



LLE-003 fibre optic light engine

User manual



Features:

- Compact light engine for small-scale projects with light engine, remote controller and twinkle wheel
- Twinkling effect
- LED CREE chip

Technical specification

Light engine model	LLE-003
Programmes	Brightness, 7 programs, twinkling wheel speed, on/off
Remote controller	Yes, RF
Light source type	LED CREE chip
CRI (Ra>):	80
IP rating	IP20
Light colour mode	White (twinkling colour effect can be achieved with the 6-colour twinkling wheels)
Working voltage	DC12V
Rated power	8 W (LED 1-5 W)
Material of housing	Aluminium + plastic
Light engine dimensions	146 mm (L) x 84 mm (W) x 69 mm (H)
Net weight	0.4 kg
Remote control dimensions	40 mm x 92 mm x 15 mm
Fibre optic port diameter	18 mm
Lifetime	50,000 hours
Warranty	1 year
Package dimensions (excluding fibre optic bundle)	200 mm (L) x 170 mm (W) x 90 mm (H)
Weight with packaging	0.8 kg



Safety notices

Electrical work safety advice and tips

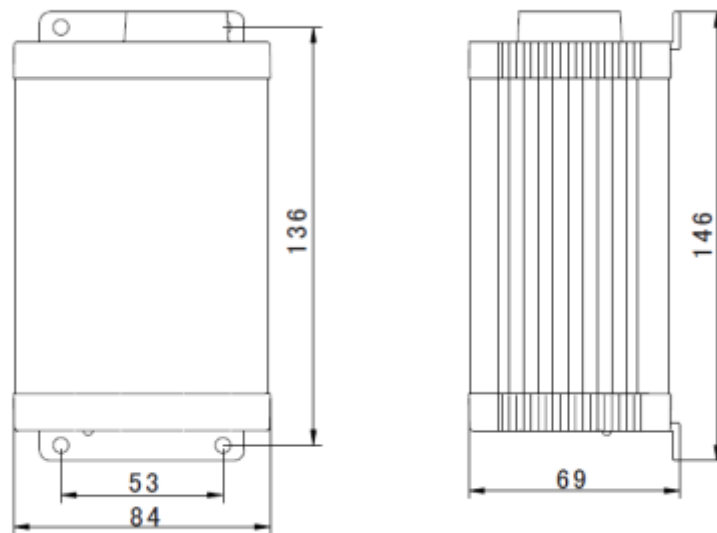
- Make sure the input voltage is correct.
- Avoid placing the light engine in the rain or in moist areas. Please ensure that the light engine has sufficient ventilation and is not placed in a completely sealed area.
- Do not open the LED light engine for inspection or re-wire the electronic circuits if you are not a professional. Opening the light engine might void your warranty.
- Avoid any debris on top or around the light engine as it can cause poor heat dissipation.
- Avoid using the device above 40 C temperature.

DIY tips and safety advice

- This task will involve working at height. A safe system of work should be established and maintained, in order to prevent injury.
- Consider your safety! Think about the potential risks and dangers of the work and the steps you should take to avoid them.
- Personal protective equipment. Make sure that you are equipped with suitable and sufficient personal protective equipment. This could include eye protection, face mask, protective overalls, safety footwear and gloves.
- Ensure that the work area is sufficiently illuminated.
- Check that the tools you will be working with are in a good operating condition. For the installation, you will need a cordless drill, epoxy glue, side cutters or scissors and drill bits.



Light engine dimensions

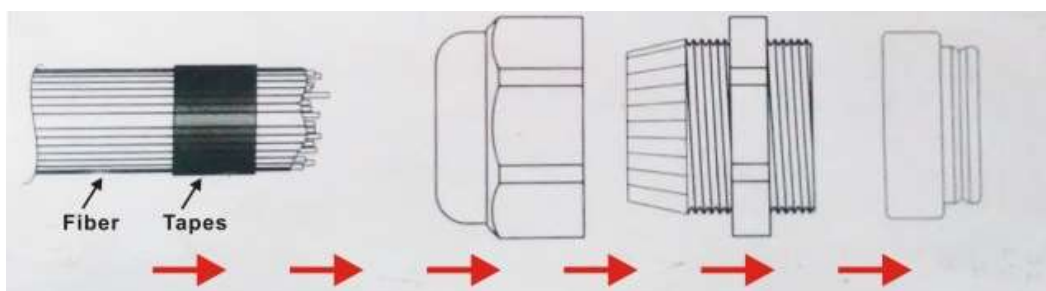


Connection method between optical fibres and the light engine



Your fibre optic bundle will come with the connector fittings ready to connect to the light engine. However, if you need to adjust your bundle or you're making your own, follow the steps below.

1. Align all the optical fibre ends and fasten with tapes which can resist temperature over 130°C
2. Pass the fibres through the connector and fasten the rotary tensioner until the fibres are tightened.



3. Cut the fibre bundle to a flat surface with a heat-knife or blade.



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4. Make sure that the optical fibre bundle head is smooth and clean to ensure even light distribution.
5. Place the fibre optic bundle's connector into the light engine's port connector. Fasten the bundle with the screw on the top of the light engine's port connector.

Twinkling and colour wheel options

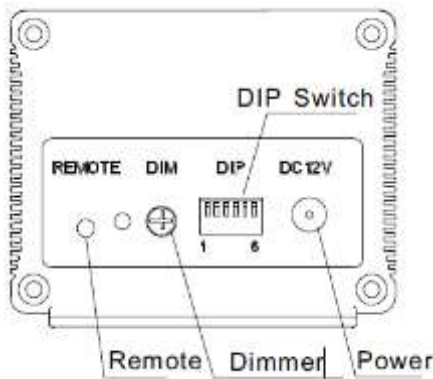
The kit is supplied with the CW-02 twinkle white wheel, while the CW-01 and CW-03 are optional accessories.



- Only one wheel can be installed on the light engine at a time.
- The motor rotates the wheel
- CW01: Colour change/single colour with no twinkling feature
- CW02: Twinkling option with no colour change feature (white only)
- CW03: Colour change + twinkling feature (motor set to ON) or Single colour selection with no twinkling feature (motor set to OFF).
- See program settings in the next section



Programming the light engine



The light engine can be programmed with the combination of the DIP switches at the back of the unit and the remote controller. The two control methods complement each other. Some functions can be set by the DIP switches only, while others, by the remote controller.

The Dimmer at the back of the light engine allows you to set the brightness of the light engine. The factory default is 100% and there are 6 levels of brightness settings.

DIP switches

	<ul style="list-style-type: none"> • DIP Switch values: 1 = ON, 0= OFF • DIP Switch 1-3: program selection (see table below) • DIP Switch 4-5: not in use, should be set to 0 (OFF) • DIP Switch 6: remote controller ON/OFF
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DIP switch programs

Program	DIP switch setting						Function
	1	2	3	4	5	6	
00	0	0	0	0	0	0	Motor Stopped
01	1	0	0	0	0	1	Colour fade: White, Cyan Blue, Green, Yellow, Blue, Purple (motor at 6 RPM)
02	0	1	0	0	0	1	Colour fade: White, Cyan Blue, Green, Yellow, Blue, Purple (motor at 4 RPM)
03	1	1	0	0	0	1	Colour fade: White, Cyan Blue, Green, Yellow, Blue, Purple (motor at 3 RPM)
04	0	0	1	0	0	1	Colour fade: White, Cyan Blue, Green, Yellow, Blue, Purple (motor at 2 RPM)
05	1	0	1	0	0	1	Colour fade: White, Cyan Blue, Green, Yellow, Blue, Purple (motor at 1.5 RPM)
06	0	1	1	0	0	1	Colour fade: White, Cyan Blue, Green, Yellow, Blue, Purple (motor at 1 RPM)
07	1	1	1	0	0	1	Colour fade: White, Cyan Blue, Green, Yellow, Blue, Purple (motor at 0.5 RPM)

To set the colour without the remote controller:

- When a single colour is selected, the motor needs to be turned off and the twinkling mode is disabled
- Use colour wheel CW01 or CW03
- Set DIP switch 2 and 3 to ON for slow rotation. When the colour wheel rotates to the desired colour, turn all DIP switches to OFF. This will disable the motor rotation.



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Remote control programs

The remote controller requires 1 x A23 battery. The battery is not included in the package.



- To use the remote controller, set DIP switch 6 to ON
- For colour selection, start the motor and stop it when it reaches the desired colour. When the motor is stopped, the twinkling mode is disabled.
- For brightness adjustment, use the two brightness control buttons to increase or decrease brightness
- The motor speed cannot be changed with the remote controller, only with the DIP switches at the back of the light engine.

Troubleshooting for remote controller connection issues:

- Make sure that the remote controller is switched on by pressing the “On” button
- Check if the battery is operational in the remote controller: Press a button on the remote and the indicator light should flash up. If the light doesn’t flash up, it means that there is either no battery in the remote or the battery needs replacing.
- If the remote’s control light flashes up, check whether the green indicator light on the back of the light engine flashes up, when a button is pressed on the remote. If the indicator light is not flashing up, restart the device and test again. If the indicator light still doesn’t flash up, the device is faulty and please contact your supplier.