

# StreamLine

## 4900 StreamLine Spider

### User guide

This guide contains an overview of the necessities for charging StreamLine batteries using the StreamLine Spider. This is followed by an explanation of battery capacity. Then the charging process is explained using a step-by-step guide with reference pictures.

### Product contents



	Object	Explanation
1.	Power supply	The StreamLine Spider ships with a +5 VDC power adapter Do not use different adapters
2.	+5 VDC Plug	
3.	Power supply wall socket plug	
4.	StreamLine Spider	Charger with 8 wires ending in charging ports (4 times +1 A and 4 times +0,5 A)
5.	Wire with socket	The socket has 3 pins and can only be used with StreamLine rechargeable Li-Po batteries

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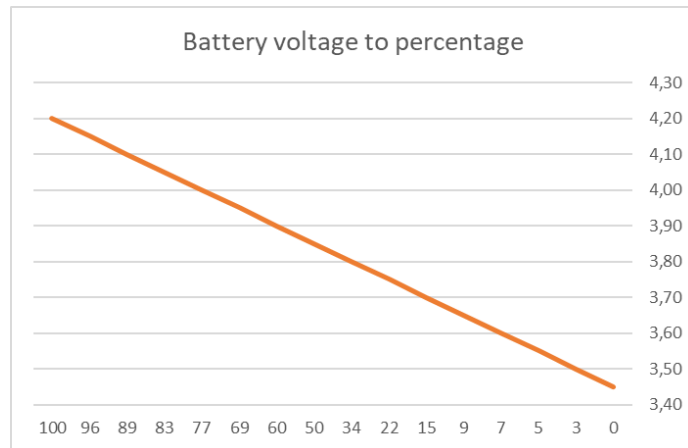
## Battery percentages

The StreamLine Spider can only be used with rechargeable StreamLine LiPo batteries.

An approximation of the remaining capacity of a StreamLine battery can be seen by measuring voltage output. This displayed Voltage will decrease in proportion to how much the battery is drained.

A full battery should deliver around +4,2 VDC. A measurement of +3,5 VDC would mean that the battery has near 3% of its charge left. Further measurements and their corresponding charge levels in percentage are displayed below.

Percentage	Battery voltage
0	3,45
3	3,50
5	3,55
7	3,60
9	3,65
15	3,70
22	3,75
34	3,80
50	3,85
60	3,90
69	3,95
77	4,00
83	4,05
89	4,10
96	4,15
100	4,20



As a rule-of-thumb, Li-Po batteries are complex thus the exact charge may differ slightly depending on varying factors like load, temperature, humidity etc.

Note: Charging beyond +4,2 VDC is not recommended as it can damage the battery. It is likewise not recommended to drain the battery beyond +3,5 VDC.

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## Steps with reference pictures

Take the StreamLine Spider (4).

Take the power supply (1) and plug the +5 VDC plug (2) into the StreamLine Spider.

Then connect the power supply to a wall socket (3).



Take the plug of the battery that needs to be charged and the StreamLine Spider charging port (5). Orient the plug and the port so that the pieces that stick out line up as in the picture below. Connect the battery to the charging port.



While a battery is charging, the LED underneath this port will be red. The LED will turn off when the battery is fully charged, and a green LED will turn on. The battery will not continue charging when this green LED is on. The percentage of a full battery can vary from 97 to 100 percent.



When connecting a battery with a charge of 90% or higher. The LED will turn green, and the battery will not be charged. This is a feature meant to protect the long-term life of the battery.

However, it is possible to override this feature by disconnecting power and connecting up to 8 batteries with a charge of 90%+ to the Spider before reconnecting the power.

The batteries and the charger will generate some heat. The heat generated in the charger is dissipated through the bottom plate.

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