Wisconsin Photoreactor
Assembly Instructions

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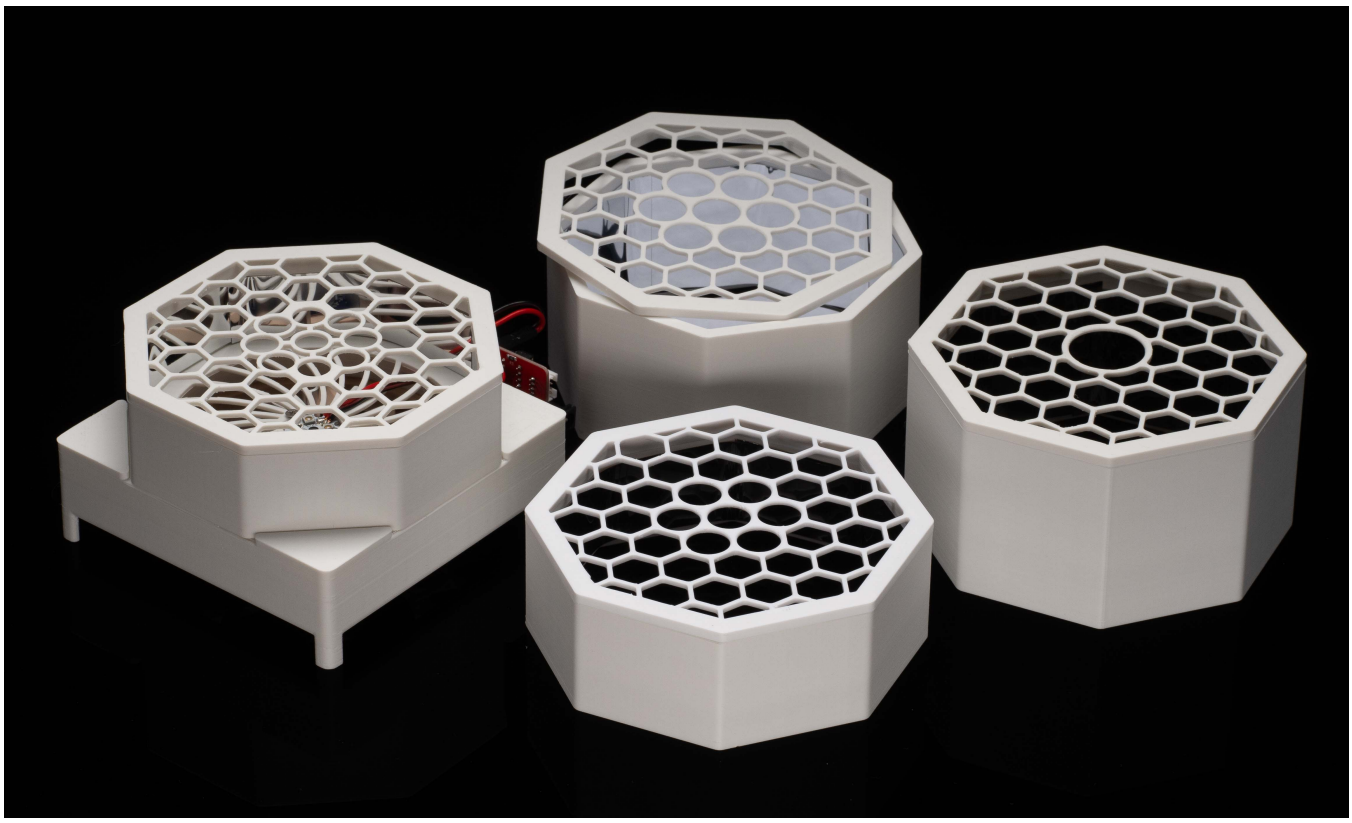
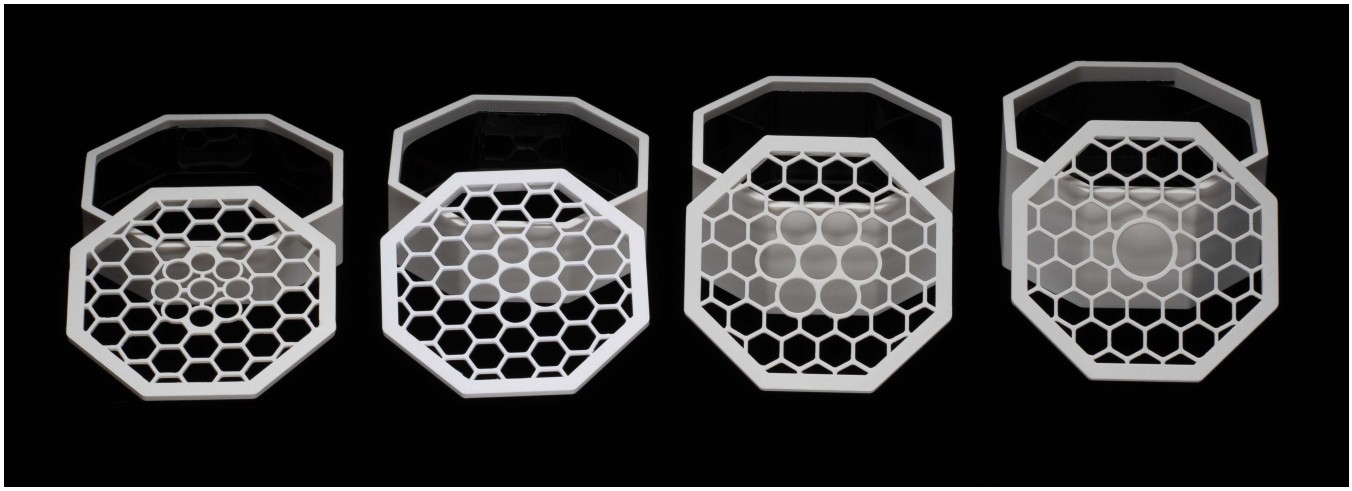


Contents

1 Introduction

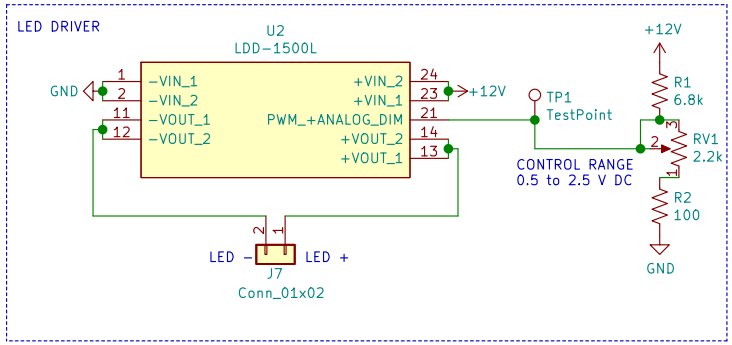
Throughout this document we refer to an online repository containing source and design files. This repository appears at `https://github.com/uw-madison-chem-shops/wisconsin-photoreactor`. This repository contains everything including the source for this very document.

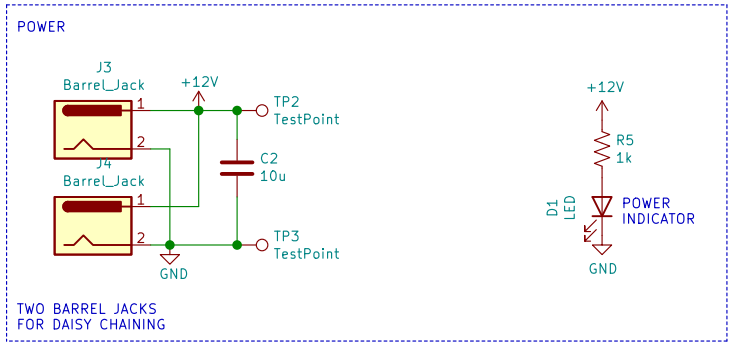
2 3D Printed Enclosure

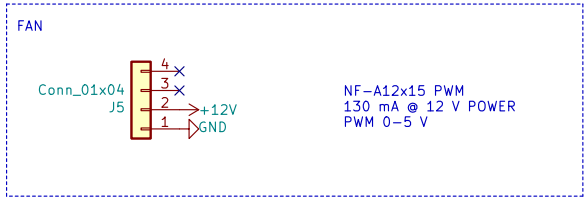


3 Electronics

3.1 Analog







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Sheet: /
File: driver.sch

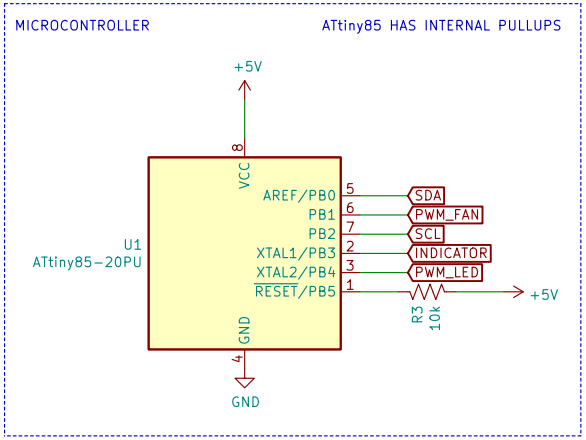
Title: Analog Photoreactor Driver

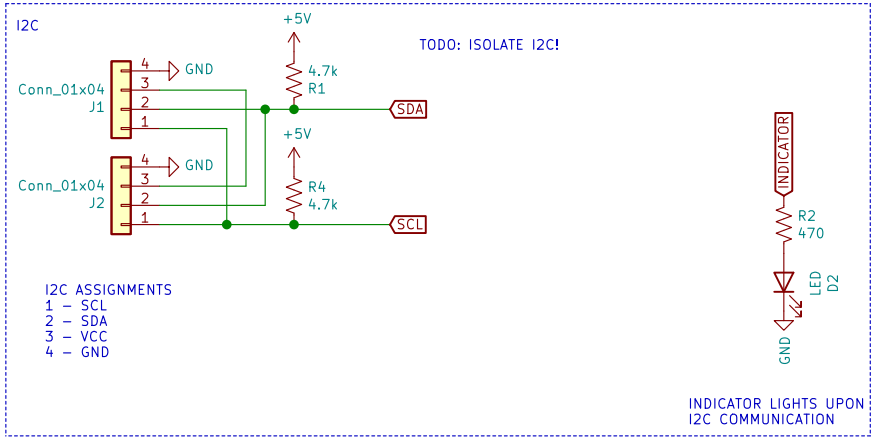
Size: USLetter	Date: 2021-03-05	**Rev: B**
KiCad E.D.A. kicad 5.1.8+dfsg1-1+b1		Id: 1/1

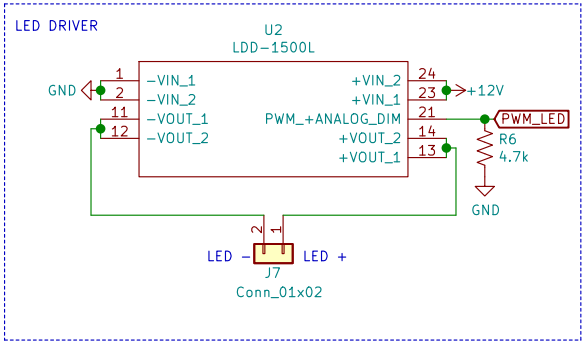
3.2 Digital

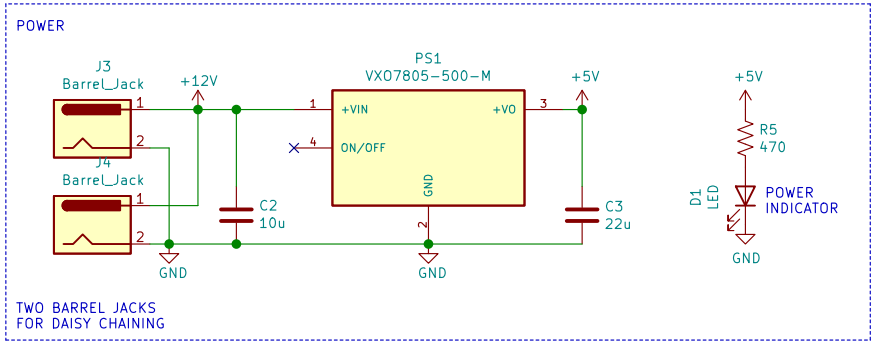
TODO: document I2C connection choice. Consistent with Adafruit, Sparkfun, Seeed...

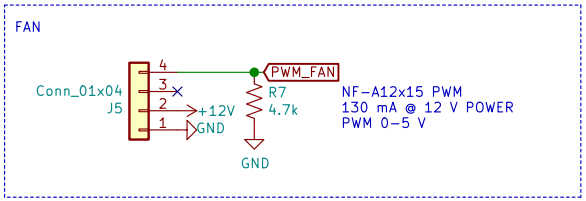
3.2.1 Driver











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Sheet: /
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Title: Digital Photoreactor Driver

Size: USLetter	Date: 2021-01-22	**Rev: 1.0.0**
KiCad E.D.A. kicad 5.1.8+dfsg1-1+b1		Id: 1/1

3.2.2 Controller

4 Assembly

0.5" standoff: RAF 4505-440-AL

4.1 Base

4.1.1 LED and Heatsink

TODO: LED PCB part number

TODO: heatsink part number

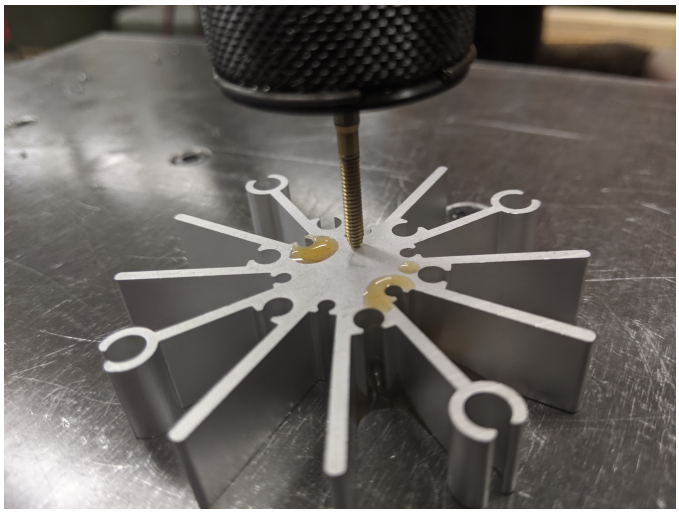

Figure 1: Two of the innermost holes on the extruded heatsink must be 4-40 tapped.

Tap the heatsink. We used thread-forming tap: OSG 1400105300.

TODO: heatsink compoud

Install with wires facing towards printed hole

Use 4-40 1/4".

4.1.2 Fan

TODO: fan part number

Noctua NF-A12x15 PWM

pins: blue: PWM (5 V) yellow: +12 V black: ground

Use 4-40 3/4" into captured nuts