

How to make a Star Wars themed lantern/Nightstand light

This is a laser cut project that I created for my daughter who is huge Star Wars fan and it makes perfect nightstand light.

To make this I used the following materials:

- 3mm laser plywood (Although MDF would work perfectly)
- Frosted Plastic
- Rustoleum Black Spray Paint
- Multi-changing LED tealight

To begin the project, I began my thinking about the dimensions I wanted the lantern to be. This was by far the most time-consuming part of the whole project as there are a lot of factors to consider here. You need to think about the size you want the final nightlight to be, the thickness of your material (in my case, 3mm ply) as these will inform the size of your joints that hold the nightlight together.

As well as the practical considerations discussed above, you need to consider the design of the panels. I made a Star Wars inspired nightlight but you can make one that is tailored to your own likes and interests. When making your design, you need to think about how it will look as a silhouette. It needs to have recognizable outline as there will be no detail within the scene to help make it identifiable. The four scenes I choose were:



Skywalker and Darth Vader Fight Scene



Luke trapped in cave on Hoth



Millennium Falcon and Death Star scene

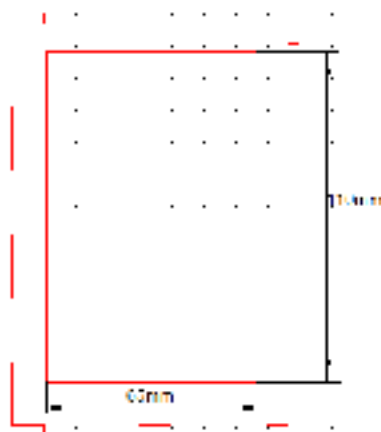


Iconic AT-AT battle scene

These are all instantly recognizable for a Star Wars fan.

Once I had determined the dimensions and design, I began creating it in Techsoft 2D Design but you can use any CAD software such as Fusion 360, Inkscape etc.

I designed a panel that was 113mm x 90 on the outer edge, I then created an inner rectangle (110mm x 65mm), this would be the online which my silhouette would anchor* to.

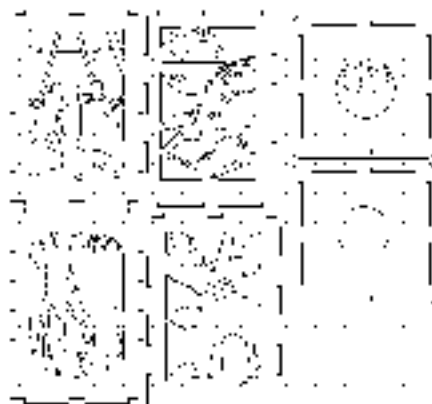


In order to hold the four sides of the lantern together, I made finger joints on the left and right side of the panel, as well as two mortise and tenon joints at the top and bottom. The number of joints and their sizes depends on how big you have made your lantern. You can work this out for yourself or take a look at my diagrams at the bottom of this document for reference. For those of you who do not wish to make your own, I will supply you with a blank template to get you started.

I then measured the size of my LED tealight (in my case this was 35mm) and created a circle on the base which would be cut out so my tealight could fit into the hole snugly. Don't forget to adjust the size of your circle (and joints for that matter!) to allow for the kurf of your laser. You can look at laser cutting principles in more depth in the laser cutting class on the Instructables website.

Once you are happy with the structural design of you lantern, you can now move on the aesthetics. Feel free to choose whatever you like for your design. If you would like to use mine. I would be only too happy to supply you with the file.

Now you have finalised your designs and checked it for any errors, it's time to laser cut (which is actually the quickest part of the whole process). I will not cover here how to import and setup your laser cutting software and hardware, there are so many out there it would be impossible to cover them all. Just make sure you have imported your laser cutting file into your laser cutting software and chosen the appropriate power and speed settings for the material you are using.

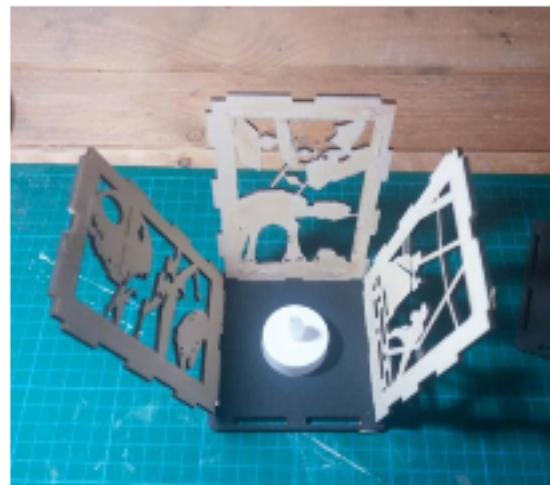


A picture of my file layout just before laser cutting.

I laser cut the lantern and then fitted the components together in a dry run, checking for any issues with the joints etc.



After laser cutting (this is a staged picture as I forgot to take a picture during the process.)



The dry run.

Once I was happy with how the lantern held together, I lightly sanded each panel and then spray painted the whole thing with Rustoleum black paint (but you could choose any colour that you like). I left the inside of the lantern its natural colour. This was to give me the greatest contrast to make the silhouettes stand out once illuminated.



Frosted plastic cut to size and glued to the inside of the lantern using hot glue.



After painting, I then cut the frosted plastic that will act as a window behind each panel. Because the plastic is so thin, I just cut this using a craft knife and ruler, although it able to be laser cut for a more accurate and neater finish.

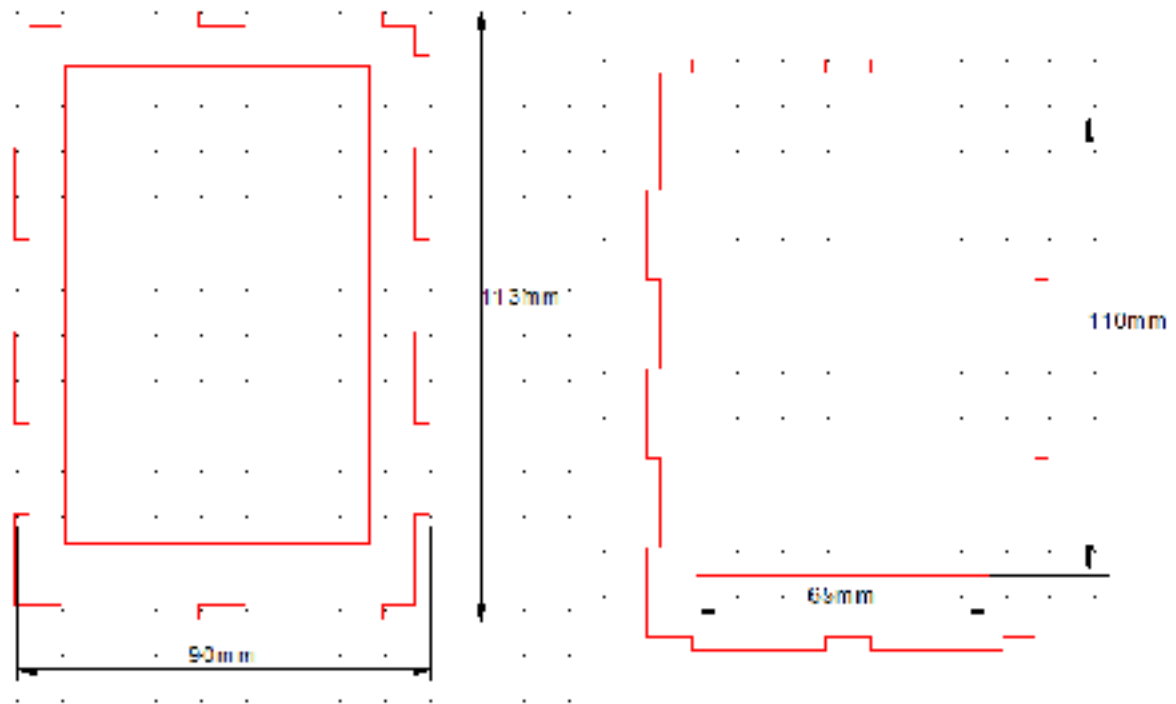
When this dried, I hot glued each side together on the inside of the joints so you couldn't see any glue on the finished product.

My final step was to add some laser cut feet to the bottom of the lantern and then hey presto! The lantern is finished and ready to be used as a bedside nightlight, give as a gift or to put in the man/woman cave!

I have made so many of these lanterns and the possibilities are endless. I have made Harry Potter themes, Indiana Jones, Christmas scenes – you are really only limited to your imagination. Please upload a picture of your final designs, I would love to see them! J.

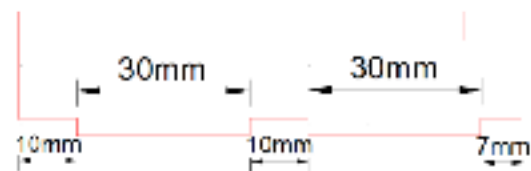
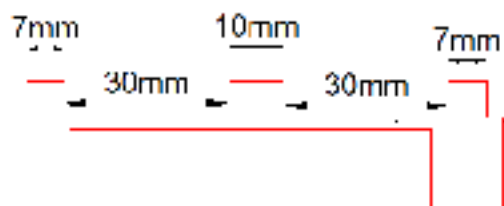
Full Dimensions of my lantern:

Please note that these are not exact cutting dimensions, no adjustments have been made for kerf or the thickness of the material that you will be using.



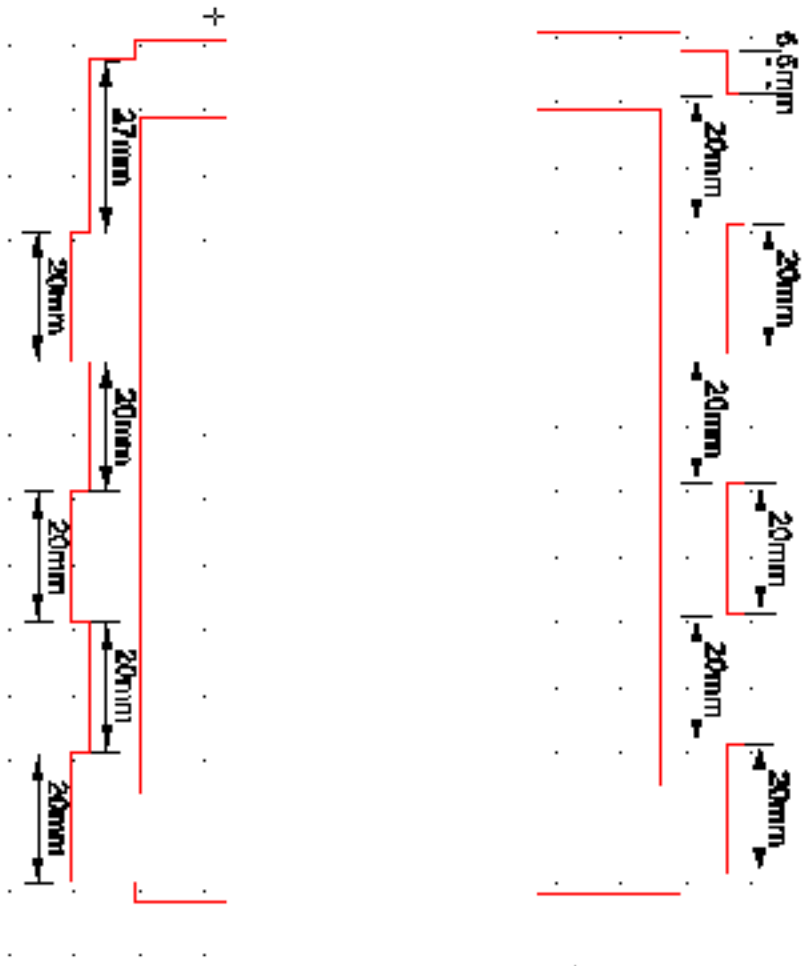
Outer Dimensions

Inner Panel Dimensions



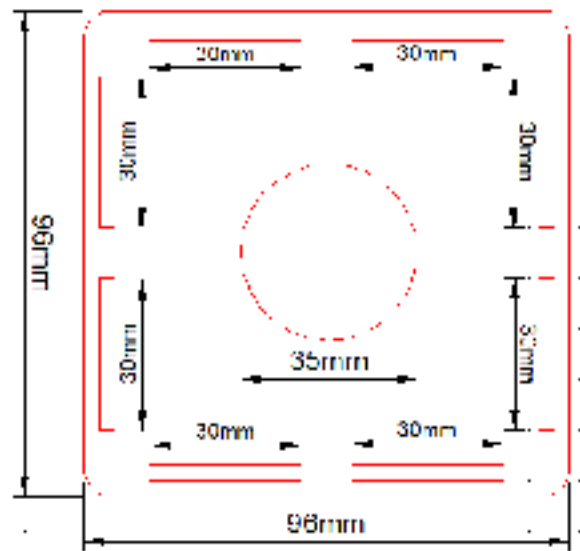
Top

Bottom



Left

Right



Top/Bottom NB: The top and bottom are exactly the same apart from the space for the tealight.

*By anchored, I mean that my silhouettes have to have contact with the main body of the frame. Not only does this add to the structural integrity of the lantern but also the silhouettes would be cut out when laser cutting and be separate from the lantern body.