

# Supporting Information

## Open Source Photoreactor

*Philip Lampkin, Blaise J. Thompson, and Samuel H. Gellman\**

Department of Chemistry, University of Wisconsin–Madison  
1101 University Ave., Madison, Wisconsin 53706

\*Corresponding Author  
email: [gellman@chem.wisc.edu](mailto:gellman@chem.wisc.edu)

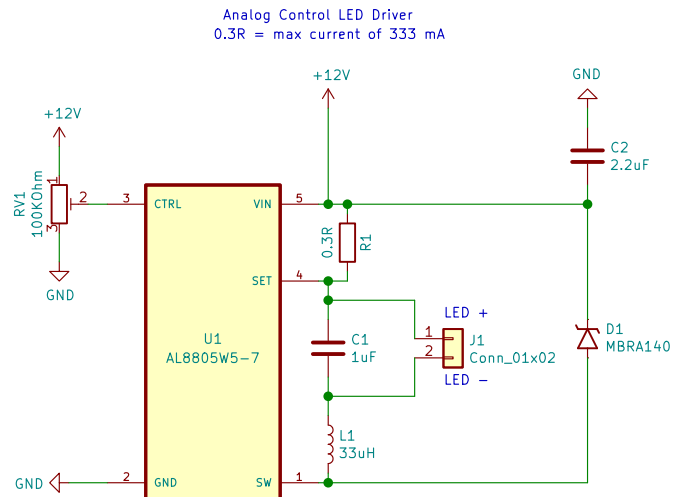
# Contents

- 1 Introduction** **S3**
  
- 2 Electronics** **S4**
  - 2.1 Analog . . . . . S4
  - 2.2 Digital . . . . . S6
    - 2.2.1 Driver . . . . . S6
    - 2.2.2 Controller . . . . . S8
  
- 3 Mechanical Construction** **S9**
  - 3.1 Base . . . . . S9
    - 3.1.1 LED and Heatsink . . . . . S9
    - 3.1.2 Fan . . . . . S9
  
- 4 Efficacy** **S10**

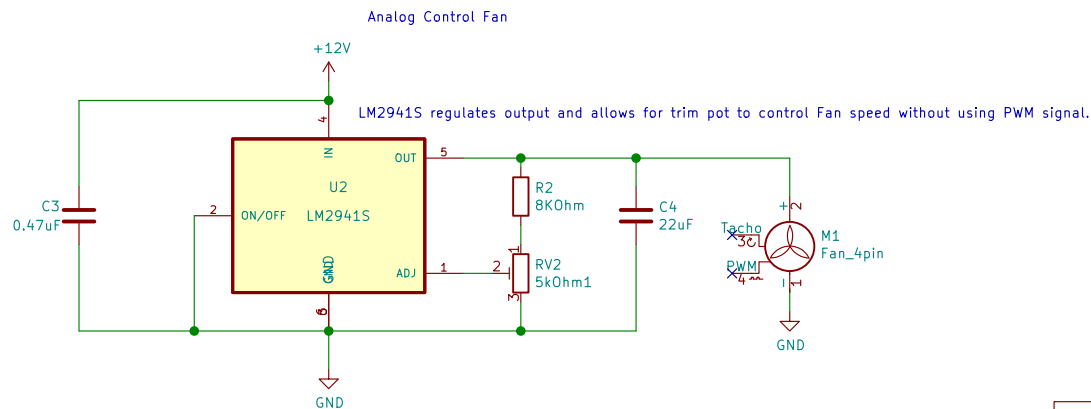
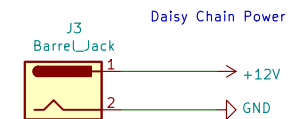
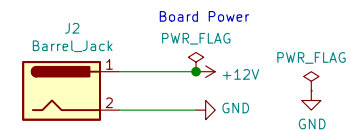
# 1 Introduction

## 2 Electronics

### 2.1 Analog



This LED driver is adapted from SparkFun femtobuck design.  
I've added a trim pot to control the driver. It should output constant 330 mA to LEDs.



plampkin@wisc.edu  
Philip Lampkin  
Gellman Group  
Department of Chemistry  
**University of Wisconsin-Madison**  
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**Title: Analog Photoreactor Driver**

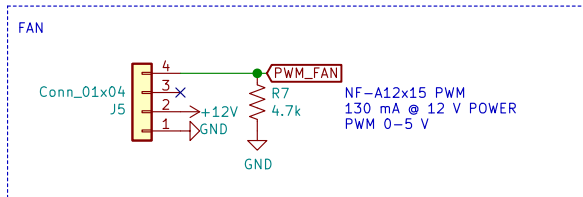
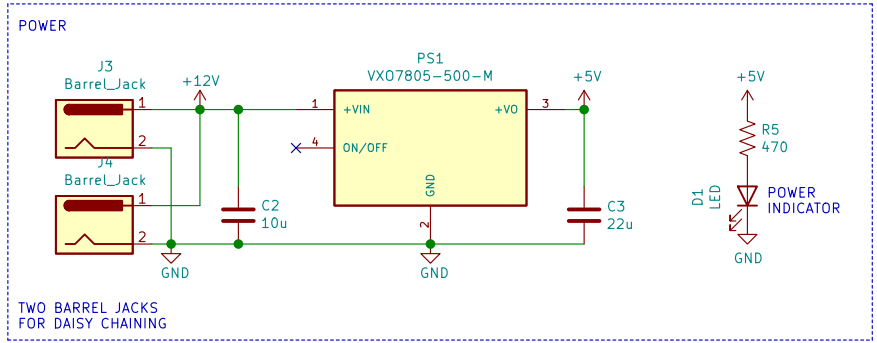
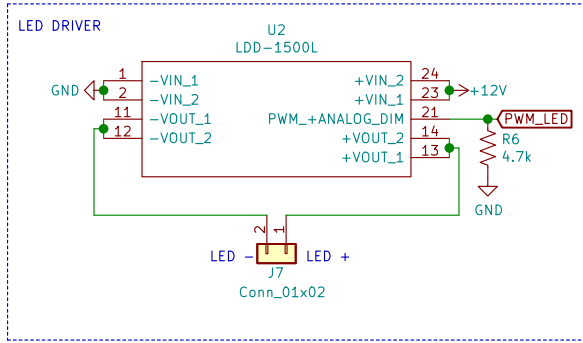
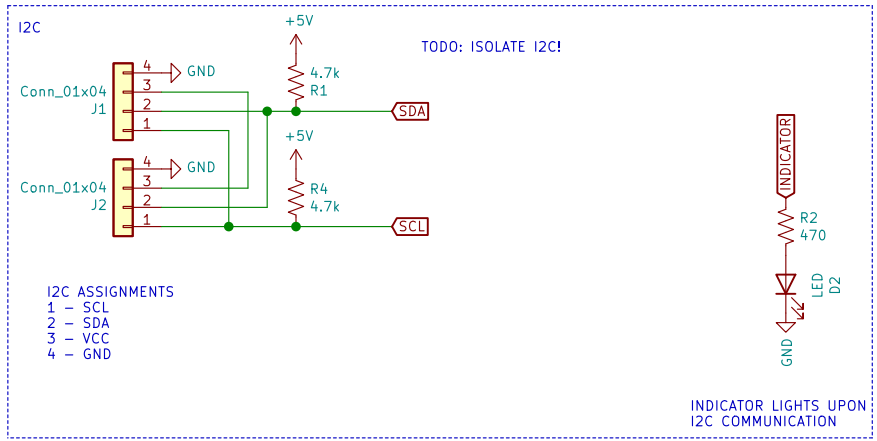
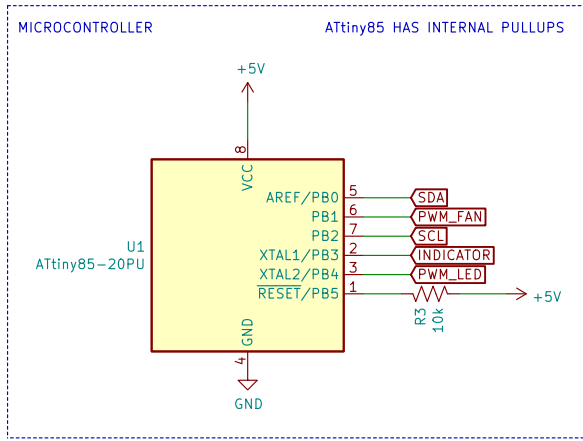
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**Rev: 1.0.0**  
Id: 1/1

## 2.2 Digital

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

### 2.2.1 Driver



plampkin@wisc.edu  
Philip Lampkin  
Gellman Group  
Department of Chemistry  
**University of Wisconsin-Madison**  
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KiCad E.D.A.    kicad 5.1.9+dfsg1-1    **Rev: 1.0.0**  
Id: 1/1

## 2.2.2 Controller



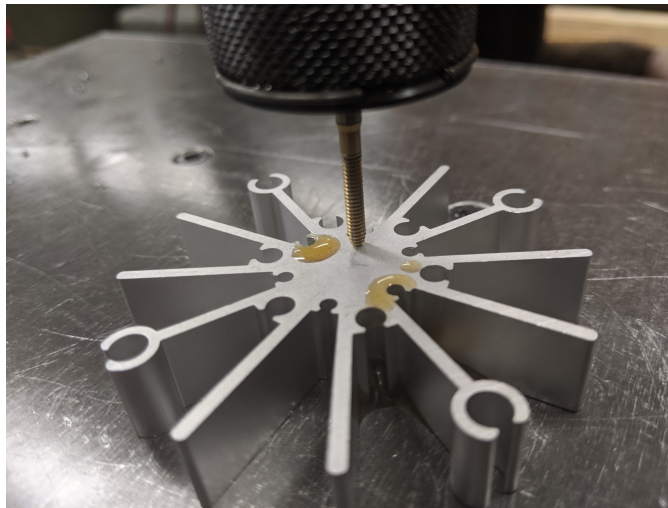


Figure S1: Two of the innermost holes on the extruded heatsink must be 4-40 tapped.

### 3 Mechanical Construction

0.5" standoff: RAF 4505-440-AL

#### 3.1 Base

##### 3.1.1 LED and Heatsink

TODO: LED PCB part number

TODO: heatsink part number

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".

##### 3.1.2 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

## 4 Efficacy