



First Downfiring. Then Upfiring. Now Sidefiring. What's Going On?

Revised Nov. 2020

For many years, our speaker cabinets exclusively used *downfiring* woofers...for good reasons:

- Boundary augmentation
 - Bringing a speaker close to a boundary (in this case, the floor) increases its output.
- Omnidirectional sound
 - The boundary disperses the beaming high frequency output to make sound omnidirectional.
- A small cabinet
 - Mounting the woofer on the bottom makes for a smaller cabinet.

Then, in 2017, we introduced the UpShot™, a speaker cabinet with an *upfiring* woofer. Interestingly, the UpShot still meets the design goals of our downfiring cabs, while adding some unique benefits of its own:

- Boundary augmentation
 - The speaker is still close enough to the floor so that some augmentation occurs.
- Omnidirectional sound
 - Mounting the speaker on the top of the cabinet results in more direct sound to the player, overcoming the negatives of high frequency beaming. In addition, reflection off of the ceiling results in better sound dispersion. As a result, the soundstage of the UpShot is even more open sounding than that our downfiring designs.
- A small cabinet
 - An upfiring woofer results in an even smaller cabinet. Downfiring systems have frequency response limitations due to the filtering effect of the cylindrical “horn” formed by the cabinet and the floor, so an additional high frequency driver has to be added for full range frequency response. The upfiring design has no such limitations which means a single driver system can be “full range” for many instruments.

Then, in 2019, we have introduced the DoubleShot™, a speaker system with two woofers in an opposing *sidefiring* configuration with a midrange driver in between. Does this design still meet our design goals? The answer is, “yes, and then some!”.

- Boundary augmentation
 - With the DoubleShot™, woofers are still near to the floor with the resulting augmentation effect. But there is the added benefit of no cylindrical horn (with its frequency response limitations), so the “full range” drivers can deliver their broad frequency response. Plus, being close to the boundary eliminates the midbass null (dropout) caused by direct/reflected wave interference.
- Omnidirectional sound

Acoustic Image[®]

Uniquely musical.

- The 180-degree sidefiring configuration plus the added frontfiring wave of the midrange driver results in true omnidirectional sound. The soundstage of the DoubleShot is huge, giving it a “coming from everywhere” quality.
- A small cabinet
 - The opposing, sidefiring configuration of the DoubleShot results in the smallest and lightest 2x10 speaker system on the market. It weighs just 15 pounds and is 11 inches wide by 12 inches diameter, basically half the size and weight of our previous Ten2 model.

Now in 2020, we’re introducing the Coda cabinet, an upfiring design that replaces our older downfiring woofer design. Why this change after we have advocated the downfiring design for so many years? Simply put, we did it because it sounds better and it preserves the advantages of boundary augmentation, omnidirectional sound and a small cabinet. In fact, the new Coda cabinet is 5 pounds lighter and noticeably more compact than the older design.

What all this shows is that, as our designs continue to evolve, we have found even more creative ways to meet our design objectives and improve our products. Cabinets are smaller and lighter and the characteristic AI sound is more open and easy to hear than ever before.