D.I.Wire Lamp

Create your own lamp

Intro

Learn how to build a lamp with the D.I.Wire Pro. It's an easy project that will make for a great conversation piece in your lab, studio or home.

Estimated Time:
2 Hours

Level:
Intermediate

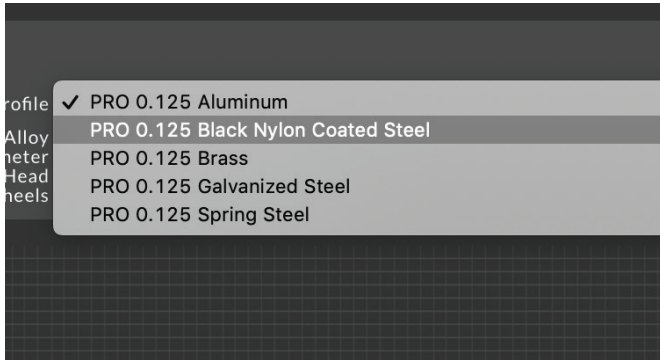| Software needed	Tools and Materials needed	Additional resources
WireWare by Pensa Labs LampCrossSection.svg BaseAndTop.svg MiddlePlate.svg	D.I.Wire Plus or Pro Computer Mac OS or Windows PC Laser cutter (optional) 3D Printer (optional) 24' of 1/8" Galvanized Steel	Files for 3D printing (Optional)

1. Material Setup

Open WireWare software and calibrate your D.I.Wire Pro by clicking "Home" button. Select wire type *"PRO 0.125 Black Nylon Coated Steel"*

Select the type of wire material you will be bending in the drop-down menu in the upper right-hand corner.

💡 **Other wires**: using wire from *PensaLabs.com* means that the material has already been preprogrammed into the software. If you are using a different kind of wire, you must calibrate your machine to make proper bends. Learn more at *www.pensalabs.com/support-wireware*

2. Select file in WireWare
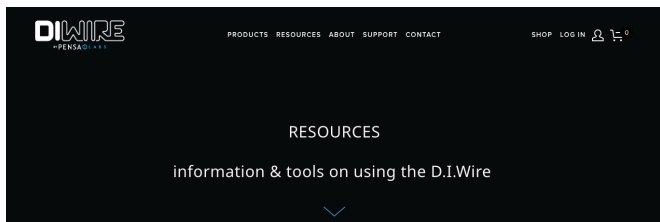
Download sample file from *www.pensalabs.com/resources*

💡 **Create your own lamp**: alternatively, you can create your own lamp in any vector based illustration application and export them as .svg file to import to WireWare. If you don't have Adobe Illustrator, we recommend using InkScape (free)
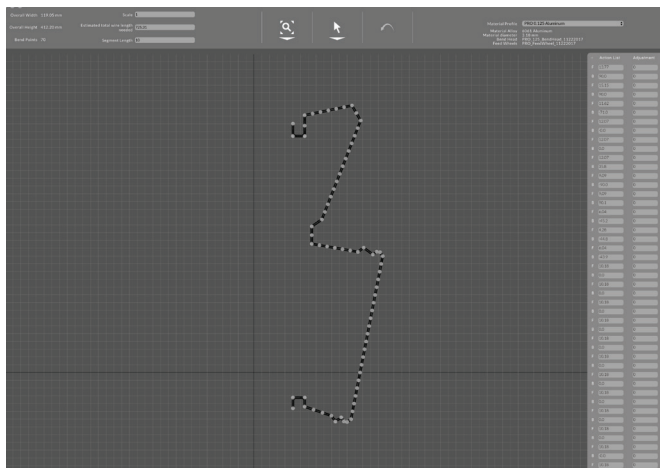
Select "Path Mode" on WireWare and navigate to the downloaded file location. Open *LampCrossSection.svg* **Leave SVG Import Scale to 1.0 and click "OK"**

💡 **Set SVG Import Scale**: if your file isn't created at the scale you would like to bend, you can adjust the scaling through the Set SVG Import Scale. Typically, we recommend you create your vector files in a 1:1 ratio, actual scale.

💡 **Edit your lamp on WireWare**: if you decide to create your own version of the lamp, you can directly modify it in WireWare. Learn more at *www.pensalabs.com/support-wireware*

3. Load the wire

Feed the wire through the feed wheels into the bend head from the back of the machine

💡 **If you experience any resistance**: make sure that the wire is trimmed flush and there is not a burr. Also, check that the feed wheels and bend head are properly inserted into the D.I.Wire Pro.

Stop right at the end of the bend head before the bend pins

You should only see the very tip of the wire prior to bending.

4. Bend the wire

Click "Bend" in WireWare

D.I.Wire should start feeding the wire and making the appropriate bend

💡 **Click "Stop" if there is any error with a feed or bend**: if something just doesn't seem right, immediately stop the bending. This will reduce the risk of the wire getting caught in the machine bend head, or damage the D.I.Wire

💡 **Keep in mind that you need room for the out-feed of the bent wire**: make sure there is enough room not only in front of the bend head, but an equal amount of room on both sides as the wire will move back and forth

5. Trim the bend wire pieces

Manually feed a little extra wire before cutting. Leave about 1/2" extra wire at the end of each cross-section. This will be used to insert into the top and bottom plates.

Now it's time to rinse and repeat. You will need 11 more precision bent wires, and that's where the D.I.Wire Pro comes in really handy. In just a few minutes and a couple of clicks, you should have all 12 cross-sections ready for assembly.
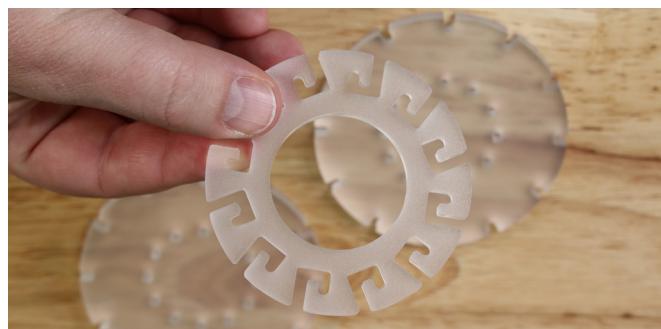
6. Cut the cross sections

Cut 2 lengths of straight wire to match the overall length of your bent truss

Now you will need to make the 3 cross-sections that hold the lamp together. First, cut out the BaseAndTop.svg files on your acrylic. The top and bottom are the same, so simply cut 2 of the same components.

Next, cut 1 plate from acrylic for the middle of the lamp using the file -- MiddlePlate.svg

Note: You don't need a laser cutter. You can cut these shapes out by hand, or even 3D print the sections by extruding the .svg file and printing them in an appropriate thickness.

7. Assemble the lamp
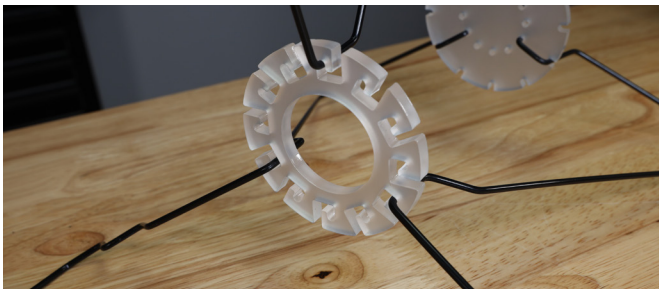
Gather all the parts and get ready to assemble the lamp.

The last step is to assemble the lamp. We found it best to start with the three cross-sections inserting them into the base and top plates, leaving 3 empty holes between each. This gives the lamp some structure and makes it easier to assemble.

Next, insert the middle plate. This adds tension to the wires . Once you have the three in place, you simply, and easily, add the remainder of the cross-sections.

The last step is to add the pendant lamp wiring. Insert the lamp holder from the bottom and screw on the retaining ring. Add a bulb and give it a test!

Congratulations! You're all done!

Share your project on social media or send it to us by email!

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