

ORION CM654

ORION Cobalt CM654 6.5-inch Mid-Range Loudspeakers Instruction Manual

Model: CM654

1. PRODUCT OVERVIEW

The ORION Cobalt CM654 Mid-Range Bullet Loudspeakers are designed to enhance your vehicle's audio system with high-efficiency sound reproduction. These speakers deliver balanced sound across a wide frequency range, focusing on clear mid-range frequencies.

Key Features:

- **High Power Handling:** 1000W Max Power and 250W RMS for dynamic sound without distortion.
- **Advanced Voice Coil:** Features a 1.5-inch high-temperature voice coil for exceptional performance and efficiency.
- **Bullet Design:** The integrated bullet design extends high-frequency response while maintaining strong mid-range output.
- **Robust Construction:** Equipped with a steel basket to manage high power and minimize vibrations, and a robust 20 Oz Ferrite magnet structure for consistent performance.
- **High Sensitivity:** 96.67 dB efficiency for clear audio output.



Figure 1: Pair of ORION Cobalt CM654 Mid-Range Loudspeakers.

This image displays a pair of ORION Cobalt CM654 6.5-inch mid-range bullet loudspeakers, showcasing their design and construction.



Figure 2: Key performance specifications of the CM654 speakers.

This image highlights the high-performance aspects of the ORION Cobalt CM654 speakers, including power rating (250W RMS / 1000W Max), 4-ohm impedance, 120Hz-10kHz frequency response, and a 1.5-inch voice coil diameter.

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating your ORION Cobalt CM654 loudspeakers. Failure to follow these guidelines may result in injury or damage to the product or vehicle.

- **Professional Installation Recommended:** Due to the complexity of car audio systems, professional installation is highly recommended.
- **Power Disconnection:** Always disconnect the vehicle's battery negative terminal before beginning any electrical work to prevent short circuits and electrical shock.

- **Wiring:** Ensure all wiring is correctly routed and secured to prevent pinching, chafing, or damage. Use appropriate gauge wire for power and speaker connections.
- **Mounting:** Securely mount speakers to prevent them from becoming loose during vehicle operation, which could cause injury or damage.
- **Volume Levels:** Prolonged exposure to high volume levels can cause hearing damage. Operate your audio system at safe listening levels.
- **Heat:** Ensure adequate ventilation around amplifiers and speakers to prevent overheating.

3. PACKAGE CONTENTS

Verify that all items are present and in good condition upon opening the package. If any items are missing or damaged, contact your retailer.

- ORION Cobalt CM654 6.5-inch Mid-Range Loudspeakers (Pair)
- Mounting Hardware (screws, clips) - *May vary by package*
- Instruction Manual (this document)

4. INSTALLATION AND SETUP

Proper installation is crucial for optimal performance and longevity of your speakers. Follow these general guidelines for installation.

4.1 Mounting the Speakers

1. **Choose Location:** Identify suitable mounting locations in your vehicle (e.g., door panels, rear deck). Ensure sufficient depth and clearance.
2. **Measure and Cut:** Use the speaker's mounting diameter (5.67 inches) and mounting depth (2.63 inches) to prepare the opening. Carefully cut the mounting hole if necessary, ensuring no damage to existing wiring or vehicle components.
3. **Secure Mounting:** Place the speaker into the opening. Use the provided mounting screws to secure the speaker firmly to the mounting surface. Avoid overtightening.



Figure 3: Detailed dimensions for ORION Cobalt CM654 speakers.

This image provides critical measurements for installation, including an overall diameter of 6.54 inches, mounting diameter of 5.67 inches, overall depth of 2.84 inches, and mounting depth of 2.63 inches.

4.2 Wiring the Speakers

The CM654 speakers have a 4 Ohm impedance. Ensure your amplifier or head unit is compatible with this impedance and can provide adequate power (250W RMS per speaker is recommended).

1. **Identify Terminals:** Locate the positive (+) and negative (-) terminals on the back of each speaker. These are typically marked.
2. **Connect Speaker Wire:** Connect the positive (+) speaker wire from your amplifier to the positive (+) terminal on the speaker. Connect the negative (-) speaker wire from your amplifier to the negative (-) terminal on the speaker.
3. **Secure Connections:** Ensure all connections are tight and free from shorts. Use proper connectors or solder for reliable contact.
4. **Route Wires:** Route speaker wires away from sharp edges, moving parts, and potential sources of electrical interference.



Figure 4: Rear view of the ORION Cobalt CM654 speaker showing wiring terminals.

This image provides a clear view of the speaker's rear, highlighting the positive and negative terminals for electrical connections.

5. OPERATING INSTRUCTIONS

Once installed, follow these steps to operate your ORION Cobalt CM654 loudspeakers:

1. **Initial Power-Up:** Reconnect the vehicle's battery. Turn on your head unit or amplifier.
2. **Volume Adjustment:** Start with the volume at its lowest setting. Gradually increase the volume to a comfortable listening level.
3. **Audio Settings:** Adjust the equalizer (EQ) and crossover settings on your head unit or amplifier to optimize sound quality. For mid-range speakers, it is recommended to use a high-pass filter to prevent them from playing very low bass frequencies, which can cause distortion and damage. A typical crossover point for mid-range speakers might be around 120Hz or higher.
4. **Break-in Period:** Allow a break-in period of several hours of normal listening to allow the speaker components to loosen up and achieve their optimal sound characteristics.

6. MAINTENANCE

Regular maintenance ensures the longevity and performance of your speakers.

- **Cleaning:** Use a soft, dry cloth to gently wipe dust and debris from the speaker cones and surrounds. Avoid using harsh chemicals or excessive moisture.
- **Inspection:** Periodically check speaker mounts and wiring connections for tightness and signs of wear or corrosion.
- **Environmental Factors:** Protect speakers from extreme temperatures, direct sunlight, and excessive moisture.

7. TROUBLESHOOTING

If you experience issues with your ORION Cobalt CM654 loudspeakers, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No sound from speaker(s)	Loose or disconnected wiring; Amplifier off or in protect mode; Faulty speaker.	Check all wiring connections; Verify amplifier power and status; Test speaker with another known good source.
Distorted or unclear sound	Incorrect amplifier gain settings; Improper crossover settings; Speaker damage; Overpowering speaker.	Adjust amplifier gain to match head unit output; Set high-pass filter correctly; Inspect speaker cone for damage; Reduce volume or power.
Intermittent sound	Loose wiring connection; Short circuit in wiring.	Check and secure all wiring connections; Inspect wires for damage or shorts.

If the problem persists after attempting these solutions, consult a professional car audio technician.

8. SPECIFICATIONS

Detailed technical specifications for the ORION Cobalt CM654 6.5-inch Mid-Range Loudspeakers.

Feature	Specification
Model Name	Cobalt CM65

Feature	Specification
Speaker Type	Midrange
Speaker Size	6.5 Inches
Speaker Maximum Output Power	1000 Watts (Max)
RMS Power	250 Watts
Impedance	4 Ohm
Frequency Response	120Hz - 10kHz
Voice Coil Diameter	1.5 Inches
Efficiency (Sensitivity)	96.67 dB
Mounting Type	Door Mount
Overall Diameter	6.54 Inches
Mounting Diameter	5.67 Inches
Overall Depth	2.84 Inches
Mounting Depth	2.63 Inches
Item Weight	5 Pounds (per pair)
Color	Black
Manufacturer	ORION
UPC	818550010130

9. WARRANTY AND SUPPORT

9.1 Limited Warranty







ORION products are covered by a limited warranty against defects in materials and workmanship under normal use. The specific terms and duration of the warranty may vary by region and product. Please retain your proof of purchase for warranty claims.

9.2 Customer Support

For technical assistance, warranty inquiries, or service, please contact ORION customer support through their official website or the retailer from whom you purchased the product. Provide your product model number (CM654) and proof of purchase when contacting support.

You can visit the official ORION store for more information:[ORION Car Audio Store](#)

Related Documents - CM654

 <p>Badger Meter ORION® Water Endpoints</p> <p>Installation Manual</p>	<p>Badger Meter ORION Water Endpoints Installation Manual</p> <p>This manual provides comprehensive installation instructions for Badger Meter ORION Cellular, Fixed Network, Migratable, and Classic water endpoints. It covers product unpacking, licensing, identification, endpoint configurations, installation guidelines for various environments (indoor, outdoor, pit), activation procedures, and details on numerous installation kits and integral endpoint configurations. The document also includes important safety warnings and compliance information.</p>
 <p>AAON</p> <p>MiniLink PD 5 Technical Guide</p>	<p>AAON MiniLink PD 5 Technical Guide: Installation, Wiring, and Configuration</p> <p>Comprehensive technical guide for the AAON MiniLink PD 5, detailing installation, wiring diagrams (terminal and modular), configuration options, baud rate settings, and system integration with VAV/Zone BACnet controllers and Orion control systems.</p>
 <p>User Manual</p> <p>MRC</p>	<p>Antelope Audio MRC User Manual</p> <p>User manual for the Antelope Audio MRC Multichannel Remote Controller, detailing its features, setup, operation, troubleshooting, and warranty information.</p>
 <p>Installation and User's Guide</p> <p>PUBLIC VIEW MONITOR SERIES (10-32 inches)</p>	<p>Orion Public View Monitor Series (10-32 Inch) Installation and User's Guide</p> <p>Comprehensive installation and user guide for the Orion Public View Monitor Series, covering safety instructions, installation procedures, OSD menu settings, features, and troubleshooting for models ranging from 10 to 32 inches.</p>
 <p>Badger Meter ORION® Water Endpoints</p> <p>Installation Manual</p>	<p>Badger Meter ORION Water Endpoints Installation Manual</p> <p>Comprehensive installation guide for Badger Meter ORION Cellular, Fixed Network, and Classic water endpoints, covering product identification, configuration, installation kits, activation, and connectivity.</p>
 <p>ORION HX Non-Linear Junction Detector User Manual</p> <p>REI</p>	<p>ORION HX Non-Linear Junction Detector User Manual</p> <p>Comprehensive user manual for the ORION HX Non-Linear Junction Detector by Research Electronics International, detailing setup, operation, features, specifications, and technical background for identifying hidden electronic devices.</p>



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