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Subject: Re: Sound Boxes - Calculating Dimensions  
Posted by [AudioFred](#) on Sun, 21 Nov 2010 22:43:00 GMT  
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There is a correlation between the diameter of a bass driver and the box volume, but other factors enter the equation too. Many years ago determining the right box size and port dimensions was a trial and error thing, and when a design did sound right nobody knew why. Then two guys named Theile and Small identified the mathematical correlation between driver parameters and box size and tuning, and the world has never been the same.

Check out some drivers on any speaker site and you will notice some parameters known as the TS parameters will be listed. This include VAS, QES, QMS, QTS, etc. You can use these to calculate the optimum box size and tuning using any of a number of calculators. One of the most popular is WinISD, which can be downloaded free from this site:  
<http://www.linearteam.dk/default.aspx?pageid=winisd>

You can plug in the TS parameters of a driver and the program will suggest an optimum box size and tuning (if the driver is appropriate for a tuned box), and will show a freq resp graph. You can change the box size and tuning, and the graph will indicate the changed freq resp and other characteristics.

Download WinISD and not WinISD Pro. It's simpler to use. And be sure when you enter data you're using the right measures (e.g. don't confuse cu liters with cu ft, etc).

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