

# Light Art

- Nervous LEDman

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A small analog, interactive

light object that responds to sounds and vibrations by flashing a LED.  
It's very sensitive, and reacts on human voice over a distance of 3m or more, when put on the right

surface, e.g. a wooden table, box or anything that vibrates.

**Nervous LEDMAN** consists of 3 parts : ( top down )

### 1) battery holder & power switch

I use a [LilyPad coin battery holder](#) or compatible and a rechargeable LIR2032 battery

### 2) LEDMAN PCB

It's a redesign of a [circuit by Yair Reshef](#) .

The original design uses an obsolete opamp and needs 2 batteries for 6V supply. Now it runs with a single cell and uses a cheap CMOS opamp <sup>\*)</sup> + 3 resistors + 1 ceramic capacitor in "beginner friendly" sized SMD packages (1206)

\*) many SOT23-5 CMOS opamps, output @ pin 4, tested

### 3) piezo disc sensor

this is a common 35mm diameter Piezo sounder/buzzer/speaker/drum sensor. Smaller discs are not recommended until you put LEDMAN straight on a loudspeaker box ;-)

the picture shows the "elektro kitsch" (C) version with vintage power resistors as legs and arms. A flexible 38mm, 3V LED filament is used as LED.

#### construction notes :

resistor "arms" can be 0...10 Ohm, any wattage.

resistor "legs" can be 0...100 Ohm, any wattage.

LilyPad connection is a bit tricky : the red "+" wire is soldered straight to a LilyPad "+" pin. The black "-" wire tunnels the other LilyPad "+" pin without connection ( it must be isolated) and is soldered to LilyPad "-" pin on the rear side.

The reason is: if you solder a wire to one of LilyPads "-" pins on the battery side, the battery can't be removed anymore !

#### documentation :

[NervousLEDman Schematics \(PDF\)](#)

[NervousLEDman PCB Layout \( PDF, 24pcs. 100x160mm single sided\)](#)

[NervousLEDman SMD assembly \(PDF\)](#)

credits go to my friend Yair Reshef and unknown early developers for inspiration and Leah Buechley for LilyPad  
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