



LED Barn Doors

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<https://learn.adafruit.com/led-barn-doors>

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Overview

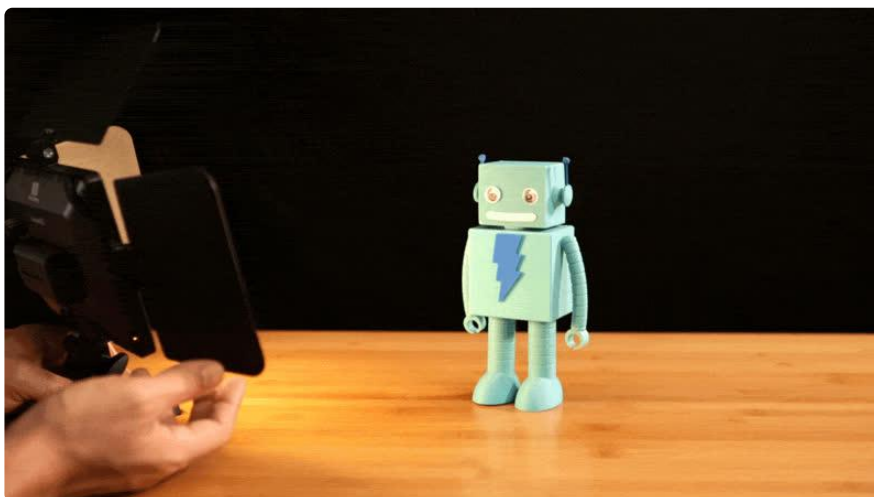


Lighting is a pretty important part of photography and video.

This luxpad LED panel is really nice because you can adjust the color temperature and brightness of the LEDs, but sometimes there's situations where that just isn't enough when you need total control of your light source.

That's when barn doors are awesome.

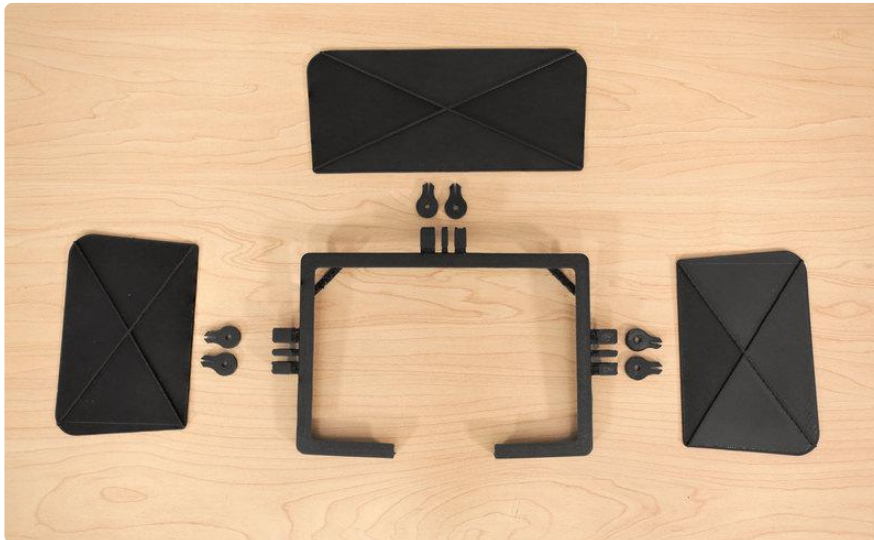
Barn doors are basically an attachment that's fitted in front of your light source and it sorta looks like a set of barn doors.



The barn doors are fixed to a hinge, allowing them to be adjust so that it can shape the beam of light coming from the source.

This is really helpful because it can be used to prevent the scatter of light from spilling into areas you don't want - such as hotspots from a subject's face, or highlights from the surface of an object.

3D Printing



[Download STLs](#)

Download, Modify, Remix Design

The parts were modeled in Autodesk Fusion 360 and available to download, modify and remix. The parts can be exported in several file formats - great if you're using a different CAD package.

[Edit Design](#)

Filament Options

We recommend using PLA material for this project. You can use ABS or other type of filaments but may require a heated bed. PLA prints with minimal warping and doesn't necessary require a heated bed.

Slice Settings

The table below is a general reference for slice settings. Every 3D printer is slightly different, so you might want to use settings you're familiar with.

barnFrame.stl

220c

The frame takes about 3 hours to print.

barnSides.stl

10% Infill

Sides print in about two hours to print

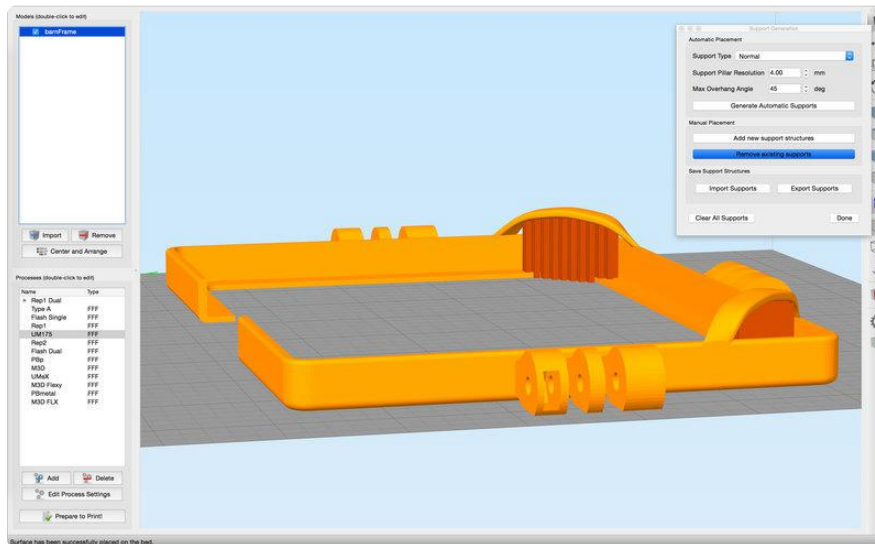
barnHinge.stl

0.3mm Layer Height

No Supports/Raft

90/150 mm/s Speeds

The hinges print in 3 minutes



Supports

You only need supports for the bands across the corners that keep the frame held onto the LED panel. You don't need to add supports to the knuckle slots or the bottom of the frame.

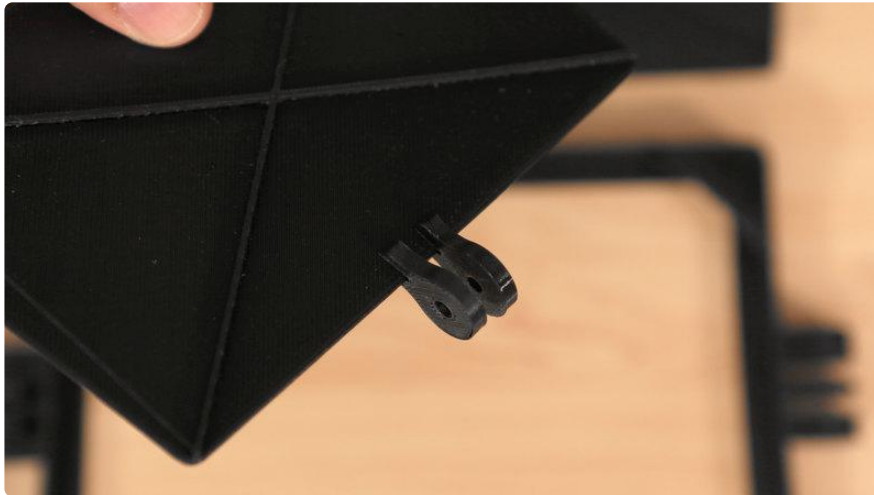
We used Simply3D to set the resolution of the pillars to 2mm to make removal easy.



Support removal

Carfully remove supports using flat pliers by twisting the supports and gently pulling away from the frame.

Assembly



Assemble hinge clips

Align panels to the frame to insure they are centered with the frame. The hinge clips snap to the side panles. The tolerences on the clips should be tight enough to grip the panles.

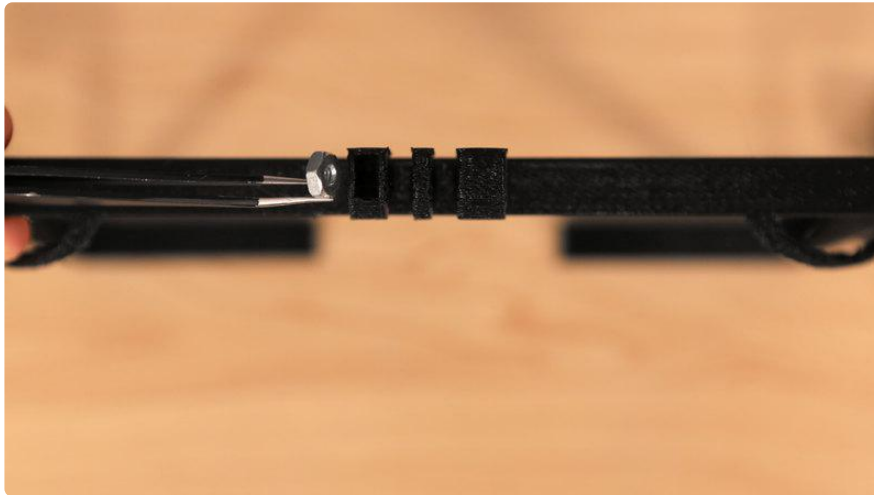
You can adjust the horizontal compensation in the slicing software if the hinge clips are too loose or too tight.



Adhere hinge clips to panels

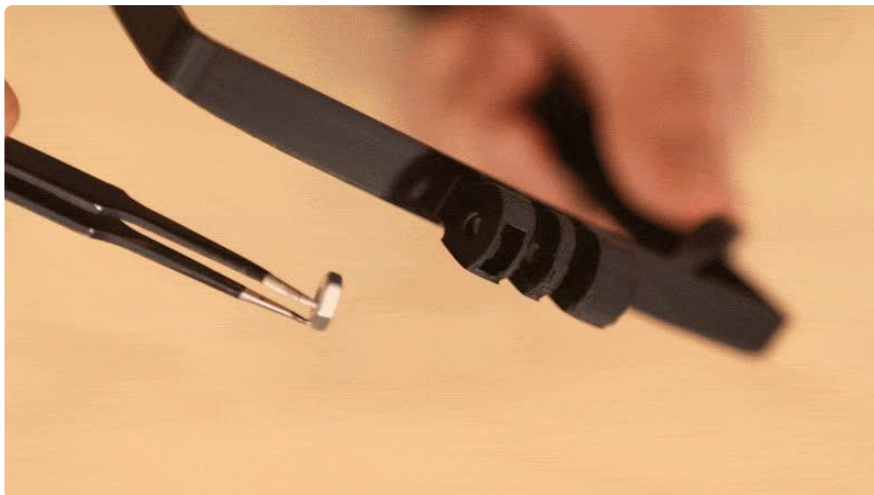
Use adhesives like E600 or hot glue to attach the hinge clips to the side panels.

Be careful not to glue the parts where the hinges move together!



Screw nut

The hinges are held together using #6-32 x 1" flat phillips screws with nuts. The hinge knuckle has an opening to insert the nut.



Hinge knuckle

The tolerances should be loose enough to easily insert the screw nut. Rotate the the screw nut until it can be fitted inside the knuckle.



Add screws

Insert the #6 screw through the hinge pin hole on the opposite side of the nut. The groove should keep the nut in place as you tighten the screw.



Final assembly

After all of the panels are aligned and glued, we are ready to attach the frame to the LED panel.



Attach barn frame

Affix the assembled barn doors to the LED panel by sliding it over the top of the panel.



Complete

With the barn doors assembled you can mount the LED panel to the hot shoe of a camera or use the pan tilt shoe mount base on a tripod. You can even use our small [3 D printed tripod \(\)](#) on a desk.