

I would really be grateful if you start to build the Optical Tester, that you go to the Photrio thread and say hi. Also please post photos of your completed tester.

Please refer to Photrio for further build help & to let us know you are building the tester
[Build a Optical Shutter Tester Cheap, Easy & it Works | Photrio.com Photography Forums](#)

GitHub repository where all documentation & code can be found. [billbill100 \(github.com\)](#)

Arduino Optical Shutter User Guide V1.0

10/08 2024

General Notes:-

These photos are taken with a digital camera. It shows what should be seen when looking through the film gate of a film camera from the rear.

This tool will only give an indication as to the accuracy of the camera, it is not designed for professional camera alignment. For this see the full Laser shutter design at [billbill100 \(github.com\)](#)

If the shutter is slow, two or more LED rows will be seen. The slower the shutter, the more rows will be seen, which gives an indication as to how slow the shutter is.

A correct shutter speed will more often than not show only one row of LEDs. However, as the camera is not synced to the matrix, it is possible to see two rows of LEDs. Photos show this.

If the shutter is fast, only one row will be seen, no matter how much faster the shutter is than set speed.

The display will show the humanised speeds of 1/30, 1/60, 1/125, 1/250 etc but the unit is actually running at the actual shutter speeds of 1/30, 1/60, 1/120, 1/240, 1/480, 1/960.

Old film cameras with cloth shutters are very inaccurate in their timing and repeatability. Do not expect to see results as neat as those shown, taken with a digital camera.

Instruction for use:-

When applying power, the firmware build version will be shown. (Pressing the button whilst the firmware version is scrolling will jump straight to the next step if you can't wait :o)

The tester will then start to strobe at 1/30s.

Each press of the button will advance the strobe effect to the next setting, 1/60s, 1/125s, 1/250s, 1/500s, 1/1000s. A further press will wrap-around back to 1/30s.

Remove the lens from the camera and open the rear door.

Set the camera at 1/30s and the tester at 1/60s (tester 1 stop faster)

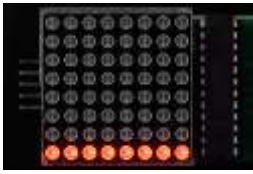
Taking photos (without film) of the LED matrix whilst looking through the back of the camera, you should see two or more LED rows lit. This shows the camera shutter is running slow.

Change the camera to the same speed as the tester and repeat. Now, only one line should be seen.

The reason for starting with the camera one stop lower is that the strobe effect is good at indicating slow shutters, but not fast shutters.

This procedure can be repeated for all speeds up to 1/1000s and if your camera has 1/15s setting, you can start at 1/15s on the camera and 1/30s on the tester.

Camera & tester set at
1/30s



1/60s



1/125



1/250s



1/500s

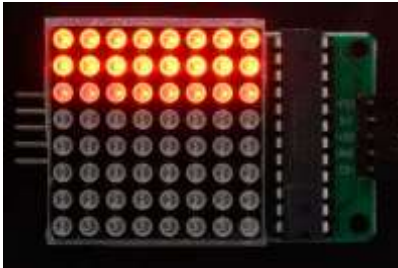


1/1000s

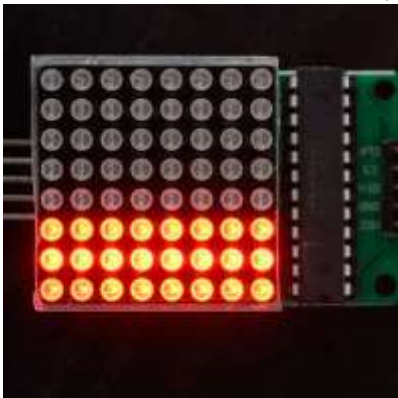


Note how the 1/60s and 1/125s have caught the change of LED rows, with one row dimmer than the other.

Here, the tester is running at 1/125s but the camera shutter is running slow, at 1/60s



Here the tester is set to 1/250s but the camera shutter is running slow at 1/60s



Here, the tester is running at 1/1000s but the camera shutter is running slow at 1/60s



Change Log

V 1.0