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Jameco Part Number 157964 (LED1007)

Assembly Instructions

Thank You

Thank you for your purchase of the BG Micro IR Spotlight Kit. These assembly instructions have been prepared to help you quickly and easily assemble your new IR Spotlight. Please review these instructions completely before beginning the assembly of the IR Spotlight.

Assembly time for this kit is estimated to be between 20 minutes (expert) and 60 minutes (beginner). Every effort has been made to make this kit simple to assemble and use. It is suggested that if you become tired, frustrated or downright angry, or if you experience any discomfort at all when assembling this kit to put down your tools, get up and walk away for a moment. Remember, it's just a kit.

If you have any questions about these instructions, find any errors or if you are unsure about any aspect of this product, please feel free to send your question or comment to support@dalewheat.com. I will be happy to address any issues you may have. Again, thank you & enjoy.

Step 1: Check for parts

Make sure you have all the parts in your kit before you begin building. The kit should contain the following parts:

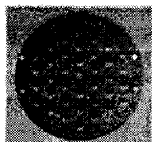


Quantity	Description
1	IR Spotlight printed circuit board (PCB) 
4	100 Ω resistors, 1/4 watt, 5%  Color code: brown, black, brown, gold
36	Infrared (IR) light emitting diodes (LEDs) 
1	Assembly instructions (this document)

Table 1. Contents of IR Spotlight Kit

Step 2: Collect the proper tools

The assembly of the IR Spotlight Kit requires the following tools and materials, and knowledge of their use:

- Soldering Iron
- Solder
- Wire cutters

Optional tools and materials:

- Lead forming jig
- Solder flux cleaner

Step 3: Install the resistors

- 3.1 Install the four (4) resistors, R1-4. Resistors have no polarity and can be installed in either direction.
- 3.2 Solder the resistors to the board.
- 3.3 Trim the excess resistor leads. Take care not to cut into the solder joint when trimming the leads. This can compromise the electrical and mechanical junction.

Step 4: Install the LEDs

Note: Do not try to install all 36 LEDs at once. It is less than impossible, but more than difficult. Instead, install the LEDs one (1) row at a time, then solder and trim the leads. Repeat for the remaining rows.

See important note on next page about LED polarity.

- 4.1 Install a single row of LEDs, being careful to observe the correct orientation (see page 2).
- 4.2 Solder one lead of each LED to the board.
- 4.3 Flip the board back over and make sure that all the LEDs are still flush with the PCB. If not, reheat the solder connection and reposition the LED so that it is flush with the PCB. It is much easier to do this when only one lead has been soldered, as opposed to after both leads have been soldered.
- 4.4 Solder the remaining leads of the installed LEDs.
- 4.5 Trim the excess LED leads. Take care not to cut into the solder joint when trimming the leads. This can compromise the electrical and mechanical junction.
- 4.6 Repeat for each remaining row.

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LED Polarity

The LEDs must be installed with the correct polarity (i.e., the correct direction or orientation) to work properly. There are two (2) visual indicators to help you determine the proper orientation of each LED. The LED has a flat side on the base of the plastic body that indicates the cathode, or negative terminal (see Figure 2). This flat side corresponds to the LED part outline on the PCB (see Figure 3). The cathode goes into the hole with the round pad on the PCB. The anode or positive terminal of the LED is slightly longer than the cathode (see Figure 4). The anode goes into the hole with the square pad on the PCB. All the LEDs on the IR Spotlight are oriented in the same direction.

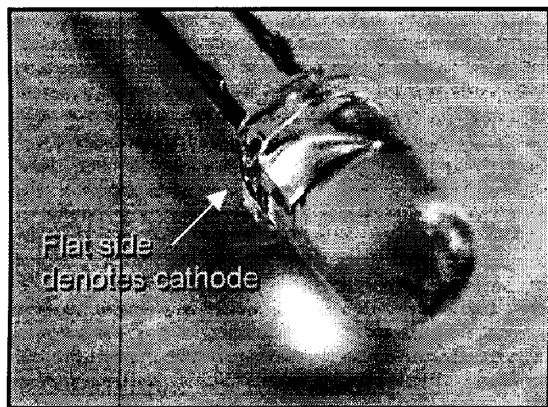


Figure 1. LED flat side cathode indicator

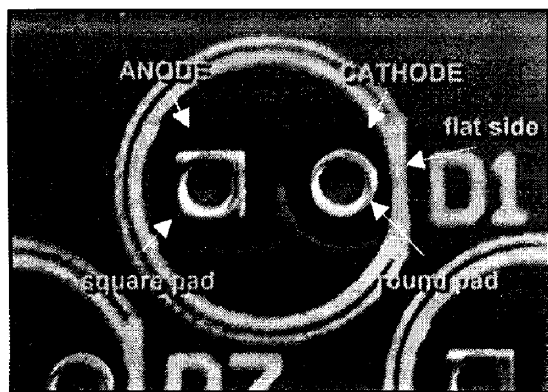


Figure 2. LED part outline on PCB

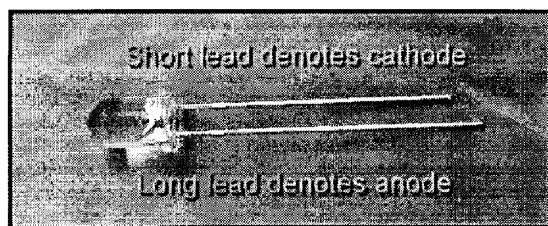


Figure 3. LED leads

Step 5: Inspect your work

You're nearly done! Compare your finished board with the ones in the following pictures. Check for the following items:



Figure 4. Missed connections, solder blobs & bridges

Step 6: Connecting power

At this point your board should look something like the one in Figure 6. Please note the location of the power supply connection points, marked as "+" and "-", on each side of the board.

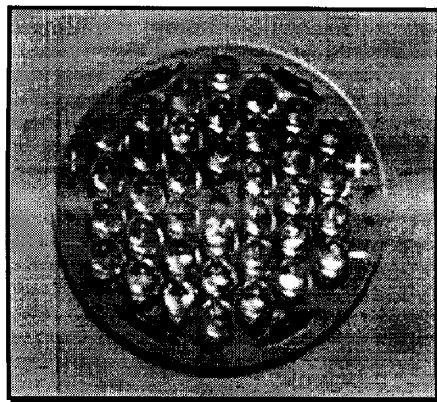


Figure 5. Assembled IR Spotlight

Congratulations! You're done!

Have a great time with BG Micro's IR Illuminator!