

# HEAD-TO-HEAD MTX VS. KICKER

As we pitted the MTX Thunder8500 against the Kicker L7 Subwoofers, we found that the differences were enormous. The price points are about the same, but that's where the similarity ends. Based on published specification differences and the measurements we took in our MTX Acoustic Labs, we found some significant differences in two major performance characteristics – Volume Displacement and Distortion.

**Volume Displacement** – “A larger cone surface area...means more air is being moved, and more air being moved means it's louder.” That's from the Kicker website. Actually, according to the laws of physics, Kicker is only half right. The whole truth is that you need to measure BOTH the cone surface area AND the Xmax to correctly determine how much air is being moved. Volume Displacement, the true measurement of the amount of air moved, is the measurement that matters.

**Distortion** – very simply, a deviation from what is intended—how clear or how muddy your bass sounds.



Kicker's inflexible Santoprene surround. Notice the ridges in the corners that are prone to inverting during play.

MTX Audio's injection-molded, expanded polypropylene cone material offers an exceptional stiffness to weight ratio, combined with our nitrile butyl rubber surround, provides greater flexibility, durability, and performance.



Kicker

MTX Audio

Kicker uses compression style terminals with one on either side of the woofer. MTX Audio uses custom StreetWires-designed 8 gauge compression terminals and set screw mounting options—all on the same side to make installation easy.

Kicker's 2" diameter, round copper voice coil (left) is no match for the massive 3" diameter, flat wound aluminum MTX Thunder voice coil.



## VOLUME DISPLACEMENT - The Scientific Way of Measuring the Difference Between Subwoofers

Volume Displacement is to a subwoofer what horsepower is to an engine

### What is Volume Displacement?

- **Sd** is the measurement of the cone's effective surface area
- **Xmax** is the linear mechanical movement of the driver one-way
- The resulting combination is **Vd**, the sub's actual volume displacement



### Per Published Specs†

	Sd	x	Xmax	=	Vd
<b>Kicker</b>	100.0 in <sup>2</sup>		.51 in		51.2 in <sup>3</sup>
<b>MTX</b>	86.6 in <sup>2</sup>		.85 in		73.6 in <sup>3</sup>

Vd based on published specs, MTX is 44% higher than the Kicker. This means a 3.16dB increase in output (translation...that's like having to double your amplifier power!)

### Per Measured Specs taken in MTX's Acoustic Lab†\*

	Sd	x	Xmax	=	Vd
<b>Kicker</b>	100.0 in <sup>2</sup>		.4 in		40.0 in <sup>3</sup>
<b>MTX</b>	86.6 in <sup>2</sup>		.85 in		73.6 in <sup>3</sup>

Vd based on measured specs shows MTX exceeding Kicker by 82%. If there is reincarnation, just hope you don't come back as a square woofer.

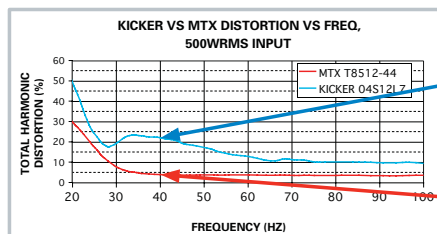
\* visit [www.mtx.com/caraudio/headtohead/w7xmax.cfm](http://www.mtx.com/caraudio/headtohead/w7xmax.cfm) to see how Xmax is measured. While you're there, go to [mtx.com/headtohead](http://mtx.com/headtohead) to see other head-to-head comparisons.

**DISTORTION - Distortion measurements are much more than numbers on a page. They are directly representative of HOW the music sounds in the real world.**

### Per Measured Specs taken in MTX's Acoustic Lab† THD+N @ 40Hz, 500WRMS Input

<b>Kicker</b>	22.5%
<b>MTX</b>	4.5%

The Kicker L7 measures 22.5% Distortion vs the MTX Thunder8500's 4.5% @ 40Hz. This means that if you put a pure 40Hz signal into the Kicker L7, an incredible 22.5% of what it reproduces is non-musical! 40Hz is where your bass guitar and kickdrum play.



It's kinda like if you could see your music, the Kicker would be blurry and unclear.

The MTX Thunder is clear, deep and powerful.



**You be the judge. With Kicker's square woofer, you get 7% more surface area, but you give up 44% in Volume Displacement, and 3dB of output...and the distortion difference is immense (nearly 5x)! When it comes to subwoofers, it is definitely NOT "hip to be square". At least, not according to the basic laws of physics.**

† For all you whiney little brats who think we make this stuff up, the published specs noted above are all available on Kicker's website. When you want real specs, head to MTX.com.

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