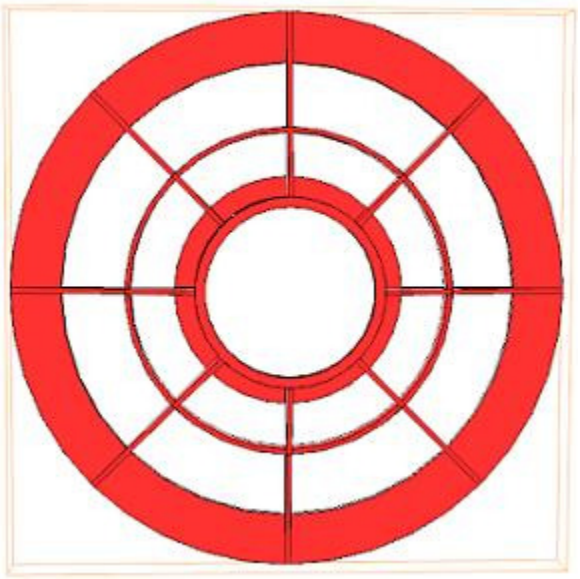
Stereo Integrity BM MKIII Technical Details

Cone

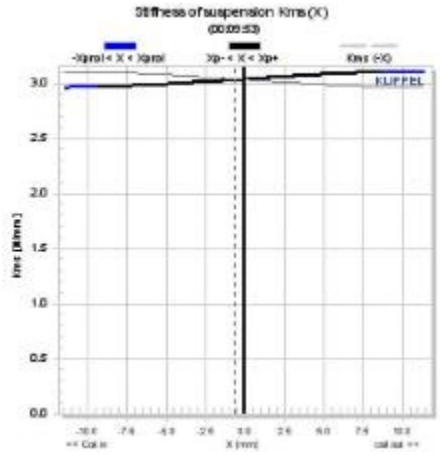
The diaphragm of the BM mkIII is made up of two pieces of composite material. The bottom, un-seen, carrier has a plethora of duties, which includes offering extra structural support for the upper flat diaphragm. In addition to the latter, the bottom carrier also centers the voice coil former to the top flat diaphragm. And finally, it offers over 15 square inches of glue surface area for the assembly while also sandwiching the inside edge of the surround between it and the top flat diaphragm.



Spider

Suspension linearity is achieved on the new BM mkIII by a massive 10" diameter Nomex spider with woven-on tinsel leads. Suspension non-linearities negatively affect the performance of any loudspeaker, so we wanted to ensure that the suspension on the BM mkIII was as linear as possible. As you can see from the suspension plot below, the suspension curve isn't a curve at all, it's as close to a straight line as possible, which means that the suspension is as linear as possible. When you delete the possibility of suspension-induced distortion, you become that much closer to aural nirvana. Many manufacturers look past suspension-induced distortion because it is a small portion of the overall distortion characteristics of the loudspeaker itself. For us here at SI,

it's enough of a percentage that we chose to completely eliminate it by engineering a suspension that is completely distortion fee.



Motor

At the heart of the BM mkIII lies the compact, XBL^2 enabled, neodymium 10 ring cluster motor. Keeping BL more linear with an XBL^2 motor in a loudspeaker keeps distortion down and your T/S parameters more stable. To read more about how our XBL^2 motors out perform other motors click here. As you can see by the Tech Paper, we not only have more linear stroke but we also have a flatter BL curve than any other type of motor topology.

The 10 ring neo motor increases BL and sheds weight compared to a normal ferrite magnet slug motor. Neo can be up to 10x stronger than ferrite, so you need less of it to have the same, if not more powerful, effect. And using a neo radial disk configuration allows space between the magnets for air to circulate around the voice coil, therefore increasing thermal power handling compared to a conventional solid ferrite slug. We also nestled a shorting ring directly in the gap, which reduces and stabilizes inductance for better sound quality. Modern overhung and underhung motors may employ shorting rings on top of, or below, the magnetic gap, which lowers inductance, but doesn't stabilize inductance. Placing the shorting ring directly in the middle of the magnetic gap of an XBL^2 motor not only lowers but stabilizes inductance while not comprising linear excursion or lowering BL to an un-desired level.