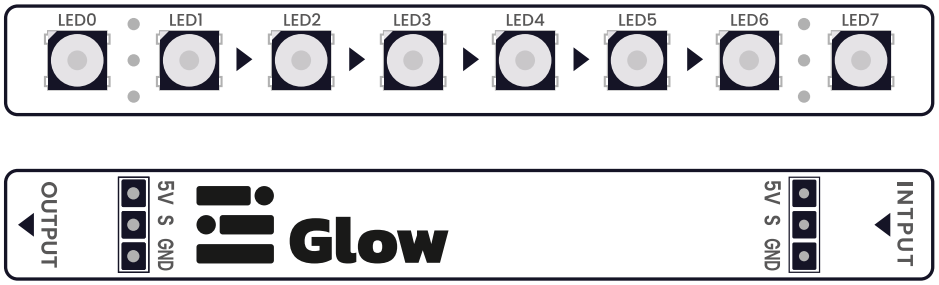
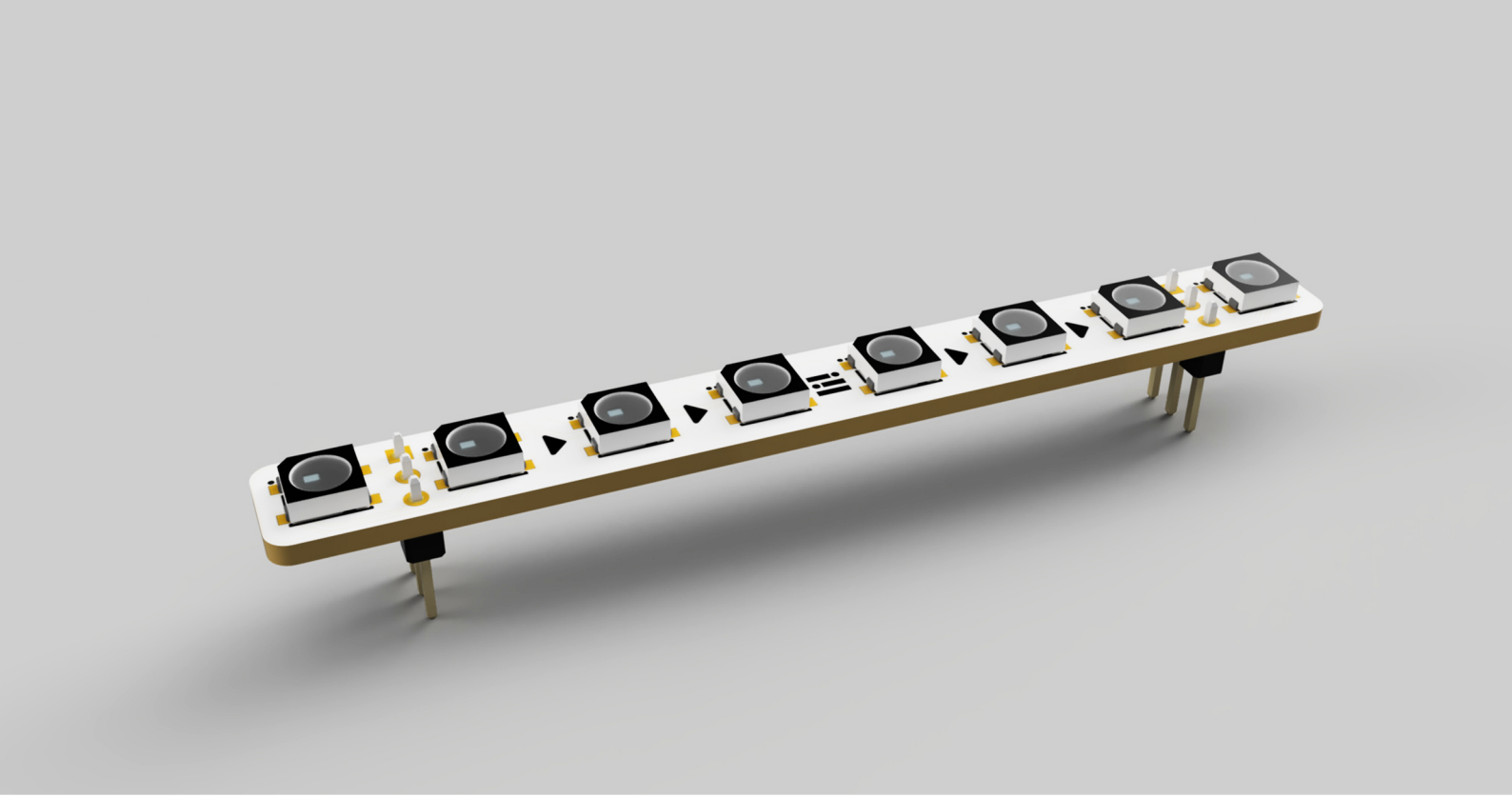
amomii



amomii Glow

DATASHEET SKU GL01V1M



Description

The amomii GLOW is an addressable LED strip with 8 WS2812B pixels, designed to add vibrant lighting effects to your projects. Each pixel can be controlled individually from a single data pin, allowing for a high level of customization and flexibility. With its compact size, low power consumption, and versatile compatibility, the amomii GLOW is a great choice for any lighting project.

Technical Specifications

LED Chipset	WS2812B
Number of Pixels (per strip)	8
Pixel Dimensions	5mm x 5mm x 1mm
Voltage	5V DC
Current Consumption at maximum brightness (per pixel)	60mA
Power Consumption at maximum brightness (per pixel)	0.3W
PCB Color	White
Control	Addressable, each pixel can be controlled individually from one data pin
Operating Temperature	-20°C to 60°C
Length	79mm
Width	9mm
Weight	3g

LED Chipset and Control

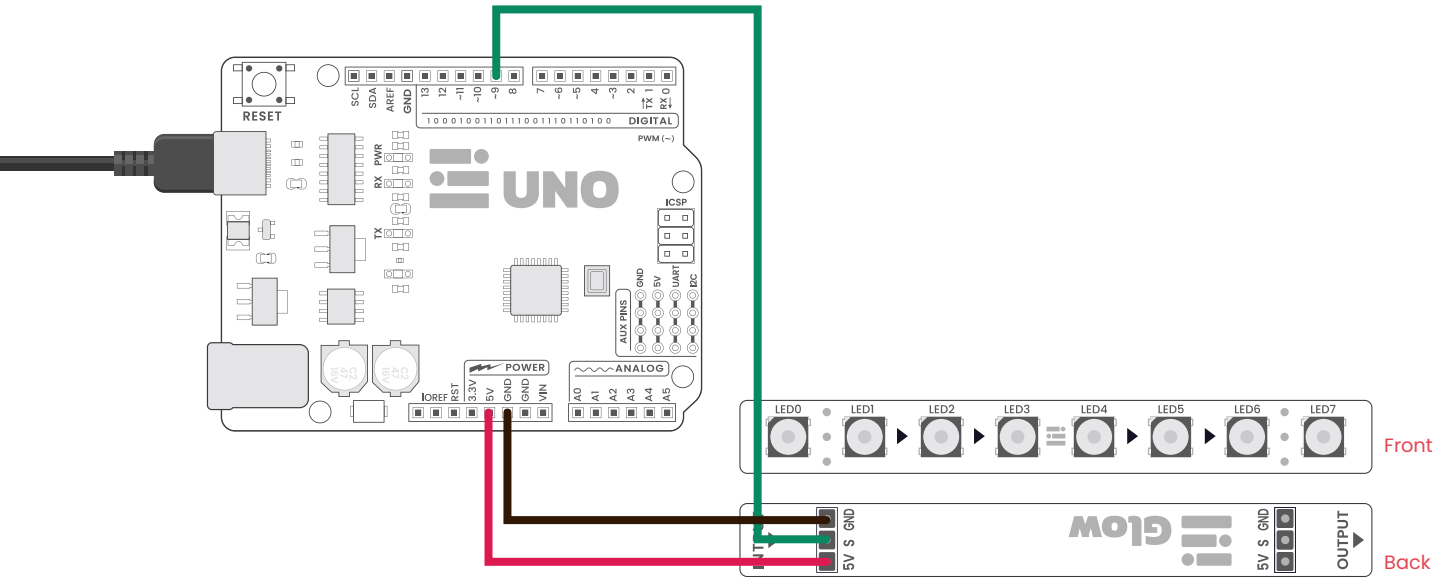
The amomii GLOW uses the WS2812B chipset, which allows each pixel to be controlled individually from a single data pin. This addressable feature provides a high level of customization and flexibility in creating lighting effects. The amomii GLOW can be easily programmed using popular microcontroller boards like the amomii UNO, Arduino or Raspberry Pi using a single data pin.

For more details on the WS2812B chipset, refer to it's datasheet:

Connections

Single Strip

To connect a single strip, the signal pin (S) on the INPUT side of the amomii GLOW must be connected to a microcontroller's digital data pin. In the example provided, we connected the amomii GLOW's INPUT signal pin to digital pin 9 on the amomii UNO. The 5V and Gnd pins of the amomii GLOW can be directly connected to the 5V and Gnd pins on a microcontroller, but caution must be taken with respect to the current draw. Refer to the Power and Consumption section for more information.



Daisy Chaining Multiple Strips

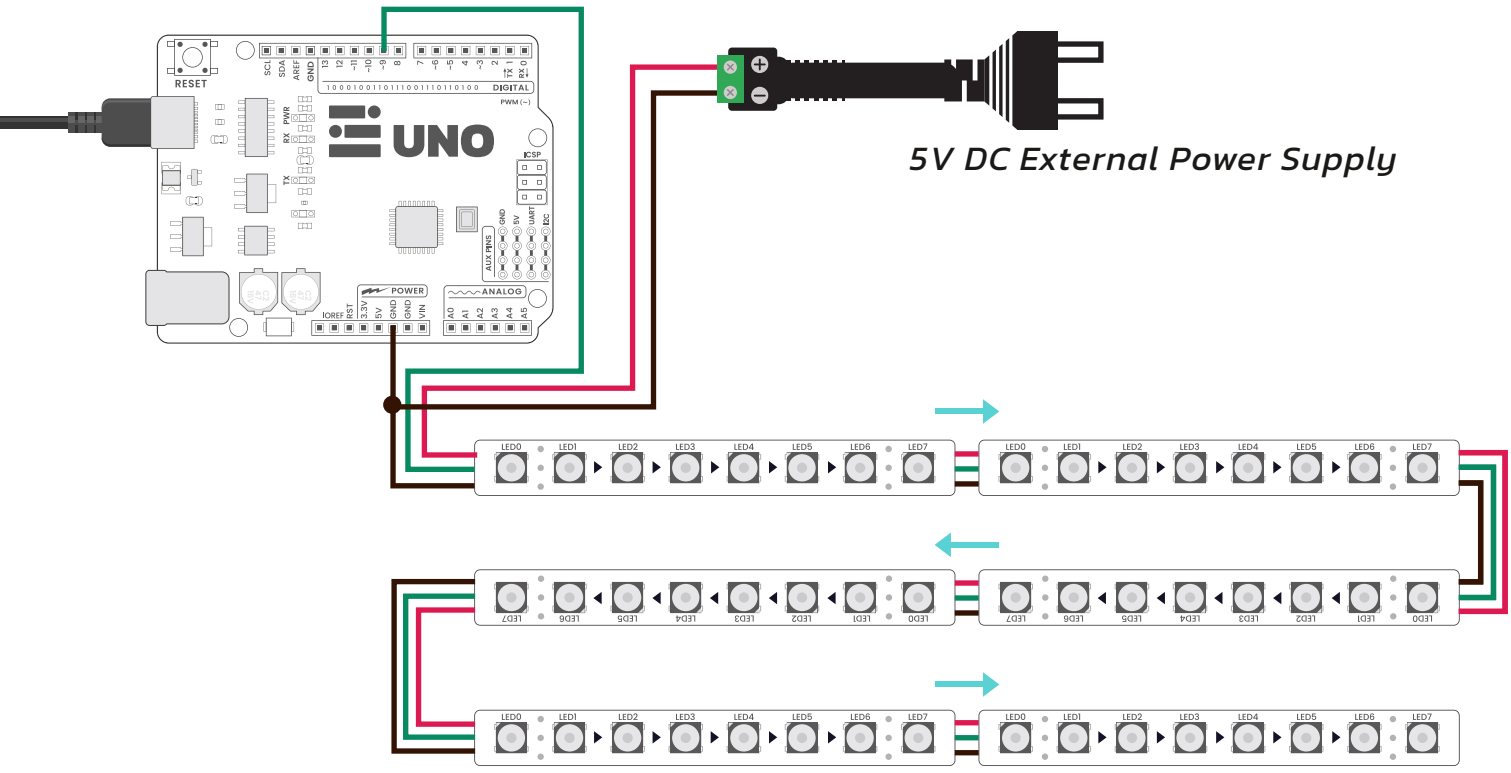
Multiple strips can be daisy-chained together and controlled by a single data pin on a microcontroller. The number of strips that can be connected is determined by two factors: the power supply and the memory on the microcontroller.

When daisy-chaining multiple strips, it is recommended to power the chain with an external power supply. When doing this, it is important to connect the ground of the chain to both the ground of the microcontroller and the ground of the power supply. Refer to the Power and Consumption section for more information.

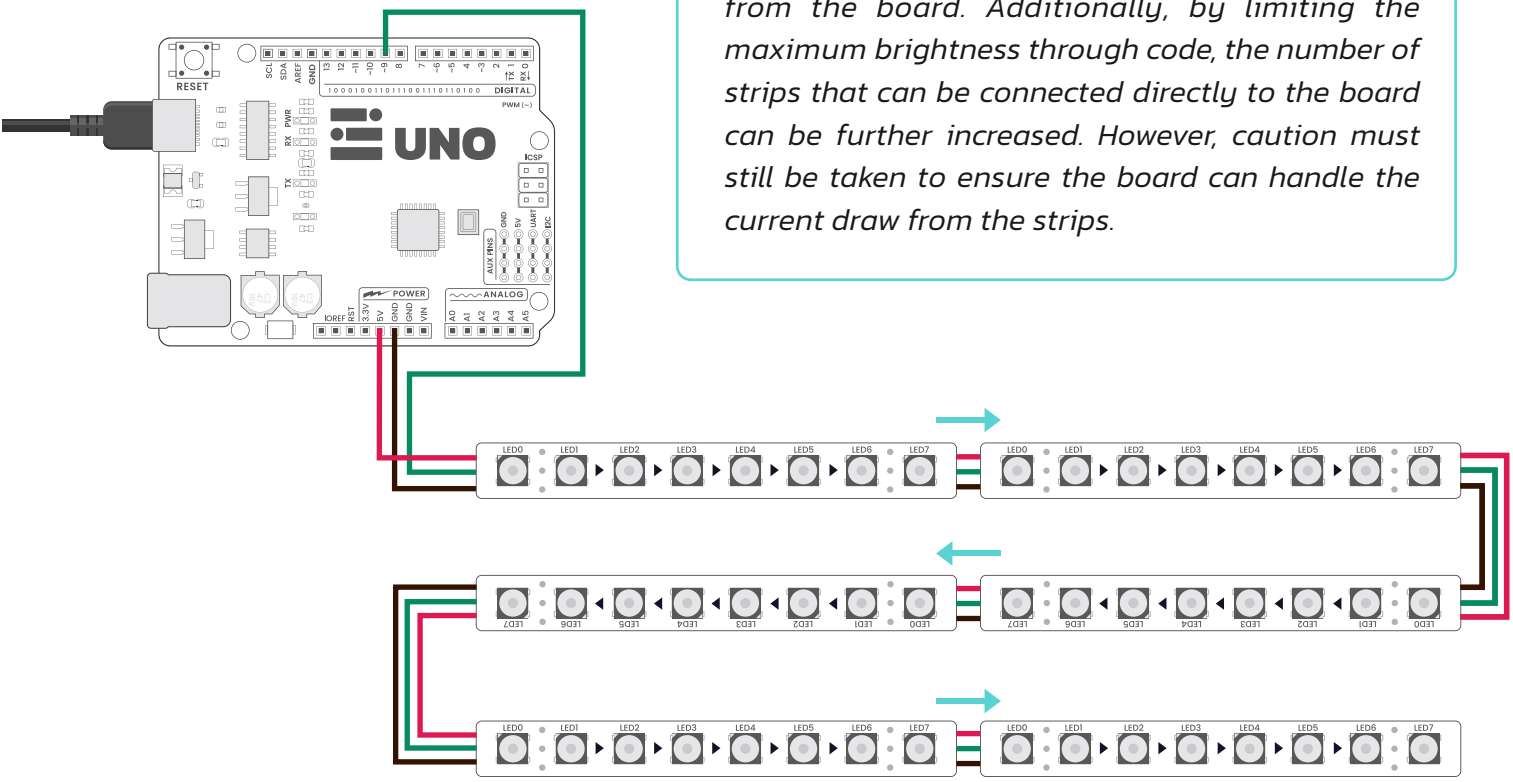
To control the strips, information about the color and brightness of each pixel must be stored on a microcontroller. Therefore, the more pixels used, the more memory required. As a reference, a single amomii UNO has enough memory to control approximately 30 strips daisy-chained together, but microcontrollers with more memory can control more strips.

To daisy-chain multiple strips, connect the INPUT end of the first strip to the microcontroller and power supply, and connect the output of the first strip to the input of the next strip. Connect the 5V, S, and Gnd pins of the output to those of the next strip's input. See the diagram below for a clear illustration of the connection.

With External Power Supply



Powered Directly



Note

The amomii UNO can handle more power than typical Arduino UNO style boards, allowing for a greater number of strips to be powered directly from the board. Additionally, by limiting the maximum brightness through code, the number of strips that can be connected directly to the board can be further increased. However, caution must still be taken to ensure the board can handle the current draw from the strips.

Power and Consumption

Each pixel on the amomii GLOW consumes 60mA at maximum brightness and 0.3W of power. For a single strip with 8 pixels, the maximum current draw is 480mA and the maximum power consumption is 2.4W.

When daisy-chaining multiple strips, it is important to consider power requirements. A single strip powered directly from a microcontroller should be fine. However, caution must be taken when connecting more strips to a single power supply, as the current draw can quickly add up. For example, 30 strips daisy-chained together could have a maximum current draw of 14.4A and a maximum power consumption of 72W.

To power multiple strips, it is recommended to use an external power supply capable of handling the total current draw. A power supply with a capacity of 5V DC and 15A or more should be sufficient to power 30 strips, and many more if measures are taken such as limiting the maximum brightness through code. When daisy-chaining multiple strips, it is important to connect the ground pin (Gnd) of each strip to both the ground of the microcontroller and the ground of the power supply.

Note that the maximum power consumption and current draw assumes all pixels are at maximum brightness. In practice, this is unlikely to happen, but it is important to have more than enough power handling capabilities to avoid potential issues with dimming or inconsistent colors.

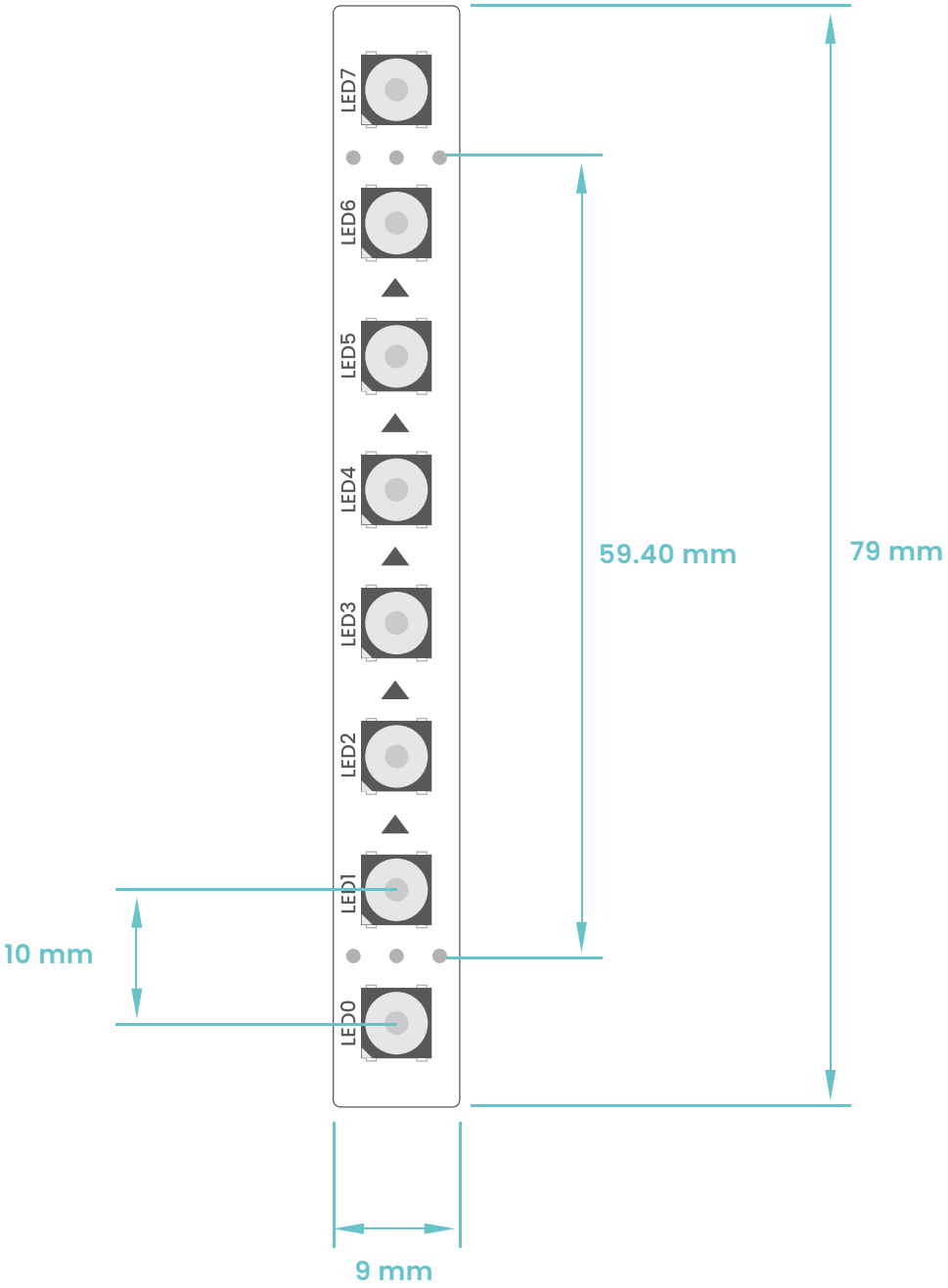
Coding

To control the amomii GLOW, a variety of controllers can be used with different coding languages and IDEs. However, we recommend using a microcontroller compatible with the Arduino IDE and the FastLED coding library for ease of use.

The FastLED library, originally created by Daniel Garcia and Mark Kriegsman, is a comprehensive function pack coding library that simplifies programming the amomii GLOW. The library includes example code that can produce impressive light patterns on your strip, requiring only the modification of the connection pin and pixel count variables.

For more information, refer to our Getting Started document.

Board Dimensions



Revision History

Date	Revision	Changes
MAY. 12. 2023	1.0	First release

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