

# LIMITED WARRANTY ONE YEAR

Reference Series Automotive Speakers, Electronics

## HOW LONG IS THIS WARRANTY?

This warranty remains in effect for one year from date of purchase.

## WHO IS PROTECTED BY THIS WARRANTY?

This warranty protects the original owner and is not transferable, providing that the product has been purchased in the United States. The original dated bill of sale from an authorized Infinity dealer must be presented whenever warranty service is required. For warranty service outside the United States, contact the Infinity distributor in the country where the product was purchased.

## WHAT IS COVERED BY THIS WARRANTY?

Except as specified below, this warranty covers all defects in materials and workmanship. The following are not covered: damage caused by accident, misuse, abuse, product modification or neglect, damage occurring during shipment, damage from failure to follow instructions contained in the instruction manual, damage resulting from the performance of repairs by someone not authorized by Infinity, or any claims based on misrepresentations by the seller. This warranty does not cover incidental or consequential damages. It does not cover the cost of removing or reinstalling the unit.

You are responsible for transporting your product for repair. However, Infinity will pay return charges if the repair is covered under warranty. Outside the United States, please contact your local distributor.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above may not apply to you.

PLEASE MAKE NOTE OF THE FOLLOWING  
INFORMATION AND RETAIN FOR YOUR RECORDS:

Product Name: \_\_\_\_\_ Model Number: \_\_\_\_\_

Store Name And Phone: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_



Infinity Systems, Inc. • 20630 Nordhoff Street  
Chatsworth, CA 91311, USA • VOICE (818) 407-0228 • FAX (818) 709-9486



# REFERENCE 1210W 12" Subwoofer INSTRUCTIONS

Thank you for purchasing an Infinity Reference 1210W 12" Subwoofer. You've selected a premium product that offers superior performance and advanced materials, resulting from over 25 years of loudspeaker design. This Infinity product is made with our ongoing dedication to create the best consumer audio products possible. As a result, you can expect your new Reference Subwoofer to provide you with many years of listening enjoyment.

We have included three enclosure types—sealed, vented, and single-reflex bandpass—with three different alignments (i.e., tuning preferences) for each box. Please refer to the discussion in *Subwoofer Enclosure Trade-Offs* and associated performance graphs (on the inside pages) to select a desired enclosure type and alignment.

Each Infinity Reference 1210W 12" Subwoofer is covered by our full one-year parts and labor warranty (see back page). Keep your original dated bill of sale in case warranty service is required.

**IMPORTANT:** *Installation of automotive stereo components can require extensive experience in dealing with a variety of electrical, and mechanical procedures, including subwoofer box building. Although these instructions explain how to install a Reference Subwoofer in a general sense, they do not show the exact installation methods for your particular vehicle. If you do not have the experience, do not attempt the installation yourself; instead ask your Authorized Infinity Car Audio Dealer about professional installation options.*

## PRECAUTIONS

- Always wear protective eyewear when using tools.
- Turn off all audio systems and other electrical devices before starting the installation.
- Disconnect the (-) negative lead from your vehicle's battery.

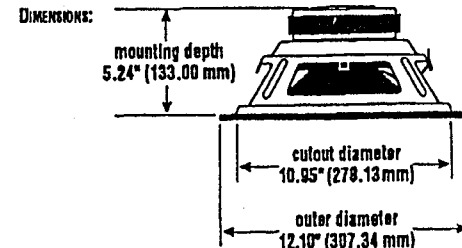
- Locate and note all fuel lines, hydraulic brake lines, and electrical wiring. Use extreme caution when cutting or drilling in and around these areas.
- Check clearances on both sides of a planned mounting surface before drilling any holes or installing any screws.

## THIEE-SMALL PARAMETERS

FREE-AIR RESONANCE:	$F_s$ (Hz)	34.00
COMPLIANCE VOLUME:	$V_{AS}$ (ft <sup>3</sup> )	3.57
	$V_{AS}$ (LITERS)	101.00
MECHANICAL Q:	$Q_{MS}$	5.54
ELECTRICAL Q:	$Q_{ES}$	0.34
TOTAL Q:	$Q_{TS}$	0.33
MAXIMUM EXCURSION:	$X_{MAX}$ (IN)	0.29
	$X_{MAX}$ (MM)	7.50
VOICE COIL DC RESISTANCE:	$R_E$ (OHMS)	3.40

## SPECIFICATIONS

DIAMETER:	12" (304.8 mm)
SENSITIVITY (2.83 V @ 1 m):	95 dB
POWER HANDLING:	250 W <sub>RMS</sub>
FREQUENCY RESPONSE:	25 - 600 Hz
NOMINAL IMPEDANCE:	4 OHMS



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## SUBWOOFER ENCLOSURE TRADE-OFFS

Subwoofer enclosures are classified as sealed (acoustic suspension) or ported (bass-reflex), and can be built in many configurations. Here we discuss three popular box types and encourage you to compare their response curves, noting the differences in Reference 1210w output level and frequency response versus volume in sealed, vented, and single-reflex band-pass enclosures.

A sealed enclosure is the smallest and simplest to build, with high power handling, good phase coherence, and the most predictable response, at the expense of somewhat diminished sound output. If amplifier power is not a concern, this is the best choice for most systems, providing the highest output at the lowest frequencies.

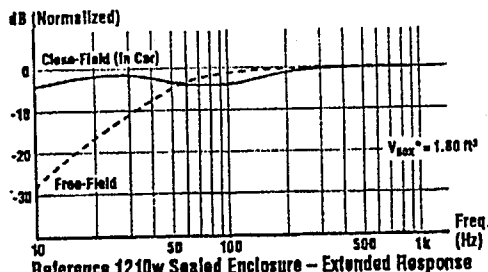
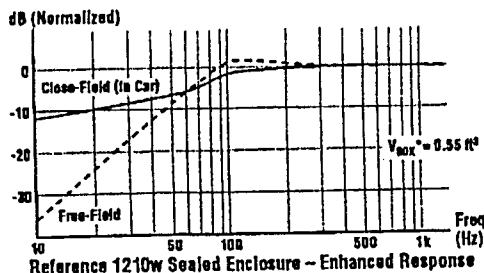
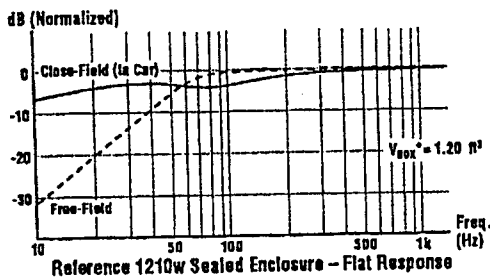
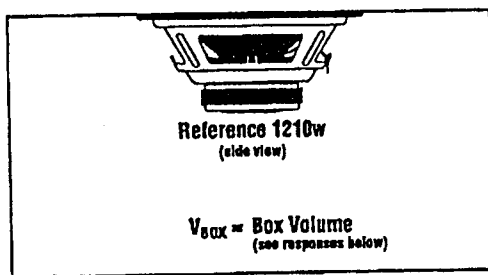
A vented enclosure adds a port (or vent) tuned to the speaker's resonance in the box to help boost sound output by "tuning" the rear sound waves so they add to the front ones. It is more efficient than a sealed box above the tuned frequency, but more difficult to build properly. For frequencies below the tuned range, output is lessened due to sound cancellation, and there is a 180-degree phase shift at the tuned frequency. Other drawbacks are the increased box size for the added port and diminished power handling due to woofer over-excitation at frequencies below the tuned frequency.

A single-reflex band-pass enclosure counteracts the sound cancellation properties in vented designs by isolating the subwoofer from the port within its own enclosure. It offers higher power handling, and an automatic band-pass response to help roll off higher frequencies. However, it has a 180-degree phase shift at the tuned frequency. Also, complexity and size are increased, due to separate front and rear chambers, and it requires adding substantial midbass drivers elsewhere in the car.

We recommend a sealed enclosure for the Reference 1210w. Depending on your taste in music, you can select a box volume for a flat, enhanced, or extended bass response (see graphs on right). The flat response is optimum for all enclosures and types of music. The enhanced sealed box provides a "tighter" bass, great for rock and rap. An enhanced vented box has increased output, but with diminished transient response and power handling. The extended sealed box is more efficient at the lowest frequencies, providing added bass boost for jazz and classical music, but with diminished power handling. The extended response curve provides the best power handling for vented enclosures.

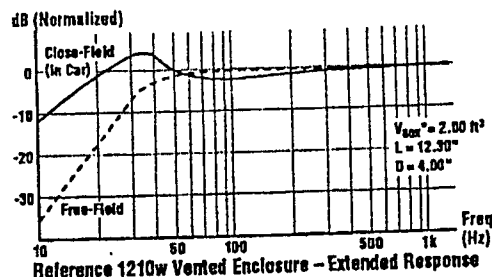
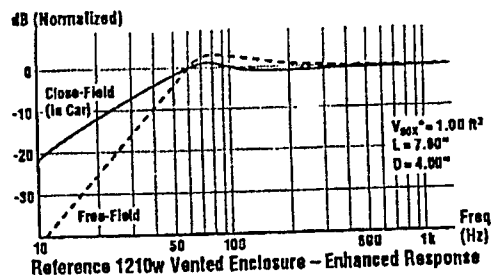
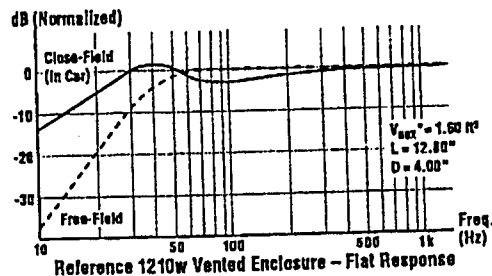
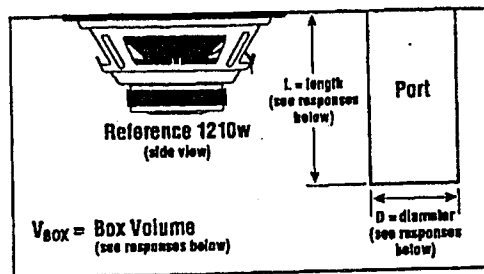
For more help, please call Infinity technical support at: (800) 553-3332

## REFERENCE 1210W SEALED ENCLOSURE



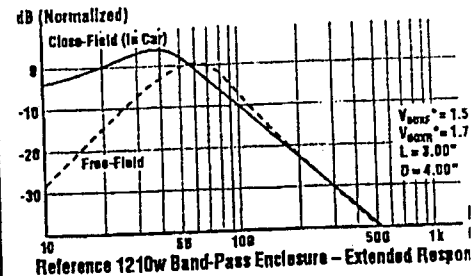
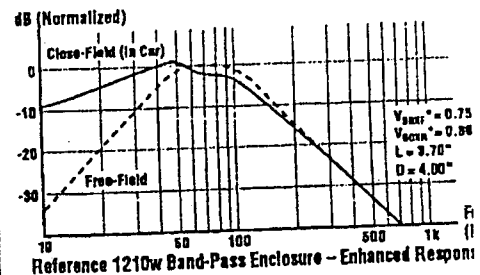
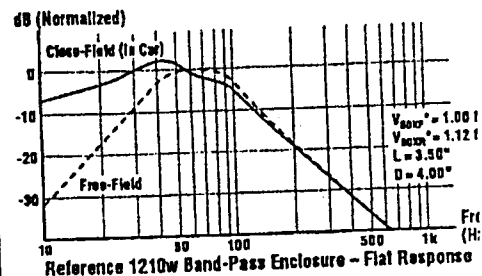
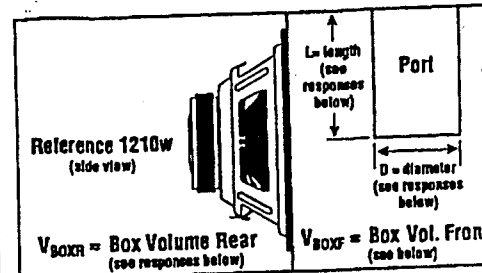
*If filling is desired, reduce box volume by 20%.*

## REFERENCE 1210W VENTED ENCLOSURE



*If filling is desired, reduce box volume by 20%.*

## REFERENCE 1210W BAND-PASS ENCLOSURE



*If filling is desired, reduce box volume by 20%.*