STEALTH

LR30W

INVISIBLE SUBWOOFER

QUAD 8″ INVISIBLE SUBWOOFER SYSTEM IN-WALL OR IN-CEILING

LINEARADIANCE

INVISIBLE SPEAKERS | SUBWOOFERS

Recommended Applications:

Home Theater / Surround Sound
Multi-Room Audio Systems
Added Bass for Foreground Music Systems
Added Bass for Background Music Systems

Recommended Installations:

Flush mounted in walls or ceilings constructed of wood or steel framing with ½" (13 mm) or thicker gypsum wallboard.

Min. Cavity Depth Required:

3¼" (83 mm) or 2 13/16" (71 mm) with back box removed.

Performance:

200W RMS (per panel)
120W min (per panel)
20Hz to 160Hz (see Figure 1)

On-Site Finish Options:

Finish options include latex paint, flat finish, orange peel texture, light plaster, light wallpaper, light fabric, wood veneer, and other selected approved finishes.

The Stealth Acoustics Model LR30W is a two-panel monaural subwoofer speaker system that becomes completely invisible after installation. The subwoofer has a rigid frame that attaches directly to standard structural framing. The paintable active diaphragm face is bonded to the frame of the speaker panel, creating an active area surrounded by a stable mounting area. Installation instructions are shown on a paper overlay that is to be removed before installation. The overlay can also be used as a cutting template for retrofitting the speakers into existing wallboard.

The LR30W may be installed in either the wall or ceiling and on-site finishing options include latex paint, light wallpaper, fabrics and selected texture coats. There is no need for special vellums or other nonstandard wallboard finishing materials. Advanced finishing methods may be supported using special techniques.

Ideal for any surround sound, foreground music or whole-house audio system that needs extra bass output, each LR30W panel incorporates two acoustically coupled, high-quality, low profile high-power 8" (203 mm) cone woofers. The panels work in pairs as a monaural output subwoofer. This two-panel system allows each panel to be placed wherever they perform best, free of visual concerns that may conflict with architectural features. LR30W panels may be mounted separately or stacked to achieve desired acoustical results. For stereo subwoofers, four panels should be employed.

Using acoustic lever principals, the LR30W provides exceptional bass output from 20Hz to 160Hz by trading off excursion for surface area to propagate bass waveforms.

For proper registration, each speaker must be installed so that the surface of the perimeter edge is flush with the adjoining wallboard. When correctly in place, the surface of the speaker face panel extends above the height of the wallboard by 1/16" (1.6 mm). This is done to allow space for the tape and joint compound needed to blend the panel into the wall. Shims are included to allow for mounting in wallboard thicker than ½" (13 mm).

Stealth Acoustics recommends the companion model SA255-MKII 250-watt subwoofer amplifier/crossover as a matched amplifier for the LR30W subwoofer speakers. Stealth Acoustics also offers a line of full-range speaker panels that when combined with the LR30W, deliver a complete, totally invisible audio solution

All Stealth Acoustics speakers are covered by a 20-year manufacturer's warranty.

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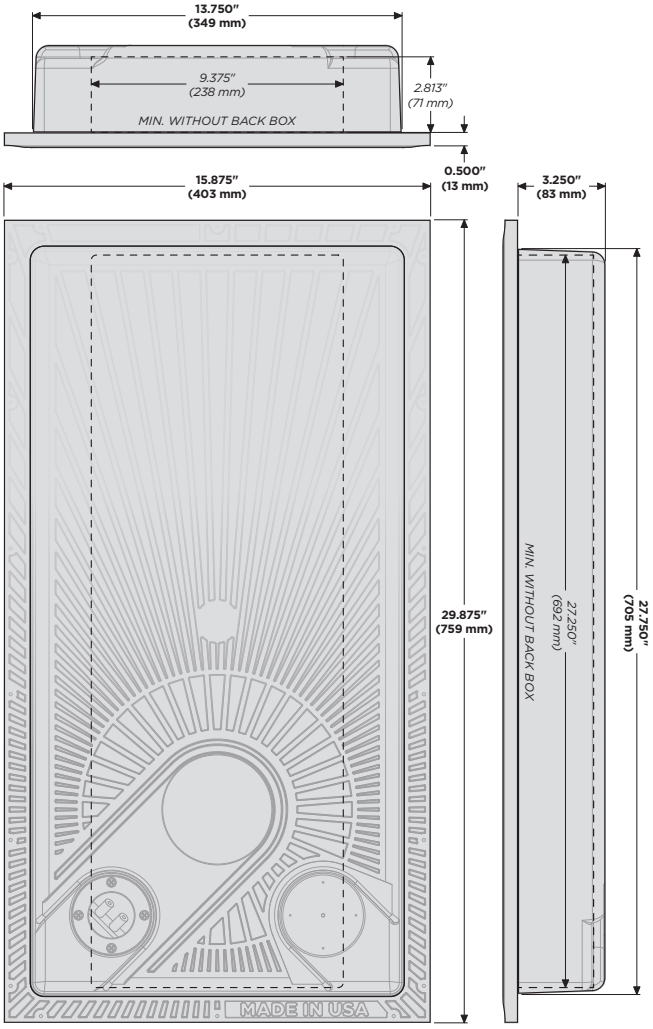
Architectural & Engineering Specifications

The subwoofer shall be an invisible, low frequency flat-panel system, with an operating range from 20Hz to 160Hz. It shall be a two panel system with each panel having a total radiating surface of 326 sq. in (2,103 sq. cm). Each panel shall be driven by two 8" (203 mm) woofers with a nominal impedance of 16Ω per panel and a power handling of 100 watts RMS according to EIA standard RS-426-A. The panels may be wired in parallel with an impedance of 4Ω.

The subwoofer shall fit into walls or ceilings with standard wood or steel stud construction and a minimum cavity depth of 3¼" (83 mm) or 2 13⁄16" (72 mm) with back box removed. The loudspeaker shall mount directly to the structural framing and have the capability of seamlessly adjoining ½" (13 mm) or thicker gypsum wallboard. The minimum distance between framing members shall be 13¾" (349 mm) or 9⅜" (238 mm) with back box removed. Face panel finishing methods shall be consistent with normal gypsum wallboard finishing techniques and may include latex paint, light wallpaper, light fabric, wood veneer and other selected approved finishes as specified.

The subwoofer shall be the Stealth Acoustics Model LR30W and shall carry a 20-year manufacturer's warranty.



Standard Installation

Product Specifications

Frequency Response:
20Hz to 160Hz (see Figure 1)

Power Capacity:
200 watts RMS (per panel)
120 watts minimum recommended power (per panel)

Sensitivity:
86 dB (1 watt / 1 meter)

Driver Components:
Low-frequency: Two 1½" (38 mm) voice coil 8" (203 mm) woofers with 20 oz. (567 gr) ceramic magnet

System Impedance:
The impedance may be changed from 4Ω (in parallel) to 16Ω (in series) via a jumper on the back of each panel.

Polar Dispersion:
170 degrees vertical and horizontal

Crossover Frequency:
Requires amplifier with low pass filter. 50Hz with 18 dB slope recommended

Dimensions:

Width:	15⅞" (403 mm)
Height:	29⅞" (759 mm)
Mounting Depth:	3¼" (83 mm)
	2 13⁄16" (71 mm) with back box removed

Product Weight:
26 lbs. (11.8 kg) each

Shipping Weight:
55 lbs. (25 kg) per system

Included Accessories:
Mounting shims
Mounting screws

Optional Accessories:

SA255-MKII	Stealth Acoustics Subwoofer Amplifer
PS-30	PlaceSaver™
MBX-30	UL Listed Metal Back Box
MBA-30	UL Listed Metal Back Box - Adjustable
MBC-30	Concrete Back Box
SK-1	Shim Kit

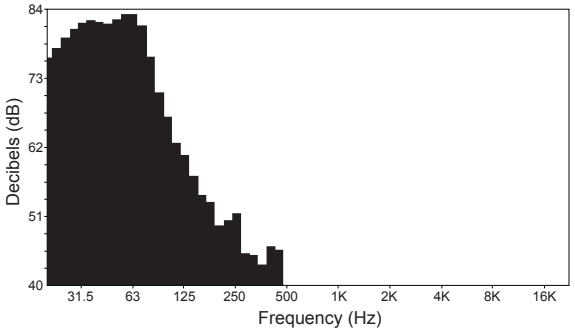


Figure 1: On-axis frequency response in standard stud wall with four coats of latex paint applied to the speaker face panel.

STEALTH ACOUSTICS

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STEALTH

LR30W
INVISIBLE SUBWOOFER

QUAD 8" INVISIBLE SUBWOOFER SYSTEM
WIRING INSTRUCTIONS & DIAGRAMS

Setting up the LR30W

The Stealth SA255-MKII subwoofer amplifier is a single channel (mono) amplifier designed to power LR30W speakers at 8-4 ohms and is available from your Stealth Acoustics Dealer.

To use a subwoofer amplifier other than the Stealth SA255-MKII, it must produce 250 – 350 watts RMS per channel into 8-4 ohms (depending on the speaker configuration). An active crossover prior to the subwoofer amplifier is also required, as there is no built-in crossover on the LR30W. Many surround sound receivers have a subwoofer crossover output (check the receiver manual to be sure).

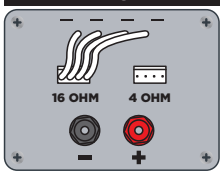
Use the diagrams at right to configure the LR30W speakers to match the amplifier load specifications.

Stereo Subwoofers

To use LR30W speakers for stereo subwoofer configurations, either use two panels set to **16 OHM** (creating an 8 ohm load) per left and right channel, or one LR30W panel set to **4 OHM** (creating a 4 ohm load) per left and right channel.

LOAD CALCULATION

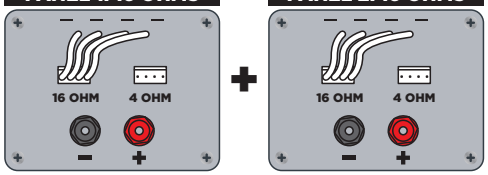
DEFAULT:



= **16 OHM LOAD**

When each panel is configured with the connector in the **16 OHM** position (factory default) and the two panels are wired in parallel, the system load becomes 8 ohms at the amplifier.

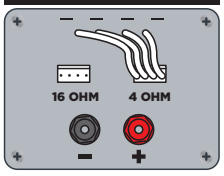
PANEL 1: 16 OHMS + **PANEL 2: 16 OHMS**



= **8 OHM LOAD**

When wired in parallel.

PANEL 1: 4 OHMS



= **4 OHM LOAD**

If only a single LR30W panel is to be used, move the connector to the **4 OHM** position.

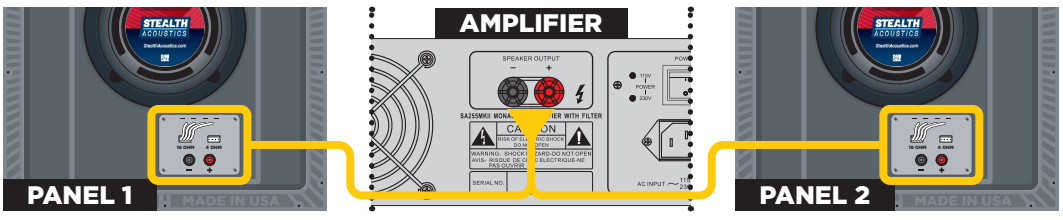
- Use 14 or 16 gauge wire for connecting the speakers.
- **Check all connections and speaker functionality before finishing the wall.**

Using Both LR30W Panels *(Recommended)*

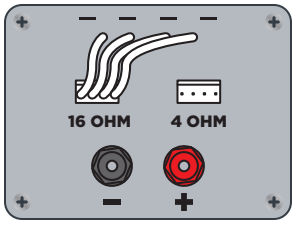
The Stealth Acoustics LR30W Subwoofer System is designed to incorporate both panels as a complete system. Each panel is shipped pre-configured at 16 ohms impedance **ready for installation** and the two speakers should be wired in parallel to create an 8 ohm load.

- **Wire speakers in parallel with each other:** positive to positive (red to red) and negative to negative (black to black)

WIRING BOTH SPEAKERS



LR30W: 16 OHMS



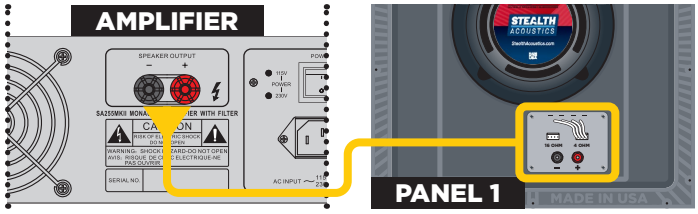
When each speaker panel is configured with the connector in the **16 OHM** position (factory default) and the two panels are wired in parallel as recommended, the system load becomes 8 ohms at the amplifier.

Using a Single LR30W Panel *(Optional)*

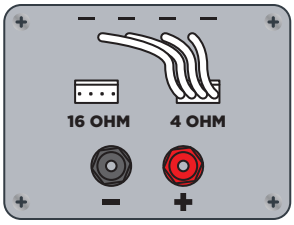
For some installations there may be an advantage to wiring LR30W panels independently – stereo applications are one example, or if limited space makes installing both panels difficult. If one panel is to be used on its own, remove the back box *(see below)* and move the connector on the circuit board from the default **16 OHM** position to the **4 OHM** position. This will reconfigure the speaker to 4 ohms, greatly increasing its efficiency.

- Do not use a single speaker with the impedance connector in the **16 OHM** position. This will not provide a proper load for the amplifier.
- If two speakers are wired together in parallel with their connectors in the **4 OHM** position, the resulting load will be 2 ohms which may not be supported by the amplifier.

WIRING A SINGLE SPEAKER



LR30W: 4 OHMS



If only a single LR30W panel is to be used, move the connector to the **4 OHM** position.

Accessing the OHM Adjustment *(Optional)*

LR30W speakers ship preset at 16 ohm and ready to install as a 2-panel system. If necessary (see above) the back box may need to be removed and will require a phillips screwdriver, a flat screwdriver, and a small tube of painter's caulk for reinstallation.

Removing the Back Box

1. Remove the (4) Phillips screws, (2) from each end, which secure the back box to the panel frame.
2. Insert flat blade screwdriver between frame and back box to gently pry back box upward. Work around the perimeter until the back box is free from the caulking adhesive.
3. Lift and position the back box to reveal the circuit board while leaving the connector wires attached.

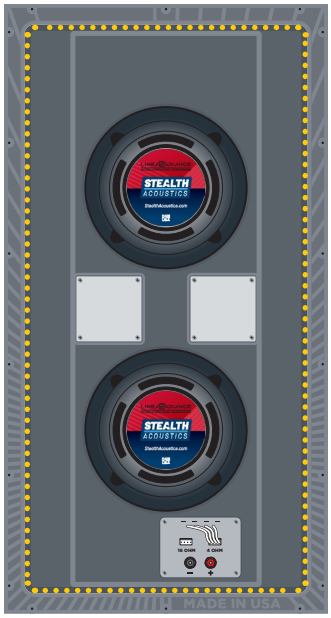
Adjust the Impedance Setting

4. Grasp the white connector plug and gently pull it away from the circuit board (do not pull on the black wires).
5. Align the connector plug with the desired Ω (OHM) rated connector pins and push firmly to reconnect the plug and make sure all pins are seated.

Re-Installing a Back Box

6. Use the flat screwdriver or other appropriate tool to remove any leftover caulk from the frame and back box
7. Verify the wire connection from the back box to the circuit board terminals are still tight.
8. Apply a small bead of painter's caulk along the recess in the speaker frame. **This step is critical to prevent vibration of the back box after installation of the speaker.**
9. Lower the back box onto the speaker frame while making sure the internal wiring does not interfere and **press the back box fits down fully and evenly into the frame.**
10. Reattach the (2) Phillips screws at each end.
11. **Thoroughly test all speaker functionality before finishing the wall.**

Four (4) screws secure the back box to the speaker frame.



Prepare and reapply painter's caulk along the recess in the speaker frame.

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Subwoofer Installation Notice

Read **BEFORE** Installing LR30W and LR24W Subwoofers

ACOUSTIC ISOLATION PRACTICES

SUBWOOFERS

It is important that the location for Stealth invisible subwoofers be chosen carefully. The backside low frequency output of these panels is roughly equivalent to the front side output and as such, sound can penetrate through the rear wall behind the speaker into the adjacent space. **Ideally, subwoofers should be mounted on exterior walls, or on interior walls connected to less used spaces (like laundry rooms, closets, etc) to avoid low frequency bleed-through to an adjacent room.**

- **It takes mass to attenuate sound energy and the lower the frequency, the more mass required.** Additional sound dampening can be achieved by adding additional mass like gypsum wallboard to wall and ceiling structures around the subwoofer. Varying layers of different dampening materials in and around the back box can improve sound isolation dramatically.

CHOOSING AN INSTALLATION LOCATION

All in-wall/ceiling speakers are subject to unwanted sound transmission. Choosing the optimum installation location for each speaker is an important step in the design process. Acoustical isolation solutions for loudspeakers are specific to each installation, as the acceptable level of isolation varies by project. While Stealth Acoustics cannot indemnify specific isolation results for a given installation, here are some guidelines to follow:

- **Know the expectations of the job.** a single family home might be different from a “zero-interference" metric of a luxury condominium.
- **Sound isolation is a combination of mechanical and acoustical properties.** Stealth speakers have negligible mechanical vibration at the attachment points, so the primary isolation issues with Stealth speakers are acoustical.
- **Whenever possible, place speakers on outside walls, non-party walls, or adjacent to interstitial spaces** (attics, closets, laundry rooms, etc.) This is especially true for subwoofers where the backside low frequency output is roughly equivalent to the front side output and as such, sound can penetrate through the rear wall behind the speaker into adjacent spaces.
- **Walls and ceilings near Stealth speakers need to be firmly constructed and free of structural items that could rattle** (such as wiring and plumbing), or transmit sound to other parts of the home (ie. duct work).
- **Air-gaps greatly reduce sound isolation.** Avoid air-gaps by sealing stud, header, and bottom plate penetrations with caulk or expanding foam, and caulking should be used where the wallboard attaches to studs.
- **Stealth recommends the use of a Back Box sealed enclosure with each speaker.** Sealed enclosures loosely filled with insulation can also be custom built for the specific installation. The insulation absorbs some high-frequencies while the enclosure not only isolates sound it also "loads" the speaker resulting in increased sound quality. Unwanted sound transmission can still occur when using a Back Box.
- **Test the system before seam finishing to ensure sound isolation objectives are achieved.** Involve an Acoustical Consultant to confirm your solution if the job requirements are critical.

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