CR2-X
(CUBE)
COMPACT DESKTOP SPEAKERS

OWNER'S MANUAL

MACKIE.

Important Safety Instructions

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 openings.
   Install in accordance with the manufacturer's instructions.

8. Minimum distance (5 cm) around the apparatus for sufficient ventilation.

9. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

10. No naked flame sources, such as lighted candles, should be placed on the apparatus.

11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

12. Only use attachments/accessories specified by the manufacturer.

13. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

PORTABLE CART WARNING

14. Unplug this apparatus during lightning storms or when unused for long periods of time.

15. 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.

16. This apparatus shall not be exposed to dripping or splashing, and no object filled with liquids, such as vases or beer glasses, shall be placed on the apparatus.

17. Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

18. Explanation of symbol, marking, signal lamp or similar means indicates that the apparatus is completely disconnected from the mains.

19. **WARNING:** Please refer to the information on exterior bottom enclosure for electrical and safety information before installing or operating the apparatus.

20. This device should be installed and operated with minimum distance 20cm between the radiator & your body.

21. Bluetooth transmitter Power: <10dBm
    Bluetooth transmitter frequency range: 2400 – 2483.5 MHz

22. Operating Temperature: 0–45° C // 32–113° F

23. **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 the 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.

    CAUTION: Changes or modifications to this device not expressly approved by LOUD Audio, LLC. could void the user's authority to operate the equipment under FCC rules.

24. This apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

    Canada ICES-003(B)/NMB-003(B)

    ATTENTION — *Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de class B prescrites dans le réglement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.*

25. This device complies with Part 15 of the FCC Rules [and contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s)]. Operation is subject to the following two conditions:
    (1) this device may not cause harmful interference, and
    (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

    L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
    (1) L'appareil ne doit pas produire de brouillage, et
    (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

26. Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a period of time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible noise level exposures shown in the following chart.

    According to OSHA, any exposure in excess of these permissible limits could result in some hearing loss. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels use hearing protectors while the equipment is in operation. Ear plugs or protectors in the ear canals or over the ears must be worn when operating the equipment in order to prevent permanent hearing loss if exposure is in excess of the limits set forth here:

Duration, per day in hours	Sound Level dBA, Slow Response	Typical Example
8	90	Duo in small club
6	92	
4	95	Subway Train
3	97	
2	100	Very loud classical music
1.5	102	
1	105	The dogs barking at the mailman
0.5	110	
0.25 or less	115	Loudest parts at a rock concert

This equipment complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. Este equipo cumple los límites de exposición a la radiación de la FCC e ISED establecidos para un entorno no controlado.

CAUTION – These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Correct disposal of this product: This symbol indicates that this product should not be disposed of with your household waste, according to the WEEE directive (2012/19/EU) and your national law. This product should be handed over to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, or your household waste disposal service.

Contents

Features

BMR driver technology for room-filling sound

Capacitive touch Volume and Mute controls

Compact design takes up minimal desk space

Three inputs – USB-C, 1/8" Aux, and Bluetooth® 5.0

Subwoofer output with jack detection

Subwoofer crossover mode

Headphone output

Please write the serial numbers here for future reference (i.e., insurance claims, tech support, return authorization, make dad proud, etc.)

Purchased at:

Date of purchase:

Introduction

Small size doesn't have to mean small sound.

CR2-X Cube desktop speakers with powerful BMR driver technology deliver unbelievably clear, room-filling sound from a compact footprint.

And with a host of connectivity options, they are perfect for any desk no matter how you need to get your audio to them. Go digital via USB, keep it analog with the Aux input, or eliminate the wires via Bluetooth®.

Built-in touch control offers a sleek look while providing easy volume adjustment and mute activation. And with the integrated headphone output, you can keep it a bit more private by simply plugging in your favorite headphones or earbuds.

If you want more bass, the built-in subwoofer output makes it easy to connect, plus it will optimize the system to work beautifully with the matching CR6S-X or any other sub.

Get the sound you want without the bulk with CR2-X Cube.

How to Use This Manual:

After this introduction, a getting started guide will help you get things set up fast. The hookup diagrams show some typical setups, while the remaining sections provide details of the CR2-X CUBE.

This icon marks information that is critically important or unique to the CR2-X CUBE. For your own good (and our peace of mind), please read and remember them. You will be quizzed later.

There's an illustration of a microscope, so, of course, you're going to get more detailed information when you see this little guy. There are explanations of features and practical tips listed here.

It's a good idea to pay attention to text displayed next to a note icon, as this icon draws attention to certain features and functions relating to the usage of the CR2-X CUBE.

Getting Started

We realize that you can't wait to hook up your CR2-X CUBE and try it out. Nevertheless, please take the time to read this page NOW, and the rest can wait until you're good and ready.

1. Make all initial connections with the power switches OFF on all equipment.

2. Connect the black (−) and red (+) RCA cables from the active speaker's ± RCA connectors to the passive speaker's ± RCA connectors.

3. Push the included line cord securely into the CR2-X Cube's power connector and plug the other end into an AC outlet.

4. Connect the line-level monitor signal from your computer or other line-level signal source to the input jacks (USB-C or 1/8″).

   ...AND / OR...

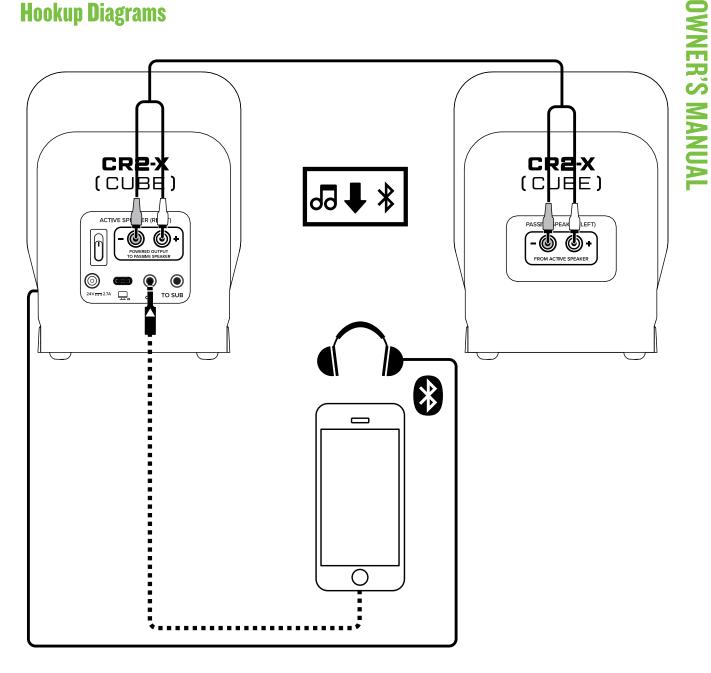   ...Connect your device via Bluetooth [instructions on page 9]...

5. Power up the CR2-X CUBE. [Rear panel power switch].

6. Confirm that the input selector switch has the correct input selected.

7. Be sure that the volume of the input is the same as it would be during normal use.

8. Play an audio file and slowly raise the input and output volumes to a comfortable listening level.

If you desire a more thorough walk-through of the CR2-X CUBE, there is a wealth of information in the following pages!

Additional Tidbits of Wisdom

- Never listen to loud music for prolonged periods. Please see the Safety Instructions on page 2 for information on hearing protection.

- Save the sales receipt and original packaging in case you ever need warranty service.

Hookup Diagrams

This is a typical use for CR2-X CUBE. This would be a prime example of utilizing it to play music. First, make sure the CR2-X CUBE is positioned for your setup. Next, connect RCA cables from the active speaker to the passive speaker.

Here a phone is connected to CR2-X CUBE via Bluetooth, although it can also be "hardwired" into the 1/8″ stereo input jack using an 1/8″ to 1/8″ cable. Both options are on display here.

Next, make sure that the input selector switch is set to either Bluetooth or 1/8″ / Aux, depending on how the phone is connected, of course.
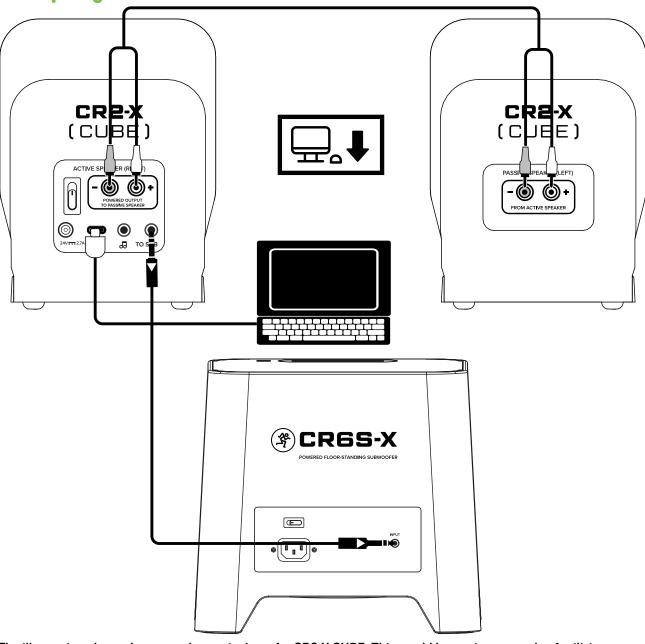
Now play audio through the phone, making sure that the volume of the phone and CR2-X CUBE are above "0". Once you hear audio, simply adjust volume to taste!

Optional: Is there someone who doesn't like what you're listening to? Well, first off, they're wrong. That's a given. There is a solution, though. Plugging a pair of Mackie headphones into the 1/8″ headphones jack auto-defeats the speaker output. The volume slider then controls the level going to the phones.

Music Playback

Hookup Diagrams continued...

The illustration above shows another typical use for CR2-X CUBE. This would be a prime example of utilizing it for gaming. First, make sure the CR2-X CUBE is positioned for your setup. Next, connect RCA cables from the active speaker to the passive speaker.

A gaming computer is connected to CR2-X CUBE utilizing a USB-C to USB-A cable.

Next, make sure that the input selector switch is set to USB. Don't forget to change the output to 'CR2-X CUBE' via Settings on your computer
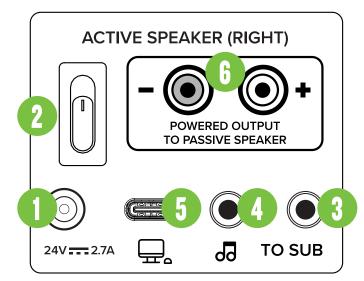
Now play audio through the computer, making sure that the volume of the computer and CR2-X CUBE are above "0". Once you hear audio, simply adjust volume to taste!

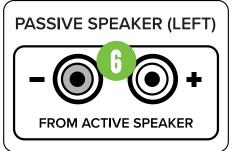Optional: As shown above, a CR6S-X subwoofer is connected to the CR2-X CUBE's 1/8" TO SUB output jack. Just imagine what your games and movies would sound like with one of these setups. Now stop imagining and go dial it up!

Optional: Plugging a pair of Mackie headphones into the 1/8" headphones jack auto-defeats the speaker output. The volume slider then controls the level going to the phones.

Gaming, Movies and More!

CR2-X CUBE: Rear Panel Features

ACTIVE SPEAKER (RIGHT)

6

2

POWERED OUTPUT
TO PASSIVE SPEAKER

1   5   4   3

24V ⎓ 2.7A   TO SUB

PASSIVE SPEAKER (LEFT)

6

FROM ACTIVE SPEAKER

1. Power Connector

CR2-X CUBE has a universal external power supply that accepts any AC voltage ranging from 100 VAC to 240 VAC. No need for voltage select switches. It will work virtually anywhere in the world. That's why we call it a "Planet Earth" power supply! It is less susceptible to voltage sags or spikes compared to conventional power supplies, and provides greater electromagnetic isolation and better protection against AC line noise.

Attach the AC connector (the smaller, shorter cable that plugs into the wall) to the power supply adapter (the bigger, longer cable that plugs into the CR2-X CUBE).

The power supply adapter may be connected to the CR2-X CUBE by pushing it into the power receptacle on the rear panel and plugging the other end into a live AC outlet. The LED on the power supply will illuminate blue to indicate that it is receiving power.

VERY IMPORTANT Only use the factory-authorized power supply that came with the CR2-X CUBE.

2. Power Switch

Press the top side of this rocker switch inwards to turn on the CR2-X CUBE. The front panel LED (of the active speaker) will illuminate green, confirming success. Additionally, it will state, "Power on. Bluetooth pairing mode." Press the bottom side of this rocker switch inwards to turn it off.

3. To Sub

Not much of a surprise here, as we would like you to connect this output to the input of a subwoofer using an 1/8" connector.

NOTE When connected, the CR2-X CUBE automatically shifts to sub mode, resulting in a roll-off of the low frequencies.

Of course, we would highly recommend the CR6S-X or CR8S-XBT subwoofer; see the hookup diagram on page 6 and check the Mackie website for more information!

4. 1/8" Stereo Input Jack

Connect a line-level signal from a smartphone, MP3 player or other signal source to this input jack using an unbalanced 1/8" connector.

It is wired as follows, according to standards specified by the AES (Audio Engineering Society):

Stereo 1/8" TRS
Sleeve = Shield (Ground)
Tip = Left Channel
Ring = Right Channel

5. USB

Since the CR2-X CUBE are "Compact Desktop Speakers," the USB connection will (most likely) be one of the most widely used features. In short, it works as an interface that allows audio to stream from the CR2-X CUBE via computer.

This is the connection that will be used for gaming, watching movies and fun cat videos, playing music or just about any other sound that is emitted from your computer.
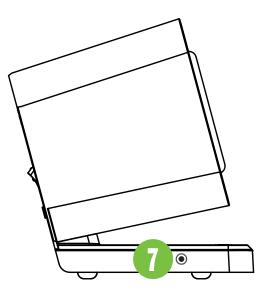
CR2-X CUBE: Rear Panel Features Continued...

Connect the USB-C side of a USB cable to the CR2-X CUBE and the USB-A side to the computer's USB port.

Don't forget to change the output to 'CR2-X CUBE' via Settings on your computer.

> **NOTE** CR2-X CUBE's USB connection is audio only. It is not a source of power.

6. RCA Connectors (±)

Connect the black (−) and red (+) RCA cables from the active speaker's ± RCA connectors to the passive speaker's ± RCA connectors.

CR2-X CUBE: Side Panel Features

7. Phones Output

This 1/8" TRS connector supplies the output to stereo headphones. The volume is controlled with the volume slider. The signal to the power amp is killed when headphones are connected.

The phones output is wired as follows, according to standards specified by the AES (Audio Engineering Society):

Stereo 1/8" TRS
Sleeve = Shield (Ground)
Tip = Left Channel
Ring = Right Channel

> **VERY IMPORTANT** **Warning:** The headphone amp is loud and could cause permanent hearing damage. Even intermediate levels may be painfully loud with some headphones. BE CAREFUL! Always turn the volume all the way down before connecting headphones. Then turn it up slowly as you listen carefully.

CR2-X CUBE: Top Panel Features

The features listed below are laid out horizontally on the right (active) speaker underneath the speaker, but above the power LED.

8. Input Selector Switch and LEDs

This is a momentary switch that cycles between the three input choices: USB, 1/8″ and Bluetooth.

Simply press this switch to cycle between the input selections. Each input selection is accompanied by a different colored LED.

- **USB [Purple]** – More information on page 7.
- **1/8″ / Aux [Amber]** – More information on page 7.
- **Bluetooth [Cyan]** – More information on page 9.

A CLOSER LOOK All inputs may be connected simultaneously, but only one input may be selected at a time. There are no issues when switching between sources. This includes a device connected via Bluetooth. Switching the source selection away from a connected device (Bluetooth) to USB or 1/8″ / Aux and back again will not disrupt the Bluetooth connection, for example.

NOTE Regardless of the currently selected input, when turning it off and on again, the CR2-X CUBE will always start by trying to pair – or successfully pairing – to Bluetooth. See the following page for instructions.

9. Volume

Tap or slide your finger in this indented volume bar to adjust the overall output level. The left side is quieter and right side is louder. The accompanying LEDs will illuminate white to display the volume level. Tapping (or sliding to) the far left side will mute the output. It would then be a single red LED.

VERY IMPORTANT Make sure that the signal level from the mixer, MP3 player, phone (or whatever device immediately precedes the CR2-X CUBE) is loud enough to produce sound. However, the computer's signal and CR2-X CUBE volume levels are "tied" to each other.

Bluetooth Connection

Upon powering up the CR2-X CUBE, the Bluetooth function is either:

(1) In sleep mode. See 'Pairing and connecting for the first time' or...

(2) ...Paired and connected. See 'Previously paired and connected devices'.

Pairing and connecting for the first time:

Start by changing the input selector switch to Bluetooth. The accompanying LED will illuminate and flash cyan while in pairing mode. Additionally, a voice prompt announces "Bluetooth pairing mode". [The LED will continue to flash until it has successfully paired and connected].

While CR2-X CUBE is in pairing mode, simultaneously scan for Bluetooth devices on the device. You should see 'CR2-X CUBE' appear in the list of "available devices". Select it by tapping it. From there, your Bluetooth device should indicate that it is successfully connected, a confirmation voice prompt announces, "connected" and the Bluetooth button will stop flashing and remain solid cyan. If it does not, start the pairing process again, and make sure that the CR2-X CUBE and device are both in pairing mode at the same time.

Previously paired and connected devices:

The Bluetooth connection will disconnect if it's out of range. Previously paired and connected devices will automatically reconnect when back within range. Additionally, it will automatically search and connect to remembered devices in range upon powering up.

NOTE To drop the device from being paired with the CR2-X CUBE, press and hold the Bluetooth button down for at least three seconds. A voice prompt announces "Bluetooth disconnected".

VERY IMPORTANT The Bluetooth may disconnect when affected by Electrostatic Discharge [ESD]. Manually reconnect the Bluetooth connection.

Appendix A: Service Information

If you think your CR2-X CUBE has a problem, please check out the following troubleshooting tips and do your best to confirm the problem. Visit the Support section of our website (www.mackie.com/support) where you will find lots of useful information such as FAQs and other documentation. You may find the answer to the problem without having to part with your CR2-X CUBE.

Troubleshooting

No power

- Make sure the power cord is plugged all the way into the AC outlet.

- Our favorite question: Is it plugged in? Make sure the AC outlet is live [check with a tester or lamp].

- The internal AC line fuse may be blown. This is not a user serviceable part. If you suspect the AC line fuse is blown, please see the "Repair" section next.

No sound

- Is the level for the input source turned all the way down? Verify that all the volume controls in the system are properly adjusted.

- Is the signal source turned up? Make sure the signal level from the computer, mixer, MP3 player, phone (or whatever device immediately precedes the CR2-X CUBE) is high enough to produce sound.

Poor sound

- Is it loud and distorted? Make sure that you're not overdriving a stage in the signal chain. Verify that all level controls are set properly.

- Are the input connectors plugged completely into the jacks? Be sure all connections are secure.

- If possible, listen to the signal source with headphones plugged into the preamp stage. If it sounds bad there, it's not the CR2-X CUBE.

- Too much bass or not enough bass? The first (and easiest) suggestion is to switch between EQ modes to see if that solves the issue. If not, move around the room and see if the bass response changes. It's possible your listening position coincides with a room mode where the low frequencies either become exaggerated or nulled. If so, try moving the CR2-X CUBE to a different position, or moving your listening position.

Noise / Hum / Buzz

- Check the signal cable between the computer/mixer/MP3 player/phone and the CR2-X CUBE. Make sure all connections are secure. These problems usually produce crackling noises, hum, or buzz.

- Make sure the signal cable is not routed near AC cables, power transformers, or other EMI sources (including wall warts and line lumps!). These sources usually produce hum.

- Is there a light dimmer or other triac-based device on the same AC circuit as the CR2-X CUBE? Dimmers cause buzzing noises. Use an AC line filter or plug the monitor into a different AC circuit.

- Excessive hiss is an indication of an incorrect gain setting somewhere before the speaker.

- If possible, listen to the signal source with headphones plugged in. If it sounds noisy there, it's not the CR2-X CUBE.

- Try disconnecting the cable connected to the input jack. If the noise disappears, it could be a "ground loop," rather than a problem with the CR2-X CUBE. Try some of the following troubleshooting ideas:
    - Use balanced connections throughout your system for the best noise rejection.
    - Whenever possible, plug all the audio equipment's line cords into outlets which share a common ground. The distance between the outlets and the common ground should be as short as possible.

Bluetooth or Other Issues

- Please email or call Technical Support if you are having Bluetooth or any other issue not listed here:
    - o mackie.com/support-contact
    - o 1-800-898-3211

Repair

For warranty service, refer to the warranty information on page 12.

Non-warranty service is available at a factory-authorized service center. To locate the nearest service center, visit www.mackie.com/support/service-locator. Service for a CR2-X CUBE living outside the United States may be obtained through local dealers or distributors.

If you do not have access to our website, please call our Tech Support department at 1-800-898-3211 (normal business hours, Pacific Time), to explain the problem. They will tell you where the nearest factory-authorized service center is located in your area.

Appendix B: Technical Information

CR2-X CUBE Specifications

Acoustic Performance

Frequency Response (-10 dB)	58 Hz – 20 kHz
Horizontal Coverage Angle	180º
Vertical Coverage Angle	180º
Maximum SPL Peak	103 dB
Dynamic Range	≥90 dB
Signal-to-Noise Ratio	≥90 dB
Monitor Angle	15˚

Transducers

High Frequency	2x 3.25 in / 83 mm BMR Drivers

Amplifiers

Rated Power	60 watts peak
Design	Class D

Input / Output

Input Type	1/8″ / USB-C / Bluetooth
Output Type	1/8″ Stereo Headphones
	1/8″ Stereo TRS (To Sub)

Bluetooth Information

Bluetooth Protocol	5.0
Bluetooth Function	Audio Streaming

Bit Depth / Sample Rate

Bit Depth	16-bit
Sample Rate	48 kHz

Power Requirements

CR2-X CUBE	24Vdc, 2.7A

Construction Features

Display LEDs	Front panel power LED
	Volume level
Operating Temperature	0 – 45 ˚C
	32 – 113 ˚F

Physical Properties

Height:	6.4 in / 163 mm
Width:	4.7 in / 119 mm
Depth:	6.0 in / 152 mm
Weight:	6.3 lb / 2.9 kg

Disclaimer

Since we are always striving to make our products better by incorporating new and improved materials, components, and manufacturing methods, we reserve the right to change these specifications at any time without notice.

The "Running Man" figure is a registered trademark of LOUD Audio, LLC.

All other brand names mentioned are trademarks or registered trademarks of their respective holders, and are hereby acknowledged.

CR2-X CUBE Dimensions

4.7 in / 119 mm

6.0 in / 152 mm

6.4 in
163 mm

WEIGHT
6.3 lb
2.9 kg

Limited Warranty

Please keep your sales receipt in a safe place.

This Limited Product Warranty ("Product Warranty") is provided by LOUD Audio, LLC ("LOUD") and is applicable to products purchased in the United States or Canada through a LOUD-authorized reseller or dealer. The Product Warranty will not extend to anyone other than the original purchaser of the product (hereinafter, "Customer," "you" or "your").

For products purchased outside the U.S. or Canada, please visit www.mackie.com to find contact information for your local distributor, and information on any warranty coverage provided by the distributor in your local market.

LOUD warrants to Customer that the product will be free from defects in materials and workmanship under normal use during the Warranty Period. If the product fails to conform to the warranty then LOUD or its authorized service representative will at its option, either repair or replace any such nonconforming product, provided that Customer gives notice of the noncompliance within the Warranty Period to the Company at: www.mackie.com or by calling LOUD technical support at 1.800.898.3211 (toll-free in the U.S. and Canada) during normal business hours Pacific Time, excluding weekends or LOUD holidays. Please retain the original dated sales receipt as evidence of the date of purchase. You will need it to obtain any warranty service.

For full terms and conditions, as well as the specific duration of the Warranty for this product, please visit www.mackie.com.

The Product Warranty, together with your invoice or receipt, and the terms and conditions located at www.mackie.com constitutes the entire agreement, and supersedes any and all prior agreements between LOUD and Customer related to the subject matter hereof. No amendment, modification or waiver of any of the provisions of this Product Warranty will be valid unless set forth in a written instrument signed by the party to be bound thereby.

Need help with the CR2-X CUBE?

• Visit www.mackie.com/support to find: FAQs, manuals, addendums, and other documents.

• Email us at: www.mackie.com/support-contact

• Telephone 1-800-898-3211 to speak with one of our splendid technical support chaps (Monday through Friday, normal business hours, Pacific Time).

MACKIE.

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