



# GlowLight v2.0

# User Manual

Learn everything you want to know  
about your GlowLight lamp.

[glowlight.glowingkitty.com](http://glowlight.glowingkitty.com)



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Make sure you did read the **Quick Start Guide** first,  
with all the basic details on how to use GlowLight:



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An image of the quick start guide booklet. The cover features a glowing pink and purple cylinder lamp in the center. To the left is a textured, light-colored fabric, and to the right is a dark, draped cloth. The glow from the lamp illuminates the surrounding area. The brand logo, a white silhouette of a cat with the text "glowingkitty" next to it, is positioned above the lamp. Below the lamp, the text "GlowLight v2.0" and "Quick Start Guide" is printed in large, bold, white letters. At the bottom, a smaller line of text reads "Learn how to get started with your GlowLight lamp."

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Still have open questions?  
Write me an e-mail!

[support@glowingkitty.com](mailto:support@glowingkitty.com)

# Introduction



GlowLight is a stunning RGB LED lamp, featuring four LED strips that emit light in a 360-degree radius. And since each LED can be individually controlled by GlowOS, a customized version of WLED, GlowLight provides near limitless opportunities for experimentation with the way it glows. And if you like, you can even write and run your own code to make GlowLight glow whatever custom effect you might have in mind. Additionally, if you wish to incorporate extra components such as sensors, they can be easily connected to GlowLight with just a bit of basic soldering.

# Specifications

## Size & weight



Width: 16cm

Depth: 16cm

Height: 27cm

Weight: 0.8kg

## LEDs



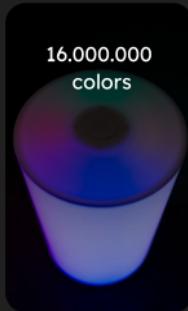
Front right: 14 LEDs

Front left: 14 LEDs

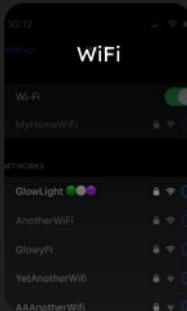
Back right: 14 LEDs

Back left: 14 LEDs

## Light



## Control options



## Power source



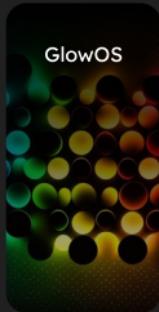
## Microcontroller



### ESP32 S3

- programmable via C++ & CircuitPython
- dual-core processor, up to 240MHz
- 8MB flash storage
- WiFi 802.11b/g/n
- Bluetooth 5 & Bluetooth LE
- USB to Serial
- JTAG via USB

## Firmware



- Control GlowLight via WiFi
- Over 100 LED effects
- Compatible with HomeKit, Alexa and other Smart Home services, using HomeAssistant

## System requirements

Re-installing GlowOS or uploading custom software to GlowLight requires a computer with one of the following operating systems:

- Windows 10 or later
- MacOS 12.0 or later
- Linux

Always make sure your operating system is up to date, before trying to flash firmware to the ESP32 S3.

# Safety & Maintenance

## Safety advise

### Power supply

Do not use a damaged USB-C power supply with GlowLight.

For additional safety, it's best to only use power supplies from well known brands like Anker, which follow strict safety standards. If your power supply is getting too hot to touch, stop using it immediately and replace it with a higher wattage model, from a well known brand.

### Temperature & Humidity

GlowLight is designed for indoor use only and room temperatures up to 30 degrees. Keep the lamp in a dry environment. Usage in bathrooms or rooms with high air humidity could damage GlowLight over time. Outdoor use at your own risk.

### Water

Keep GlowLight away from water. It is not built to resist water exposure, including rain or immersion. Water intrusion can cause immediate and irreversible damage to both GlowLight and your USB-C power source, potentially creating a safety hazard.

## How to clean GlowLight

Clean GlowLight gently with a dry towel.

If this doesn't clean GlowLight properly, add a small amount of isopropanol (99.9%, cleaning alcohol) on the towel, clean the acrylic surfaces properly and make sure to quickly wipe all acrylic surfaces with a dry towel afterwards. Please note, isopropanol can cause irreversible damage to acrylic if not promptly wiped off or if excessively applied.

# GlowOS

## Overview

GlowOS is based on the famous software WLED. Currently, GlowOS has some extra functionalities for all LED products by glowingkitty. For example: press the action button to cycle between presets, generate wifi name based on product name + the devices unique color code, and more. In future software updates, GlowOS will add more features and long term also add a completely redesigned user interface.

## Open Source

Just like WLED, GlowOS is also open source. This means you can take a look at the code, understand it and modify it if you like. If you plan on modifying GlowOS, first check out the WLED Discord community and the WLED wiki for more details on how to write your own usermods. The open source code of GlowOS can be found on GitHub.

If your modified software stops working reliably, you can always reinstall GlowOS on [install.glowingkitty.com](https://install.glowingkitty.com).



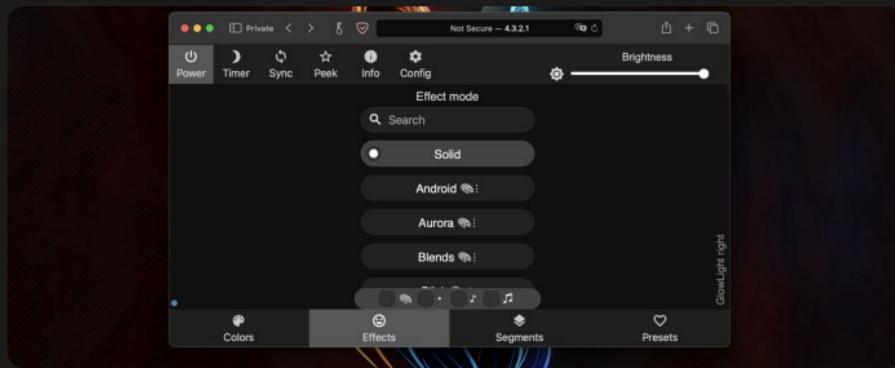
# Segments

LEDs are arranged in segments. A segment can consist of any number of LEDs connected to your device, ranging from a single LED to all LEDs, and everything in between. Each segment can operate a distinct effect with different colors.

You also have the flexibility to alter the effect direction using the **Reverse direction** option or allow an effect to run from the center in both directions with **Mirror effect**.

When you save a preset, it retains all the segments you had at that moment. This implies that you can have varying segments for different presets. For instance, one preset might have only one segment, running entirely **Solid** in **red**, while another preset might have four segments, each running a different effect and color.

Bear in mind, the LED count begins from 0, so if you have a strip of 100 LEDs, the last LED will be number 99. Additionally, the segments can overlap, which means you can have two segments that include some of the same LEDs. This feature can be beneficial for generating more complex lighting effects.



# Effects

GlowOS has over 100 LED effects for each of your LED segments to choose from. Scroll down through the list, to explore them all.

Most LED effects can be further customized by changing the speed of the effect and the intensity. Remember that those changes only apply to the segments you currently have selected.

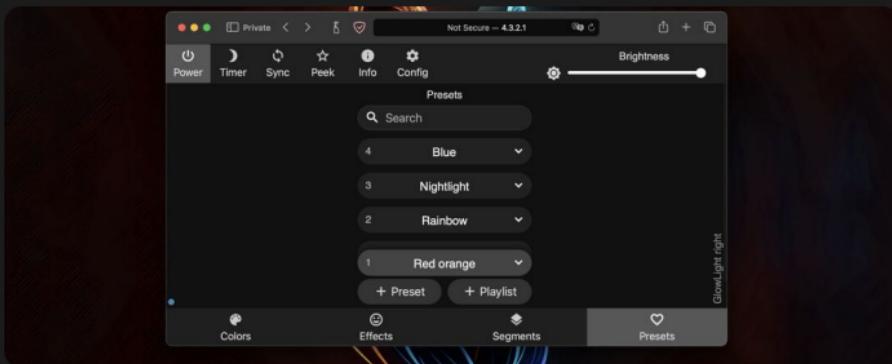


# Colors

Once you selected the segment and effect, you can change the colors of the effect. For some effects, like **Solid**, you can change the color via the the color wheel or the sliders and buttons under it.

For most effects, you can choose from a large selection of color palettes, which the effect will use. For the color palettes **\* Color 1**, **\* Color Gradiant**, **\* Colors 1 & 2** and **\* Colors only** you can also select custom colors for the palettes, by pressing **Fx**, **Bg** and **3** and then the color of your choice.

If you want to change the brightness, you can do so with the slider in the top right.



## Presets

Happy with the way your LEDs glow? Then save the current settings as a preset, so you can easily switch back to those settings later. Simply press the **+Preset** button and give your preset a name and press **Save**.

If you want your LEDs to start with the preset after it turns on, remember the number of your preset, go to **Config** (button in the top menu), then **LED Preferences**, then scroll all the way down to **Apply preset ... at boot** and enter the number of your preset and press **Save** at the top.

## Playlists

If you want to let the LEDs cycle automatically between multiple presets, you can also setup a playlist, by pressing the **+Playlist** button, select the effects, their duration and the transition time between time, before pressing **Save**.



## Backup & restore data

It's always a good practice to backup your data. The same applies to your presets and configuration on your device. Especially before you update the software or if you want to install CircuitPython, you should make a backup of your presets and configuration before. For that, open [Config](#), then [Security & Updates](#) and scroll down to [Backup & Restore](#). Here you can backup your presets and configuration as a json file, and also restore them later.



# WiFi Setup

To access all settings related to WiFi, click on **Config** and **WiFi Setup**.

## Connect GlowLight to WiFi

To connect GlowLight to an existing WiFi (so you can control it via the WLED app or via it's mDNS address or Client IP in your web browser), enter the network name (SSID) and password at the top and press **Save & Connect**. Restart GlowLight to apply the changes.

## Change hotspot name + password

By default, GlowLight starts a WiFi hotspot with it's name and unique color code and the password **letsglow**. You can change the hotspot name and the password when you scroll down to **Configure Access Point** and change the **AP SSID** to the new hotspot name and the **AP password** to the password of your choice, before pressing **Save & Connect**.  
Restart GlowLight to apply the changes.



# LED Preferences

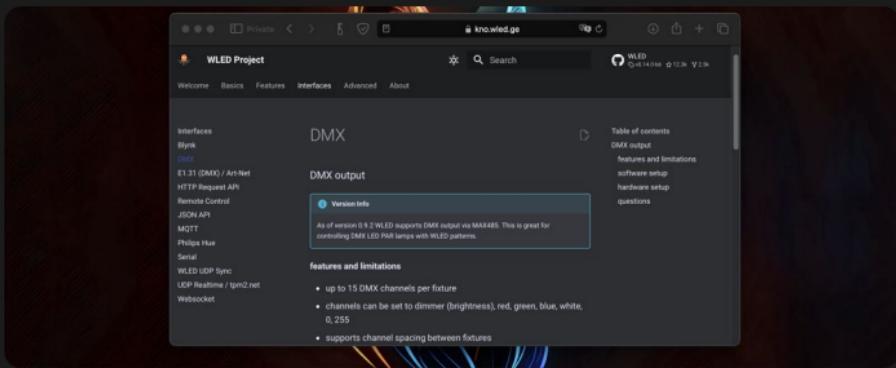
To access all settings related to the LED strips, click on [Config](#) and [LED Preferences](#).

## Config new connected LED strips

By default, GlowLight comes with WS2812B LED strips with 60 LEDs per meter. If you replace the LED strips with a different kind (different model or different LEDs per meter density), scroll down to [Hardware setup](#) and change the four connected LED strips here - the type, the [Start](#) and the [Length](#) of each strip. Press [Save](#) to then apply those changes.

## Apply preset at boot

Scroll further down and you see the option to enter the number of a preset which you have saved. This preset will then be started, each time GlowLight turns on.



## More questions?

GlowOS is based on WLED. So if you still have more questions related to GlowOS, you should also check out the WLED wiki:

<https://kno.wled.ge>

# Smart Home

## Alexa

To control GlowLight via Alexa, go to [Config, Sync Interfaces](#) and then scroll down to [Alexa Voice Assistant](#), activate [Emulate Alexa device](#) and adapt [Alexa invocation name](#) to how you want to call your lamp, when controlling it via Alexa. Click [Save](#) and restart GlowLight to apply the changes.

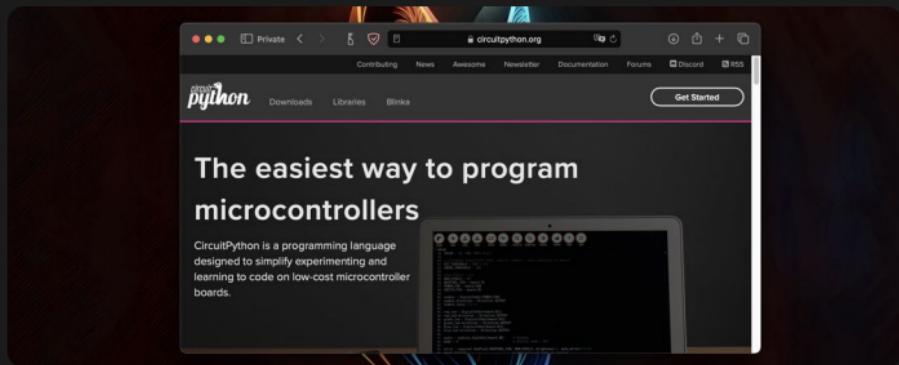
Next, go to your Alexa app, add a new device and select [Philipps Hue Lightbulb](#), since this is what WLED (and therefore GlowOS) emulates. If it asks you if the lightbulb has Bluetooth, you can press yes.

If Alexa cannot find the light on the first try, try it again. It often takes a second try to find WLED powered lamps in Alexa.

## Home Assistant

GlowLight can also be added to Home Assistant, and this way be controlled via Siri and integrated into many home automations. Open your Home Assistant interface, scan for devices and GlowLight should show up as a WLED device, which you then can add just like any other WLED powered lamp.

# Write your own code



## CircuitPython

If you are a programming beginner and want to write code for your GlowLight from scratch, using the Python programming language - you can install CircuitPython on it. Be aware that by doing this, by default there won't be any LEDs glowing that are connected to GlowLight - you would need to code that yourself in Python. For example using the NeoPixel library. To install CircuitPython, first install the bootloader, as described on [https://circuitpython.org/board/adafruit\\_qtpy\\_esp32s3\\_nopsram/](https://circuitpython.org/board/adafruit_qtpy_esp32s3_nopsram/) under **Install, Repair, or Update UF2 Bootloader**, then download the .UF2 file via the download button at the top and copy it over to the GlowLight storage. From there on, you should follow the [CircuitPython tutorial from Adafruit](#) for more details.

## Modify GlowOS code

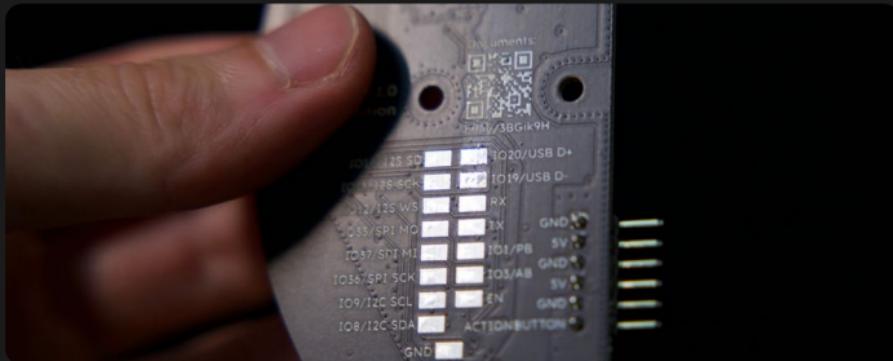
If you want to modify GlowOS instead, [clone it from GitHub](#) and follow the example in the folder `GlowOS/usermods/EXAMPLE_v2`, to create your own usermod.

# Modify GlowLight

# Change LED strips

GlowLight comes by default with WS2812B LED strips with 60 LEDs per meter. However, you can also replace it with a wide range of other LED strips. From WS2812B with more LEDs per meter, up to WS2813 with an extra backup data channel, and many more. Checkout the [WLED wiki entry about supported LED strips](#) for more details.

If you want to connect LED strips that don't require 5V, remember that you need to connect a step up or step down converter to GlowLight as well.

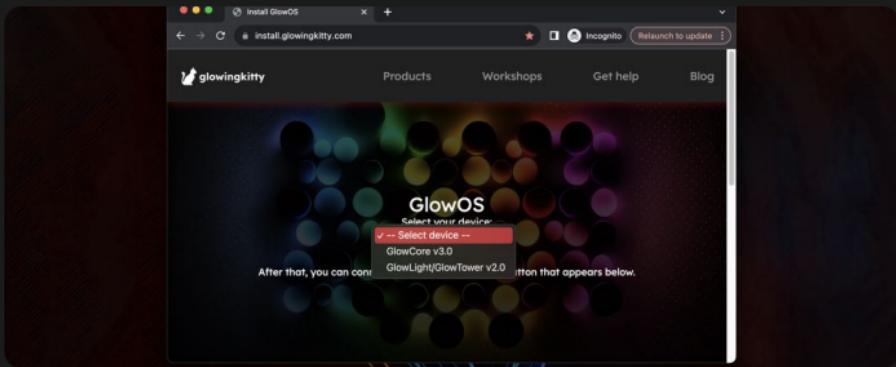


# Add additional components

You can also connect additional components to your GlowLight, for example sensors, microphones, step up and step down converters and more. To connect them, solder them with some wires to the Main PCB.

Checkout the [GlowLight Main PCB Pinout](#) for more details on the pins.

# Troubleshooting



## Update/Reinstall GlowOS

If you want to reinstall GlowOS again on your device or you want to update GlowOS to the latest version, first make a backup of your data. As explained in the chapter [Backup & restore data](#).

Next, visit [install.glowingkitty.com](https://install.glowingkitty.com). There select you select your device and follow the installation instructions.

### Remember:

All your data on the ESP32 S3 will be deleted, when GlowOS is installed.

Afterwards, you can connect to your device again and upload the backup of your presets and config.

In the future, there will also be alternative options to update the firmware. For example by downloading the .bin file from the web installer (so you can update GlowOS without deleting your presets and config) and even updating the software directly via the GlowOS interface.

# More documents



## Quick Start Guide

Learn all the basics of your GlowLight,  
the fast way.



Download PDF:  
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## DIY Assembly Guide

Quickly assemble your GlowLight yourself.



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## Main PCB Pinout

Learn how to connect additional components to your lamp.



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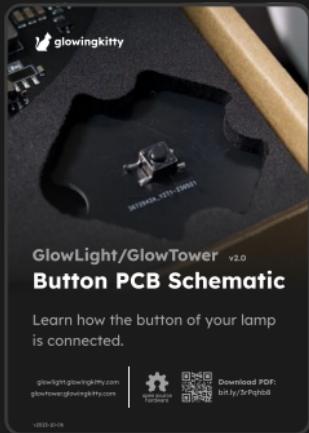


## Main PCB Schematic

An overview of all electronic components on the Main PCB and how they are connected.



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Learn how the button of your lamp  
is connected.

glowinglight@glowingkitty.com  
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# Button PCB Schematic

An overview of all electronic components  
on the Button PCB and how they are  
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