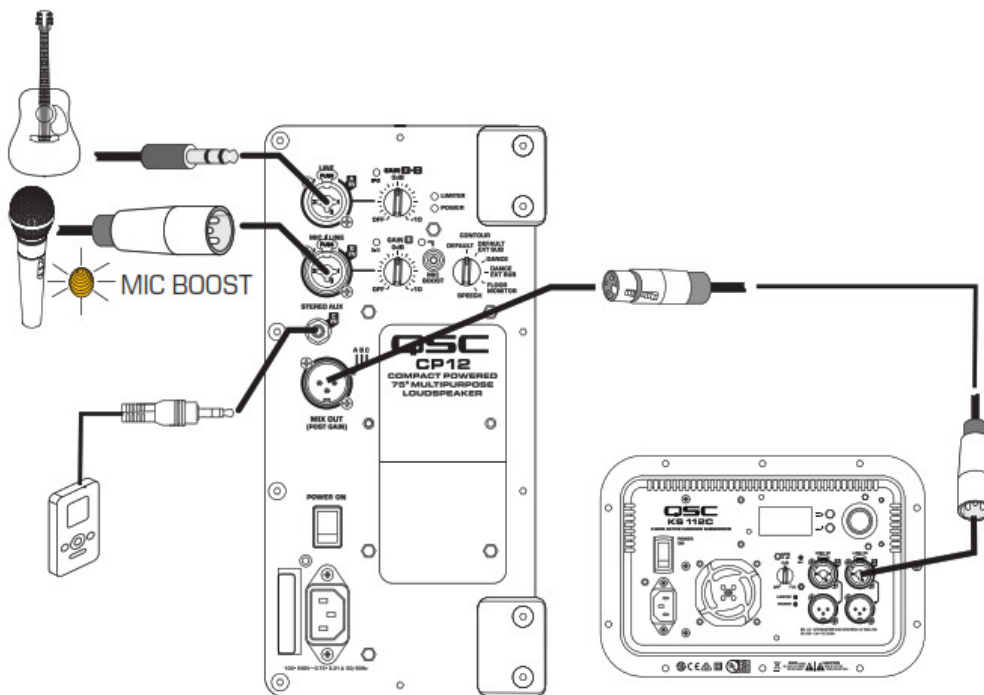
**CAUTION!** The MIC BOOST setting should only be used when a microphone is connected directly to the MIC/LINE input. Using the MIC BOOST setting for line-level may introduce distortion. Use caution when changing to the MIC BOOST selection as the output level increases significantly when MIC BOOST is selected.

MIC BOOST adds +25 dB to Input B when the MIC BOOST button is engaged. Some of the voicings for Input B change when MIC BOOST is on. The table below shows the differences on Input B when MIC BOOST is on or off.

Input A, Input B Comparison With MIC BOOST On and Off			
Contour	Input A	Input B	Input B (mic boost on)
Default	Default	Default	Default (+25 dB)
Default w/sub	Default w/sub	Default w/sub	Default w/sub (+25 dB)
Dance	Dance	Dance	Speech (+25 dB)
Dance w/sub	Dance w/sub	Dance w/sub	Speech (+25 dB)
Floor Monitor	Floor Monitor	Floor Monitor	Floor Monitor (+25 dB)
Speech	Default	Speech	Speech (+25 dB)

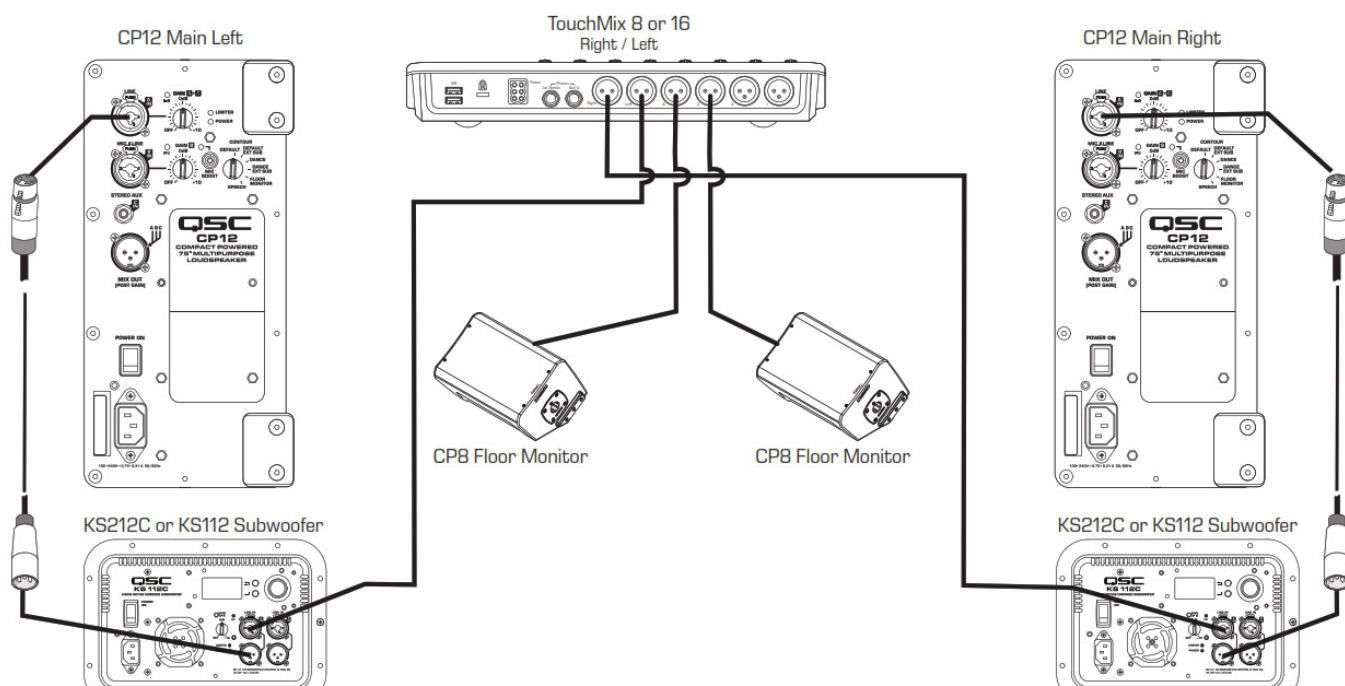
## HOOKUP DIAGRAMS

### All-In-One PA System with Subwoofer



— Figure 15 —

## Typical Stereo System

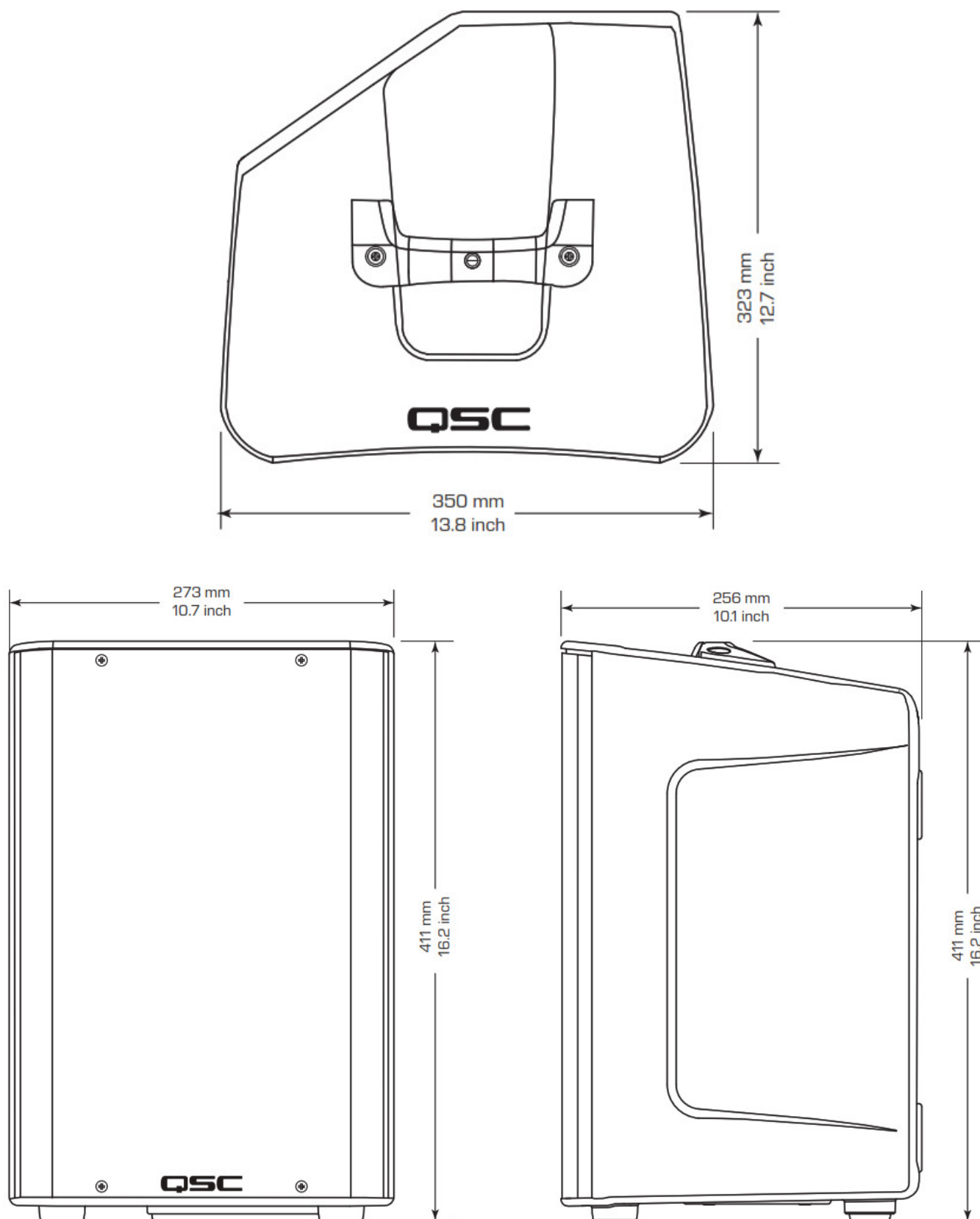


— Figure 16 —

## DIMENSIONS

### CP8 Loudspeaker

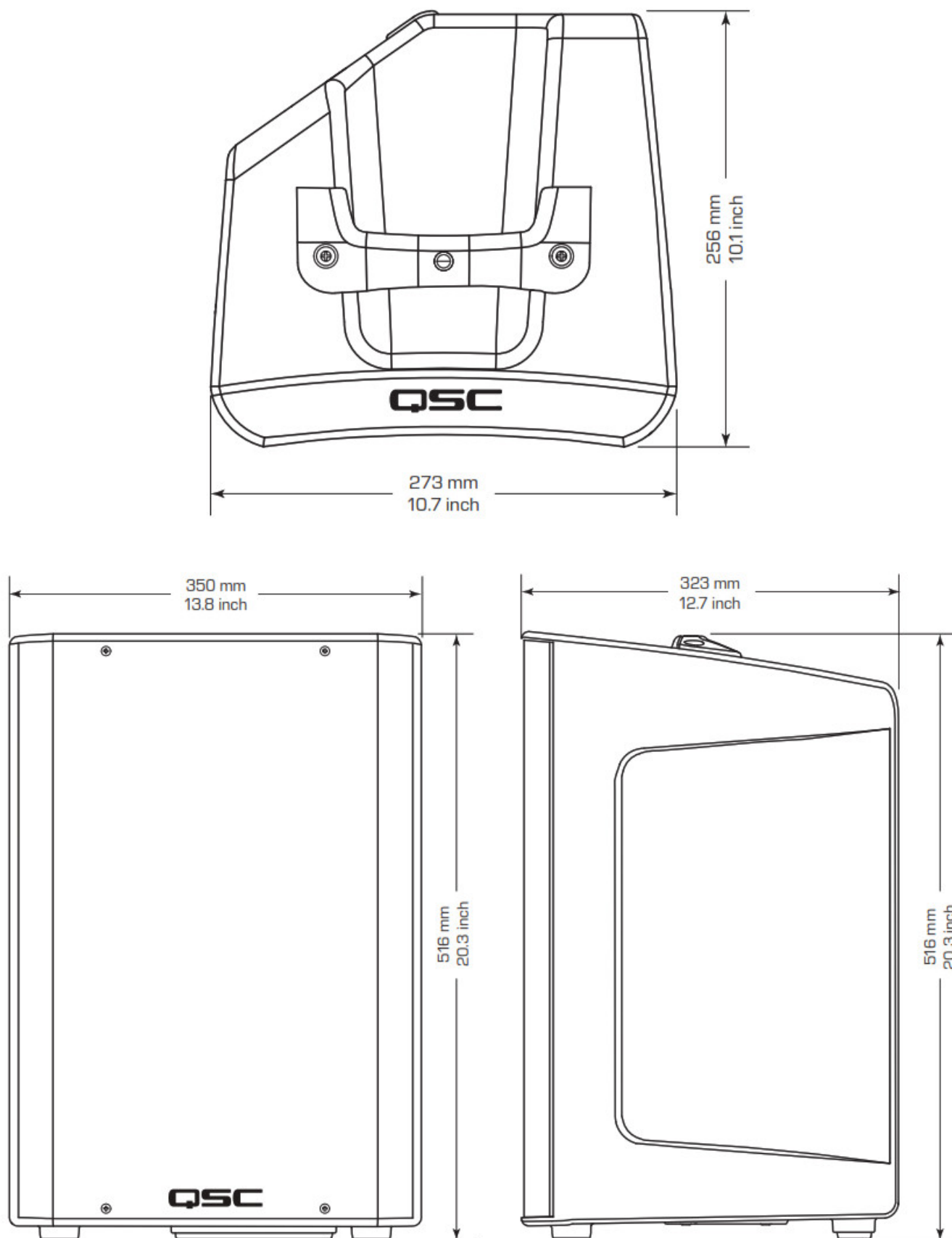




— Figure 17 —

## CP12 Loudspeaker





— Figure 18 —

## SPECIFICATIONS

	CP8	CP12
Configuration:	Two-way active loudspeaker	Two-way active loudspeaker

LF Transducer:	8 inch (203 mm) cone	12 inch (305 mm), cone
HF Transducer:	1.4 inch (35.6 mm) compression driver	1.4 inch (35.6 mm) compression driver
Frequency Response (-6 dB):	56 – 20 kHz	49 – 20 kHz
Frequency Range (-10 dB):	53 – 20 kHz	47 – 20 kHz
Nominal Coverage Angle:	90° Axisymmetric	75° Axisymmetric
Maximum Rated SPL	124 dB	126 dB
Amplifier:	Class D Peak: 800 W (LF), 200 W (HF)	
Controls:	Power 2 x Gain MIC BOOST Push Switch 6-way Contour Selection Switch	
Indicators:	Power LED 2 x Input Signal LED Input B MIC BOOST selected LED Limiter active LED	
Connectors:	2 x locking XLR/F ¼ inch combo (LINE Input and MIC/LINE input) 1 x 3.5 mm TRS (Stereo Input) 1 x XLR/M (Mix Output) 1 x IEC power connector	
AC Power Input:	Universal power supply 100 – 240 VAC, 50 – 60 Hz	
AC Power Consumption 1/8th Power:	100 VAC, 0.75A -240VAC 0.31A	
Enclosure Material:	Polypropylene	
Attachment Points:	2 x M8 threaded insert (for yoke mount attachment only)	
Color:	Black	
Grille:	18 Gauge powder-coated steel	
Dimensions (HxWxD):	16.2 x 10.7 x 10.1 inch 411 x 273 x 256 mm	20.3 x 13.8 x 12.7 inch 516 x 350 x 323 mm
Net Weight:	21.0 lb (9.5 kg)	30.3 lb (13.7 kg)
Shipping Weight:	25.5 lb (11.4 kg)	36.3 (16.5 kg)
Regulatory:	UL, CE, CCC, FCC Class B	
Optional Accessories:	CP8 Tote, CP8 Outdoor Cover CP8 Yoke	CP12 Tote, CP12 Outdoor Cover CP12 Yoke

1 Peak SPL is measured on-axis at 1 m, with dynamic pink noise



**NOTE:** Specifications subject to change without notice.



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## Documents / Resources

	<p><a href="#">QSC CP Series Loudspeaker System</a> [pdf] User Manual</p> <p>CP Series Loudspeaker System, CP8, CP12, 90 1000 W active 8 inch 200 mm 2-way loudspeaker system, 75 1000 W active 12 inch 300 mm 2-way loudspeaker system, TD-001571-01-B</p>
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## References

- [QSC Patents](#)
- [QSC Pro Audio](#)
- [QSC Pro Audio](#)