

PROJECT NAME

# LIGHT SHIELD



DOCUMENT VERSION

1.0.0 (2024-07-04)

BUILD DIFFICULTY

■■■■■ Easy

PROJECT SUMMARY

A five-panel box with a reflective interior designed for use with the Straylight project.

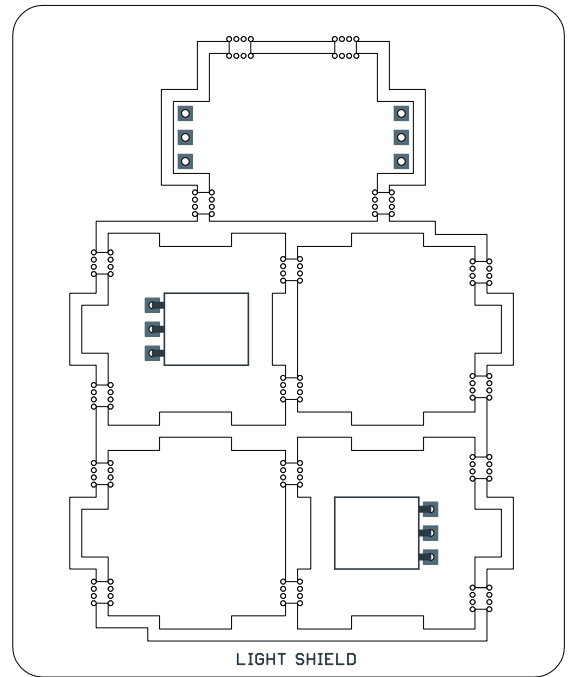
## PROJECT OVERVIEW

This is a light shield designed for our [Straylight](#) project, based on the Univox Uni-Vibe.

The original Uni-Vibe enclosed the lamp and LDRs in a reflective sheet-metal box that dispersed the light internally so that all four LDRs were evenly exposed. It also blocked most outside light so the effect would still work when the enclosure lid was removed for service.

So for our implementation of the Uni-Vibe, we designed a solution that uses interlocking PCBs to build a box that can be soldered in place. The inside is reflective, and the top is removable. It comes in a single panel with five sub-PCBs that can be easily separated.

Like the original shield, it is not perfectly sealed from outside light. The reflective interior is the more significant feature. With that said, it still blocks ~98% of the light when the enclosure lid is open, and 100% when it's closed.



Actual size is 2.30" x 2.80".

## PARTS LIST

QTY	PART	NOTES
2	Pin header, right angle, female, 0.1" / 2.54mm	Available from <a href="#">Tayda Electronics</a> .
2	Header strip, 3 pin, 0.1" / 2.54mm	Available from <a href="#">Tayda Electronics</a> . Can also use a single 40-pin snap apart strip.

# ASSEMBLY INSTRUCTIONS

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The light shield is pretty straightforward to put together, but there are a few ways to mess it up, so make sure to read all of the instructions before you start soldering.

## Before you begin

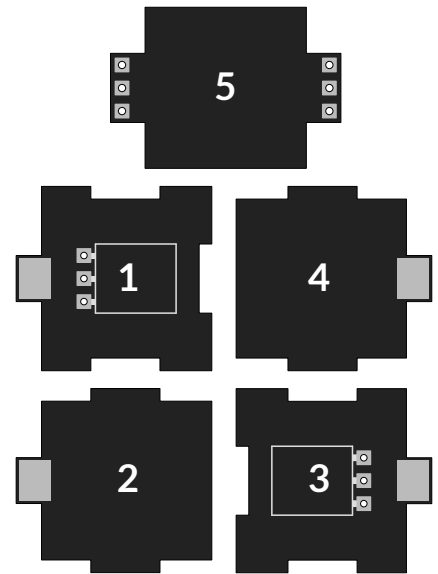
Separate all five of the PCBs from the frame. It's easiest to push from the center so that they snap and swing outward. The outer frame is flexible, so they should come out without much force.

Then, using needlenose or flat-nose pliers, snap off the mouse-bite tabs from each PCB.

Try to avoid touching the plated reverse side of the panel. It's lead-free, but fingerprints will diminish the reflectivity.

## Panel identification

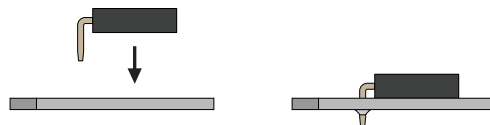
We will refer to the individual panels PCBs using the numbers shown to the right. Note that panels 1 & 3 are identical, as are panels 2 & 4, so don't worry if you lose track of which is which.



## Step 1: Solder the female headers

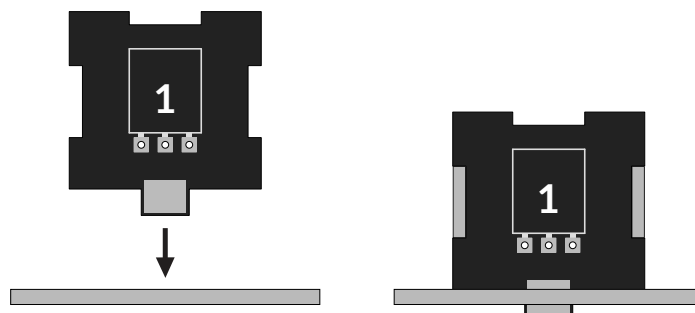
Panels 1 and 3 each have silkscreen outlines showing right-angle female headers. These should be installed to the black side. You can solder them from either the top or the bottom side of the PCB.

It's recommended to solder the middle pin first, then check to make sure it's aligned with the silkscreen. If not, heat up the joint and shift it accordingly. Only solder the other two pins if it's aligned or it will be hard to correct later.



## Step 2: Install panels 1-4 to the PCB

Fit the four panels together, then fit them loosely into the PCB to test the fit. The tab that is plated on both sides fits into the slot on the PCB. It's much easier if you use a rubber band around the perimeter to hold the four panels together during this step.



## ASSEMBLY INSTRUCTIONS, CONT.

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**Important:** Make sure panels 1 & 3 are the “north” and “south” panels, with 2 & 4 facing “east” and “west”. Otherwise the header sockets won’t have enough clearance due to the trimmers on the left and the capacitors on the right. The Straylight PCB intentionally uses resistors to the north and south of the box outline to leave space for the headers.

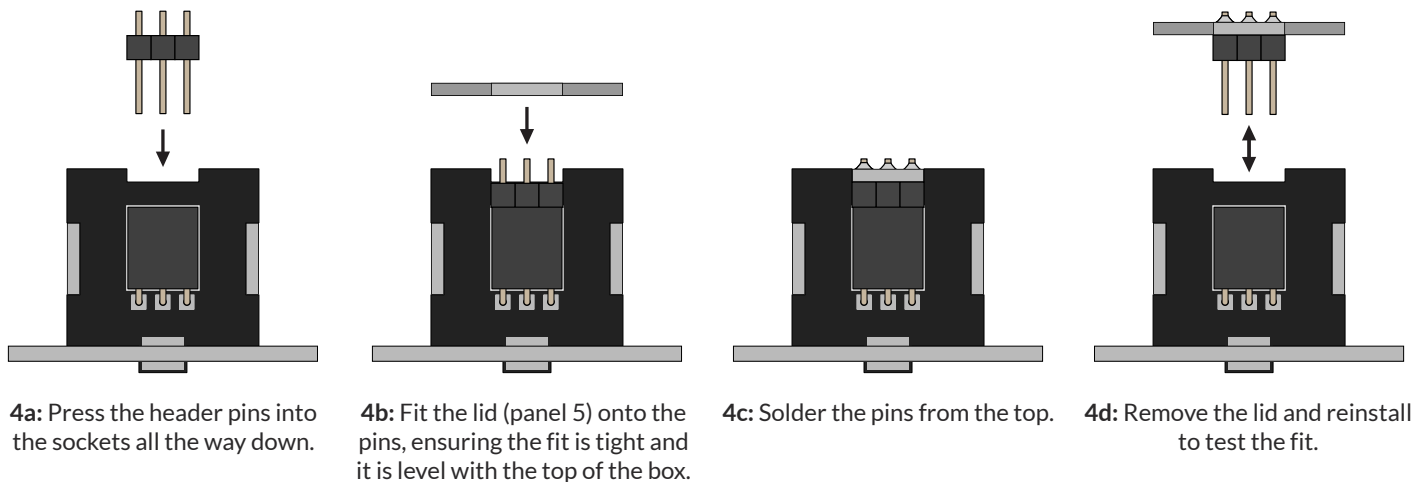
### Step 3: Solder the tabs

Once the panels are interlocked and straight, you can flip the whole PCB upside down and solder the tabs from the bottom. They are plated on both sides, so solder as much as you can and make sure it flows into the slot.

The solder won’t go all the way around due to the unplated PCB material on the edges, but the connection will still be very rigid. You can also add some solder from the top side if you want to make it even stronger.

### Step 4: Solder the header pins to the lid (panel 5)

Follow the sequence below to install the header pins to the lid. By doing it this way, you can ensure that the pins are perfectly aligned with the header sockets.



That’s it! Now you have a fully reflective light shield around the lamp and LDRs, and the lid is easily removed if you want to experiment with different components or if you need to troubleshoot.

## LICENSE & USAGE

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**No direct support is offered for these projects beyond the provided documentation.** It's assumed that you have at least some experience building pedals before starting one of these. Replacements and refunds cannot be offered unless it can be shown that the circuit or documentation are in error.

**All of these circuits have been tested in good faith in their base configurations.** However, not all the modifications or variations have necessarily been tested. These are offered only as suggestions based on the experience and opinions of others.

**Projects may be used for commercial endeavors in any quantity** unless specifically noted. No attribution is necessary, though a link back is always greatly appreciated. The only usage restrictions are that **(1) you cannot resell the PCB as part of a kit without prior arrangement, and (2) you cannot "goop" the circuit, scratch off the screenprint, or otherwise obfuscate the circuit to disguise its source.** (In other words: you don't have to go out of your way to advertise the fact that you use these PCBs, but please don't go out of your way to hide it. The guitar effects industry needs more transparency, not less!)

## DOCUMENT REVISIONS

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**1.0.0 (2024-07-04)**

Initial release.