

Small Liquid Crystal Light Valve – Controllable Shutter Glass

Product ID: 3627

Description

What do you get when you power a layer of liquid crystal material sandwiched between two sheets of glass? A Liquid Crystal Light Valve (a.k.a a LCD Controllable Black-out Panel)! They're often used for electric welding helmets because they can protect the welder's eyes from the bright sparks. *Or* – if you aren't a welder – they can be used to provide a "reveal" effect for your project, as you can control the opacity of the LCD.

A Liquid Crystal Light Valve (LCLV) is a device that uses the properties of liquid crystals to control the level of illumination passing through an optical system. It's basically what goes on in your LCD monitor/TV/projector etc, but for each individual pixels.

In this product, we have one small LCD piece, which will filter what you see through it. Normally, it's a tinted gray color (because the light around us is not polarized, it is not completely clear). There are two electrodes that you can put a voltage across to change the opacity.

By changing the voltage applied, it will block light more and more. Starting at about 1.0VDC the glass will start darkening. At about 4.0V the glass will be opaque. 5V is the max recommended voltage. In between you will get darker shades. Note that it is not capable of blocking 100% of light, but it looks like it blocks at least 95%. If you put a bright light behind it, you will see some light shine through!

Almost no current is used. Once activated with a voltage, the glass will stay at that darkness level even if the voltage is removed. So, if you want to have it turn on and off, you'll need to drive it with a 0V signal to 'open' it up, or connect a draining resistor between the two pins to leak the voltage off when not powered.

[If you're going to turn it on \(make opaque\) for more than a few minutes, use an AC square wave between the two pins to avoid a DC bias that can damage it.](#)

Please note that this is a thin piece of glass, you can't bend it, or cut it, and it's very delicate! Use care when working with this item.

Technical Details

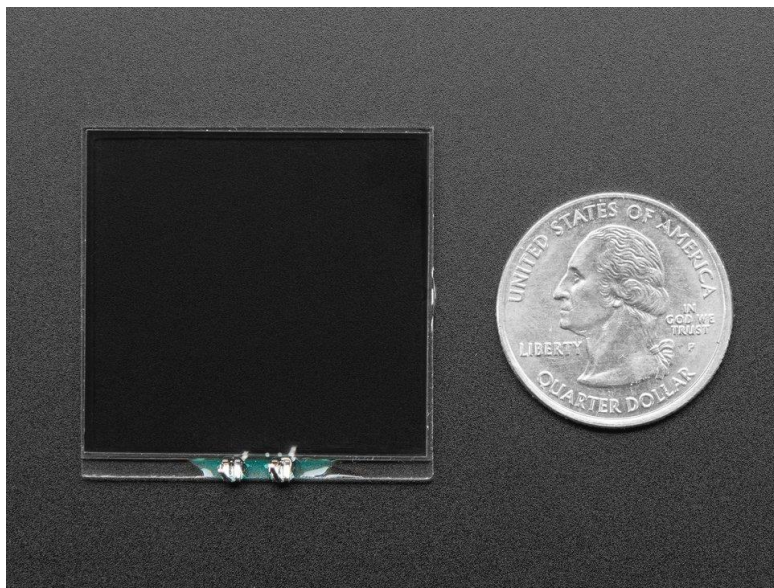
- LCD size: 31 x 33 x 2 mm
- Dimensions: 36 x 36 mm
- Driving voltage: 3-5V
- LCD type: TN, transmissive, positive
- Operating temperature: -10° to 60°

Product Dimensions: 36.0mm x 36.0mm x 1.8mm / 1.4" x 1.4" x 0.1"

Product Weight: 5.2g / 0.2oz

Watch on YouTube

https://www.youtube.com/watch?t=172&v=tPCGRHurpo&feature=emb_imp_woyt



https://www.adafruit.com/product/3627_1-19-22