Subject: Re: WinISD 0.44
Posted by Wayne Parham on Tue, 18 Jun 2019 19:49:46 GMT
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That's approximately the same size box I run. It sounds great in that size box. I tune mine a little below that, which as you said, gives the system an overdamped alignment. I like that because thermal shifts don't push towards underdamping, but rather shift to a less overdamped alignment. It's just more tolerant of thermal shifts.

To be very honest, what I've found that is as important as the Helmholtz frequency in boxes this size are the standing waves in the 100-300Hz region. Those are too low for acoustic insulation on the enclosure walls to damp effectively. And you don't want to fill the box with stuffing if its ported. So I do an arrangement that works well for large ported boxes, which is to span the cross-section with a sheet of insulation. It is far enough away from the cabinet boundaries to lower the frequency range where damping material works. So it effectively "catches" the lower midrange while letting the bass pass right through.

It also helps to position the driver and the port carefully so that they do not line up with a standing wave mode. It's kind of like working with room modes, except the frequency range we're concerned about is shifted upwards because the chamber size is smaller than a room. So instead of modes lining up in the bass, they line up in the midrange. That's why careful placement of driver, port and damping material all come into play.