

**WILSON AUDIO SPECIALTIES, INC.**



**LOUDSPEAKER PRELIMINARY SPECIFICATIONS  
&  
OWNER'S GUIDE**

WILSON AUDIO SPECIALTIES, INC. 2233 MOUNTAIN VISTA LANE, PROVO, UTAH 84606

TEL: 801-377-2233 FAX: 801-377-2282

# WILSON AUDIO CUB™ LOUDSPEAKER SYSTEM

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# WILSON AUDIO CUB™ LOUDSPEAKER SYSTEM

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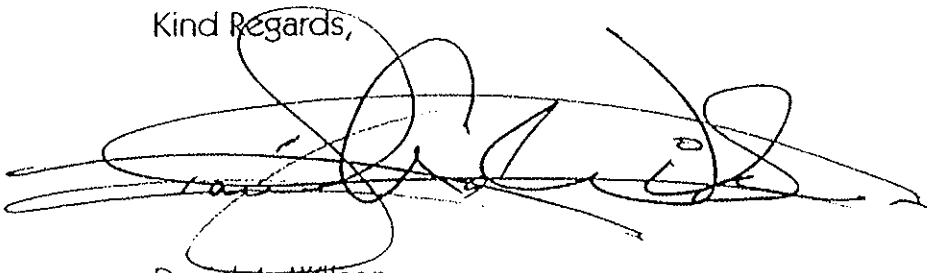
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Congratulations on the purchase of your Wilson Audio Specialties CUB™ loudspeaker system.

I have designed the CUB to provide many years of unprecedented musical enjoyment. We have written this manual to help you better appreciate the design and care that went into its construction, and to fully realize its sonic attributes through proper setup.

If you have any questions about your CUBs, your room setup, or other Wilson Audio Specialties products, you may contact your dealer or call us directly from 9:00 am to 5:00 pm Mountain Standard Time. Please feel free to call us with your questions or comments. We are very concerned with your satisfaction. Without your support and enthusiasm, Wilson Audio Specialties would not be the success it is today.

Kind Regards,

A large, stylized handwritten signature in black ink, appearing to read 'David A. Wilson', written over a horizontal line.

David A. Wilson  
President  
Wilson Audio Specialties, Inc.

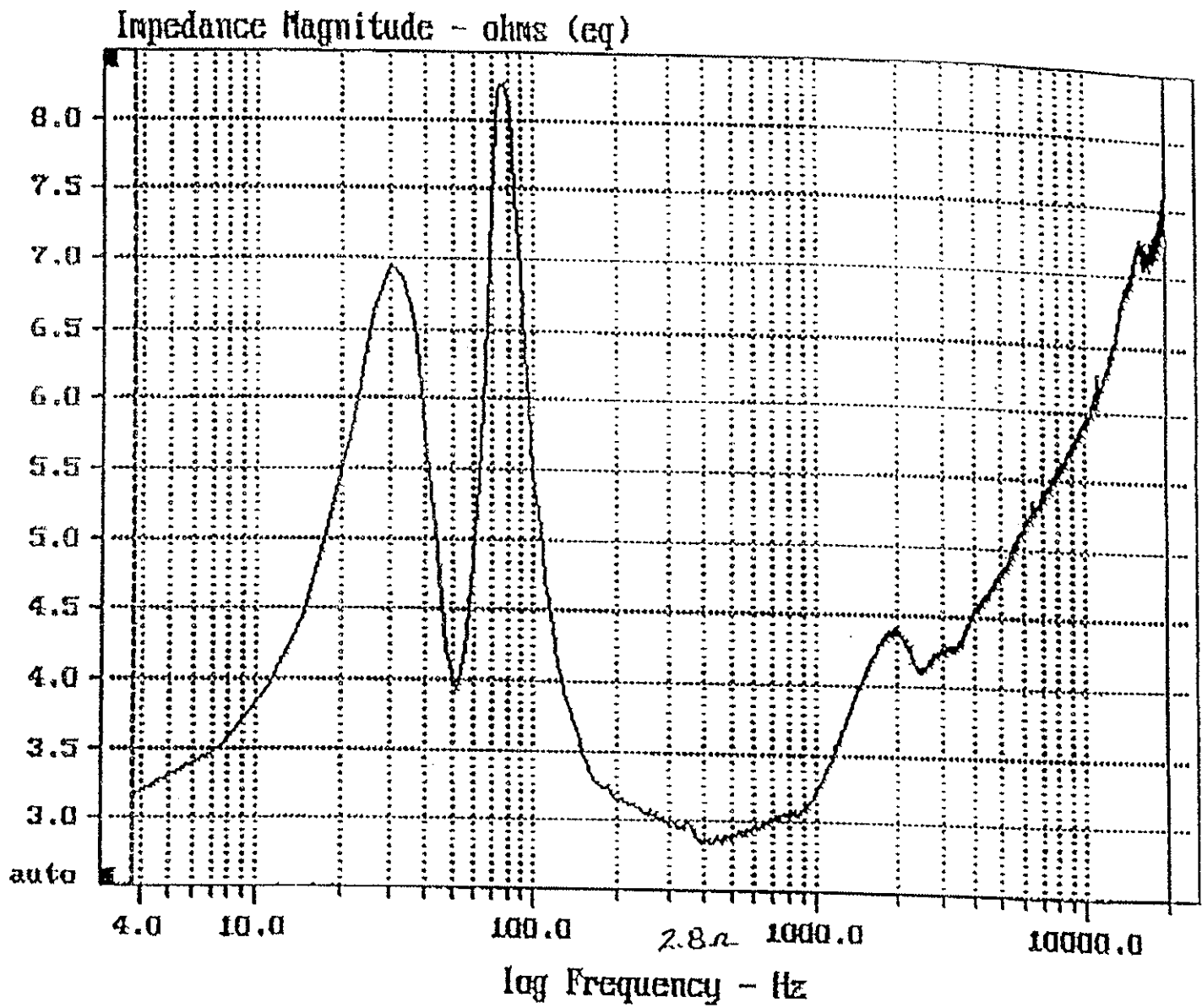
# WILSON AUDIO CUB™ LOUDSPEAKER SYSTEM

## TECHNICAL SPECIFICATIONS

APPLICATION/DESIGN PRINCIPLE	PORTED ENCLOSURE
WOOFER DIAMETER (INCHES)	TWO 6 1/2" WOOFERS
TWEETER DIAMETER (INCHES)	ONE 1" TWEETER
TWEETER TYPE	INVERTED TITANIUM DOME
ANECHOIC FREQUENCY RESPONSE	50HZ TO 25KHZ ± 3.0 DB 55HZ TO 22KHZ ± 1.5 DB
SPL, DB (1 WATT/ 1 METER)	94
RECOMMENDED <u>MINIMUM</u> AMP POWER	7 WATT'S PER CHANNEL
CROSSOVER FREQUENCY	1.8KHZ
IMPEDANCE, OHMS	4 NOMINAL / 2.8 MIN. @ 400HZ 8.2 MAXIMUM @ 75HZ
DIMENSIONS (TO NEAREST INCH)	22" H x 10" W x 19" D CROSSOVER CUPS ADD 3" OF DEPTH -- TOTAL DEPTH IS 22".
WEIGHT PER UNIT	75 LBS.
SHIPPING WEIGHT PER UNIT	105 LBS.

# CUB

## MODULUS OF IMPEDANCE



## APPLICATIONS

The Wilson Audio CUB (Center Unitized Bass) is designed to provide exceptionally high quality music reproduction in rooms which are too small to accommodate larger systems. The CUB is also highly suitable for various high quality home theater applications.

CUB is the English word for the young of the great, top of the food chain, predators. Using enclosure, speaker driver, and time alignment technologies developed for the WATT, Puppy, X-1 Grand SLAMM, and WITT loudspeakers, the CUB truly is the young of the great and is well suited to carrying on the heritage of Wilson Audio products.

One of Wilson Audio's most important criteria in speaker qualification is that a speaker delivers the accuracy and dynamic demands of studio monitoring. It must also be discerning enough for critical hardware and software evaluation. Consequently, the CUB has been designed to deliver the speed, dynamics, and musical accuracy to satisfy the most demanding music lovers.

The CUB is engineered to take full advantage of today's multi-channel surround formats, especially the latest full-range AC-3 (Dolby Digital) and DTS (Digital Theater Systems) formats. The CUB will provide the speed, dynamic impact, and dialog intelligibility you have come to expect in high performance home theater systems, while at the same time revealing the subtleties of a good film score in a way that is emotionally satisfying.

## DESIGN CONSIDERATIONS

The CUB features large magnetic motor structures for improved sensitivity and dynamic linearity. The system's sound is more naturally alive sounding as a result. The CUB also integrates separated crossovers for high pass and low pass functions, greatly reducing intermodulation interactive effects. The character of the music is more realistic at all levels.

As with all Wilson loudspeakers, the CUB incorporates superior quality, high performance enclosure materials to control resonance. These materials exhibit excellent internal damping and a correct mechanical impedance match to the frames of the drivers. Additional mechanical tuning is provided by rigid bracing. Minimum energy/time storage behavior in the crossover is achieved by using only the finest audio-grade components, which are matched to better than 0.1% tolerance. The drivers were selected because of their frequency response linearity, impulse stability, and most important, their intrinsic musical quality. As such, they reveal the emotionally involving nuances of musical expression.

## CARE OF THE FINISH OF YOUR CUBS

### *Painted or Wood Finish*

Your CUB loudspeakers are hand-painted with Wilsongloss® paint and hand-polished to a high luster. While the finish seems quite dry to the touch, final curing and complete hardening takes place over a period of several weeks. To protect the finish of the CUBs during final manufacture, shipment, and setup in your listening room, we have installed a removable layer of protective film over the finish. We recommend that this film be left in place until the speakers are in their final location in your listening room. Once you have determined their final position, remove the film by peeling it off. **Do not leave this film on indefinitely, as it may leave impressions on the paint.** It is important that the delicate paint finish of the CUB be dusted carefully with the special dust cloth which has been provided with your loudspeakers. We recommend that the following procedure be observed when dusting the speakers:

- A. Blow off all loose dust
- B. Using the special dust cloth as a brush, gently whisk off any remaining loose dust.
- C. Shake out the dust cloth.
- D. Dust the finish, using linear motions in one direction parallel to the floor. Avoid using circular or vertical motions.

Because the paint requires a period of several weeks to fully cure, we recommend that no cleaning fluids such as glass cleaners be used during this initial period of time. When the paint is fully cured, heavy finger prints and other minor smudges may be removed with a glass cleaner. Always use the special cloth. Stronger solvents are not recommended under any circumstances. Consult your dealer for further information if required. Periodic polishing may be desired over the years to maintain the high luster of the finish. We recommend a non-abrasive carnuba-based wax and soft cloth.

### ***Laminate Finish***

As a final step before shipment, each laminate CUB is polished with a Carnuba based wax. This should protect your CUBs during setup and the initial ownership period (2-3 months). If you incur heavy finger prints and other minor smudges during this time, it is not usually necessary to apply any solvent or wax. You may use the cloth provided to dust and re-polish the factory-applied wax coat back to its original luster. After this initial period, you may want to use a glass cleaner to remove such marks. A periodic waxing with a carnuba based wax will also offer continued protection of the laminate.

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### **BREAK-IN PERIOD**

All audio equipment will sound its best after its components have been broken-in for some period of use. Wilson Audio breaks in all woofers and mid-range drivers for a 12 hour period before they are tested and calibrated at the factory. All tweeters are tested, calibrated, and matched. In your listening room, expect 25 to 50% of break-in to be complete after two hours of playing music fairly loudly. Ninety percent of break-in is complete after 24 hours of playing. Playing a "disc repeat" overnight can accomplish this task quickly. Wilson Audio recommends chamber music for this task.



## CONNECTION OF YOUR CUB LOUDSPEAKERS

The very high current input terminals located on the rear of your CUB loudspeaker are coded so that (+) corresponds to positive and (-) to negative, or common, or ground on the amplifier output. Be sure to connect the loudspeakers in phase with each other. We recommend the use of the very highest quality loudspeaker interface cables, particularly those designed for high frequency propagation correction and phase linearity. Beware of "zip cord" type speaker cables which will smear the sound from your CUBs, and limit their effective bandwidth. Also do not use braided litz type loudspeaker cables as they will cause an unnatural brightness to the sound, compromise sound staging performance, and may cause instability, oscillation, and damage in wide bandwidth solid state amplifiers.

## CONNECTION OF YOUR CUBs TO YOUR POWER AMPLIFIER

1. Turn off your power amplifier(s) and remove the AC power cord from the wall outlet.
2. Lay out your speaker cables before hooking them up to the CUBs. Make sure that there are no kinks or right-angle bends in the cable. If you need to turn corners, attempt to use a gradual curve as opposed to a severe right-angle bend.
3. Connect the negative (normally black) end of the speaker cable to the high current speaker binding posit with the engraved "-" above it.
4. Connect the positive (normally red) end of the speaker cable to the high current speaker binding posit with the engraved "+" above it.

**Note:** This is a good time to check that your cables are connected properly at the amplifier. Remember: Red = "+" and Black = "-" on most cables. If your cable is not marked with Red/Black or "+"/"-", call the cable manufacturer to find out which cables are positive and negative.

5. Plug your amplifier(s) AC power cord into the wall outlet.

6. Your CUBs are now ready for final positioning. Refer to the Room Acoustics section of this guide for an explanation of this process.

**Note:** Always attempt to keep your pair of speaker cables the same length. This will ensure that the signals arrive at each speaker in the proper time frame, by traveling the same distance to each speaker.

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## PHYSICAL IMPLEMENTATION

Many CUBs will be configured into systems as free standing units on stands. Both the construction and height of the stand have a profound effect on the system's sound.

### *Stand Construction*

Since the CUB will mechanically introduce appreciable amounts of vibrational energy into the stand, it is important that the stand quickly transmit that energy into the floor, without second-hand radiation of sound from its own structure. Thus, not only must the stand be extremely rigid, but it should also be non-resonant as well. Welded or braised hollow metal columns on a rigid, wide spiked floor support are structural features of one approach, which can be particularly successful if the columns are partly or fully filled with sand or lead shot. Because the CUB is relatively deep, the top platform of the stand needs adequate depth.

While three spikes on the floor support provides self-proportioning of the load, it does not provide self-leveling. These three spike stands can also pose a safety hazard in the case of the CUB, which is extremely heavy at 75 pounds per channel. For safety reasons, Wilson Audio specifically does not recommend three spike stands.

Correctly adjusted four spike stands allow accurate leveling, stable mechanical grounding, and a good stability margin for safety. Other excellent stand construction materials include ultra-high density composites, MDF (especially if sand filled), and stone, such as granite or marble. Usually stands are "open," being constructed

of discrete pillars. However, some stands have solid fronts, which are essentially the width of the speaker, all the way down to the spikes. Solid stands provide somewhat more output in the upper bass and lower mid-range (i.e. 100Hz to 200Hz). Due to the  $2\pi$  steradian wave launch support in this region, such a stand can help balance the sound in a "lean" room; in other words, a room whose low frequency balance is reduced relative to the mid-range and high frequencies. Additionally, this type of stand can help balance the sound of lean electronics or cabling.

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### ***Stand Height***

The height of the stand establishes the distance between the woofers and the floor. This distance is one variable in an acoustical interaction between the speaker, the floor, and the listener's ear height, which results in predictable irregularities in the frequency response and the tonal balance of the system. Thus changes in the stand height affect frequency response and tonal balance.

The CUB was measured in a live room, with the microphone 44" (1.13m) above the floor, 9 feet (2.77m) in front of the CUB. The CUB was positioned vertically. In these tests, **David Wilson, and the entire development team, unanimously preferred the 19" (.487m) stand height.** It demonstrated the most consistently satisfying balance of musical qualities over a wide range of music, and with both tube and solid-state amplifiers. However, the other heights (or even extrapolations of intermediate heights) out to the extremes of 15" (.385m) to 22" (.564m) would prove useful depending on the overall sound in your room. For example, a slightly taller stand would probably be preferred in bass-heavy rooms, and/or rooms with much heavy drapery or furniture. Also, probably benefiting from the taller stand heights, would be systems using soft, thick, or dull sounding equipment. On the other hand, shorter stands might benefit brighter electronics in lean rooms.

## ROOM ACOUSTICS

### *Final Listening Room Setup (voicing)*

Your CUB loudspeakers will give you years of music satisfaction. However, their high performance characteristics and abilities can only be fully appreciated with the proper acoustical setup.

The following section will present some guidelines on room acoustics and their interactions with loudspeakers. We will also offer some detailed suggestions on the setup of your CUBs, but we strongly suggest that you have your local Wilson Audio dealer perform the final speaker "voicing" for you. They are specially trained in setting up Wilson loudspeakers and will ensure that you realize the full value of your purchase.

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### *Reflections*

There are 3 commonly encountered room reflection problems. Probably the most obnoxious form of reflection is called "slap echo." In slap echo, primarily mid-range and high frequency sounds reflect off of two parallel hard surfaces. The sound literally reverberates back and forth until it is finally dissipated over time. You can test for slap echo in any room by clapping your hands sharply in the middle of the room and listening for the characteristic sound of the echo in the mid-range. Slap echo destroys the sound quality of a stereo system primarily in two ways: by adding harshness to the upper mid-range and treble through energy time storage and by destroying the delicate phase relationships which help to establish an accurate sound stage. Non-parallel walls do not support slap echo, but rather allow the sound to diffuse.

Slap echo is a common acoustical problem in the typical domestic listening room, because most of these rooms have walls with a hard, reflective nature, usually being only occasionally interrupted by curtains or drapes. Slap echo can be controlled entirely by the application of absorptive materials such as Sonex, airduct board, or cork panels to the hard surfaces. Large ceiling to floor drapes are

effective in controlling some high frequency slap echo, as is the application of carpeting to wall surfaces. In many domestic listening environments, heavy stuffed furnishings are the primary structural control to slap echo. Unfortunately, their effectiveness is not predictable. Diffusers are sometimes also used to very good subjective effect, particularly in quite large rooms. Sound absorbent materials such as described above will alter the tonal characteristic of the room by making it sound "deader," less "bright and alive" and "quieter." These changes also make the room more pleasant for conversation. Diffusers, on the other hand, tend to not change the tonal balance characteristic of the room, but make the sound smoother and more open.

Another type of reflection phenomenon is "standing waves." Standing waves cause the unnatural boosting or accentuation of certain frequencies, typically in the bass, to be found at certain discreet locations on the room. A room generating severe standing waves will tend to make a loudspeaker sound one way when placed in one location and entirely different when placed in another. The effects of standing waves on a loudspeaker's performance are primarily in its tonal balance, although resolution of low-level detail, as well as sound-staging will also suffer. Standing waves are more difficult to correct than slap echo because they tend to occur at a lower frequency, whose wave length is long enough to be ineffectively controlled by absorbent materials such as Sonex. Moving speakers about slightly in the room is, for most people, their only control over standing waves. Sometimes a change of placement of as little as two or three inches can dramatically alter the tonal balance of a small system because of standing wave problems. Fortunately, minor low frequency standing waves are well controlled by positioning ASC tube traps in the corners of the room. Very serious low frequency accentuation usually requires a custom-designed bass trap system.

Low frequency standing waves can be particularly troublesome in rooms constructed of concrete or brick. These materials trap the bass in the room, unless it is allowed to leak out of the room, through windows and doors.

In general, placement of the speaker in a corner will excite the maximal number of standing waves in a room, and is to be avoided for most direct radiator, full range loudspeaker systems. Some benefit is achieved by placing the stereo pair of loudspeakers slightly asymmetrically in the listening room so that the standing waves caused by the distance between one speaker and its adjacent walls and floors are not the same as the standing wave frequencies excited by the dimensions in the other channel.

A special type of standing wave noticeable primarily at higher frequencies and shorter wave lengths is the so-called "comb filter effect."

Acoustical comb filtering occurs when sound from a single source, such as a loudspeaker, is directed toward a microphone or listener at a distance. The first sound to reach the microphone will be the direct sound, followed by delayed reflected sound. Because the reflected sound lags in phase relative to the direct sound, there will be cancellation at certain frequencies where the two are 180 degrees out of phase, and augmentation at other frequencies where the direct and the reflected sounds arrive in phase. Because it is a function of wave length, the comb filter effect will notch out portions of the audio spectrum at regular octave-spaced intervals. The subjective effect of comb filter effects is an added roughness to the sound, a reduction of harmonic richness, and a smearing of lateral sound stage image focus and placement. The side wall reflections which cause the comb filter effects are best controlled by careful speaker placement and by the placement of Sonex or air duct panels applied to that part of the wall where the reflection occurs.

### **Resonances**

Resonances in listening rooms are generally caused by two sources: (1) the structures within the listening room and (2) the volume of the air itself in the listening room.

Structural resonances are familiar to most people as buzzes and rattles, but this type of resonance usually only occurs at extremely

high volume levels, and is usually masked by the music. In many wood frame rooms, the most common type of structural resonance problem is "booming" of walls and floors. You can test for these very easily by tapping the wall with the heel of your hand or stomping on the floor. If it is a wooden floor, this is done to detect the primary spectral center of the resonance. To give you an idea of what the perfect wall would sound like, imagine rapping your hand against the side of a mountain. Structural wall resonances generally occur in the low to mid-bass frequencies and add tonal balance fullness to any system played in that room. They too are more prominent at louder levels, but their contribution to the sound of the speaker is more progressive. Rattling windows, picture frames, lamp shades, etc. can generally be silenced with small pieces of caulk or with blocks of felt. Short of actually adding additional layers of sheet rock to flimsy walls, however, there is little that can be done to eliminate wall resonances.

The volume of air in a given room will also resonate at a frequency determined by the size of the room. Larger rooms will resonate at a lower frequency than will smaller rooms. Air volume resonances, wall panel resonances, and low frequency standing waves, together, combine to form a low frequency coloration in the sound. At its worst, it is a grossly exaggerated fullness which tends to obscure detail and distort the natural tonal balance of the speaker system. Occasionally, however, there is just enough resonance to give a little added warmth to the sound... an addition some listeners prefer. Tube traps manufactured by the ASC corporation have been found to be effective in reducing some of this low frequency room coloration. Custom designed and constructed bass traps, such as perforated Helmholtz resonators, provide the greatest degree of low frequency control.

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## IN YOUR ROOM

There are three basic shapes for most rooms: square, rectangular, and L-shaped. A perfectly square room is the most difficult room to set up speakers in because, by virtue of its shape, square rooms are the perfect medium for building and sustaining standing waves.

Standing waves are pressure waves created by the integration of sound and opposing, parallel walls, that accentuate particular frequencies. They heavily influence the music played by loudspeakers, greatly diminishing the listening experience.

Long, narrow rectangular rooms pose their own special acoustical problems for speaker setup. They have the ability to set up several standing wave nodes which will have different standing wave frequency exaggerations depending on where you are sitting. Additionally, these long rooms are often quite lean in the bass near the center of the room. Rectangular rooms are still preferred to square rooms because by having two sets of dissimilar length walls, standing waves are not as strongly reinforced and will dissipate more quickly than in a square room. In these rooms the preferred speaker position for spatial placement and midrange resolution will be on the long walls. Bass response will be reinforced by speaker placement on the short walls.

In many cases L-shaped rooms offer the best environment for speaker setup. Ideally speakers should be set up along the primary (longest) leg of the room. They should fire from the end of the leg (short wall) toward the bend, or they should be along the longest wall, with the speaker furthest to the bend being inside of the bend. In this way both speakers are firing the same distance to the back wall. The asymmetry of the walls in L-shaped rooms resists the buildup of standing waves.

### ***Speaker Placement vs. Listening Position***

The location of your listening position is as important as the careful setup placement of your CUB speakers in your room. The listening position should ideally be no more than 1.1 to 1.25 times the distance between the tweeters on each speaker. Therefore, in a long rectangular room of 12' x 18', if the speaker tweeters are going to be 9' apart, you should be sitting 9'11" to 11'3" from you ear to its corresponding tweeter. This would be about halfway down the long axis of the room.



Many people would place the speakers on one end and sit at the other end of the room. Needless to say, this will not yield the finest sound. We would ask you to carefully consider your listening position for optimal performance. Our experience has shown that any listening position which places your head closer than 14" to a room boundary will diminish the sonic results of your listening.

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### ***Speaker Orientation***

Speaker placement and orientation are two of the most important considerations in obtaining superior sound. The first thing you need to do is eliminate the side walls as a sonic influence in your system. Speakers placed too close to the side walls will suffer from a strong primary reflection. This can cause out-of-phase cancellations, or comb filtering, which will cancel some frequencies and change the tonal balance of the music. A good place to start is with the speakers about 18" from each wall and, if you need to move them relative to the side wall, move them away from the wall, not closer.

A very important aspect of speaker placement is how far from the back wall to place the speakers. A rule of thumb is: the closer to the back wall the more pronounced the low bass energy and centering of image will be. However, this comes at a definite reduction in stage size and bloom, as well as a deterioration of upper bass quality. You must find the proper balance of these two factors, but remember, if you are partial to bass response or air and bloom, do not overcompensate your adjustments to maximize their effects. Overbalanced systems are sometime pleasing in the short term, but long term satisfaction is always achieved through proper balance.

The CUBs are designed for maximum phase coherence and pulse replication accuracy when they are aimed directly at the listener or microphone. Thus, your CUBs should be "toed in." In other words, the listener, when seated in the listening position, will just barely see the surface of the inner side of the CUBs. Toeing in the speakers provides dramatic improvements in resolution of low level detail in

the midrange as well as dramatic improvements in sound staging performance.

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## SUMMARY

In summary, it is clear that, for optimal tonal balance accuracy, resolution of low level detail, and sound staging performance, the CUB should be positioned at or slightly below the ear level of the listener. Ideally, the speakers should not be positioned too far from the listener, if maximum resolution of low level detail is required. If possible the speakers should be positioned out into the room, slightly asymmetrically away from side and rear walls. The speakers should be toed-in toward the listener, preferably so that the listener at his seated position can barely see the surface of the inner side of the CUB as he/she faces the speaker. It is recommended that a distance of 2-3 feet, and possibly more, be maintained between the CUB and the rear walls and a distance of at least 2 feet be maintained between the front panel of the CUB and reflective side walls. Use of sound absorbent materials reduces the space requirement somewhat. Experiment for each room.

By following the guidelines in this manual and your own common judgment, your new CUB speakers will provide you with a lifetime of pure music reproduction.

# LIMITED WARRANTY

## LIMITED TO ORIGINAL PURCHASER

This Warranty is for the sole benefit of the original purchaser of the covered product and shall not be transferred to a subsequent purchaser of the product. Any subsequent purchaser should contact a Wilson Audio dealer to request a new warranty.

## DEMONSTRATION EQUIPMENT

Equipment used by an authorized dealer for demonstration purposes is warranted to be free of manufacturing defects in materials and workmanship for a period of five (5) years from the date of shipment to the dealer. Demo equipment needing warranty service may be repaired on-site or, if necessary, correctly packed and returned to Wilson Audio by the dealer at his sole expense. Wilson Audio will pay return freight of its choice. A returned product must be accompanied by a written description of the defect. Dealer owned demonstration equipment sold at retail within two (2) years of date of shipment to the dealer is warranted to the first retail customer to be free of manufacturing defects in materials and workmanship for the same time periods as if the product had originally been bought for immediate resale to the retail customer. In other words, 90 Day basic warranty, unless extended to 5 years by return of a completed Warranty Registration.

## MISCELLANEOUS

ANY IMPLIED WARRANTIES RELATING TO THE ABOVE PRODUCT SHALL BE LIMITED TO THE DURATION OF THIS WARRANTY. THE WARRANTY DOES NOT EXTEND TO ANY INCIDENTAL OR CONSEQUENTIAL COSTS OR DAMAGES TO THE PURCHASER. Some states do not allow limitations on how long an implied warranty lasts or an exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

# WILSON AUDIO LOUDSPEAKER

## LIMITED WARRANTY

### TERMS AND CONDITIONS

#### LIMITED WARRANTY

Wilson Audio warrants its loudspeakers to be free of manufacturing defects in material and workmanship, subject to the conditions hereinafter set forth for a period of 90 days from the date of purchase by the original purchaser, or five (5) years, if a Warranty Registration Form has been correctly filed at Wilson Audio, no later than 30 days after product delivery to the customer.

#### CONDITIONS

This warranty is subject to the following conditions and limitations. The Warranty is void and inapplicable if the product has been used or handled other than in accordance with the instructions in the owner's manual, abused or misused, damaged by accident or neglect or in being transported or the defect is due to the product being repaired or tampered with by anyone other than Wilson Audio, or an authorized repair center. Most repairs can be made in the field by an authorized Wilson Audio agent. In instances when return to Wilson Audio's factory is required, a return authorization must first be obtained by the dealer or customer. Wilson Audio will pay return freight of its choice. **A RETURNED PRODUCT MUST BE ACCOMPANIED BY A WRITTEN DESCRIPTION OF THE DEFECT.** Wilson Audio reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any product without notice or obligation to any person.

#### REMEDY

In the event that the above product fails to meet the above Warranty and the above conditions have been met, the purchaser's sole remedy under this Limited Warranty shall be to return the product to Wilson Audio or to an authorized Wilson Audio repair center where the defect will be rectified without charge for parts or labor.

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## Important

Changes in stand height will affect frequency response and tonal balance of your CUB loudspeaker system. During testing and evaluation of this product, the development team unanimously preferred a stand height of 19" (.487m). While other heights may prove useful depending on the overall sound in your room, the 19" height will provide the most consistently satisfying balance of musical qualities over a wide range of music, and with both tube and solid-state amplifiers.