

Concert Stage Monitor

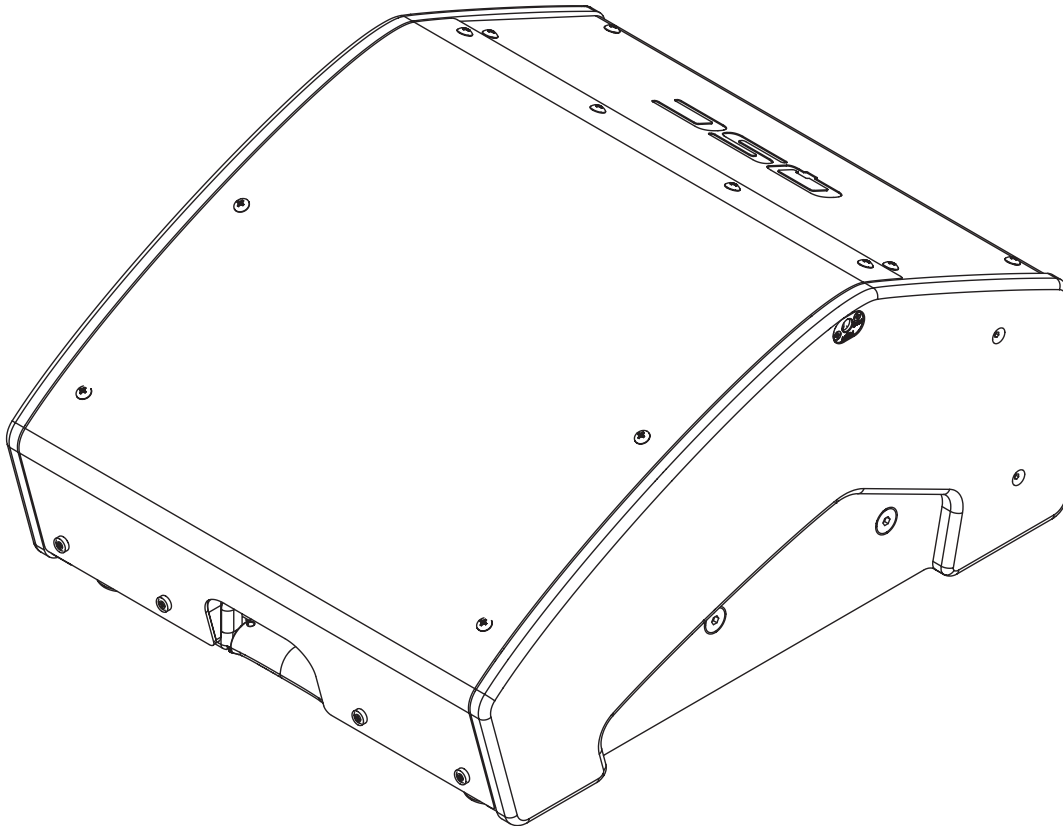
Loudspeaker User Manual

QSC[™]

CSM10 – 10" Full-range loudspeaker

CSM12 – 12" Full-range loudspeaker

CSM15 – 15" Full-range loudspeaker



TD-000279-00-A



IMPORTANT SAFETY PRECAUTIONS AND EXPLANATION OF SYMBOLS



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 regarding physical equipment installation. Ensure that all local, state and national regulations regarding the safety and operation of suspended equipment are understood and adhered to.

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 all QSC instructions and documentation. Suspension and mounting should be attempted only by those who are trained and skilled in safe suspension and mounting practices.
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, LLC.
9. Use only with mounts or brackets specified by QSC Audio Products, LLC.
10. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way.



The lightning flash with the 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 shock to humans.



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

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

Disclaimer

QSC Audio Products, LLC 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, LLC ("QSC") guarantees its products to be free from defective material and/or workmanship 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, one of our authorized service stations or an authorized QSC International Distributor 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. The warranty on QSC products is NOT VALID if the products have been purchased from an unauthorized dealer/online e-tailer, or if the original factory serial number has been removed, defaced, or replaced in any way. Damage to, or loss of any software or data residing on the product is not covered. When providing repair or replacement service, QSC will use reasonable efforts to reinstall the product's original software configuration and subsequent update releases, but will not provide any recovery or transfer of software or data contained on the serviced unit not originally included in the product.

Customers may have additional rights, which vary from state to state or from country to country. In the event that a provision of this limited warranty is void, prohibited or superseded by local laws, the remaining provisions shall remain in effect.

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 website at www.qscaudio.com.

The QSC limited warranty is valid for a period of three (3) years from date of purchase in the United States and many (but not all) other countries.

For QSC warranty information in countries other than the United States, contact your authorized QSC international distributor. A list of QSC International distributors is available at www.qscaudio.com.

To register your QSC product online, go to www.qscaudio.com and select "Product Registration". Other questions regarding this warranty can be answered by calling, e-mailing or contacting your authorized QSC distributor.

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Introduction

The CSM Series of stage monitors is a very low profile, high output wedge speaker that provides the highest output to size ratio of any premium brand. These high performance speakers use a high power, 3" neodymium magnet compression driver, coupled with a 4" voice coil woofer on the CSM12 and CSM15 and a 3" voice coil woofer on the CSM10. The CSM series features a selectable pattern control "shutter" system that by opening the shutter, converts the vertical coverage to an asymmetrical pattern of +45° and -75° relative to the baffle, while maintaining a nominal 50° pattern in the horizontal. As a result, the user is able to limit the amount of sonic HF energy spilling over into the audience, while increasing its upstage coverage angle.

In addition, the CSM Series features integral hardware that provides up to an additional 15° (in 1° increments) of angle to the enclosure as well as a recessed connector pocket that allows the user to dress the cable a full 360° in any direction.

Signal Processing

The CSM Series is designed as a "Best in Class" stage monitor system package. The amazing performance of the CSM models is a result of extensive and sophisticated application of digital signal processing. The algorithms have been developed using QSC processing products and can not be readily replicated on other DSP platforms. In order to enjoy all the performance that your QSC CSM speakers can deliver, it is important to use the correct QSC signal processors loaded with the appropriate processing settings. Visit the Support section of the QSC website (www.qscaudio.com) and navigate to "Technical Support" - "Software Downloads" to obtain the correct settings for your monitor model, QSC processor and application. Note that application specific settings for full-range, bi-amp, stage monitor and utility applications are available.

QSC will, from time to time introduce new digital signal processing platforms so check the "CSM Series" section of the QSC website for the latest processor recommendations.

Power

In order to take full advantage of CSM Series capabilities abundant and clean amplifier power is required. Recommended amplifiers and power levels:

CSM10

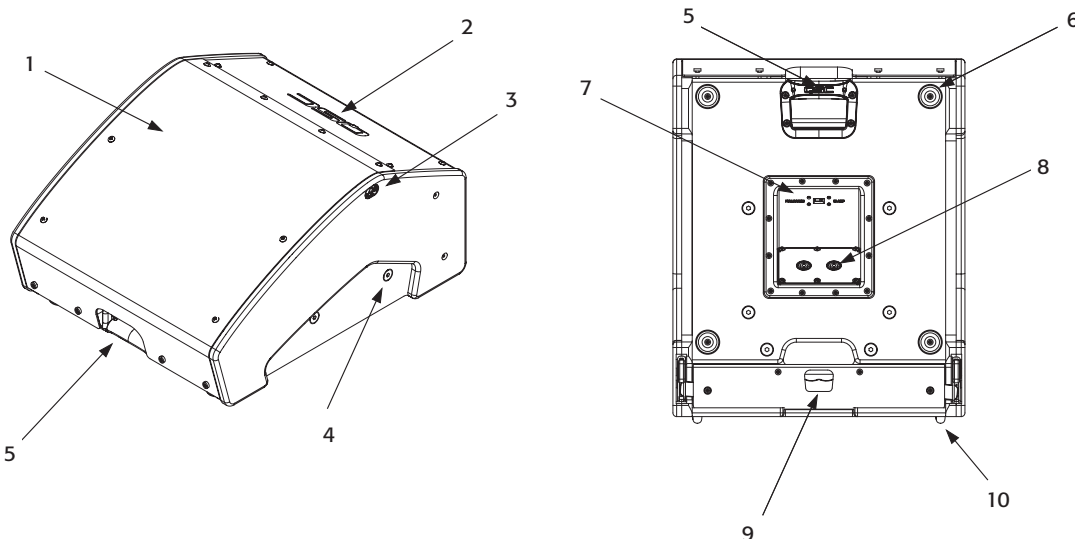
- LF amplifier: QSC PL340 or other amplifier capable of at least 800 W @ 8Ω; 1250 W @ 4Ω & 2000 W @ 2Ω.
- HF amplifier: QSC PL325 or other amplifier capable of at least 500 W @ 8Ω; 850 W @ 4Ω & 1250 W @ 2Ω.

CSM12 and CSM15

- LF amplifier: QSC PL380 or other amplifier capable of at least 1500 W @ 8Ω; 2500 W @ 4Ω & 4000 W @ 2Ω.
- HF amplifier: QSC PL325 or other amplifier capable of at least 500 W @ 8Ω; 850 W @ 4Ω & 1250 W @ 2Ω.

CSM Loudspeaker

1. Grille
2. Deco Plate
3. Shutter Switch
4. M10 Yoke and Suspension Points (QTY:12)
5. Handle
6. Hard Rubber Feet
7. Full-Range/Bi-amp Switch
8. Input Plate
9. Tilt Release Mechanism
10. Skids



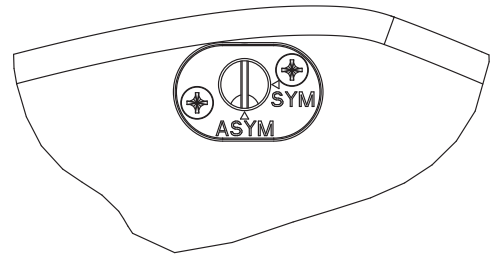
Selecting Coverage Pattern

On the side of the speaker you will find the shutter switch which will allow the lip extension to be engaged in either an Asymmetric (ASYM) or Symmetric (SYM) configuration. (Figure 1)

To select coverage pattern, insert a standard flat blade screw driver into the slot provided and push to release shutter. Turn clockwise a quarter turn to change from SYM to ASYM. Turn counterclockwise a quarter turn for ASYM to SYM.

In monitor position, symmetric coverage will allow for 150° vertical coverage, 50° horizontal coverage. Asymmetric coverage will allow for 120° vertical coverage, 75° down and 45° up, with a 50° horizontal coverage.

In utility position (side oriented), symmetric coverage is 150° horizontal coverage, 50° vertical coverage. Asymmetric coverage is 120° horizontal coverage, 50° degree vertical coverage.



– Figure 1 –



NOTE: Shutter actuator must be fully depressed or shutter will not engage and turn.



NOTE: Shutter should move smoothly if fully engaged. Do not use excessive force or non-standard screw driver when activating shutter actuator button.



NOTE: Speaker will come from the factory engaged in ASYM position.

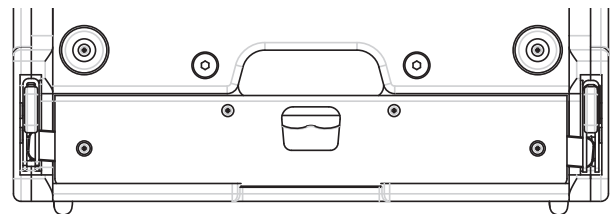
Adjusting Tilt Mechanism

Located in the rear bottom side of the speaker you will find the Tilt Mechanism. (Figure 2)

To activate the tilt mechanism, insert fingertips underneath the enclosure, locate the grab bar and pull bar towards you to release the mechanism. Lift speaker to desired height and release grab bar. This will lock the legs into the desired angle.

To disengage tilt mechanism, insert fingertips underneath the enclosure and pull grab bar toward you lifting slightly to disengage teeth.

While supporting the weight of the speaker slowly lower to the desired angle.



– Figure 2 –



NOTE: Make sure the teeth are fully seated at the desired angle and locked evenly before leaving unattended.



NOTE: Do not grab legs or any other surface of box while raising or lowering.

Controls and Connections

The input connector for the CSM is mounted on the bottom side of the enclosure. To gain access to the connectors use the front handle to tilt the speaker onto the skids located on the flat back side allowing full access to the recessed connector pocket and mode selection switch.

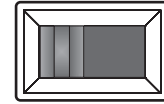
Mode Selection Switch

Located on the input plate housing is the Mode selection switch (Figure 3). This will allow the speaker to go from bi-amp to full-range.

To select the mode, orient speaker so the back side is facing you. Insert a standard flat screwdriver into available slot and slide left for full-range and right for bi-amp.

MODE Selection Switch

FULL RANGE



BI AMP

- Figure 3 -



NOTE: Speaker will come from the factory in bi-amp setting.

Input Connectors

The CSM input/output connectors are a pair of Neutrik NL4's wired in parallel which allows for multi speaker mixes. See (Table 1) for bi-amp connection. See (Table 2) for full-range connection.

Table 1: Bi-amp Connector Pinout

PIN	Connection
1+	Low-frequency Transducer + (8 Ohms)
1-	Low-frequency Transducer - (8 Ohms)
2+	High-frequency Transducer + (8 Ohms)
2-	High-frequency Transducer - (8 Ohms)

Table 2: Full-Range Connector Pinout

PIN	Connection
1+	Full-range
1-	Full-range
2+	Thru
2-	Thru

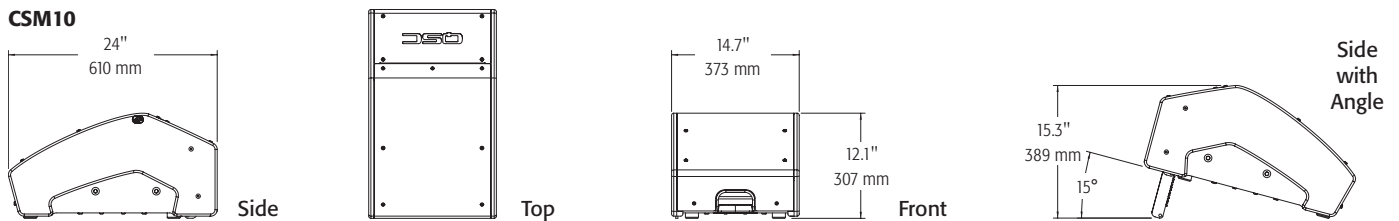
Pinout Table as printed on CSM input plate label

		INPUT PINOUT			
		+1	-1	+2	-2
BI-AMP		LF		HF	
FULL RANGE		FULL		N/A	

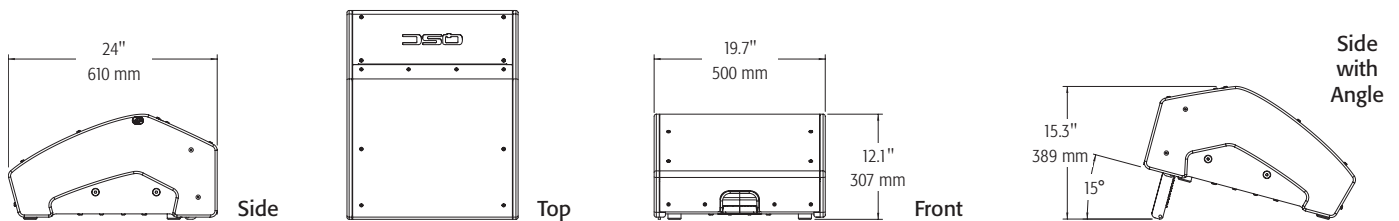
Specifications | Dimensions

	CSM10	CSM12	CSM15
Configuration	2-way wedge	2-way wedge	2-way wedge
Transducers			
Low-frequency	10" / 3" voice coil woofer	12" / 4" voice coil woofer	15" / 4" voice coil woofer
High-frequency	3" diaphragm / 1.4 exit	3" diaphragm / 1.4 exit	3" diaphragm / 1.4 exit
Frequency Response (± 3 dB)	80 Hz – 20 kHz	65 Hz – 20 kHz	55 Hz – 20 kHz
Frequency Range (-10 dB)	70 Hz – 20 kHz	55 Hz – 20 kHz	45 Hz – 20 kHz
Nominal Coverage (-6 dB)			
Wedge	50° H x +45°/-75° V	50° H x +45°/-75° V	50° H x +45°/-75° V
Multipurpose	150° H x 50° V	150° H x 50° V	150° H x 50° V
Power Handling (Continuous)			
Passive	450W	550W	650W
Low-frequency	450W	550W	650W
High-frequency	110W	110W	110W
Sensitivity (SPL 1 W at 1 m)			
Passive	95 dB	97.5 dB	96.5 dB
Low-frequency	96 dB	98.5 dB	97 dB
High-frequency	108.5 dB	108 dB	108.5 dB
Max Calculated Output (SPL at 1 m)			
Passive	127 dB	130.5 dB	130.6 dB
Low-frequency	128 dB	131.5 dB	131.1 dB
High-frequency	134.9 dB	134.9 dB	134.9 dB
Cabinet Type	Ported wedge	Ported wedge	Ported wedge
Enclosure	15 mm Birch plywood	15 mm Birch plywood	15 mm Birch plywood
Grille	Heavy-duty, powder coated steel	Heavy-duty, powder coated steel	Heavy-duty, powder coated steel
Dimensions (HWD)	11.87" x 14.7" x 24" (301.5 mm x 373.4 mm x 310.6 mm)	11.87" x 19.7" x 24" (301.5 mm x 500 mm x 610.6 mm)	12.87" x 21.7" x 26" (326.9 mm x 551 mm x 662 mm)
Weight (Net)	60 lb / 27.2 kg	79 lb / 35.8 kg	89 lb / 40.3 kg
Optional Attachment	Yoke/pole mount	Yoke/pole mount	Yoke/pole mount

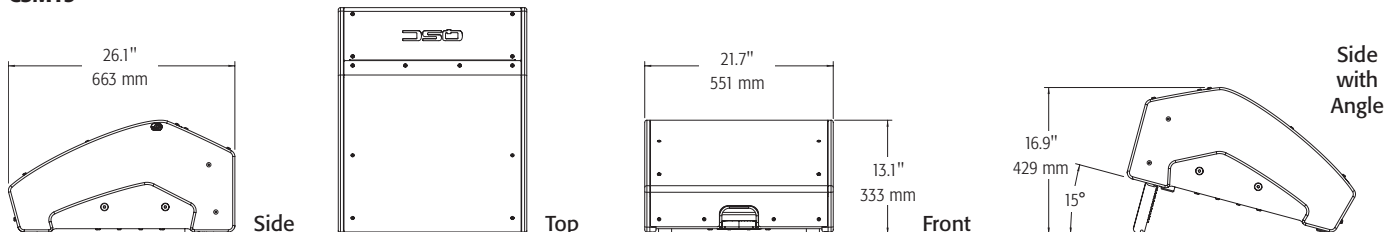
CSM10



CSM12



CSM15



Specifications subject to change without notice.



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