

USER MANUAL

DL A DRONE LIGHT MODULE

Thank you very much for choosing the DL Series drone lights, and congratulations with your new product. We hope that you will enjoy it and that it will serve you in whatever you use it for. Please feel free to contact us for any types of feedback.

GENERAL INFORMATION

The DL Series is created to push limits and maximize the potential in LED technology and optical performance.

DL A is developed with focus on high light performance, low weight and smart control functions. The DL A series has two different beam options as standard: 15 and 40 degrees.



SAFETY

- When operating, keep the area in front free for obstacles. Do not place face down.
- Do not look directly at lamp when switched on.
- Depending upon the ambient temperature and airflow the housing will become HOT.
- Only for professional use, must be operated by qualified personal.



TECHICAL DATA

Input voltage	11-36 VDC
Current	1,8A @ 11,1 VDC (20W)
Measured lumens	500 – 2.000 lm depending on beam
LUX / 1m	2.900 – 103.500 cd depending on beam
Weight	125 grams
Dimensions	55x55x55 mm / 2,16x2,16x2,16 Inches
Surface temperature	Maximum 80 degrees C
Control interface (0-100%)	<ol style="list-style-type: none"> 1. Standard RC PWM 3-5V 50-1000Hz 2. Push button.

More technical information in the datasheet: [DL Series datasheet](#)

DISCHARGE PROTECTION FOR 3-CELL LIPO BATTERIES

The DL A has integrated low voltage cut-off to protect your battery from deep discharge. During operation/load, the battery voltage will decrease. When it has declined to a certain level, the DL A will automatically turn off.

Remember to unplug the power cable when the light is off. Even when off, the light draws a little power, and will eventually empty the battery completely, and possibly destroy it.

OVERHEAT PROTECTION

The DL A has integrated an overheat protection system. To prevent excessive temperatures and damage to the LED's, the DL A automatically dims down to reduce the temperature to an acceptable level. The DL A make use of relative wind and propwash for cooling but will not be damaged if cooling is not present.

CONNECTIONS

The DL A is delivered with two connectors

- XT30: Power
- Standard RC PWM connector: RC PWM

Cables

Black – Ground

Red – Plus

Brown – Ground

Yellow – Signal / RC PWM input

LIGHT BEAM ANGLE ALTERNATIVES

Illustration



Light Beam

Spot 15

Medium 40

Diameter @ 30m

Ø8m

Ø22m

Stray light or scattered light will provide illumination also beyond the given light beam angle, which may be helpful to keep in mind when the beam angle is chosen. The height of the drone can be increased which will cause a "Spot 20" @ 60m to illuminate the same ground area as an "Medium 40" @ 30m. Based on this, it is recommended to choose the narrower beam.

CONTROL INTERFACE

The DL A can be controlled by RC PWM or by wireless.

RC PWM

A standard RC PWM interface is prepared. PWM frequencies from 50-1000Hz (with 3-5V amplitude) is accepted, hence the light module can be controlled as a standard RC servo or an electronic speed controller (ESC). The light can be turn on and off or dimmed continuously from 0-100%.

Wireless

The DL A is a node in Luminell UNITY wireless control system, which means that it can be controlled using Luminell UNITY. More information about Luminell UNITY on request.

PUSH BUTTON

The push button can be used to switch the light on/off, regulate intensity, switch on strobe effect, to switch on/off the radio receiver and to set default light intensity.

The light intensity can be regulated in 5 steps, at apx. 10%, 25%, 50%, 75% and 100%. When on maximum, the next step is strobe and when on strobe the next step is the minimum level.

1 short push	When off: Switches light on. When on: switches to next intensity level. When on max: switches to strobe effect. When on strobe effect: switches to minimum level
1 longer push	Turns light off
1 extra-long push	Sets the default setting to be at this light intensity level when power is connected. Please find detailed description below.
3 longer pushes	Turns radio receiver on or off. When on: 10 fast flashes. When off: 5 slow flashes

DEFAULT LIGHT INTENSITY SETTING

When the DL A is connected to power, the default setting is "off", and it is switched on by pushing the push button or controlled via RC PWM.

On several drones there are external power outputs (extended power port) that can be controlled from the remote control. It is possible to program the DL A to start at a certain light intensity when connected to power.

Description to activate this functionality

- At the desired light intensity level, press and hold the push button.
- The light will turn off, and on again at the desired light level, starting with a flash, which confirms the default "on" light intensity level.
- Disconnect, and reconnect the power source to verify.

This can be done on any light intensity level.

In order to set the default back to "off" when connected to power

- Switch off the light by holding the push button for a short time.
- When the light is off, press and hold the push button. The light turns on, and off before giving a short flash which confirms that the light is off, when connected to power.
- Disconnect, and reconnect the power source to verify.
-

WARRANTY

The DL Series has 1 year warranty and is covered by Luminell's "General terms and conditions for sale, delivery and mounting": <https://luminell.com/downloads/#general-terms>

MAINTENANCE

In event of dirt and debris on the surface and lenses of the DL A, first you may use a moist towel to clean and you can rinse it in running water.

ATTENTION: Be careful when cleaning lenses, as dents and scratches will decrease light performance.

RESOURCES

Please check our webpage www.luminell.com/products/drone-lights/ for product information, lux calculator, technical datasheet and much more. Also find us on Facebook, Instagram and YouTube for updates, pictures, videos and a glimpse into our everyday life

Never hesitate to contact us. Contact information is found on our web page.

TROUBLESHOOT

Problem	Solution
The DL A does not switch on	-Check battery connection and polarity. -Check battery voltage. -Check control interface connection, and verify that the connected channel is transmitting value 0 (less than 1ms PWM pulse at 50Hz)
The DL A does not dim	-Check control interface connection and verify that correct channel on the RC-receiver or flight controller is connected. -Check setup between RC-transceiver and -receiver
Power decreases over time	Overheat protection activated. Increase airflow to decrease the surface temperature.