

## LumiDrv3.0 Network Setup and Operation

2 lights are the minimum requirement for networking, a Master and a Slave. As many slaves may be registered as required, however exceeding 6 slaves may incur a short delay when changing modes.

### **Master Light Set up**

Select the light to be used as the master controller, hold the toggle switch up as you insert the DC power connector from the battery; continue to hold the switch until the indicator LED turns **GREEN**, then release the toggle switch. The indicator LED should now show solid **RED**.

Press the toggle switch UP once then release, LED indicator will now show **YELLOW**.

Press the toggle switch DOWN once, the indicator LED will flash **GREEN** and then turn back to **YELLOW**.

This light is now set as the MASTER. Do not remove the DC power cable.

To register a slave light to this you need to place the master into registration mode. To do this press the toggle switch UP once, LED will turn **GREEN** indicating the unit is now waiting for a registration signal from a slave unit.

### **Slave Light Set up**

Select the light to be used as the Slave, hold the toggle switch up as you insert the DC power connector from the battery, continue to hold the switch up until the indicator LED turns **GREEN**, then release the toggle switch. The indicator LED should now show solid **RED**.

Press the toggle switch UP twice then release, LED indicator will now show **GREEN**.

Press the toggle switch DOWN once, the indicator LED will flash **RED/BLUE** rapidly indicating it is transmitting a registration signal.

### **Within 30 seconds**

The Master light will still be showing a **GREEN** LED, press the toggle switch DOWN once to accept registration from the slave.

The LED on the Master will briefly flash **YELLOW/GREEN** to show successful registration, and then turn back to solid **GREEN**.

The Slave light will then exit out of registration mode automatically (LED's flash in sequence and then light goes into standby mode)

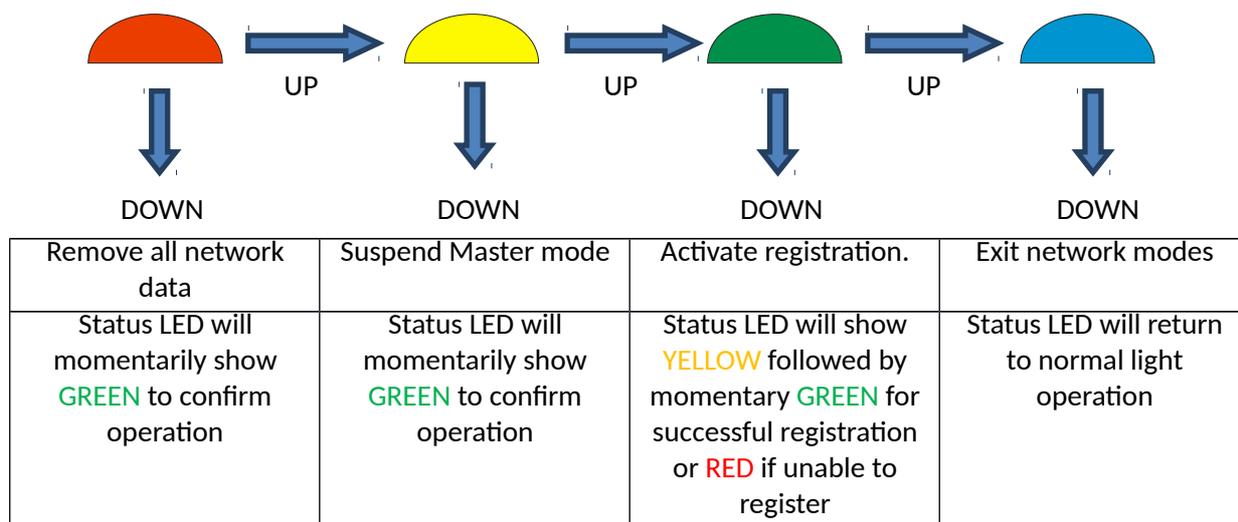
Master and Slave have now been registered to each other. If you require to add further Slave lights at this point, leave the Master unit in registration mode, and repeat the Slave Light Set Up for any additional lights required.

If no further lights need registration, exit registration on the master by pressing the toggle switch UP UP once, the LED indicator on Master unit will show **BLUE**. Press toggle switch DOWN once; light unit will exit registration mode and go back into standby mode.

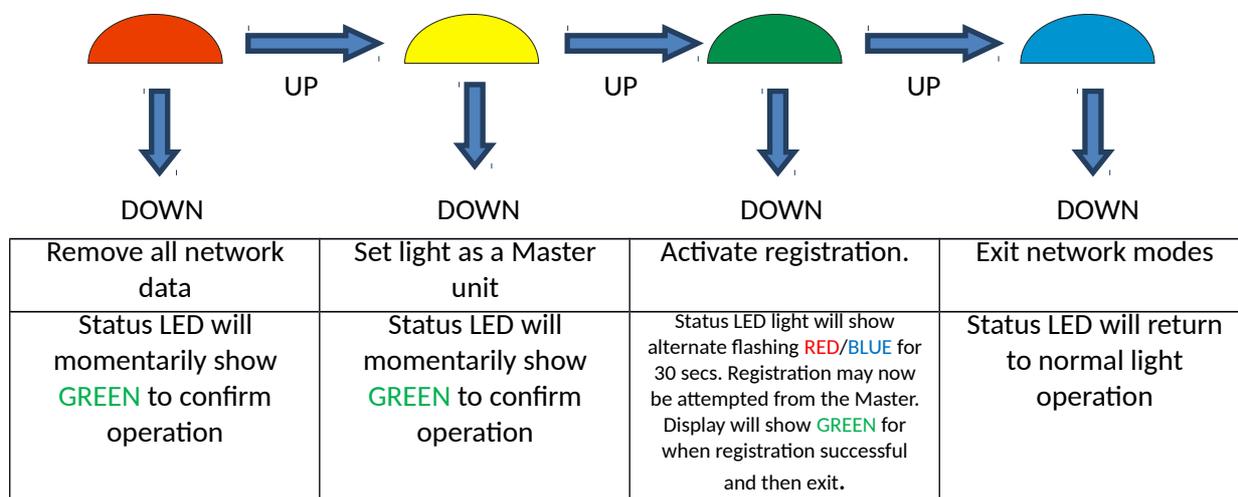
**Note:**

A DOWN press of the toggle switch will tell the light to accept whichever mode it was in, if you accidentally press the toggle switch too many times continue to press the toggle switch UP until the correct LED indicator colour is showing.

**Master mode:**



**Slave mode:**



**In use**

Once a light has been setup as a Master, on inserting the battery the status LED will show a short flashing sequence of **YELLOW/ GREEN** to identify the light as a Master before showing the usual power on sequence. This is useful when initially powering the lights in the network so that the Master may be placed in the best position for operating the switch.

The Slave(s) will now 'follow' the Master. Press the control switch on the Master UP or DOWN to select the required mode, the Slave(s) will follow. When use of the lights is finished, hold the Master switch DOWN to switch off, the Slave(s) will also switch off.

The network settings are 'remembered' by the lights when power is removed, hence on power up all previous settings will be retained.

### Range

The Lumicycle network mode is designed to operate over several meters distance and may achieve much further. This should adequately cover all lights used on a bicycle or other vehicle.

### Security

The Lumicycle network mode employs a proprietary communications link, so false activation from other RF systems is not possible. When a light is set as a Master it randomly chooses a network ID number from over 65000 options. It also chooses an RF channel from 20 available. This gives a unique network parameter setup from over 1.3M options. It is extremely unlikely that unwanted operation from another Lumicycle system will occur.

### Temporary Master mode suspension

When set as a Master the light will send information to Slave(s) every time the switch is activated. If it is required to temporarily stop this feature, then entering network setup on the Master and using the **YELLOW** mode will prevent the Master sending messages, ie the Slave(s) won't follow. The light will revert to full Master operation after the battery is removed and re-powered.

This mode allows a temporary disabling of the Master whereas using the **RED** mode to clear all network data would require re-registration of all Slave(s) to resume Master operation.

### Battery monitoring

The lights have a battery monitoring system to gauge the amount of charge remaining. As the battery charge level falls the light will reduce the available modes so as to extend the run time as much as possible whilst still providing a light output. When the charge level is very low the light will revert to flash mode before finally shutting the light down to protect the battery against over discharge.

Charge state	Status LED	Available modes
Over 80%	<b>GREEN</b>	All
Between 20% and 80%	<b>YELLOW</b>	All
Less than 20%	<b>RED</b>	Low, Mid, Flash
Less than 10%	<b>RED</b>	Low, Flash
Less than 5%	<b>RED</b>	Flash only
0% (flat)	Flashes <b>RED</b> - powers off	N/A

When in Master/Slave operation effects of falling battery charge in the Master are not passed to the Slave(s), ie. the Slave(s) operational modes are set by its own battery charge level. If the Master powers off due to flat battery, assuming the Slave(s) have sufficient battery life, they will continue to operate as independent units.

## Troubleshooting

- No registration
  - ensure one light is set as a Master.
  - ensure distance between Master and Slave is less than 1m.
  - ensure there is no strong electrical noise close by.
  - ensure both lights batteries are charged.
  - clear all network data from each light and start again.
- Slave not following Master
  - ensure the Master and Slave have been previously paired.
  - ensure distance between Master and Slave is no more than 3m.
  - ensure there is no strong electrical noise close by.
  - ensure the Master operation is not temporarily suspended.
  - clear all network data and re-register to Master.
  - ensure Master battery is charged.
  - missed message – see below.
- Slave slow to respond
  - ensure distance between Master and Slave is no more than 3m.
  - ensure there is no strong electrical noise close by.

Note – if a light has been re-registered many times, the Master may be sending messages to Slave(s) that no longer exist causing system delay. If this is the case, clear all network data from both the Master and Slave(s) and re-setup the network.

## Missed message

In the event that a Slave 'misses' the Master message, the Master will re-send the message a further 2 times. After this the Master assumes the Slave is not available, ie not powered on, has been removed from the network or is out of range. However, if the Slave missed all 3 messages due to interference such as strong electrical noise from a passing motorcycle, the Slave will re-synchronise the next time the Master is used.