

**Revel[®] Concerta[™] C12
Loudspeaker**

Owner's Manual



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REVEL Concerta C12

Owner's Manual

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DOCUMENTATION CONVENTIONS

This document contains general safety, installation, and operation instructions for the Revel Concerta C12 Center-Channel Loudspeaker. It is important to read this document before attempting to use this product. Pay particular attention to safety instructions.

WARNING Calls attention to a procedure, practice, condition, or the like that, if not correctly performed or adhered to, could result in injury or death.

CAUTION Calls attention to a procedure, practice, condition, or the like that, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.

Note Calls attention to information that is essential to highlight.

ABOUT THE C12

Thank you for purchasing the Revel Concerta C12 Center-Channel Loudspeaker. The C12 delivers an impressively clear soundfield with excellent acoustical accuracy across a wide dynamic range, making it the perfect complement to the Revel Concerta F12 and M12 Loudspeakers in surround sound home theaters. Four proprietary transducers, sophisticated filter networks, and flexible placement options allow the C12 to serve as a full-frequency center-channel in the most demanding home entertainment systems.

A three-way center-channel, the C12 delivers an expansive range of frequencies with impressive accuracy. Two 6.5-inch (165.1mm) woofers provide high excursion capabilities, reproducing low frequencies with outstanding dynamic range. Housed in its own separate sub-enclosure, a 4-inch (101.6mm) midrange handles critical mid-band frequencies with natural tonal balance over a wide operating range. Also, a 1-inch (25mm) dome tweeter with a proprietary waveguide reproduces high frequencies well above the audible spectrum, with wide listening room dispersion.

Combining superior form and function, the C12 transducers' unique design provides smooth frequency response. The woofer, midrange and tweeter cones are constructed with Organic Ceramic Composite material to reduce distortion. The spiders are constructed with a high-strength Nomex/cotton blend with optimized geometry for increased linearity. The woofers and midrange include ceramic magnets for improved magnetic shielding.

High-order filters at 500Hz and 2.8kHz optimize loudspeaker on-axis and off-axis response, helping to ensure smooth octave-to-octave balance and timbral accuracy. The rear input panel features gold-plated binding posts to accommodate connections.

The C12 cabinet is constructed with medium-density fiberboard (MDF) walls and internal bracing to reduce cabinet-induced colorations. The cabinet features an attached adjustable tilt foot which creates an optimal dispersion tilt angle toward the listening area. Threaded inserts on the bottom of the cabinet accommodate screws for secure mounting to an optional pedestal stand for optimal acoustical placement. Optional rubber bumper pads for the bottom of the cabinet are also included.

Since 1996, Revel has stood at the forefront of loudspeaker design and performance. Backed by Harman International's extensive research and design facilities, the Revel Concerta Series Loudspeakers benefit from cutting-edge development tools. A multi-channel listening lab provides for double-blind listening tests. A laser interferometer enables detailed driver and cabinet analysis. Multiple large anechoic chambers provide for precise tests and measurements. Finite element analysis allows for advanced loudspeaker modeling. A stereo lithography apparatus aids in achieving tight tolerances.

Adding to the proud lineage of Revel's Ultima and Performa Series Loudspeakers, the Concerta C12 further solidifies Revel's reputation as the leading designer and manufacturer of high-quality, high-performance loudspeakers. The C12 provides outstanding center-channel performance for all home theater applications.

HIGHLIGHTS

- Optimal center-channel performance
- Two proprietary 6.5-inch (165.1mm) Organic Ceramic Composite woofers
- Proprietary 4-inch (101.6mm) Organic Ceramic Composite midrange
- Proprietary 1-inch (25mm) Organic Ceramic Composite dome tweeter
- Gold-plated binding posts
- Advanced woofer and midrange motor structure
- Magnetic shielding
- Large voice coils for wide dynamic range without compression
- Adjustable tilt angle foot
- Elegant cabinet design in vinyl finishes

PRODUCT REGISTRATION

Please register the C12 within 15 days of purchase. To do so, register online at www.revelspeakers.com or complete and return the included product registration card. Retain the original, dated sales receipt as proof of warranty coverage.

UNPACKING

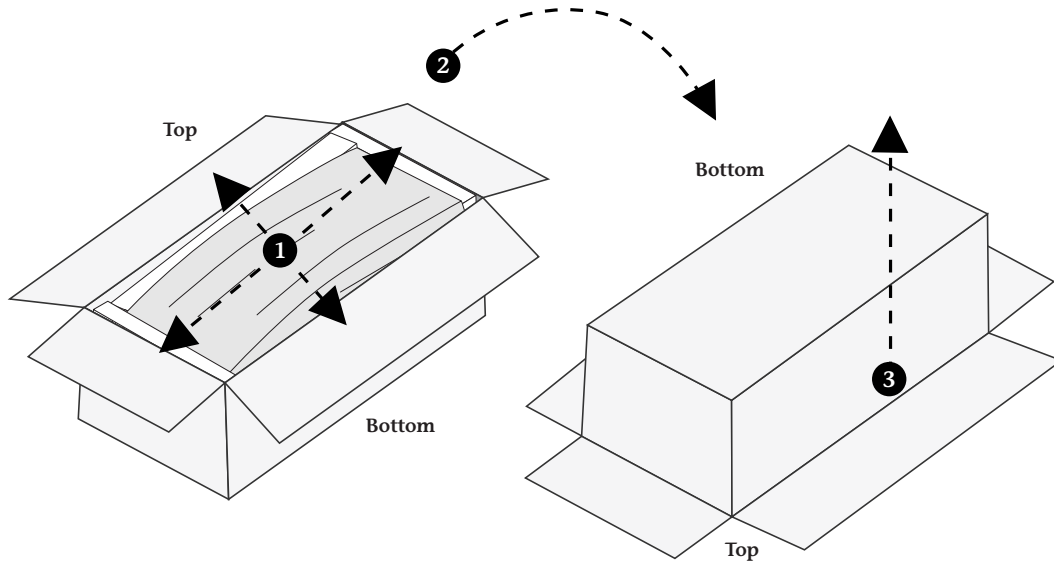
The C12 requires special care and handling during unpacking. Pay particular attention to the precautions that appear in this section and to other precautions that appear throughout this owner's manual.

When unpacking, save all packing materials identified in Figure 2 at the bottom of the next page for possible future shipping needs. Refer to the Obtaining Service section on page 13 for additional information.

To unpack the C12:

1. Place the packing carton upright on a soft towel or carpeted floor and fully open the top flaps as shown in step 1 of Figure 1 (page 7).
2. With the top flaps folded back, carefully roll the carton over, as shown in step 2 of Figure 1 (page 7).
3. Lift the packing carton off of the loudspeaker as shown in step 3 of Figure 1 (page 7). Use caution to avoid damaging the loudspeaker cabinet. At this point, the loudspeaker will be upside-down.

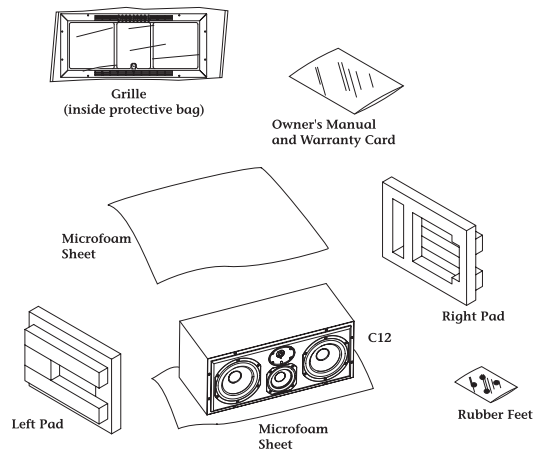
Figure 1: Unpacking the C12



Unpacking (continued)

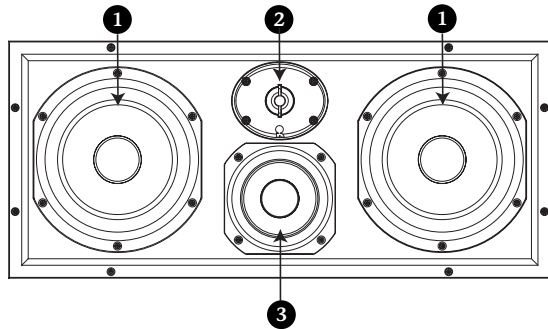
4. Remove the left and right pads and the grille identified in Figure 2 (right).
5. Remove the Owner's Manual, Warranty Card and rubber pad feet as identified in Figure 2 (right).
6. Grasping the sides of the cabinet, place the C12 on its side. Then place the C12 in the upright position.

Figure 2: Packing Materials



LOUDSPEAKER OVERVIEW

Figure 3: C12 Loudspeaker Front View



The numbers in Figure 3 (above) correspond with the numbered items in the Driver Complement section that begins below.

DRIVER COMPLEMENT

The numbers in Figure 3 (above) correspond with the numbered items in this section.

1. **Woofers**
2. **Tweeter**
3. **Midrange**

CABINET

Reduces cabinet-induced colorations with thick MDF walls and internal bracing. An adjustable tilt foot is shipped attached to the cabinet to provide an optimum tilt angle when the C12 is placed on or above a video monitor.

The cabinet's vinyl finish does not require routine maintenance. However, cabinet surfaces that have been marked with fingerprints, dust, or other dirt can be cleaned using a soft cloth.

CAUTION

To prevent cabinet damage, do not use a cloth made with steel wool or use metal polish to clean the cabinet.

Do not use any cleaning products or polishes on the cabinet or grille.

FILTER NETWORK

Optimize loudspeaker on-axis and off-axis response with high-order filters at 500Hz and 2.8kHz, helping to ensure smooth octave-to-octave balance and timbral accuracy. Gold-plated binding posts accommodate heavy speaker cables.

INPUT PANEL

The numbers in Figure 4 (page 9) correspond with the numbered items in this section.

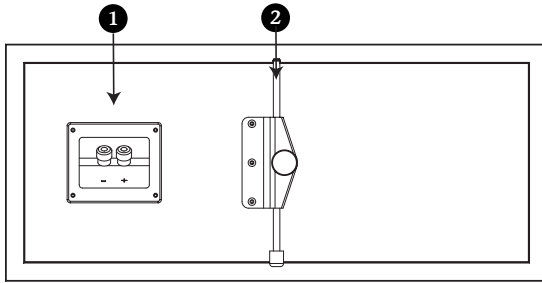
1. Input Connectors

Provide input connections from the associated power amplifier. One "positive" and one "negative" gold-plated binding posts are available. Refer to the Making Connections section that begins on page 11 for additional information.

2. Adjustable Tilt Foot

Provides an adjustable tilt angle if the C12 is mounted on top of a monitor or shelf for optimum sound quality. Adjust until desired tilt angle is achieved. See page 10 for more information.

Figure 4: C12 Loudspeaker Rear View



The numbers in Figure 4 (above) correspond with the numbered items in the Input Panel section that begins on the previous page.

LOUDSPEAKER PLACEMENT

Loudspeaker fidelity depends on the following three factors:

1. Loudspeaker accuracy
2. Listening room acoustics
3. Loudspeaker placement

Advanced Revel design features allow the C12 to achieve stunning acoustical precision with exceptional freedom from coloration and distortion across a wide dynamic range. As a result, experimenting with loudspeaker placement will have the most significant impact on the C12's performance.

The bulleted items that begin below indicate important placement considerations for the C12.

In general, it is recommended to:

- Aim the C12 directly toward the primary listening position
- Remove all obstructions between the C12 and the primary listening position
- Align the front edge of the C12 with the front edge of your TV screen.

The C12 is magnetically shielded to minimize any effect on CRT video monitors. However, stray magnetic fields may affect large CRT monitors located in close

proximity to the C12. These magnetic fields decrease rapidly with distance, so moving the C12 farther away from the monitor will reduce interference. It is important to confirm that the C12 is suitable for use with the intended CRT monitor.

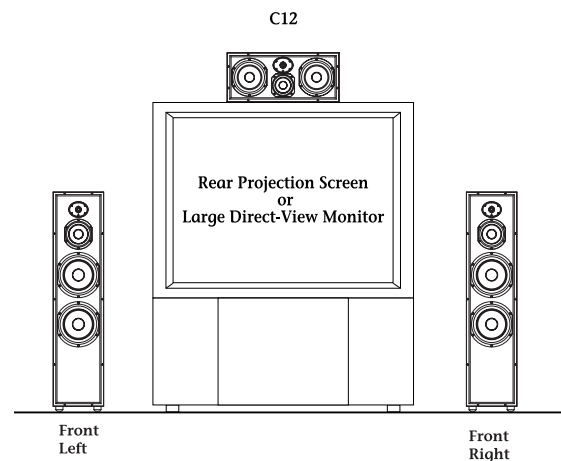
Note

DLP, LCoS and Plasma display devices are not affected by magnetic fields.

ON TOP OF MONITOR

The C12 loudspeaker can be placed on top of a video monitor or a shelf as shown in Figure 5 (below). If desired, use the tilt foot to create a proper tilt angle. The loudspeaker should be tilted to align the tweeter with the listener's head.

Figure 5: On Top of Monitor



Adjustable Tilt Foot

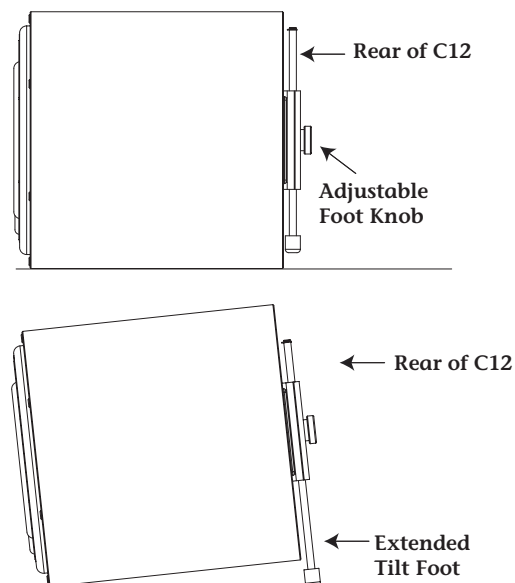
The adjustable tilt foot is attached to the rear of the cabinet identified in Figure 4 (page 9). Use the tilt foot to achieve the proper tilt angle when the C12 is placed on top of a video monitor or shelf as shown in Figure 6 (right).

To use the tilt foot:

1. Turn the foot knob counterclockwise to loosen and extend the tilt rod to create a tilt angle as shown in Figure 6 (right).
2. Slide rod down while tilting the C12 until desired tilt angle is achieved.
3. Turn knob clockwise to lock rod into place.

For best results, the C12 should be tilted so the front of the speaker is facing directly toward the listener's head.

Figure 6: Tilting the C12



FLUSH MOUNTED

The C12 loudspeaker can be placed in a bookcase or wall unit as shown in Figure 7 (right).

STAND MOUNTED

The C12 loudspeaker can be mounted on a pedestal stand as shown in Figure 8 (right). The bottom of the C12's cabinet has threaded inserts to accommodate secure fastening to the stand which serves to elevate the tweeter to the listener's ear level. The optional Revel pedestal stand is available at authorized Revel dealers.

Figure 7: Flush Mounted

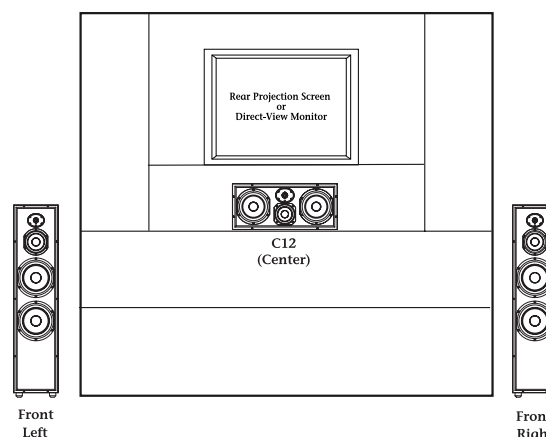
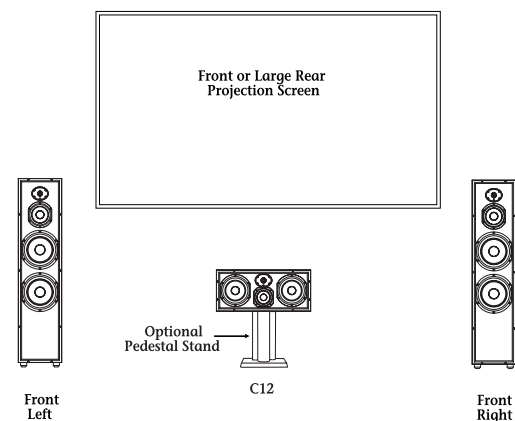


Figure 8: Stand Mounted



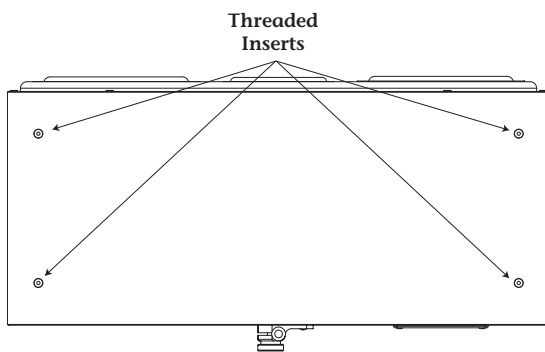
Note

For pedestal assembly instructions, refer to the Revel Performa Pedestal 32/50a Assembly Instructions that are included with the pedestal stand.

To attach to a pedestal stand:

1. Assemble the pedestal stand.
2. Place the C12 on its side on a soft towel or carpeted floor.
3. Locate the four threaded inserts on the bottom of the cabinet. These inserts are identified in Figure 9 (below).
4. Fasten the C12 to the pedestal stand with screws.
5. Make sure the four screws are evenly threaded to achieve a level balance.
6. When all screws have been tightened, stand the mounted C12 (and stand) in the upright position.

Figure 9: Threaded Inserts



Note

The optional Performa Pedestal 32/50a is available at authorized Revel dealers.

If not using a pedestal stand, four black rubber pads, measuring .750-inches (19.0mm) by .160-inches (4.0mm), are also included to serve as a protective bumper between the bottom of the cabinet and your monitor or shelf. If desired, apply to the four bottom corners of the cabinet before placing on your monitor or shelf. The pads are adhesive-backed, press firmly to attach to cabinet.

CAUTION

Loudspeakers placed on stands or on top of video monitors may fall if tipped or improperly positioned. To avoid this, anchor the loudspeaker and stand using the same procedures and hardware used to anchor bookcases, wall units, and other furniture. Harman Specialty Group assumes no responsibility for improper selection and installation of hardware or for any personal injuries or product damages resulting from improper installation or a fallen loudspeaker.

MAKING CONNECTIONS

The C12 input panel features gold-plated binding posts. The binding posts accept either bare wires or banana plugs.

CAUTION

- Never make or break connections unless all system components are powered off.
-

Before making connections, note the following:

- Use high-quality loudspeaker cable with a maximum total loop resistance of 0.07Ω or less (for each wire run). Refer to the table on the next page to determine the appropriate maximum wire gauge.

Maximum Wire Gauge

Gauge (AWG)	Length (Feet)	Length (Meters)
6	87	27
7	69	21
8	58	18
9	43	13
10	34	10
11	27	8
12	22	7
13	17	5
14	14	4
15	11	3
16	9	3
17	7	2
18	5	2

Note

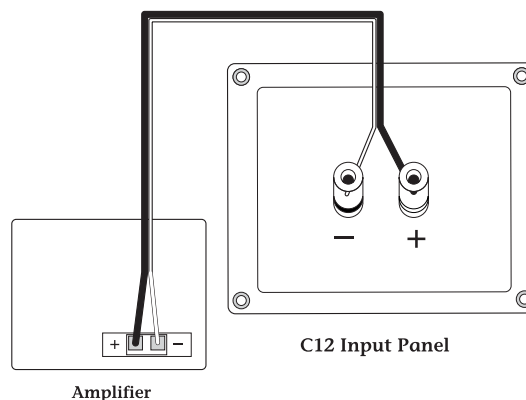
High loop resistances that exceed 0.07Ω (for each wire run) will cause the filter network to mis-terminate, resulting in considerable degradation of sound quality.

- Make all connections observing the proper polarity, positive-to-positive (+) and negative-to-negative (-). Connections that do not observe the proper polarity will cause poor stereo imaging and diminished bass response.

If desired, contact an authorized Revel dealer for information about the suitability of power amplifier components before connecting the C12 to the associated power amplifier.

- Review the owner's manuals for associated audio components to determine their connection procedures.

Figure 10: Connections



The C12 can be connected to the associated power amplifier outputs as shown in Figure 10 (above).

To make connections:

1. Connect one pair of loudspeaker wires to the desired C12 input connectors. Then, connect the same pair of loudspeaker wires to the desired power amplifier outputs.
 - Contact an authorized Revel dealer for assistance setting the associated multi-channel controller or receiver for the appropriate crossover.

OPTIMIZING PERFORMANCE

To optimize the C12 for best performance:

1. Set the associated multi-channel controller or receiver for an 80Hz crossover (or higher), even if the loudspeaker setup does not include a subwoofer. In its absence, the associated multi-channel controller or receiver will use bass management to route frequencies below 80Hz to the front left and right channels, without losing center-channel low-frequency information.
 - The C12 must be used with at least an 80Hz crossover.
 - Selecting the appropriate crossover based on accurate in-room response measurements will result in decreased distortion, accurate timbre, and increased dynamic capabilities.
2. Begin playback of a familiar multi-channel music or film source. Make sure to set the associated multi-channel controller or receiver to a mode that uses the center channel.
 - It is recommended to listen to well-recorded dialogue from more than one film source, as sound quality varies from film to film.
3. Listen from the primary listening position, increasing volume to a comfortable level.

LOUDSPEAKER VOLUME LEVELS

High-order filters include steep cut-offs to reduce potential damage from “out-of-band” frequencies. Combined with carefully selected transducers and filter network components, this approach helps the C12 to maintain its performance under extreme operating conditions.

However, all loudspeakers have limits when it comes to continuous playback. To extend these limits, avoid playback at volume levels that distort or strain sound.

CAUTION

To avoid damage, reduce volume level immediately if loudspeaker sound is not clean and clear.

OBTAINING SERVICE

To obtain warranty or non-warranty service, contact your authorized Revel dealer. Refer to the included Revel Warranty Card for warranty information.

SPECIFICATIONS

Specification	Value	Definition
Sensitivity	90dB SPL with 2.83V @ 1m (2 pi anechoic)	Indicates the amount of power the associated power amplifier must deliver to drive the loudspeaker at reasonable volume levels. Conservatively-rated specifications indicate moderate sensitivity, meaning that a massive power amplifier is not required to drive Revel loudspeakers to reasonable volume levels in large listening spaces.
Impedance	6Ω (nominal), 3.7Ω (minimum @ 130Hz)	Indicates whether the loudspeaker presents a “difficult” or “easy” load on the associated power amplifier. Combined with moderate phase angles, a minimal impedance specification of 3.7Ω allows a reasonably designed power amplifier to drive Revel loudspeakers.
Filter Network	Three-way, high-order @ 500Hz and 2.8kHz	Indicates the acoustical characteristics of the filter network. Steep filters indicate an optimized filter network that produces minimal acoustical interference, low distortion, and expansive dynamic range.
In-Room Response	±1.5dB from 85Hz to 15kHz	Indicates sound quality in context with other specifications. A breakthrough measurement, this specification closely correlates to sound quality in a single curve – a long-standing goal of loudspeaker engineers. In-room response is measured through the use of large anechoic chambers. The speaker’s response is measured every 10 degrees horizontally and vertically for a total of 72 response measurements. The in-room response curve is a prediction of how the speaker would measure in a typical room. Research and observation reveals that ubiquitous “on-axis” response curves cannot distinguish between two loudspeakers with radically different sound qualities.
Low-Frequency Extension	-10dB @ 50Hz, -6dB @ 60Hz, -3dB @ 72Hz	Indicates the low-frequency response of the loudspeaker. Studies have shown that the -10dB specification best correlates to controlled listening tests. At low frequencies, most loudspeaker and listening room combinations demonstrate significant “room gain,” which produces an increase in levels as frequencies decrease. Unlike the -3dB specification, the -10dB specification reflects the steepness of low-frequency roll-offs.
Height	<ul style="list-style-type: none"> • 9.13 inches (23.19cm) • 21.13 inches (53.67cm) (with optional Revel pedestal stand) 	
Depth	<ul style="list-style-type: none"> • 9.38 inches (23.83cm) (not including grille and tilt foot) • 10.14 inches (25.76cm) with grille (not including foot) • 10.37 inches (26.34cm) (without grille, including foot) • 11.13 inches (28.27cm) (including both grille and foot) 	
Width	20.88 inches (53.04 cm)	
Weight	32 pounds (14.5kg) (including grille)	

Specifications are subject to change without notice.

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