

LED Bulb Manual

Aeotec by Aeon Labs LED Bulb.

Aeotec LED Bulb is a multi-coloured LED bulb which allows control (on/off/dim/colour change) via wireless Z-Wave® commands. The LED Bulb can also communicate securely via AES 128 wireless Z-wave commands and supports Over-The-Air (OTA) firmware upgrades

Familiarize yourself with your LED Bulb.

ADDED WEIGHT OF THE DEVICE MAY CAUSE INSTABILITY OF A FREE-STANDING PORTABLE LUMINAIRE. THIS DEVICE IS NOT INTENDED FOR USE WITH EMERGENCY EXITS OR NOT FOR EMERGENCY LIGHTING. SUITABLE FOR USE IN ENCLOSED LUMINAIRES.

Quick start.

Getting your LED Bulb up and running is as simple as inserting it into a lamp holder and adding it to your existing Z-Wave network. To set your Z-Wave hub into pairing mode, please refer to the respective section within your hubs instruction manual.

1. Toggle off the wall switch before you firmly screw in LED Bulb.
2. Set your Z-Wave hub into pairing mode.
3. Toggle the wall switch controlling your LED Bulb to turn it off (keep it in the "OFF" state for 2 seconds) and then toggle the wall switch to turn

your LED Bulb on, the green LED will blink to indicate the Bulb is entering into pairing mode.

4. If LED Bulb has been successfully added to your Z-Wave network, its light will be continuous when you turn it on.

Note:

1. If your Bulb has already been added into another Z-Wave network, you'll need to remove it from the existing network first. Refer to the section below: "Removing your LED Bulb from a Z-Wave network".

2. To check if LED Bulb is already paired to an existing network, toggle the wall switch off and on 3 times fast (the Colour Transition Style (2 bits) final ending position of the wall switch must be on). If LED Bulb blinks orange for 3 seconds, it is already paired into a Z-Wave network.

With your LED Bulb now working as a part of your smart home, you'll be able to configure it to indicate different colours from your home control software via setting the RGB value. Please refer to the user manual for your Z-Wave hub for precise instructions on configuring your LED Bulb to your needs.

Manually changing LED Bulb's colour.

After LED Bulb is paired into your network, toggle the LED Bulb off, on, off, on in quick succession via the wall switch to enter a colour cycle (Warm white, Cold white, Red, Orange, Yellow, Green, Cyan, Blue or Purple) from which you may select from. Toggle off the LED bulb to select and lock the colour visible.

Note:

1. The Power Outage LED is a small red LED in the Bulb, which is used to indicate the power outage state of the LED Bulb. When the LED Bulb is switched off by the wall switch, the red Power Outage LED will light for 1.2 seconds.

2. The wall switch needs to be left in the "On" position in order for the bulb to function properly in the Z-Wave network. This functionality would include

being an active repeater, repeating the Z-Wave RF commands and being controlled remotely.

Advanced functions.

Colour Display Cycle Configuration.

Parameter 37 [4 byte] will cycle the colour displayed by LED Bulb into different modes:

| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---------------|-------------------------|---|----------|---|----------------------|---|---|---|
| Value 1 (MSB) | Colour Transition Style | | Reserved | | Colour Display Cycle | | | |
| Value 2 | Cycle Count | | | | | | | |
| Value 3 | Colour Change Speed | | | | | | | |
| Value 4 (LSB) | Colour Residence Time | | | | | | | |

Colour Display Mode (4 bits)

The Colour Display Cycle field can have the following values corresponding to 4 different modes:

| Colour Display Cycle | Description |
|----------------------|-----------------------------------------------------------------------|
| 0 | Single Colour Mode |
| 1 | Rainbow Mode(red, orange, yellow, green, cyan, blue, violet, pinkish) |
| 2 | Multi Colour Mode(colours cycle between selected colours) |
| 3 | Random Mode |
| 15 | Inactive (keep the current configuration values) |
| 4 to 14 | Reserved |

Colour Transition Style (2 bits)

The following values correspond to 3 different transition styles between colours:

| Colour Transition Style | Description |
|-------------------------|---------------------------------------------------|
| 0 | Smooth Colour Transition. |
| 1 | Fast/Direct Colour Transition. |
| 2 | Fade Out Fade In Transition. |
| 3 | Inactive (keep the current configuration values). |

Cycle Count (8 bits)

The Cycle Count is used to define the number of repetitions/cycles displayed by your LED Bulb in Colour Display Cycle before stopping.

| Cycle Count | Description |
|-------------|-----------------------------------------------------|
| 0 | Unlimited |
| 1 to 254 | Total number of repetitions/cycles before stopping. |
| 255 | Inactive (keep the current configuration values) |

Colour Change Speed (8 bits)

This field specifies the transition speed when one colour changes to another.

| Speed | Description |
|----------|--------------------------------------------------|
| 0 to 254 | 0 is the slowest and 254 is the fastest. |
| 255 | Inactive (keep the current configuration values) |

Colour Residence Time (8 bits)

This field specifies the length of time each individual colour is displayed before a transition.

| Colour Residence Time | Description |
|-----------------------|--------------------------------------------------|
| 0 to 254 | Corresponds from 0 to 25.4 seconds. |
| 255 | Inactive (keep the current configuration values) |

The tables above shows a decimal representation of the settings that can be set on parameter 37.

Parameter 38 [4 bytes] can be used to set up to 8 colours to cycle between when LED Bulb is in Multi Colour Mode. Colours transition from Colour Index 1-8.

| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---------------|----------------|---|---|---|----------------|---|---|---|
| Value 1 (MSB) | Colour Index 8 | | | | Colour Index 7 | | | |
| Value 2 | Colour Index 6 | | | | Colour Index 5 | | | |
| Value 2 | Colour Index 4 | | | | Colour Index 3 | | | |
| Value 1 (LSB) | Colour Index 2 | | | | Colour Index 1 | | | |

Colour Component Id:

| ID | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------|-----|--------|--------|-------|------|------|--------|---------|
| Colour | Red | Orange | Yellow | Green | Cyan | Blue | Violet | Pinkish |

Example:

If you set the parameter 38 to 801(0x00000321 in hexadecimal), the colour will be changed from Red to Orange and then Orange to Yellow circularly(Red→Orange→Yellow→Red).

Enabling Security Encryption.

1. Set your Z-Wave hub into pairing mode.
2. Toggle off the wall switch controlling your LED Bulb to turn it off (keep it in the "OFF" state for 2 seconds) and then quickly toggle on the wall switch on, off, on, off, on. The blue LED will blink to indicate the Bulb is entering into secure pairing mode.
3. If LED Bulb has been successfully added to your Z-Wave network, its RGB LED will be solid when you turn LED Bulb on.

Reset your LED Bulb.

Removing LED Bulb from the Z-Wave network will set LED Bulb to factory default settings.

Technical specifications.

Model number: ZW098.

Bulb holder type: E26 for USA version, E27 for EU/AU version.

Max operating power: 9W.

Max brightness: 850 lumens.

Rated colour temperature: 4700K.

Useful life: 50000 hours.

Operating temperature: 0°C to 40°C /32°F to 104°F.

Relative humidity: 8% to 80%.

Operating distance: Up to 492 feet/150 meters outdoors.

AC Input:

| Version | Input (Standby Power) | Working band |
|---------|-----------------------|--------------|
| AU | 230V 50Hz, Max: 0.7W | 921.42MHz |
| BR | 220V 60Hz, Max: 0.7W | 921.42MHz |
| CN | 220V 50Hz, Max: 0.7W | 868.40MHz |
| EU | 230V 50Hz, Max: 0.7W | 868.42MHz |
| IL | 230V 50Hz, Max: 0.7W | 916.02MHz |
| IN | 230V 50Hz, Max: 0.7W | 865.20MHz |
| UK | 230V 50Hz, Max: 0.7W | 868.42MHz |
| US | 120V 60Hz, Max: 0.5W | 908.42MHz |