



Lucida 3D (Portable Camera Lucida)



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Summary

A unique take on a 200 year old tool. Camera Lucida is an optical device used to easily trace a subject.

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Camera lucida. the 200 year old optical device used to create accurate images before cameras existed. Brought back into the spotlight by Pablo Garcia over a decade ago I learnt about the tool for the first time a couple of months back. Fascinated by it I decided to make a printable version. Unlike any to exist before now my design transforms from its case to be able to use anywhere, unlike traditional versions which all require a table. Video:

In this process I contacted Pablo Garcia who was of great help and features several times in the video. It would be fair to say he is the contemporary expert on the subject and provided alot of fascinating historical insights. Build guide coming soon, in the next few days but I just need a little break from Camera Lucida for a day or two.



A video build guide is a WIP but I am very busy atm. Most of it can be deduced pretty simply however.

TOOLS (aside from normal printing tools):

- glass cutter
- 2mm drill bit

BOM:

Required:

76mm length 2mm brass rod

43mm length 2mm brass rod

10 m2*20mm bolts

2 m2*7mm bolts

3 m6 nuts

1 m6*20mm bolt

1 m6*45mm bolt

1m6 rubber washer 1mm(ish) thick

Super glue of choice

Extendable arm, 1 end 5.8mm, other end 8.6mm. I took mine from these cheap back scratchers.



[5PK] Home Master Extendable **Back Scratchers**, Anti Slip Rubber Grip Handle, Wide Claws With Rounded Tips, Suitable For Sensitive Skin, Lightweight and Compact,...

★★★★☆ ~ 4

50*50mm square 1.2mm thick glass.

50*23mm square thin mirror (around 1mm)

A “first surface mirror” and “semi silvered glass” are the ideal choice here but greatly up the cost. Build guide will discuss this when it is complete.

Recommended:

Stiffened felt board or other material to line box

20mm elastic for holding ND filter

Cellophane for ND filter

8 m2*7 bolts for ND filter

Cut down strip of microfibre cloth

Optional:

1m6 nut for table clamp

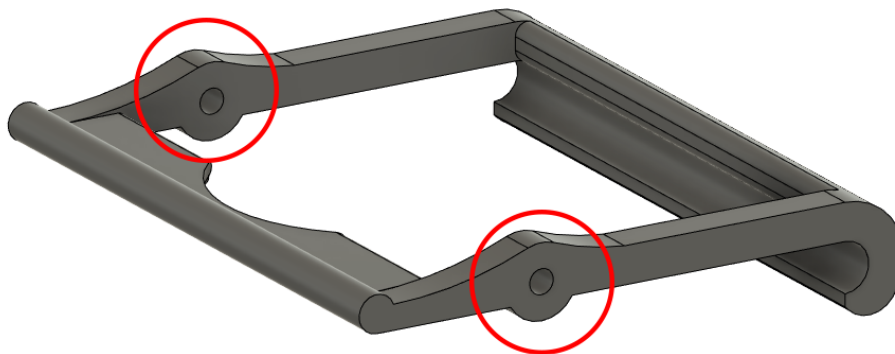
1 m6*100mm threaded rod for table clamp

3mm material of choice for laser cut logo

Key build notes:

Drilling holes:

The 2mm holes are all slightly undersized. The outer holes need to be widened using a 2mm drill bit in a pin vise or similar. This is to ensure a smooth operation of pivoting components.



Cutting glass:

The glass components will be need to cut to size. Look up guides if you need more info, its not hard but im really not knowledgeable enough to be spreading advice on this.

Gluing glass:

When gluing the glass into place, take care to use very little glue and not to splash the glue out onto the glass. Go very slow and use very, very little glue.

Laser cutting:

There are two versions of the case, one with and one without the logo. Use the provided SVG to cut the logo from 3mm material of your choice should you so choose.

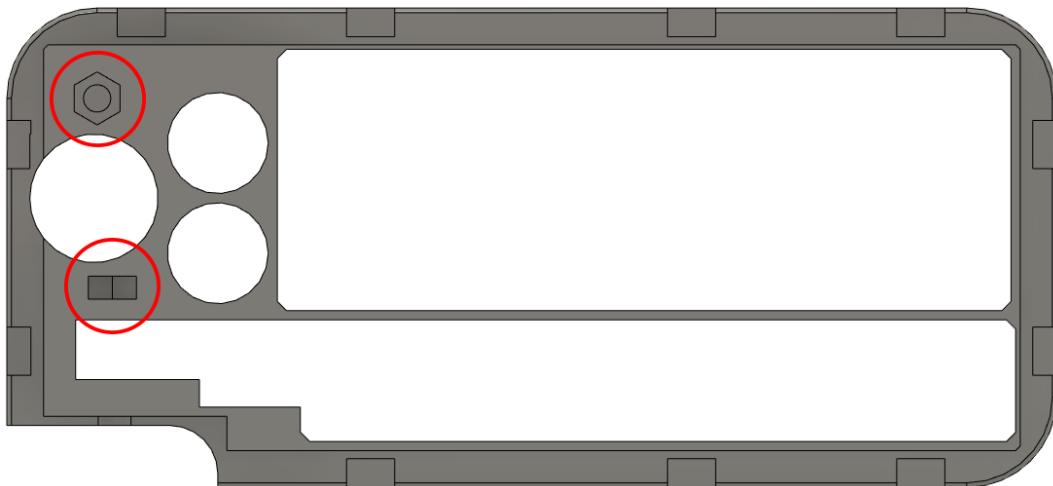
There are SVGs for cutting the felt inserts if this is a capability you have. Highly recommended. Could also print these shapes and use as a template with a craft knife.

ND filter:

I am not happy with the current design and am working on new options, so keep that in mind. It works but could be better.

“Captive” nuts:

Two of the m6 nuts are inserted before the case is built, as seen here:



Model files



Box

15 files



nd-b-proto-1.stl



outer-bottom-final.stl



inner-top-logo-final.stl



top-logo-final.stl



innter-top-logo.stl



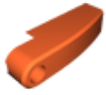
bench-clamp-final.stl



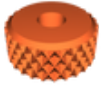
hinge-final.stl



nd-a-proto-1.stl



body-pivot-final.stl



knurled-knob-x2-final.stl



arm-divider-final.stl



pivot-knob-final.stl



latch-part-b-final.stl



latch-part-a-final.stl



inner-bottom-final.stl



Optical

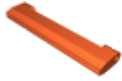
9 files



pivot-spacer.stl



mirror-body-final.stl



glass-hinge-final.stl



latch-arm-x2-final.stl



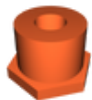
viewing-hole-final.stl



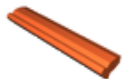
arm-pivot-final.stl



latch-main-final.stl



pivot-mount.stl



latch-reciever-final.stl

Other files

 **SVG** 6 files

 **circle_big.svg**

 **insert_3.svg**

 **ring_1.svg**

 **circle_small.svg**

 **ring_2.svg**

 **camera_lucida.svg**

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