

Instructions for Large Table Top Lighthouse (V1.3 : 04/18/2026):

The table top lighthouse, has been designed with a DFRobot Beetle Board controller (<https://www.dfrobot.com/product-1075.html>). The Beetle Board is compatible with the Arduino Leonardo - ATmega32U4 programming tools. The lighthouse includes an LED strip with 16 red, green, and blue (RGB) LEDs around the center, and four RGB LEDs in the top, with each LED being independently addressable. The Beetle board software will be available at "https://www.gibsonsjewelry.com/other_projects.htm". Which you are free to download and modify however you wish for improvements to the LED modes.

If the lighthouse USB Type-A connector is attached to a personal computer USB port, the Arduino development tools can be used to modify and update the software installed in the lighthouse Beetle board. Otherwise, the lighthouse can be powered with a standard USB Type-A +5VDC power adapter.

Lighthouse LED Operation:

1. When the lighthouse is first powered up, the LEDs will blink the software Version and Revision installed in the Beetle board. The initial version and revision is 1.3, so one long blink in Green, and three short blinks in Blue.
2. The brass ball of the lighthouse is attached to an internal potentiometer that allows turning the pot a total of 300 degrees, so slightly less than one full turn. Turning the ball allows the various LED modes to be selected. Please don't attempt to turn the brass ball past the pot limits, as this may damage the pot.
3. The lighthouse is set up to operate in 12 different LED modes. If the ball is turned fully counter-clockwise, the LEDs are OFF and the lighthouse mode is set to the default, Mode-1. Turning the ball clockwise past the mode select point will start running in Mode-1. To select a different mode, rotate the brass ball fully counter-clockwise, then turn the ball slowly clockwise until the Red LED blinks. Leaving the ball in this position will cause the LEDs to blink in order. When the desired mode indicator LED blinks, rotating the brass ball further clockwise will select that mode.

LED MODES:

1. Mode-1 : Looping Through LED Modes 4 through 8 : The ball position controls how long each mode runs, from ~10 seconds to ~60 seconds fully clockwise.
2. Mode-2 : Looping Through LED Modes 4 through 12 : The ball position controls how long each mode runs, from ~10 seconds to ~60 seconds fully clockwise.
3. Mode-3 : Night light mode. Only the first LED lights in violet and the ball position controls the LED brightness, with fully clockwise the brightest.
4. Mode-4 : Only light the top four LEDs with a steady, fast, fading hue shift without blinking. Fully clockwise is the brightest and fastest LED cycles. Included in both Mode-1 and Mode-2.
5. Mode-5 : Rainbow - Marching Colors Cycle : The ball position controls the LED brightness. Included in both Mode-1 and Mode-2.

LED MODES (continued):

6. Mode-6 : Rainbow - Marching Colors Cycle - Slower Version : The ball position controls the LED brightness. Included in both Mode-1 and Mode-2.
7. Mode-7 : Steady Slow Hue Fade : The ball position controls the LED brightness. Included in both Mode-1 and Mode-2.
8. Mode-8 : Steady Fast Hue Fade : The ball position controls the LED brightness. Included in both Mode-1 and Mode-2.
9. Mode-9 : Shooting Star Animation : The ball position controls the tail length, the shooting star speed, and the LED brightness. Only included in Mode-2.
10. Mode-10 : Bouncing LED Animation : The ball position controls the bounce speed and the LED brightness. Only included in Mode-2.
11. Mode-11 : Beat Sine Wave with Dual Racing LEDs : The ball position controls the number of LEDs lit and the LED brightness. Only included in Mode-2.
12. Mode-12 : Beat Sine Wave with Dual Racing LEDs and Blur Effect : The ball position controls the number of LEDs lit and the LED brightness. Only included in Mode-2.

The 8" tall desktop lighthouse is weighted with 3 oz. of lead-free weights in the bottom of the base for improved stability. The lighthouse base allows the USB-Micro cable to be removed, to change the cable if necessary. If the four screws in the base are removed, the lighthouse and base can be separated, to allow the USB-Micro cable to the Beetle micro-controller card to be changed.

