



## Cms explanation

What is Cms?

Cms is a measure of the compliance of a subwoofer. Ok, so what is compliance? By definition, compliance is: a coefficient expressing the responsiveness of a mechanical system to a periodic force. In this case, the force is the motor of a subwoofer. A high compliance subwoofer is one that has a very soft suspension. A low compliance woofer is one that has a very stiff suspension. In small enclosure subwoofer you typically don't want a really stiff suspension because a stiff suspension is going to rob you of efficiency. Now if you're after a big SPL monster where you don't care how it sounds, a stiff suspension is exactly what you want because you want to be able to throw 5,000 watts on a single subwoofer.

Now, lets take a further look into the Cms figure. Cms is more than just a number. Well, it *is* just a number. But what you really need to look at is the Cms of a subwoofer over STROKE! A wildly varying Cms curve will diminish the effectiveness of the motor and performance of the subwoofer.

Assuming that the motor force is linear (like our XBL<sup>2</sup> subwoofers are!), you don't want the compliance changing drastically while within the linear limits of the speaker. So when *do* you want Cms to change? When the driver is approaching its linear limits you want the suspension to tighten up to resist and/or slow down the moving assembly before it gets into trouble (like bottoming the voice coil into the backplate). When you see a Cms curve, the important thing to look at is the linearity of the curve. If the curve is heavily bell shaped, that means the suspension is changing quite a bit in relationship to what the motor is trying to do.