



#### Functional description

Portable photodiode amplifier with headphone output.  
Analog audio receiver for modulated ambient light. Purpose: field recording, ambient listening, audio experiments, art installation, etc.  
Fluctuations in the intensity of incident light (visible and near-IR) are amplified and band-limited to audible frequency range.  
Analog audio output is available at headphones jack or optional 8-ohm speaker.  
For recording, connect phones jack to line in port of any audio recording device.

#### Op amp specification

Requirements for best performance: low noise JFET op amp, max supply voltage >10V  
TL072 works

#### Capacitor specification

For best results avoid Class 2 dielectric (i.e. X7R) capacitors. Use polyester film, electrolytic, or C0G/NP0 ceramic.

#### Response polarity

TIA output deflects toward GND for increasing illumination when D1 is oriented as shown  
LM386 output deflects positive for increasing illumination

#### Power supply

For 9V battery. Do not exceed 10 volts.  
12V operation OK if 16-volt rated capacitors are used for C9, C11 (220 uF).

#### License Terms

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**Lite2Sound BC**  
PHOTODIODE AUDIO RECEIVER  
FOR AMBIENT MODULATED LIGHT  
rarewaves.net

**RARE WAVES LLC (USA)**  
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