

## Sundown Audio U-12 D2

# Sundown Audio U-12 D2 U-Series Subwoofer Instruction Manual

## INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Sundown Audio U-12 D2 12-inch U-Series Subwoofer. Please read these instructions carefully before use to ensure optimal performance and longevity of your product.

## PRODUCT SPECIFICATIONS

Specification	Value
Model Name	U-12 D2
Speaker Type	Subwoofer
Subwoofer Diameter	12 Inches
RMS Power Rating	1500 Watts
DC Resistance (Re)	3.8 $\Omega$
Resonance Frequency (Fs)	42.2 Hz
Equivalent Volume (Vas)	17.9 L
Electrical Q Factor (Qes)	0.30
Mechanical Q Factor (Qms)	2.67
Total Q Factor (Qts)	0.27
Voice Coil Inductance (Le)	2.41 mH

Specification	Value
Force Factor (BL)	31.2 NA
Moving Mass (Mms)	290.2 g
Suspension Compliance (Cms)	0.05 mm/N
Sensitivity	88.4 dB 1w / 1m
Recommended Sealed Box Volume	1.0 cu. ft.
Recommended Ported Box Volume	2.0 cu. ft.
Displacement	0.21 cu. ft.
Mounting Depth	7.75 in
Outside Diameter	12.83 in
Cutout Diameter	11.01 in
Recommended Tuning	32 Hz
Recommended Port Area	32 sq. in
Mounting Type	Flush Mount
Material	Aluminum, Ferrite
Item Weight	54.9 pounds

## PRODUCT OVERVIEW

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**WOOFERS ETC**

Front view of the Sundown Audio U-12 D2 subwoofer, highlighting the black cone and surround with the brand's logo.



# WOOFERS ETC

Side profile of the Sundown Audio U-12 D2 subwoofer, showcasing the robust basket and speaker terminals for wiring connections.



Angled view of the Sundown Audio U-12 D2 subwoofer, providing a closer look at the speaker terminals and a portion of the voice coil assembly.



Rear view of the Sundown Audio U-12 D2 subwoofer, illustrating the substantial magnet structure and the speaker terminals.

## INSTALLATION AND SETUP

Proper installation is crucial for the performance and longevity of your subwoofer. It is recommended that installation be performed by a qualified professional.

### Enclosure Recommendations

The U-12 D2 subwoofer is designed to perform optimally in specific enclosure types. Refer to the specifications section for recommended volumes:

- **Sealed Enclosure:** Recommended volume of 1.0 cubic feet.
- **Ported Enclosure:** Recommended volume of 2.0 cubic feet with a tuning frequency of 32 Hz and a port area of 32 square inches.

Ensure the enclosure is robust, airtight (for sealed), and properly braced to prevent rattles and vibrations.

### Wiring Configurations

The U-12 D2 features dual 2-Ohm voice coils. Proper wiring to your amplifier is essential to achieve the desired

impedance load and prevent damage to the amplifier or subwoofer.

- **Parallel Wiring (1 Ohm Load):** Connect the positive terminal of voice coil 1 to the positive terminal of voice coil 2. Connect the negative terminal of voice coil 1 to the negative terminal of voice coil 2. Then, connect the combined positive to the amplifier's positive output and the combined negative to the amplifier's negative output. This configuration results in a 1-Ohm load.
- **Series Wiring (4 Ohm Load):** Connect the positive terminal of voice coil 1 to the amplifier's positive output. Connect the negative terminal of voice coil 1 to the positive terminal of voice coil 2. Connect the negative terminal of voice coil 2 to the amplifier's negative output. This configuration results in a 4-Ohm load.

Always verify the final impedance with a multimeter before connecting to an amplifier. Ensure your amplifier is stable at the chosen impedance load.

## Amplifier Matching

Select an amplifier that can provide 1500 Watts RMS at the chosen impedance. Using an underpowered or overpowered amplifier can lead to damage. Consult your amplifier's manual for its power output capabilities.

## OPERATING INSTRUCTIONS

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### Break-in Period

Allow for a break-in period of approximately 20-30 hours of moderate listening before operating the subwoofer at full power. This allows the suspension components to loosen and reach their optimal performance characteristics.

### Gain Setting

Set the amplifier gain correctly to match the output voltage of your head unit. Incorrect gain settings can lead to clipping and damage to the subwoofer. It is recommended to use an oscilloscope or consult a professional for proper gain setting.

### Crossover Settings

Utilize a low-pass filter (LPF) on your amplifier or head unit to send only low frequencies to the subwoofer. A typical LPF setting for subwoofers is between 60 Hz and 80 Hz, with a slope of 12dB or 24dB per octave. Adjust to blend seamlessly with your main speakers.

### Avoiding Distortion

Avoid operating the subwoofer at levels that produce audible distortion. Distortion indicates that the amplifier or subwoofer is being overdriven, which can cause permanent damage to the voice coil.

## MAINTENANCE

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The Sundown Audio U-12 D2 subwoofer requires minimal maintenance. Follow these guidelines to ensure its longevity:

- **Cleaning:** Use a soft, dry cloth to gently wipe the cone and surround. Avoid using harsh chemicals or excessive moisture.
- **Inspection:** Periodically inspect the speaker terminals and wiring for secure connections and any signs of corrosion or damage.
- **Environment:** Ensure the subwoofer is installed in a dry environment, protected from extreme temperatures and direct sunlight.

## TROUBLESHOOTING

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If you experience issues with your subwoofer, refer to the following common troubleshooting steps:

- **No Sound:**

- Check all wiring connections from the amplifier to the subwoofer and from the head unit to the amplifier.
- Verify the amplifier is powered on and receiving a signal.
- Ensure the head unit's subwoofer output is enabled and volume is up.
- Check amplifier fuses.

- **Distorted Sound:**

- Reduce the amplifier gain.
- Check for proper crossover settings.
- Ensure the subwoofer is not over-excursing (moving too far in and out).
- Inspect the subwoofer cone and surround for any physical damage.

- **Overheating Amplifier:**

- Verify the subwoofer's impedance matches the amplifier's stable operating impedance.
- Ensure adequate ventilation around the amplifier.
- Check for short circuits in the wiring.

If problems persist after following these steps, contact a qualified car audio technician or Sundown Audio customer support.

## WARRANTY AND SUPPORT

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The Sundown Audio U-12 D2 subwoofer comes with an extended warranty. For specific details regarding warranty coverage, terms, and conditions, please refer to the warranty documentation included with your purchase or visit the official Sundown Audio website.

For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact Sundown Audio customer support. Contact information can typically be found on the product packaging or the manufacturer's website.