

How to calculate the space requirements for your custom Tensioned-Inceiling projection screen

When you have a certain amount of space available, or your projector projects an image of a certain size, there might not be a standard size that's suitable.

The Beamax tensioned inceiling screens can be customised to fit the exact space you have available for the screen. Here, you can determine which space you need for your custom screen.

We'll look at the most common starting points to make the calculations:

1. You have a certain space available in your ceiling
2. You need a certain image width

1. How to determine the screen width when you have a certain amount of ceiling space.

We'll start from an example. Let's say you have 250 cm available for your projection screen case.

Now, let's look at how we calculate the rest:

The cut out size: The cut-out size is the opening you need to make in the false ceiling to install your screen.

The cut out width is 2 cm less than the case width. So, in our example, the cut-out width would be $250 - 2 = 248$ cm

The cut out width is always the same. It's 13 cm.

So, in our example, the hole that needs to be cut in the ceiling is 248 x 13 cm

The image width: The image width is the width of the image that you can project onto the screen.

The image width is always 52 cm less than the case size for a tensioned inceiling screen. Following our example, the image width is $250 - 52 = 198$ cm.

And now that we know the image width, we can calculate the image height.

The image height: The image height is the height of the projection on your screen. The height for a given width is calculated according to the aspect ratio. Most common are 4:3, 16:9 and 1:2.35. We'll use 16:9 here, as it's currently the "standard" aspect ratio for home cinema.

We'll look at the example again, where we found an image width of 198 cm. To get the height of the image, we have to divide 198 by 16 and multiply it with 9. This gives you $198 / 16 = 12.38$. Now, we multiply 12.38 by 9, which is: 111.38 cm.

This gives you a projected image size of: 198 x 111 cm.

Now, how would that work if you know which image size you want, but you want to calculate the case width and cut out size?

2. How to determine case width and cut out size when you know which image size you want.

Basically, we'll do the opposite from what we have done above. Here we are going to assume you want a 200 cm wide image.

The cut out size: The cut-out size is the opening you need to make in the false ceiling to install your screen.

The cut out width is 50 cm more than the width of the image. So in our example, the cut out width would be: $200 + 50 = 250$ cm

The cut out depth is always 13 cm, so that's easy.

Now you know how big the opening in your false ceiling should be: 250 x 13 cm

The case width: The case width is the overall width of the visible part of the case, so the part below the ceiling from the far left to the far right.

You can calculate the case width by taking the image width and adding 52 cm to it.

In our example, that would be: $200 + 52$ cm = 252 cm

So there you are, 2 calculations based on different starting points, that help you determine the right cut out or projection size.

If there's anything you would still need to know, or you have any questions, please let me know.

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