

---

Subject: Re: Comparing components verses comparing systems

Posted by [Wayne Parham](#) on Thu, 07 Oct 2010 14:09:16 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

When swapping horns, if their size is similar (HxWxD) and their directivity characteristics are similar, then they are at least in the same ballpark. There may be some specific details that require attention, and some crossover changes may be required. But the basic crossover topology should probably be the same.

Generally, you have two common directivity contours, constant directivity being one and collapsing directivity being the other.

Exponential and tractrix horns have collapsing directivity and so those can be considered similar to each other when designing the crossover. Mass rolloff is somewhat equalized with acoustic equalization, at least on-axis.

Conical, radial, oblate and prolate spheroidal and the various proprietary constant directivity designs like Mantarays and BiRadials all provide similar response over a wide arc. There is no acoustic equalization from collapsing directivity so mass rolloff has to be compensated with equalization in the crossover. This is the topology of my crossover designs, having an R1/R2/C1 network for top-octave compensation.

Constant directivity, compression drivers and crossovers

---