

# STAGE FRONT

HOME THEATER SOLUTIONS®

INSTALLATION GUIDE



**IW2550LCR ■ IW2650LCR ■ IW2670LCR ■ IW2770LCR**

PROFESSIONAL QUALITY, IN-WALL, ENCLOSED  
LEFT/CENTER/RIGHT CHANNEL LOUDSPEAKERS

# CONGRATULATIONS!

Thank you for choosing a superior **StageFront Home Theater Solutions® In-Wall LCR** loudspeaker from Niles. With proper installation and operation, you should enjoy years of trouble-free use.

Niles manufactures the industry's most complete line of custom installation components and accessories for audio/video systems. To see the complete Niles product assortment, visit us on the Internet at: **[www.nilesaudio.com](http://www.nilesaudio.com)**

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# INTRODUCTION

StageFront Home Theater Solutions loudspeakers are expressly designed for superior sonic quality in home theater applications. Each model employs advanced technology components that extract the subtle nuances in recorded music or the thunderous action sound in a movie. Models ending in “LCR” are intended primarily for front channel left/center/right placement or wherever a monopole design is required. Models that end in “FX” are designed for special effect placement. StageFront models are the perfect choice wherever quality of sound is the most important consideration.



IW2550LCR

Stock Number  
FG01330



IW2650LCR

Stock Number  
FG01329



IW2670LCR

Stock Number  
FG01327



IW2770LCR

Stock Number  
FG01326

## FEATURES AND BENEFITS

### **DUAL TCC™ (TALC, CARBON, CERAMIC-FILLED) WOOFERS\***

*\*IW2550LCR & IW2650LCR models only*

Extremely rigid to reduce breakup, lower distortion and provide enhanced bass response

### **DUAL INTERLACED CARBON-FIBER WOOFERS WITH BUTYL RUBBER SURROUNDS\***

*\*IW2670LCR & IW2770LCR models only*

Provide increased sound pressure levels and sustained high-power output

### **FLUID-COOLED TETERON DOME MIDRANGES\***

*\*IW2670LCR & IW2770LCR models only*

Produce smooth detailed dialog

### **FLUID-COOLED TETERON DOME TWEETERS**

Deliver ultra-wide dispersion and silky-smooth response

### **ADJUSTABLE, CAST ALUMINUM, FULLY-ENCLOSED, DISPERSION-CONTROLLING MIDRANGE/TWEETER POD\***

*\*IW2670LCR & IW2770LCR models only*

Enables precise imaging regardless of placement and accommodates vertical or horizontal installations

### **VARIABLE MIDRANGE AND TREBLE CONTROLS\***

*\*IW2670LCR & IW2770LCR models only*

Enables fine-tuning after installation (+/- 3dB)

### **CROSS-BRACED PORTED CABINETS WITH INTEGRATED FRAME DESIGN**

Fit standard 2x4 construction and are easily retrofitted

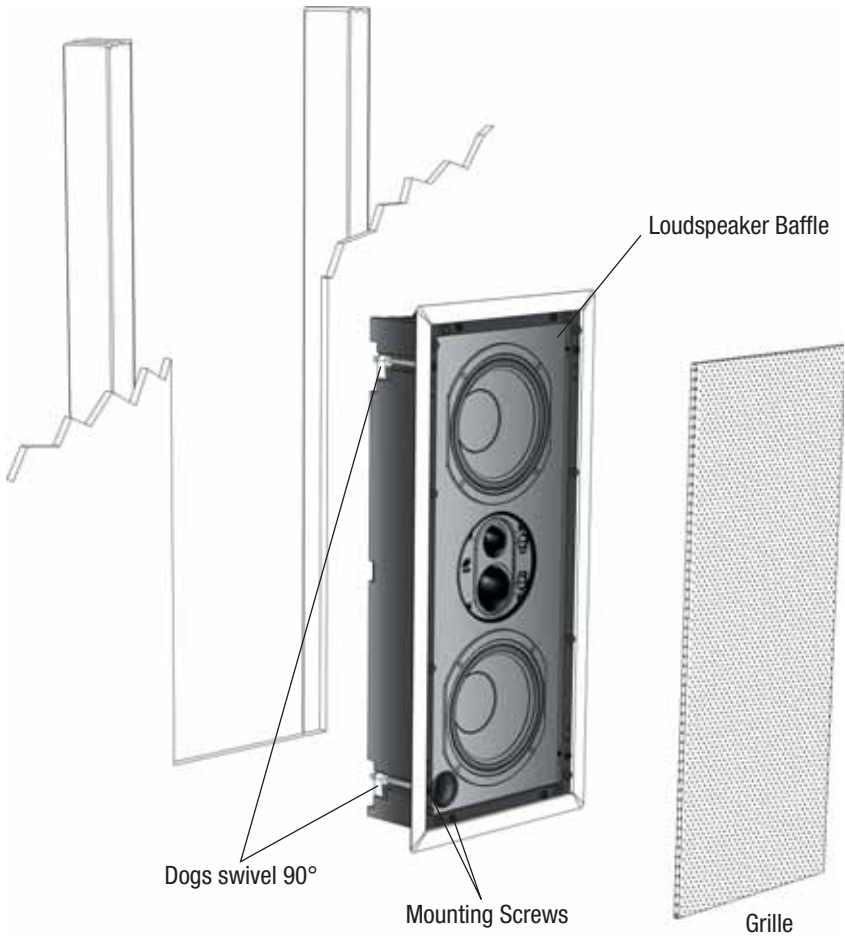
### **EPOXY-COATED MICROPERF™ MAGNETIC GRILLE**

Provides an elegant yet unobtrusive appearance

### **DOLBY DIGITAL® READY**

StageFront Home Theater Solutions loudspeakers are expressly designed for superior sonic quality in home theater applications. All models exceed the specifications set forth by Dolby Laboratories for the accurate reproduction of Dolby Digital-Encoded Sources

# INSTALLATION CONSIDERATIONS



**Figure 1.** Mounting an IW2770LCR vertically into a wall.

## TOOLS AND PRECAUTIONS

We recommend using the following tools to install an In-Wall StageFront loudspeaker:

- *Electric drill with 1/4- and 1/2-inch drill bits, and a 1-inch flat drill bit (for drilling through studs)*
- *Keyhole or drywall saw*
- *Stiff wire, fish tape, or glow rods (for routing cables)*

(CONTINUED ON NEXT PAGE)

## INSTALLATION CONSIDERATIONS (CONTINUED)

- *Phillips screwdriver set*
- *Cable ties*
- *Pencil*
- *Level*
- *Rubber gloves and protective eyewear*

Before starting the installation, please observe the following precautions:

- *Turn off all system power before making any connections*
- *Always wear protective eyewear when using tools*
- *Make sure hands are clean before installation*
- *Wear gloves when working with fiberglass insulation*

### RECOMMENDED AMPLIFIER POWER

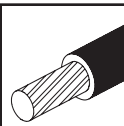
For satisfactory performance, we recommend using an amplifier with a power rating of 15 to 125 watts. Most loudspeakers are not damaged by large amplifiers, but rather by small amplifiers. If your system is playing loud music, a small amplifier will run out of power very quickly and can create damaging “clipping” distortions. A more powerful amplifier will play at the same volume without distorting. See **OPERATION** on page 11 for more information about amplifier clipping distortion.

### LOUDSPEAKER WIRE

Use 2-conductor loudspeaker wire when connecting loudspeakers to your receiver or amplifier. For most applications, we recommend using 16-gauge wire. For wiring runs longer than 80 feet, we recommend 14-gauge wire. The spring-loaded terminals will accommodate up to 12-gauge wire directly. Larger sizes can be accommodated via pin connectors. When running wire inside walls or ceilings, use special jacketed cable (CL-2 or CL-3) to protect the wire and to meet local electrical and fire codes. In some areas, conduit is also required. For a trouble-free installation, low-voltage wire such as loudspeaker wire must be run in accordance with the National Electrical Code and any applicable provisions of the local building code. If you are unsure of the correct installation techniques, wire jacket, or type of conduit to use, consult a professional audio/video installer, building contractor, or the local building and inspection department.

#### TECH TIP

Wire size is expressed by its AWG (American Wire Gauge) number – the lower the number, the larger the wire. For example, 12 AWG is physically larger than 14 AWG.



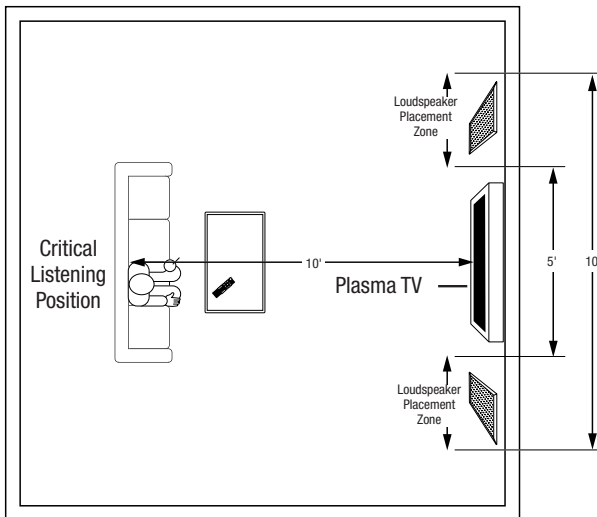
## LOUDSPEAKER PLACEMENT

NOTE: THE STAGEFRONT LCR LOUDSPEAKERS ARE DESIGNED FOR USE IN FRONT LEFT, CENTER OR RIGHT-CHANNEL APPLICATIONS. FOR EFFECT CHANNEL NEEDS, WE RECOMMEND USING A STAGEFRONT FX LOUDSPEAKER.

### PLACING THE STAGEFRONT LCR AS THE FRONT LEFT AND RIGHT LOUDSPEAKERS

In a home theater, the intelligibility of dialog and action reproduced by the front loudspeakers is paramount! The position of each loudspeaker plays a very important role in how clear the sound is and how a stereo image is created. Here are some guidelines to make the process of placement quick and easy:

- *Make sure the sound will not be blocked or reflected off furniture or other objects. The listener should have a direct line of sight with the front of the loudspeaker. To determine the best position, measure the “listening” distance between the ideal listening position (e.g., favorite chair or couch) and the wall in which you plan to install the loudspeakers.*
- *For stereo music applications, try to place the loudspeakers so that they are equally distant from the listening spot and at least one half of the listening distance apart to maintain a large pleasant stereo “image.”*
- *In home theater applications where there is a center channel, you may choose to space the left and right main loudspeakers farther apart for a “bigger than life” sound with Dolby® encoded movies and TV shows. However, for combined music and movie usage, we recommend using the placement zone for stereo music. Ideally, if the listening position is 10 feet back from the wall, place the loudspeakers between 5 and 10 feet apart, as shown in **Figure 2**.*



**Figure 2.** Recommended loudspeaker placement for front left and right channels.

(CONTINUED ON NEXT PAGE)

## INSTALLATION CONSIDERATIONS (CONTINUED)

As for placement height, place front left and right loudspeakers on either side of the picture source so that their tweeters are not more than 24 inches above or below the center-channel loudspeaker's tweeter (see **Figure 3** on page 7).

If the StageFront LCR loudspeaker is being installed in existing construction, please use the included cardboard template to mark your installation location. Check for proper clearance within studs or any other obstructions before cutting the speaker opening. **If you are unsure of the correct installation techniques, please consult your authorized Niles Audio dealer.**

**NOTE: DO NOT PLACE ANY STAGEFRONT LCR OR FX LOUDSPEAKERS TOO CLOSE TO A DIRECT-VIEW CRT TV MONITOR, AS IT MAY CAUSE PICTURE DISCOLORATION. IN GENERAL, TRY TO KEEP IT AT LEAST 24 INCHES AWAY FROM THE TV. WITH LARGER CRT SCREEN SIZES, TEST THE PLACEMENT DISTANCE FOR PICTURE DEGRADATION BEFORE INSTALLATION.**

### THE BOUNDARY EFFECT

Placing a loudspeaker in a corner can powerfully affect the way a listener perceives bass response. Known as the boundary effect, placing loudspeakers close to a wall/ceiling boundary or near a corner wall boundary will emphasize certain bass frequencies, while canceling others. This effect can make the loudspeaker sound excessively boomy and inaccurate to some listeners, while to others it just seems like more bass sound.

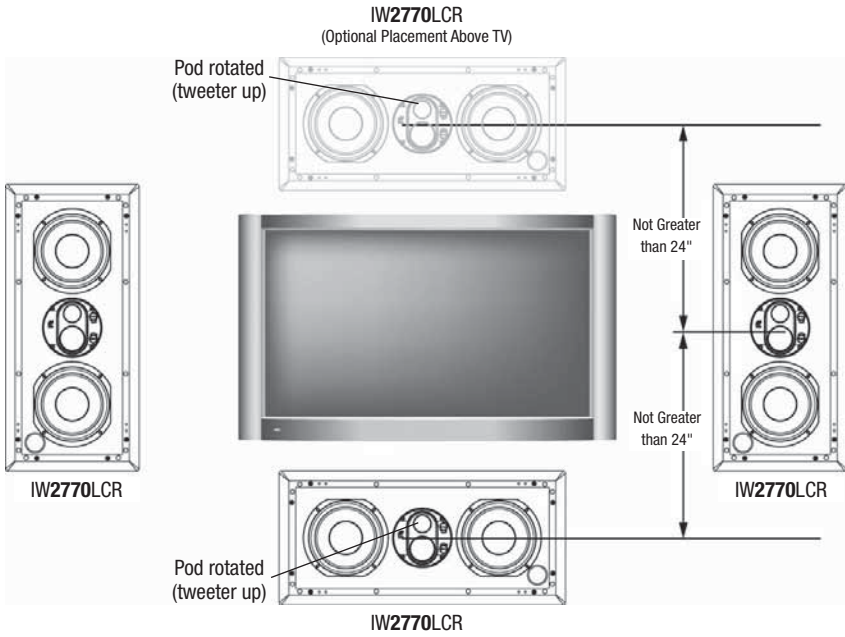
As a good rule-of-thumb, if you like listening to your current pair of loudspeakers with the bass turned up, you'll enjoy corner placement. However, if you listen with the tone controls at neutral, try keeping the loudspeakers at least 2 or 3 feet from the boundaries of the room.

### PLACING THE STAGEFRONT LCR AS THE CENTER-CHANNEL LOUDSPEAKER

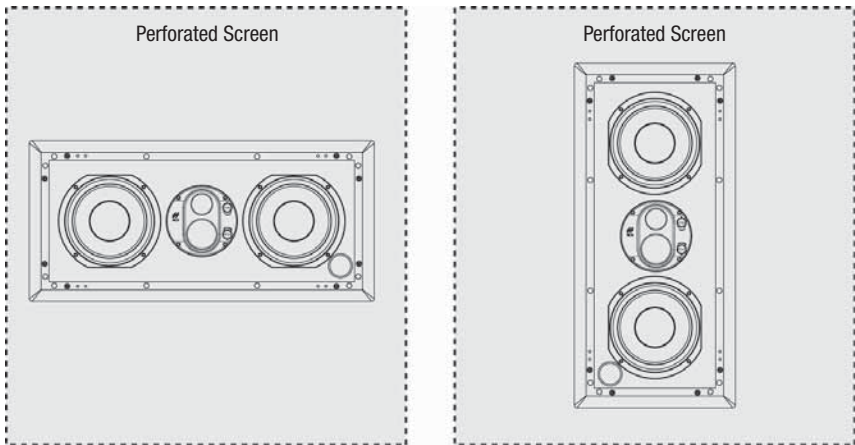
The center-channel loudspeaker is the workhorse in a home theater system. It handles all of the critical dialog and is vitally important in creating the illusion of sounds emanating directly from the picture. Here are some tips for obtaining optimum center-channel performance:

- *In a typical installation, place the loudspeaker horizontally, directly above or below the television or projection screen. Try to ensure that the loudspeaker is not placed too high relative to the left and right loudspeaker, as shown in **Figure 3**.*
- *The IW2670LCR and IW2770LCR feature a midrange/tweeter pod that can be rotated to accommodate horizontal installations. If you mount one of these models horizontally, please remove the screws that hold this pod in place, rotate the pod ninety degrees so that the tweeter is above the midrange and reinstall the screws to reattach the pod to the loudspeaker as shown in **Figure 4**.*





**Figure 3.**



**Figure 4.** Recommended center-channel placement behind a perforated projection screen. Loudspeaker may be installed vertically or horizontally. Tweeter/Midrange Pod should be positioned as shown.

## FINISHING THE INSTALLATION

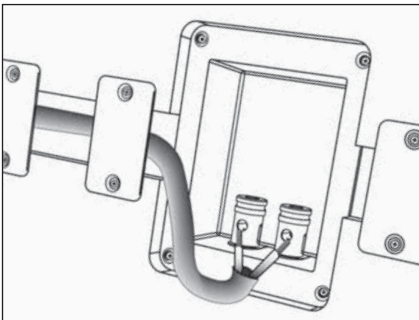
### CONNECTING & INSTALLING THE LOUDSPEAKER

1. Remove the magnetic grille by starting at a corner and gently pulling the grille outwards as you work around the edges.
2. At each loudspeaker, route the wire through the provided channel to the input connectors, then separate the loudspeaker wire so that at least 2 inches of each conductor are free. Strip away 1/4 inch of insulation from each loudspeaker wire.
3. On each set of loudspeaker connectors, press down the spring-loaded connector, insert the appropriate conductor, and then release the connector, as shown in **Figure 5**. Gently tug on the loudspeaker wire to make sure it is held in place. If not, repeat this procedure until it is.

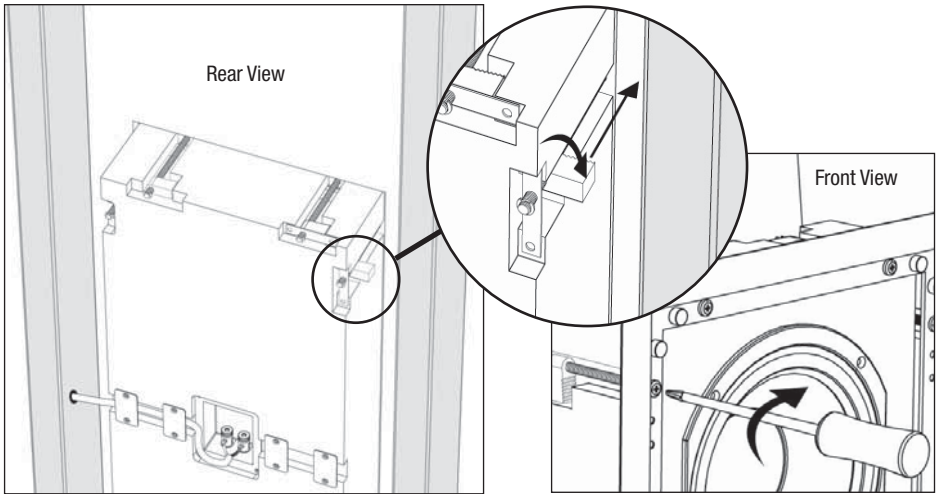
NOTE: OBSERVE CORRECT POLARITY: POSITIVE (+) GOES TO THE RED POST AND NEGATIVE (-) GOES TO THE BLACK POST. IF YOU ARE UNSURE OF WIRE POLARITY, SEE THE SECTION, **CHECKING LOUDSPEAKER PHASE** ON PAGE 9.

4. Connect the other end of each loudspeaker wire to the receiver (or amplifier) in the same way. If you are unsure of wire polarity, see the next section, **CHECKING LOUDSPEAKER PHASE** on page 9.
5. Check that loudspeaker is level and then tighten the eight large screws using a #2 Phillips bit. This should pull the frame and mounting dog together (sandwiching the drywall) so that the frame is absolutely flush with the wall surface. There should be no gaps between the wall and the frame. See **Figure 6**.
6. Remove cardboard paint mask / template from the box and keep for future potential use.
7. Turn on the home theater receiver and calibrate all loudspeakers in the system according to the receiver manufacturer's instructions.

**IMPORTANT: DO NOT OVER TIGHTEN THE SCREWS! OVER TIGHTENING THEM MAY MAKE THE GRILLE DIFFICULT TO INSTALL.**



**Figure 5.** Connecting a loudspeaker wire to the terminals.



**Figure 6.** Installing unit into a wall.

## PAINTING THE GRILLE AND FRAME

Each StageFront FX and LCR frame and grille may be painted without the need for primer. For best results when painting the grille, use a spray gun or airless sprayer, thin the paint to prevent clogging of the grille holes, and apply several light coats instead of one heavy one.

- 1. Install loudspeaker into wall.*
- 2. Carefully peel adhesive-covering strips off of paint mask and align over magnets on loudspeaker baffle. Gently press into place.*
- 3. Paint the frame of the loudspeaker.*
- 4. Paint the grille separately from the loudspeaker frame.*
- 5. Reinstall grille after paint dries on all surfaces and the paint mask has been removed.*

## CHECKING LOUDSPEAKER PHASE

Loudspeaker wire has two conductors. On both your loudspeaker and amplifier, one conductor is attached to the negative (–) terminals, while the other is attached to the positive (+) terminals. Usually, the wire is marked for your convenience, but the marking can be done in the following different ways:

- *Stripe on one wire*
- *Ribbed area you can feel on one conductor*
- *Different colors of metal wire on each conductor*
- *Fabric strand or string wound into one of the conductors* (CONTINUED ON NEXT PAGE)

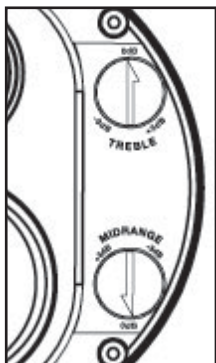
Of course, there are some wires that appear completely identical. So be careful, or you might make a connection mistake. If you do, one loudspeaker will be playing “out-of-phase” with the other loudspeaker. A pair of out-of-phase loudspeakers works against each other, and the sound of the two playing together will be lacking in bass and sound “phasey.” If you suspect the sound is not right, and you cannot see any markings on the wire, try this simple test:

1. *Stand halfway between the loudspeakers.*
2. *Play some music with the amplifier or radio set to Mono.*
3. *Listen to the richness of the bass and the loudness of the sound.*
4. *Turn off the amplifier and reverse the connections on one amplifier channel only.*
5. *Repeat the listening test with the same volume control setting. When the sound has a richer bass and is slightly louder, the loudspeakers are working together or “in-phase.”*

## ACOUSTIC FINE TUNING

Each StageFront 70 Series In-Wall LCR loudspeaker features TREBLE and MIDRANGE variable controls located on the front for acoustic fine-tuning after installation, as shown in **Figure 7**. Adjust these controls as follows:

- *If you desire more dialog presence, increase the amount of midrange frequencies produced by turning the MIDRANGE control clockwise.*
- *If a StageFront LCR model is placed in a room with highly reflective surfaces like glass or tile, you may wish to decrease the amount of high frequencies produced by turning the TREBLE control counter-clockwise.*



**Figure 7.** The IW2670LCR or IW2770LCR TREBLE and MIDRANGE controls.

## INSTALLING THE GRILLE

Starting at one corner, carefully align the magnetic grille into the frame and slowly allow the magnets to attach. Work around the grille edge, ensuring that the grille stays within the frame. When properly installed, the edges of the grille will be flush in appearance with the frame.

### **LISTENING AT HIGHER VOLUMES**

Achieving a reasonable volume of sound in a large room requires more amplifier power than it does in a small room. It is possible to turn the volume up so high that the amplifier runs out of power. This creates “clipping” distortion, which will make treble sound very harsh and unmusical. When you hear harsh-sounding treble from any good loudspeaker, turn the volume down immediately! Those harsh sounds are masking much more powerful ultra-high-frequency sound spikes, which will quickly damage any fine loudspeaker. You are much less likely to damage a loudspeaker driven by a large amplifier because it will be very loud before any clipping distortion is produced.

### **CLEANING**

Clean the StageFront loudspeaker with a dampened soft cloth or paper towel. If the loudspeaker is mounted high up on a wall or ceiling, use a broom to gently brush it off.

## SPECIFICATIONS

### IW2550LCR

#### Recommended Amplifier Power

15 to 125 watts per channel

#### Nominal Impedance

6 ohm nominal; 3.2 ohm minimum

#### Frequency Response

80Hz to 20kHz, +/- 3 dB

#### Sensitivity

88 dB with 2.83 V pink noise input measured at 1 meter on axis

#### Frame Dimensions

21-1/2" x 11" (54.6 cm x 27.9 cm)

#### Hole Cut-Out Dimensions

19-7/8" x 9-3/8" (50.5 cm x 23.8 cm)

Depth From Front of Wall 3-7/8" (9.8 cm)

#### Wiring Requirements

We recommend using 16-gauge loudspeaker wire for runs up to 80 feet and 14-gauge loudspeaker wire for runs up to 200 feet. The connectors will accommodate 12 to 22-gauge wire.

### IW2650LCR

#### Recommended Amplifier Power

15 to 125 watts per channel

#### Nominal Impedance

6 ohm nominal; 3.2 ohm minimum

#### Frequency Response

70Hz to 20kHz, +/- 3 dB

#### Sensitivity

89 dB with 2.83 V pink noise input measured at 1 meter on axis

#### Frame Dimensions

21-1/2" x 11" (54.6 cm x 27.9 cm)

#### Hole Cut-Out Dimensions

19-7/8" x 9-3/8" (50.5 cm x 23.8 cm)

Depth From Front of Wall 3-7/8" (9.8 cm)

#### Wiring Requirements

We recommend using 16-gauge loudspeaker wire for runs up to 80 feet and 14-gauge loudspeaker wire for runs up to 200 feet. The connectors will accommodate 12 to 22-gauge wire.

# SPECIFICATIONS

## IW2670LCR

### Recommended Amplifier Power

15 to 125 watts per channel

### Nominal Impedance

6 ohm nominal; 3.2 ohm minimum

### Frequency Response

70Hz to 20kHz, +/- 3 dB

### Sensitivity

90 dB with 2.83 V pink noise input measured at 1 meter on axis

### Frame Dimensions

25-3/4" x 12" (65.4 cm x 30.5 cm)

### Hole Cut-Out Dimensions

24-1/4" x 10-1/2" (61.6 cm x 26.7 cm)

Depth From Front of Wall 3-7/8" (9.8 cm)

### Wiring Requirements

We recommend using 16-gauge loudspeaker wire for runs up to 80 feet and 14-gauge loudspeaker wire for runs up to 200 feet. The connectors will accommodate 12 to 22-gauge wire.

## IW2770LCR

### Recommended Amplifier Power

15 to 125 watts per channel

### Nominal Impedance

6 ohm nominal; 3.2 ohm minimum

### Frequency Response

70Hz to 20kHz, +/- 3 dB

### Sensitivity

91 dB with 2.83 V pink noise input measured at 1 meter on axis

### Frame Dimensions

25-3/4" x 12" (65.4 cm x 30.5 cm)

### Hole Cut-Out Dimensions

24-1/4" x 10-1/2" (61.6 cm x 26.7 cm)

Depth From Front of Wall 3-7/8" (9.8 cm)

### Wiring Requirements

We recommend using 16-gauge loudspeaker wire for runs up to 80 feet and 14-gauge loudspeaker wire for runs up to 200 feet. The connectors will accommodate 12 to 22-gauge wire.

E N G I N E E R E D B Y



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