The Hollow Oval Solution

Quite a few years ago, after many computer simulations and other exhaustive tests, the engineers at Analysis Plus reached an innovative solution that flew in the face of conventional wisdom on audio cable geometry. We determined that the **Hollow Oval** cable design constituted the best possible conductor design. Here's why:

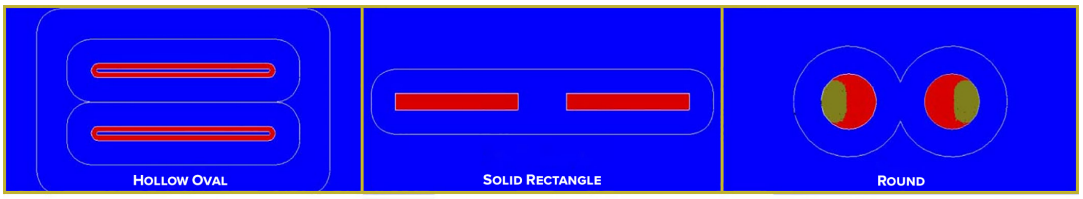
The primary advantage of an oval conductor design, rather than cylindrical conductor geometry, is that the oval shape allows more of the return current to be closer to the outgoing current, thus reducing the negative effects associated with excessive current bunching.

At DC, the current is uniformly distributed across the cross-section of the wire, but as the frequency gets higher, the current is distributed near the surface. Since the center part of the conductor is not used at high frequencies, we can simply eliminate it. By using a *hollow* conductor, we help minimize the change in resistance with frequency and the cable becomes more efficient.

The illustrations below were the first *finite element* computer simulation ever done looking inside three different copper conductors' geometries. You are looking at the current inside a cross section of three different wires at different frequencies. Before this, we used to guess what the current looked inside a conductor and talk about skin effect but ignore the proximity effect because we could not model it.

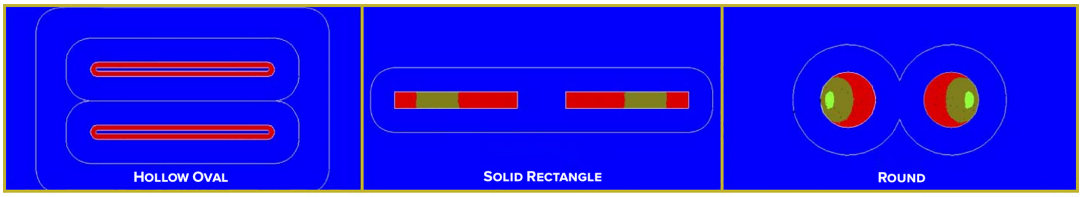
Why do Hollow Oval cables sound better?

As the frequency is raised to 4 kHz, non-uniform current distribution appears in the round conductor cable. This change alters the resistance and inductance properties of the cable, an unwanted effect.



Bad, non-uniform current distribution

The plots at 10 kHz show increased areas of reduced current density for both the rectangular and round geometries. The effect is more pronounced for the round conductor, which leads to greater changes in its electrical parameters.



Good... Uniform current distribution

Bad, non-uniform current distribution

With our Hollow Oval design, note the uniform current distribution (even at 20 kHz). This is why the electrical properties of our Analysis Plus cables don't change, and why more of the music is delivered to your speakers and to your ears. Find out for yourself. We think you'll agree.