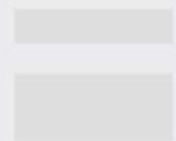



A Quick-Start Guide

HOW TO CHOOSE LED STRIP LIGHTS





LED light strips come in a dazzling variety of types and styles. With this eBook we'll attempt to explain some of these options and how you might choose between them.

Our LED experts, who work with both our customers and our suppliers, spec our LED strip lights to meet the needs of most common applications – so don't worry too much if this seems like more information or complexity than you bargained for.

Browse our strip lights for what you need here or contact our customer service team at **1-855-768-4135** or **customerservice@hitlights.com** and let them guide you on your LED journey!



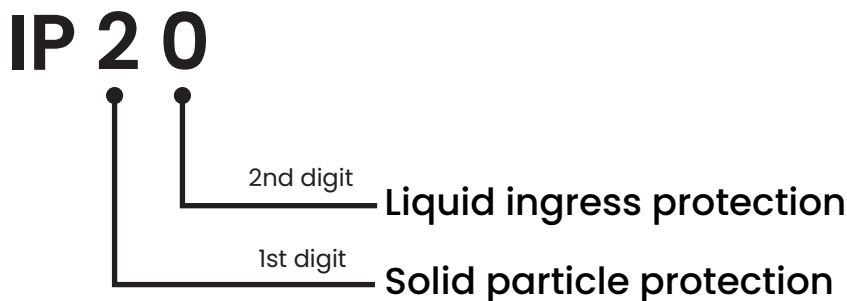
IP Ingress

If you have worked with LED lighting, there is a good chance you have seen an 'IP' code on these products. If you are unfamiliar with this rating system and have a desire to learn about it, you are at the right place.

If you're installing your strips in a regular indoor location, then regular IP-20 strips (indoor) are fine. For outdoor locations or indoor locations that might need additional protection you might choose IP-65 (weatherproof) or [IP-67 \(waterproof\)](#).

IP-65 strips are coated in a transparent gel that protects the top and sides of the strip. IP-67 strips are fully encased in a transparent rubber sleeve for maximum protection.

Understanding the Code



First Digit: Solid Particle Protection

X	Not Tested
0	No Protection
1	Protected against a solid object greater than 50mm, such as a hand
2	Protected against a solid object greater than 12.5mm, such as a finger
3	Protected against a solid object greater than 2.5mm, such as a wire
4	Protected against a solid object greater than 1.0mm, such as a strap
5	Dust Protected. Prevents ingress of dust sufficient to cause harm
6	Dust Tight. No ingress of dust

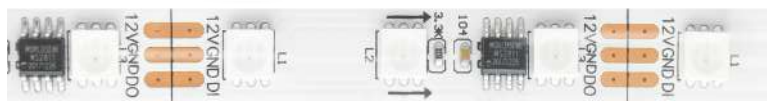
Second Digit: Degree of Protection Against Water

X	Not Tested
0	No Protection
1	Protection against water drops
2	Protected against water drops at a 15 degree angle
3	Protected against water spray at 60 degree angle
4	Protected against water splashing from any angle
5	Protected against water jets from any angle
6	Protected against powerful water jets and heavy seas
7	Protected against effects of temporary submersion in water (30 minutes at 3 feet)
8	Protected against the effects of permanent submission in water (up to 13 feet)

IP20 for indoor use only no protection against water



IP67 for outdoor use protected from dust and solid particles and water from any direction

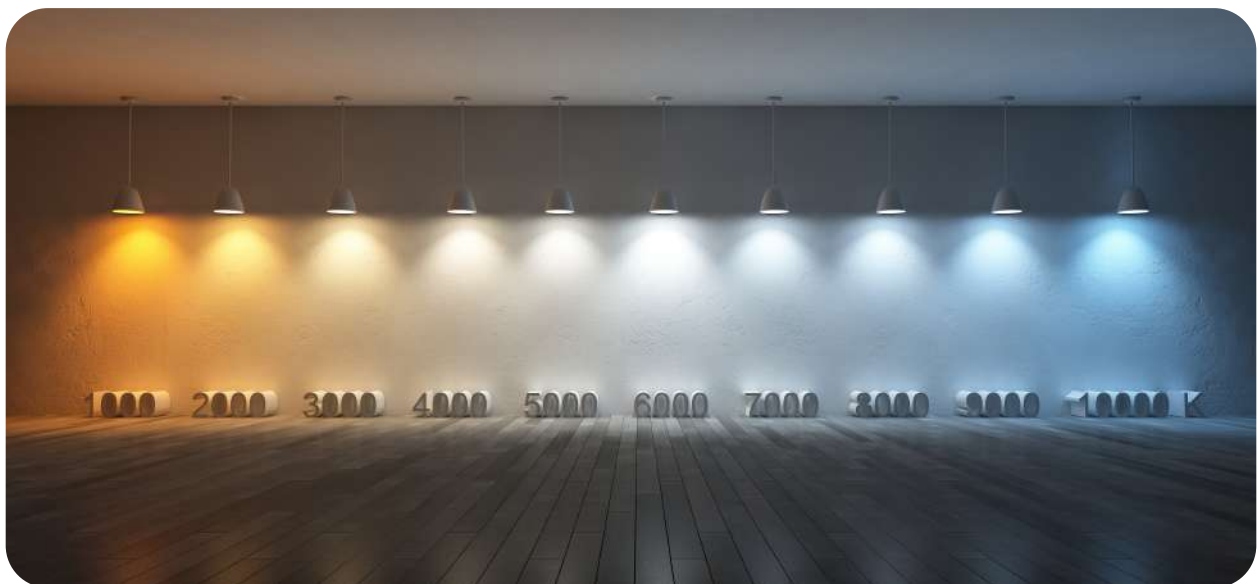


Color | Color Temperature

What is Color Temperature?

First, a note on color temperature values, which are measured in degrees Kelvin, and range from around 1700K (very, very warm) to 9500K (very, very cool). Why degrees Kelvin?

A simple way to think about color temperature is to imagine a piece of metal being heated. As it is first heated, it emits invisible infra-red light, or heat. As it gets even hotter, it begins to glow a soft red, or orange - and we're now in the lower range of color temperatures. As the heat increases further, the red or orange gives way to yellow, and eventually white.



Single Color

Single color strips output just one color, most often a white. Within that white spectrum, you'll have a choice between warmer whites (low kelvin, 2700K to 3,000K), neutral whites (mid kelvin (4000K to 4500K), cooler whites (5000K to 6000K) and very cool whites (6,500K+). While color temperature is primarily an aesthetic choice, some consideration

should be given to the application, as certain color temperatures tend to favor certain moods and ambiances. You can read more about color temperature [here](#).

RGB

[RGB strips](#) contain unique RGB chips which contain three small LEDs - one red, one green, and one blue. A compatible RGB controller dims these three LEDs independently, allowing you to select various different colors. With all three LEDs set to full brightness, you get white. With two LEDs, say red and blue, set to full brightness, you get purple.

The functions and colors available with an RGB strip are determined by the controller. Our sound activated music controller, for example, comes with sixteen colors and a microphone / input jack for music functions, while our high end T3 controllers allow you to control several different zones independently. You can browse the rest of our RGB controllers [here](#).



RGBW

[RGBW strips](#) are almost identical to RGB strips, but they contain a fourth LED in each chip - one dedicated to white light.

This has two main advantages over a standard RGB strip. The dedicated white LED usually puts out a nicer, high CRI white light than the mix of red, green, and blue chips on an RGB strip does - and because it has a dedicated white chip, the whites are much brighter.

Voltage

We stock both [12 Volt](#) and [24 Volt](#) DC strips. The output, power draw, and color reproduction between the two varies little if at all - but the 24V led strips offer one significant advantage over the 12V strips : much longer run length.

Higher voltage strips are less affected by voltage drop related dimming than lower voltage ones, so where a 12V DC strip might start to dim after thirty-two feet (sometimes sixteen feet), the 24V DC strips are guaranteed to remain for 65 feet or more! They are a little bit pricier, so if you don't need to go that long, stick with the 12 volt.

Our RGB strips are not currently available in 24V.



Lumens

Lumens measure the amount of light put out by a light source. In LED strip lights, they're measured in lumens per foot (sometimes lumens per meter) so that you can best determine how many feet of strip you'll need for a specific amount of light or vice versa.

A traditional 60 watt incandescent light bulb puts out about eight hundred lumens, so you'd need about five feet of our popular [Luma5 High Density](#) strips, at 164 lumens per foot, for the same amount of light as an incandescent 60 watt light bulb.

Higher output strips will generally require more power than lower output strips but more on that later. RGB strips do not have an associated lumen rating, as they are by nature variably bright across different colors. RGBW strips may have a lumen rating for the white channel only.

Power Requirements

LED strip power requirements are generally proportional to lumen output, so when we selected a strip based on lumen output, we more or less already made our decision on power requirements. Fortunately, LEDs are inherently low powered devices, so you're unlikely to break any power budgets with an incorrect choice here. The exception might be for battery operated setups, where total wattage can be extremely important (and in which case you might move this step way up to the top of the list!). We measure power in watts per foot.

Why just 'generally' proportional? It's related to the efficiency of the chip, measured in Lumens per Watt. A more efficient chip does a better job converting power to light, meaning you get more lumens per watt. Where does that extra power go in less efficient strips? That's lost mostly as heat, which is why you'll find those strips to be much warmer when running.



Color Rendering Index (CRI)

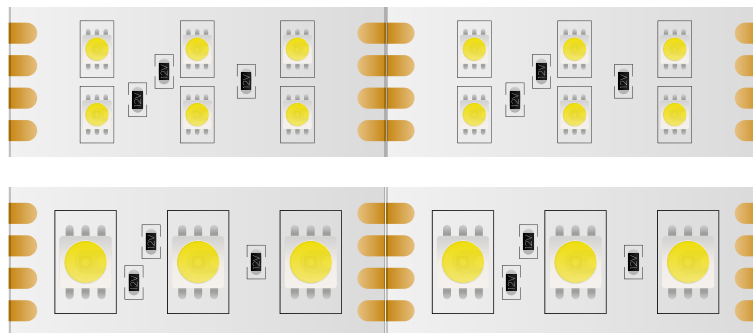
Color Rendering Index is a measure of the 'quality' of a white light (and does not apply to RGB strips). A CRI of 100 (maximum) represents a perfectly white light, where all colors in the spectrum are represented at equal brightness. CRI can be important if you're using your lights in a location where color reproduction is important - photographers, sign manufacturers, and display/exhibit companies place a high value on high CRI strips that will crisply and accurately display the colors of their subject matter.

For residential or business use, CRI is less important - but we don't stock anything below 70 CRI, and our [premium strips](#) are all 80 CRI or above.

LED Density

The LED Density refers to how close the LED chips on an LED light strip are to each other. A high density strip will feature many more chips (closer together) across a given length, than a lower density one. Density is typically measured in chips per meter - our Standard Density RGB strips feature 30 LEDs per meter, while the High Density version has 60 LEDs per meter.

Aside from being brighter, higher density strips also put out a smoother light. They're less 'spotty', because the gaps between the LED chips are less noticeable. If your installation requires the LED strip to be visible, or to be installed very close to a surface (such as above cabinet kitchen lighting), then you might consider a higher density strip over a lower density one - all else being equal.



LED Chip Type

Given their importance in producing the actual light from an LED light strip, you might be surprised to find the LED chip type at the bottom of our list, but there's a good reason for it. Imagine you're choosing a new car. You select certain attributes that are important to you - say, gas mileage, reliability, price.

This might narrow your selection significantly to a range of cars that meet your needs. It probably excludes certain types of cars entirely - sports cars, trucks, and the like.

Picking your LED chip first is like picking your car before considering your needs, which is why we put it last. In many cases, you might even find that by this stage, you've no choices left to make! LED chips are named by their physical size. A 3528 chip is 3.5 mm long and 2.8 mm wide. A 5050 chip is 5.0 x 5.0mm. A 2835 is, in physical size, almost identical to the 3528 chip (turned sideways), but in construction and design very different. The output of a chip is not specifically related to its size (our 2835 Luma20 strips are our brightest), so always refer to lumen output for brightness.

If you're looking for RGB or RGBW chips, those are only available (at least here, at HitLights) in the 5050 style. You can learn a little more about [chip types here](#).



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[Choosing the Right Color Temperature](#)

[How to connect a dimmable driver](#)

[UL-Listing - What it means to you](#)

[12 Volt vs 24 Volt LED Strip Lighting : What's the difference?](#)

[What is voltage drop? Why are my strips dimmer at the end?](#)

[How to use LED Light Strips to Illuminate Acrylic Lettering and Signage](#)

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CONTACT US

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We consider ourselves a full service **LED lighting PARTNER**,
not just a supplier