

OPERATION MANUAL

Model RL-3.0



RADIAL LOUDSPEAKERS

MANUFACTURED by DECWARE / High Fidelity Engineering Co.
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USA

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Congratulations on your purchase of the RL-3.0 loudspeakers! *Please take a moment to read this setup guide so that you understand how this speaker works.*

DESCRIPTION

The RL3 is a 2-way loudspeaker that features the unique Decware 6.5 inch radial driver coupled with a conventional forward firing driver and a planar ribbon tweeter.

This combination of Radial and Conventional drivers gives the RL-3.0's the benefits of both designs. The canted horizontal radial driver ensures a huge coherent sound stage while the conventional forward firing driver adds a midrange presence that is hard to argue with. Unlike it's sister, the RL-1.5, the RL-3.0 has more accurate front to back imaging that is true to the recording. It has the ability to project an image in front of the speaker plane when needed whereas the RL-1.5 design keeps the image at or behind the plane of the speakers at all times.

Both the Radial and conventional drivers are wired in parallel with no crossovers of any kind. The lack of a crossover greatly reduces phase shifts throughout the frequency response, maintains the high efficiency and most of all transient response. You will hear that these speakers are unusually fast. In fact, unlike your average audiophile speaker of less efficiency, the RL-3.0's will have a more accurate linearity to that speed. That simply means they will be as fast in the bass as they are in the midrange.

The only crossover in the speaker consists of a single capacitor for the tweeter which is externally mounted for those who like to tweak.

This 3 component driver array is close coupled and time aligned in a small cube that is de-coupled to the main cabinet. This expensive process keeps cabinet resonance away from the array to improve coherency.

In the bottom of the cabinet there is an 8 inch passive radiator that is used to create a 4th order reflex cabinet without the signature of a tuned port. This passive driver couples the bass directly to the floor in a radial pattern not unlike the radial driver on the top of the cabinet.

The pyramidal shape of the cabinet eliminates all parallel surfaces which reduce standing waves inside the cabinet.

From a design aspect you have a speaker using the more expensive and less common design elements. It has evolved from 1000's of hours of listening with the goal of having a near perfect audiophile loudspeaker.

GETTING STARTED

After unpacking your speakers, please check for damage. Save your shipping cartons and remember how the speakers were packed in case you have to send them back.

HOOKUP



Your RL-3's have 3 sets of binding posts.

The lower horizontal set is the main jacks that hook to your amplifier.

The top vertical sets are as follows:

Left set is for the tweeter capacitor.

Right set is for the tweeter resistor.

These speakers can not be bi-wired.

Periodically check the top vertical sets to be sure they are always tight.

The tweeter capacitor was externally mounted so that you can easily change from one brand of capacitor to another. Since no two brands sound alike it is possible for you to voice your tweeters to your own liking with different caps.

The tweeter resistor is used for attenuation and is also externally mounted so that you can easily change the resistor to a different value. These are 5 watt ceramic resistors and can range in value from 1 ohm to 16 ohms or higher. The higher the value used, the quieter the tweeter will become. It is also acceptable when no attenuation is needed to replace this resistor with a straight piece of wire.

TWEETER ANGLE

The RL-3.0 uses a Isodynamic Planar Ribbon Tweeter mounted to a steel tab that is designed to be bent a few degrees in either direction (front or back) to facilitate the correct tweeter angle. Correct tweeter angle is determined by the listening chair distance away from the speakers and the listening chair height.



The picture at left shows the tweeter angle at 1 degree back in relation to the front baffle. This is the maximum forward angle typically used when sitting far away and or in a low listening chair.

From this point it is possible to continue the tweeter angle back to about 7 degrees or 1 inch back at the top of the tweeter.

Making small adjustments over time will hone your soundstage and image focus.

SPEAKER PLACEMENT

Two things are effected by where you physically place your speakers in the listening room. Bass / overall frequency balance and Imaging / Soundstage performance. As a general rule, the farther out from the wall behind the speakers you place them, the deeper your soundstage will become. Placing them too close to the walls or corners will exaggerate the bass. As with all speakers, the more time you invest in trying different placement possibilities the more likely you are to stumble into the best possible setup in your room. In small rooms I usually recommend a near field arrangement where the speakers are 6 to 8 feet apart and the listening chair is 4 to 8 feet back. The toe in should be such that the axis of each speaker crosses either just in front of your nose, or just behind your head. In larger rooms the same method just gets better results, but you have the option of enlarging the triangle.

TWEAKING THE BASS

Room placement is 90% of it. Once you have determined the best possible placement in your room there are a few things that can be done to alter the character of the bass.

On hardwood floors you can try setting the speakers on a small plush piece of carpet or rug.

On carpeted floors you can put a square piece of wood between the speaker and the carpet.

Coupling the speaker to the floor properly can effect everything from the bass to how smooth the treble is. Options are as follows:

- A) Run the speakers with no spikes or feet, just the bare wood base making contact with the floor.
- B) Use small rubber feet on all 4 corners of the wood base to isolate the speaker from the floor and raise it up 1/2 inch.
- C) Use spikes to couple the speaker to the floor. For example, using the two piece cone spikes, you can use the whole cone, use just the top half of the cone or use just the bottom half of the cone. All three will create different heights between the floor and the cabinet base.

AMPLIFIERS

These speakers are around 93 dB efficient with 1 watt at 1 meter. The ideal amplification would be a tube amplifier between 6 and 30 watts. If solid state amplification is used it should be ideally 100 watts or less. These speakers present your amplifier with a 4 ohm nominal impedance.

BREAK-IN

40 hours for initial / 200 hours for complete

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