



## Why Square Subwoofers?

Most speakers you encounter are round. So why did Kicker make subwoofers that are square? The answer is very simple...more cone area. The advantage of having more cone area means you will get more air movement and that equals more bass output.

Round speakers have been the most common shape because they are relatively simple to construct. At low frequencies, the shape of the speaker cone does not affect the sound quality (as long as the cone is strong enough to resist flexing under pressure). Having more cone area will move more air than a smaller cone with less area. That is why large woofers are necessary if you want a lot of bass in your vehicle.

The only way to get more cone area for the same size of woofer is to make it square. A round speaker is essentially a square speaker with the corners rounded off. This will decrease the cone area and produce less bass output. If you leave more of the cone area intact, you will have more bass from that speaker. This is why Kicker has engineered square subwoofers. They required a lot of research and development but they deliver all the bass hardcore bass enthusiasts require.

Kicker did not invent the square speaker. Square speakers have been around for decades. Kicker did pioneer the deep dish, long travel, square subwoofer that is dedicated to producing maximum bass from a given area. This was made possible with the patented ribbed corners. The ribbed corners allow the surround to compress and expand as the cone travels in and out without deformation, distortion or unnecessary stress on the surround's corners.

Using a 10" circle and a 10" square for an example...you will see roughly 27% more area in the 10" square. This means more cone area with the square subwoofer.

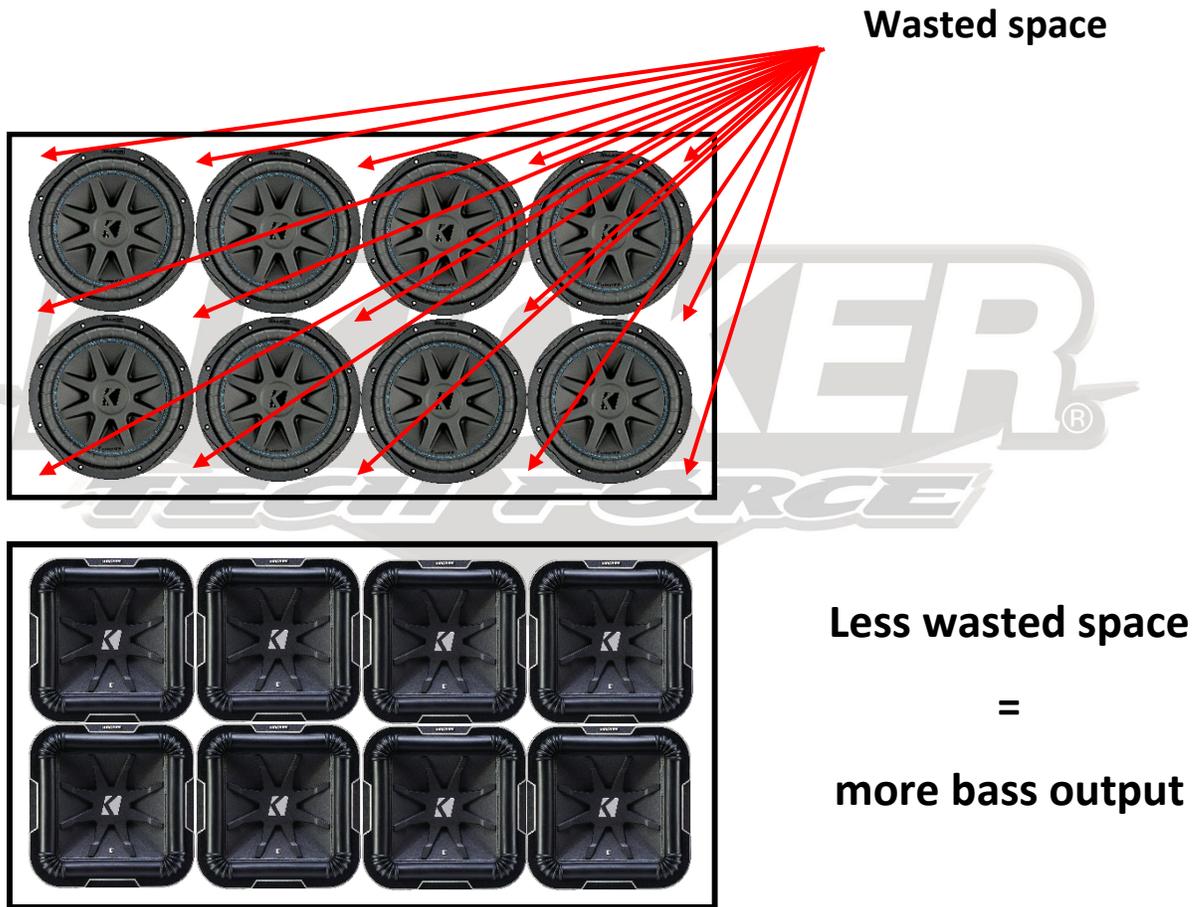
area of a square = length x height - **10" x 10" = 100 square inches**

area of a circle =  $\pi$  (pi) x R (radius)<sup>2</sup> - **3.1416 x 5"<sup>2</sup> = 78.54 square inches**

When calculating the cone area of a square speaker, the corners of the subwoofer are not perfectly square. There is some minimal rounding in the corners so there is a little less cone area that the formulas calculate. This is why we round down the area comparison to approximately 20% more cone area in a 10" square subwoofer vs. a 10" round subwoofer.

The Kicker square speakers use larger motor structures to give the extra power needed to push the larger square cone and to move more air than a similar size round subwoofer. This added performance makes Kicker square subwoofers the only choice for bass enthusiasts that want the most output they can get from their audio system.

Another huge advantage of square subwoofers happens when you put multiple square woofers on a baffle. Since square subwoofers occupy more of the usable area, you get better “mutual coupling”. This means the woofers will start to perform more like a single subwoofer since there is less space between the drivers that is wasted. This will give you even more output for louder bass.



Our square subwoofer cone areas compare generally to the next inch larger size of a round subwoofer. Here's generally accepted cone area comparison:

8" square = 9" round  
10" square = 11" round  
12" square = 13" round  
15" square = 16.5" round  
18" square = 20" round

This is the reason why if you want to get the most bass from your enclosure, you want to use Kicker square subwoofers. There are several models to choose from depending on your bass needs:

- L7** The highest power handling, deepest bass and the most output.
- L7S** Best bang for the buck square subwoofer.
- L7R** L7S's little brother – excellent value.
- L7T** Shallow-mount square subwoofer with all the performance you expect from Kicker subwoofers.

Kicker's square subwoofers are also available in custom developed enclosures that are performance-matched to the subwoofer for perfect bass every time. Check out the Kicker Subwoofer page for details.

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