

# SUPER Lights

## Version 4.0

*Thank you for purchasing a set of SUPER Lights!*

### **WARNING**

**Always fly your aircraft first! Never let your light set distract you from your main task - flying your aircraft!**

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# Introduction

These lights are a great way to have fun at twilight on your paramotor, impress your friends, and fly legally during twilight (with the included strobe pattern on a double sided set). This set comes pre-programmed with a whopping 45 patterns, and most of them can be adjusted to create even more variety.

## Key Features

- Two 4 meter LED strips with 480 LEDs total. One strip with 240 LEDs on the Lite set.
- FAR 103 twilight flying compliant (480 LED set only). No extra strobe required!
- 10,000 mAh battery for over 8 hours of fun between charges.
- Built in 1 amp USB charger. No external charger required.
- Simple easy to remember controls that work with gloves on.
- 45 unique patterns that are customizable for a limitless variety of patterns.
- Remembers your settings between uses and always starts at the last pattern you used.

## FAR 103 Note

Super Lights can only be used as your twilight strobe if you have the full set. That means you have 2 strips of lights on your cage ring. One facing forward and the other facing rearward. If you purchased the "Lite Edition" only one light strip was included and therefore is NOT FAR 103 compliant.

## Included In the Box

- Super Lights controller with 10,000 mAh battery and built in charger.
- 2 4-meter strips with 480 LEDs (1 4-meter strip with 240 LEDs on the Lite Edition).
- 40 zip ties to secure the lights to your netting.
- 4 double sided velcro ties to secure the controller to your frame.
- 2 7" cable extensions (1 on the Lite Edition) to attach the lights to your controller.

## Technical

<b>Weight</b>	398g (14oz)
<b>Dimensions</b>	185mm x 80mm x 30mm (7.2"x3.1"x1.1")
<b>Battery</b>	10,000 mAh LiPo (with over/under protection)
<b>Lights</b>	4m (~13ft) with 240 LEDs per strip IP65 Rated
<b>LEDs</b>	RGB ws2812b 5050 5v rated

## Charging the Battery

The controller has a built in USB charger capable of charging the included battery at 1+ amp. Your controller will either have a USB mini or micro connector. The connector is located under the USB symbol on the top cover.

**Note about cables:** Not all USB cables are equal. If the cable you are using is too long, or a thin cheap one, your controller may not get the full 1 amp of power. Although this will not hurt anything, it will take longer to charge your battery. The shorter the cable you use, the better.

Below is a table showing the charging times based on the current supplied. If your controller is taking longer than overnight, switch your cable or use a different USB charging port.

Current	Charge Time
100 mA	100 hours
500 mA	20 hours
1,000+ mA (1+ amp)	Less than 10 hours

## Installation

It should take about 15 minutes to install your Super Lights on your cage for the first time. Before installing, you'll want to take minute to figure out which side of the paramotor your want to mount the controller box. Generally you'll want to install it on the opposite side of your throttle hand.

The controller box is mounted with velcro so it can be removed after use. Generally you don't want to leave your controller box attached to your paramotor. Reattaching when you want to use it forces you to inspect the controller before flight.

Unless you break down your cage after every flight for transportation, you can leave your lights zip tied to the cage ring with no problems. They will even withstand transportation in the rain. (I've had the same set of lights mounted to my paramotor for 3 years, transported it in the rain, flown at the beach, and they still look and operate as they did when new.)

## Tools Needed

- **Snips** or **Scissors** to cut the tails off from the zip ties.
- Black **Sharpie** to mark the center of your light strips.
- **Scissors** to trim the double sided velcro if needed.

## Precautions

- Avoid mounting the light strips where there is a possibility of your line set rubbing over the top coating. This shouldn't be a problem when mounting on the net next to the cage ring.
- If the controller gets damaged for any reason - stop using it! Send it back in for inspection and possible replacement.
- Turn off the controller when charging the battery. Make sure the controller is off first, then plug the USB cable into the controller to charge. If the controller is on when you plug in the cable, the indicator light will not display the correct colors to indicate charge progress, but otherwise is harmless to your controller.

## Installing the Light Strips

These instructions are for mounting the light strips to your netting using the included zip ties for a typical paramotor. Read through these once before installing your lights.

1. Determine which side of the pilot the controller will be mounted. Super Lights are preprogrammed to assume the controller will be mounted on the pilots left side. This is the side the light strip (MR30) connector will be on.
2. Find the center of each light strip by gently folding it in half and marking the center point. This is where you will start when mounting the light strips. Only fold just enough to find the center point. The copper foil the LEDs are mounted on can crack if folded too much. On most light strips, the three gold bars at this point will have solder on them (making them silver).

3. Take the two light strips with their centers marked and use one of the zip ties to tie them together back to back. **DO NOT PULL OFF THE TAPE BACKING!** If your light strips don't have a 3M sticky back, don't worry, just offset the 2 strips so the 3 gold bars on the back are NOT touching. There is a coating over the back, but over time may wear off, so best to avoid trouble now by offsetting them.
4. Now position the light strips center point at the top dead center of your cage ring. Make sure LEDs are facing both forward and rearwards. Using a zip tie start fastening to your netting, keeping the light strips as close to the ring as possible.
5. Work your way around one side of the cage ring, then do the next side. It should take about 20 zip ties per side. You only need to attach a zip tie every 2 or 3 inches.
6. If you have more than an inch or two past the netting on the side without the connector, use another zip tie to secure this tail to your cage ring. It should be low enough that the zip tie will not interfere with your launching.
7. That's it! You're done installing your light! If you need to break down your paramotor for transport, just cut the zip ties and remove the lights.

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## Q & A

- Q. What if I have more lights hanging past the end of the netting than I like?
- A. Count the number of LEDs you would like to remove on one side. Double that number and cut that number of LEDs off the end of your light strips. Be sure to cut down the middle of the 3 gold bars when removing the excess LEDs. Then follow the steps above again. You may need to purchase some more 4" zip ties to complete the installation.
- Q. My lights came with sticky tape on the back. Should I use this to stick them together?
- A. Although you can use the sticky tape on the back to stick the two light strips back to back, I would leave the tape covering on and just use the zip ties to hold the lights in place. That way if you need to remove them or just replace one side, you can easily do this.

## Installing the Controller

The controller can be attached with the 4 double sided velcro strips to any part of your frame it will fit. Generally you'll want to attach one side of the controller with 2 straps, and then anchor the controller with the 3rd strap. Using three straps is the minimum I would suggest.

If you have a harness with a zippered pouch on one side, you can put the controller inside the pouch if you like.

The controller is made up of 3 boards with slots that are aligned to accept 3/4" velcro straps. When using the straps through aligned slots, you'll want to include as many boards as possible.

## Initializing the Controller

Your set of Super Lights are preprogrammed for the controller to be mounted on the left side (LEDs going counter clockwise) and to utilize the full length of your light strips. If this is your installation, you do not need to do this step.

### Why you might need to reprogram the controller:

- You are mounting the controller on the pilot's right side.
- You need to cut some LEDs from your light strips to fit your cage.
- Or, the 3 and 9 o'clock positions are different from the default positions and patterns like the American flag are not displaying correctly.

## Steps to Reprogram Your Controller

1. Turn the Brightness, Flash Rate, and Color/Size knobs counter clockwise to the full left positions. Now press and hold down the Pattern and Group buttons, then turn the controller on. The ring will flash RED three times. Let go of both buttons. You are now in programming mode.
2. Turn the Brightness knob slowly to the right, filling the light strip with white lights. The RED dot indicates the end of the strip. Move this RED dot to the very last LED. (Note: It will jump by 2 LEDs at a time, since there needs to be an EVEN number of LED in a strip.) Push the Pattern button once when you found the end of your light strip. This sets the length.
3. Now, using the Brightness knob again, find the top center of your cage ring. You should be splitting the two colors evenly on either side of your cage ring. This is your 12 o'clock position. Push the Pattern button once you find this position. This is your 12 o'clock position.
4. Now, using the Brightness knob one more time, find the 3 and 9 o'clock positions. You should be splitting the two colors evenly on the top and bottom half of your cage ring. This is your 3 and 9 o'clock position.
5. To confirm the position set above and set the direction of your lights (clockwise or counter clockwise - controller on pilot right or pilot left), do one of the following:
  - a. For lights mounted counter clockwise (controller on pilots left side), push the Pattern button.
  - b. For lights mounted clockwise (controller on pilots right side), push the Group button.

If you mess up any of these steps, just turn off the controller and start over. You can do this as many times as needed to get it right.

## Using Your Lights

Your new Super Lights are designed to be as simple as possible to work while in flight. Allowing you to do your task of flying your aircraft with minimum distractions.

Before your first flight with Super Lights, you should go through ALL the groups and patterns and adjust each pattern the way you like it. The controller will remember your settings. That way when you get into the air, you will only need to push either of the two buttons to change patterns (while in Normal mode).

## Normal Operation

Turn on Super Lights will put the controller in Normal operation mode. This is the default mode and will give you the most control of your lights while in flight.

When you first turn your Super Lights on, the American Flag will display. After that, the last pattern you were displaying will become the pattern displayed when you turn your Super Lights on again.

In Normal operation mode the Group button will cycle to the next group, and when reaching the last group, will cycle back to the first group (Strobes). The Pattern button works the same, but within a group. So the Pattern button cycles through the patterns in a group, returning to the first pattern when then end is reached.

When in Normal mode, push and hold the Group button for 2 seconds to reset back to the first group (Strobes). Or, push and hold the Pattern button for 2 seconds too reset to the first pattern in a group. That way if you ever get lost in the groups or patterns, you can reset to a known position and start over.

Furthermore, when in the air you can quickly get to the Aircraft Strobes by pushing and holding the Group button for 2 seconds.

## Special Modes

Besides the Normal operating mode above, you can put your Super Lights into various other special modes for different affects that can allow you to fly without touching the controller.

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### Random

To enter this mode, with the controller off, push and hold the Pattern button and turn the controller on. Two red dashes will display on the ring indicating the controller is now in Random mode. In this mode all the patterns, except the Strobe patterns, are displayed randomly.

You can set the amount of time each pattern is shown with the Flash Rate knob. The range is from 3 seconds to 15 seconds. Set the knob position BEFORE you turn the controller on! Fully left (counter clockwise) is 3 seconds, while fully right (clockwise) is 15 seconds.

While in Random mode the Pattern button will pause on the current pattern. Push the Pattern button again to un-pause the pattern and continue displaying patterns randomly. Pushing the Group button will switch to the Strobe group. Once in the Strobe group the pattern button will work as normal for this group. Push the Group button again to return to displaying random patterns.

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### Favorites

To enter this mode, with the controller off, push and hold the Group button and turn the controller on. Three red dashes will display on the ring indicating the controller is now in Favorites mode. In this mode only the last pattern displayed in each group while in Normal mode will display. Again leaving out the Strobe group.

You can set the amount of time each pattern is shown with the Flash Rate knob. The range is from 3 seconds to 15 seconds. Set the knob position BEFORE you turn the controller on! Fully left (counter clockwise) is 3 seconds, while fully right (clockwise) is 15 seconds.

While in Favorite mode the Pattern button will pause on the current pattern. Push the Pattern button again to un-pause the pattern and continue displaying patterns favorites. Pushing the Group button will switch to the Strobe group. Once in the Strobe group the pattern button will work as normal for this group. Push the Group button again to return to displaying favorite patterns.

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### Cycle All Patterns

#### **Short Delay (~3 seconds)**

To enter this mode, with the controller off, turn the Brightness and Flash Rate knobs fully right and turn the Color/Size knob full left, then push and hold both the Pattern and Group buttons down and turn the controller on. Five red dashes will display on the ring indicating the controller is now in Cycle All Patterns mode with a short delay.

In this mode all the patterns are displayed in sequence starting with the American Flag. The Strobe group is left out.

While in the Cycle All Patterns mode the Pattern button will pause on the current pattern. Push the Pattern button again to un-pause the pattern and continue displaying patterns. Pushing the Group button will switch to the Strobe group. Once in the Strobe group the pattern button will work as normal for this group. Push the Group button again to return to displaying patterns.

#### **Long Delay (~8 seconds)**

Same as above, but turn all the knobs fully right to enter this mode. Four red dashes will display on the ring indicating the controller is now in Cycle All Patterns mode with a long delay.

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## Continuous Pattern Button

To enter this mode, with the controller off, turn the Brightness and Color/Size knobs fully right (clockwise) and turn the Flash Rate knob fully left (counter clockwise), then push and hold both the Pattern and Group buttons down and turn on the controller. Six red dashes will display on the ring indicating the controller is now in Continuous Pattern mode.

In this mode the Pattern button will not cycle back to the first pattern in the group. Pushing the pattern button will cycle through all the patterns in sequence. You can still use the Group button to skip to the next group.


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## Aircraft Strobes Only

To enter this mode, with the controller off, turn the Brightness and Color/Size knobs fully left (counter clockwise) and turn the Flash Rate knob fully right (clockwise), then push and hold both the Pattern and Group buttons down and turn on the controller. Seven red dashes will display on the ring indicating the controller is now in Aircraft Strobes mode.

In this mode only the Aircraft Strobes are available.

# Pattern List

SUPER LIGHTS PATTERNS			
Aircraft Stobes 	Flash Rate	Color/ Size	Notes
Aircraft Strobe♦	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Standard double flash pattern.</li> </ul>
Navigation Strobe	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Standard double flash with navigation green (right) and red (left).</li> <li>Size adjusts width of flashing area.</li> </ul>
Landing Lights	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Size adjust the amount of white LEDs lit at the bottom.</li> </ul>
Flags	Flash Rate	Color/ Size	
American Flag♦	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the stars flash.</li> </ul>
Spanish Flag	<input type="checkbox"/>	<input type="checkbox"/>	
Italian Flag	<input type="checkbox"/>	<input type="checkbox"/>	
Mexican Flag	<input type="checkbox"/>	<input type="checkbox"/>	
French Flag	<input type="checkbox"/>	<input type="checkbox"/>	
Canadian Flag	<input type="checkbox"/>	<input type="checkbox"/>	
Portugal Flag	<input type="checkbox"/>	<input type="checkbox"/>	
Rebel Flag (Dixie)	<input type="checkbox"/>	<input type="checkbox"/>	
Hungarian Flag	<input type="checkbox"/>	<input type="checkbox"/>	
Rainbow Effects	Flash Rate	Color/ Size	
Fade Wave♦	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the colors cycle and wave up the ring.</li> </ul>
Theater Wave	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the lights move around the ring and wave up the ring.</li> </ul>
Fade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the colors cycle.</li> </ul>
Theater Wave	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the lights move around the ring.</li> </ul>
Cycle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the rainbow colors move around the ring.</li> <li>Size adjusts the width of each color.</li> </ul>
Solid Colors	Flash Rate	Color/ Size	

<b>Fire/Flames♦</b>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Comet</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the comet moves around the ring.</li> <li>Color adjusts the color of the comet. Turning fully right makes the comet white.</li> </ul>
<b>Fire Flies</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the fire flies flash.</li> <li>Color adjusts the color of the fire flies. Turning fully right makes the fire flies white.</li> </ul>
<b>The Matrix</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the random lights flash.</li> <li>Color adjusts the color of the lights. Turning fully right makes the lights white.</li> </ul>
<b>Loose Connection</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Color adjusts the color of the lights. Turning fully right makes the lights white.</li> </ul>
<b>Solid Colors</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the lights flash. Turning fully right stops the flashing.</li> <li>Color adjusts the color of the lights. Turning fully right makes the lights white.</li> </ul>
<b>Color Streak</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the streak moves around the ring.</li> <li>Color adjusts the color of the streak. Turning fully right makes the streak white.</li> </ul>
<b>Bouncing Lights</b>	Flash Rate	Color/ Size	
<b>Rainbow Night Rider♦</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the two streaks bounce in the ring.</li> </ul>
<b>Rainbow Tron</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the four streaks bounce in the ring.</li> </ul>
<b>Color Night Rider</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the two streaks bounce in the ring.</li> <li>Color adjusts the color of the streaks and background. Turning fully right makes the streaks white on black background.</li> </ul>
<b>Color Tron</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the four streaks bounce in the ring.</li> <li>Color adjusts the color of the streaks and background. Turning fully right makes the streaks white on black background.</li> </ul>
<b>Bouncing Balls</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Color adjusts the color of the balls. Turning fully right makes the balls white.</li> </ul>
<b>Holiday Lights</b>	Flash Rate	Color/ Size	
<b>Festive♦</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts the flash.</li> <li>Color adjusts the amount of black lights.</li> </ul>

<b>Christmas</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts the flash.</li> <li>Size adjusts the size of each color bar. Turning fully right displays the colors randomly.</li> </ul>
<b>Hanukkah</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Ramadan</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Valentines</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Saint Patricks</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Easter</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Independence</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Halloween</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Thanksgiving</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Police Lights</b>	<b>Flash Rate</b>	<b>Color/ Size</b>	
<b>Chase Lights♦</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the colors move around the ring.</li> <li>Size adjusts the size of each color bar. Turning fully left displays the colors randomly.</li> </ul>
<b>Triple Flash</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>Same as above...</li> </ul>
<b>Red/Blue</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the two colors flash. Turn fully right for not flash.</li> </ul>
<b>Triple Crawl</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the two colors crawl down the ring.</li> </ul>
<b>Triple Ring Flash</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Flash rate adjusts how fast the triple flash of red and blue alternates.</li> </ul>

- ☼ This is the TOP pattern group. Press and hold the Pattern Group button for at least 2 seconds to reset back to this group.
- ♦ This is the TOP pattern for this group. Press and hold the Pattern button for at least 2 seconds to reset back to this pattern.