

# STEALTH

## LR24W

INVISIBLE SUBWOOFER

### DUAL 8" INVISIBLE SUBWOOFER SYSTEM IN-WALL OR IN-CEILING



LINEA  RADIANCE  
INVISIBLE SPEAKERS | SUBWOOFERS

The Stealth Acoustics Model LR24W is a compact, 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 LR24W 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 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 LR24W panel incorporates an acoustically coupled, high-quality, high-power 8" (203 mm) cone woofer. 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. LR24W 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 LR24W provides exceptional bass output from 30Hz to 150Hz by trading off excursion for surface area to propagate bass waveforms. Each panel has 228 sq. in. (1,470 sq. cm) of active area for a total of 456 sq. in. (2,942 sq. cm) for both panels.

#### Recommended Applications:

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

#### Recommended Installations:

Flush mounted in walls or ceilings constructed of wood or steel framing with  $\frac{1}{2}$ " (13 mm) or thicker gypsum wallboard.

#### Min. Cavity Depth Required:

$3\frac{1}{4}$ " (83 mm) or  $2\frac{13}{16}$ " (71 mm) with back box removed.

#### Performance:

- 160W RMS (per pair)
- 100W min. (per pair)
- 30Hz to 150Hz (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.

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  $\frac{1}{16}$ " (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  $\frac{1}{2}$ " (13 mm).

Stealth Acoustics recommends the companion Model SA255-MKII 250-watt subwoofer amplifier/crossover as a matched amplifier for the LR24W subwoofer speakers. Stealth Acoustics also offers a line of full-range speaker panels that, when combined with the LR24W, delivers a complete, totally invisible audio solution.

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

### Architectural & Engineering Specifications

The compact subwoofer shall be an invisible, low frequency flat-panel system, with an operating range from 30Hz to 150Hz. It shall be a two panel system with each panel having a total radiating surface of 256 sq. in (1,652 sq. cm). Each panel shall be driven by one 8" (203 mm) low profile woofer with a nominal impedance of 8Ω per panel and a power handling of 80 watts RMS according to EIA standard RS-426-A.

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 2⅜" (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 13¼" (349 mm) or 9⅝" (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 LR24W and shall carry a 20-year manufacturer's warranty.

### Product Specifications

#### Frequency Response:

30Hz to 150Hz (see Figure 1)

#### Power Capacity:

160 watts RMS (per pair)

100 watts minimum recommended power (per pair)

#### Sensitivity:

86 dB (1 watt / 1 meter)

#### Driver Components:

Low-frequency: 1½" (38 mm) voice coil 8" (203 mm) woofer,  
20 oz. (567 gr) ceramic magnet

#### System Impedance:

8Ω nominal.

#### Polar Dispersion:

170 degrees vertical and horizontal

#### Crossover Frequency:

Requires amplifier with low pass filter. 80Hz  
with 18 dB slope recommended.

#### Dimensions:

Width: 15⅞" (403 mm)

Height: 23⅞" (606 mm)

Mounting Depth: 3¼" (83 mm)

2⅜" (72 mm) with back box removed

#### Product Weight:

14 lbs. (6.3 kg) each panel

#### Shipping Weight:

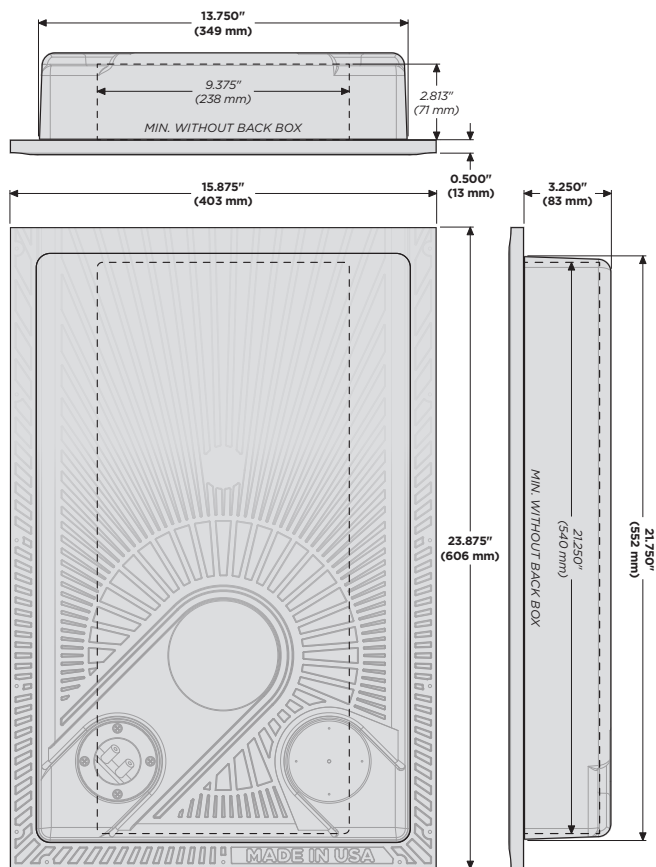
30 lbs. (13.6 kg) per pair

#### Included Accessories:

Mounting shims  
Mounting screws

#### Optional Accessories:

SA255-MKII	Stealth Acoustics Subwoofer Amplifier
PS-24	PlaceSaver™
MBX-24	UL Listed Metal Back Box
MBA-24	UL Listed Metal Back Box - Adjustable
MBC-24	Concrete Back Box
SK-1	Shim Kit



### Standard Installation

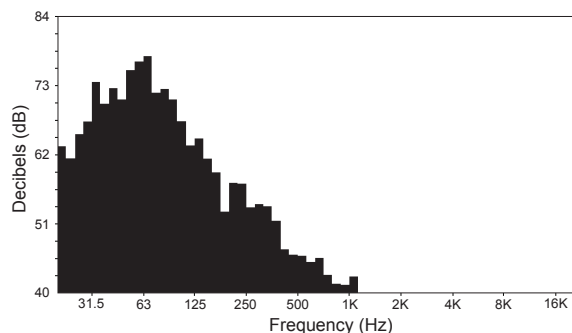


Figure 1: On-axis frequency response in standard stud wall with four coats of latex paint applied to the speaker face panel.

# LINEAR RADIANCE

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## INVISIBLE SPEAKERS | SUBWOOFERS

### Subwoofer Installation Notice

► Read **BEFORE** Installing LR30W and LR24W Subwoofers

### ACOUSTIC ISOLATION PRACTICES

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#### 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.