AEOTEC
by AEON LABS

LED BULB

View the expanded manual:
http://aeotec.com/support

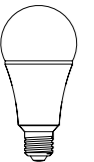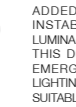### ① Aeotec by Aeon Labs LED Bulb.

Make any light a smart light.
LED Bulb brings the connected light bulb to Z-Wave. Offering the perfect shades of cool and warm light, along with 16 million shades of other coloured light, LED Bulb is the modern light bulb as it should be: connected, controllable and perfectly considered.

② Familiarise yourself with your LED Bulb.

Your LED Bulb contains all its technology within its silver and white exterior. It has no external buttons.
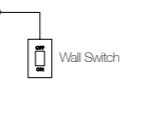
ADDED WEIGHT OF THE DEVICE MAY CAUSE INSTABILITY OF A FRE-STANDING PORTABLE LUMINAIRE.
THIS DEVICE IS NOT INTENDED FOR USE WITH EMERGENCY EXITS OR NOT FOR EMERGENCY LIGHTING.
SUITABLE FOR USE IN ENCLOSED LUMINAIRES.

③ 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. You'll need to set your Z-Wave hub to accept new products; to do this, please refer to its user manual.

Wall Switch

1. Toggle off the wall switch into the OFF position.
2. Remove any existing light bulb and replace it with LED Bulb.
3. Set your Z-Wave gateway to accept new products.
4. With LED Bulb in its fitting, wait 2 seconds. Now toggle your wall switch ON. LED Bulb's green LED will blink to indicate that it is looking for a Z-Wave network to connect to.
5. After successfully connecting to your network, LED Bulb will illuminate. If a network connection has failed, it will remain without light.

Using LED Bulb.

With your LED Bulb now a part of your smart home, you'll be able to schedule, configure and control it your Z-Wave gateway.

Please refer to the relevant pages of your gateway's user manual for instructions on configuring LED Bulb to your needs.
Please note that the wall switch controlling LED Bulb needs to be left in the on position in order for LED Bulb to function within your Z-Wave network. In the off position, LED Bulb will not be able to draw power and will not be remotely controllable nor be able to serve as a Z-Wave repeater.

④ Advanced functions.

Manually changing LED Bulb's colour.

LED Bulb can fill your room with multiple shades of white and an additional 16 million different colours. It's possible to manually select some of these without the use of your Z-Wave gateway. To do this;

1. Keep the wall switch in the "ON" state and then toggle LED Bulb off, on, off, on in quick succession via its wall switch. LED Bulb has now entered colour cycle mode and will cycle through the following colours: warm white, cold white, red, orange, yellow, green, cyan, blue and violet.
2. When the colour cycle arrives at the colour you'd like to select, toggle off LED Bulb via the wall switch. The visible

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colour will be set as your bulb's default.

Removing LED Bulb from a Z-Wave network.

Your LED Bulb can be removed from your Z-Wave network at any time using your Z-Wave gateway. To set your gateway into removal mode, please refer to the respective section of its user manual.

1. Set your Z-Wave gateway into device removal mode.
2. Keep the wall switch in the "ON" state.
3. Toggle LED Bulb's wall switch off, on, off, on, off, on in fast succession.
4. LED Bulb should now be removed from your Z-Wave network. To confirm successful removal its colour will change to orange for 2 seconds before changing to white. If removal was unsuccessful, LED Bulb will blink orange for 3 seconds before changing to red for 2 seconds.

Removing LED Bulb from your Z-Wave network will reset LED Bulb to default factory settings.

Security inclusion.

1. Keep the wall switch in the "ON" state.
2. Set your Z-Wave gateway into pairing mode.

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3. Toggle the wall switch off, on, off, on, off, on. The blue LED will blink to indicate the Bulb is entering into secure pairing mode.
4. If LED Bulb has been successfully added to your Z-Wave network, its RGB LED will be solid when you turn LED Bulb on.

⑤ Manual configuration.

You may wish to manually configure LED Bulb via Z-Wave command classes through your gateway. What follows is a list of the associated information.

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 (MSE)	Colour Transition Style				Colour Change Speed Option		Colour Display Cycle	
Value 2	Brightness							
Value 3	Cycle Count							
Value 4 (LSB)	Time Base of Coulor Change Speed				Colour Change Speed Level			

Colour Display Cycle (4 bits)

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

Colour Display Cycle	Description
0	Inactive (keep the current configuration values).
1	Rainbow Mode(red, orange, yellow, green, cyan, blue, violet).
2	Multi Colour Mode(colours cycle between selected colours).
3	Random Mode.
4	Single Colour Mode.
5 to15	Reserved.

Colour Transition Style (2 bits)

The following values compares to 2 different transition styles between colours:

Colour Transition Style	Description
0	Smooth Colour Transition.
1	Fade Out Fade In Transition.

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)inactive (keep the current configuration values).

Brightness (8 bits)

Brightness Level	Description
1 to 99	1 = Min level. 99 = Max level.
0 or 255	Inactive (keep the current configuration values).

Time Base of Colour Change Speed (3 bits)

This function would be used when the Colour Display Style is set to Fade Out/In.

Time Base	Description
0	Time base is 1s.
1	Time base is 10ms.
2	Time base is 100ms.

Colour Change Speed Level (5 bits)

This function would be used when the Colour Transition Style is set to Fade Out/In.

Speed Level	Description
0	Constant speed.
1 to 30	Accelerate/decelerate speed from the level 1 to 30.
31	Inactive (keep the current configuration values).

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

Parameter 39 (4 byte) 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)	Index 1				Index 2			
Value 2	Index 3				Index 4			
Value 3	Index 5				Index 6			
Value 4 (LSB)	Index 7				Index 8			

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 39 to 305135616 (0x12300000 in hexadecimal), the colour will be changed from Red to Orange and then Orange to Yellow circularly(Red-Orange-Yellow).

When your Bulb is in Single Colour Mode and the Fade Out Fade In transition style, the parameter 39 would be used to set the RGB value.

	7	6	5	4	3	2	1	0
Value 1 (MSB)	Red value							
Value 2	Green value							
Value 3	Blue value							
Value 4 (LSB)	Reserved							

When your Bulb is in Random Mode, the parameter 39 would be used to set the random seed, then your bulb will automatically generate random colours to be displayed according to the random seed you set.

	7	6	5	4	3	2	1	0
Value 1 (MSB)	Random seed value							
Value 2								
Value 3								
Value 4 (LSB)								

⑥ Technical specifications.

Model number: ZW098.
Bulb holder type: E26 for USA version, E27/B22 for EU/AU version.
Max operating power: 9W.
Max brightness: 750 lumens.
Rated colour temperature: 5000K.
Useful life: 25000 to 30000 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

⑦ Warranty.

If you are in need of any technical support during or subsequent to your products' warranty, please get in touch with our support team via http://aeotec.com/support. The Company you bought this product from has also guaranteed to assist you with any of your support needs; and you can also contact them for accordingly.

This guarantee made by the company who you purchased the product from includes the transfer of Aeon Labs' full warranty to that Company. They've guaranteed that they'll be able to assist you, the Customer, with all technical support and repair needs on our behalf.

Aeon Labs warrants to the original purchaser of Products that for the Warranty Period (as defined below), the Products will be free from material defects in materials and workmanship. The foregoing warranty is subject to the proper installation, operation and maintenance of the Products in accordance with installation instructions and the operating manual supplied to Customer. Warranty claims must be made by Customer in writing within thirty (30) days of the manifestation of a problem. Aeon Labs' sole obligation under the foregoing warranty is, at Aeon Labs' option, to repair, replace or correct any such defect that was present at the time of delivery, or to remove the Products and to refund the purchase price to Customer.

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Any repairs under this warranty must be conducted by an authorized Aeon Labs service representative and under Aeon Labs' RMA policy. Any repairs conducted by unauthorized persons shall void this warranty.

Excluded from the warranty are problems due to accidents, acts of God, civil or military authority, civil disturbance, war, strikes, fires, other catastrophes, misuse, misapplication, storage damage, negligence, electrical power problems, or modification to the Products or its components.

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Aeon Labs will pass on to Customer all manufacturers' Material warranties to the extent that they are transferable, but will not independently warrant any Material.

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Customer shall indemnify, defend, and hold Aeon Labs and Aeon Labs' affiliates, shareholders, directors, officers, employees, contractors, agents and other representatives harmless from all demands, claims, actions, causes of action, proceedings, suits, assessments, losses, damages, liabilities,

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THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT.SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

STORE INDOORS WHEN NOT IN USE. SUITABLE FOR DRY LOCATIONS. DO NOT IMMERSE IN WATER. NOT FOR USE WHERE DIRECTLY EXPOSED TO WATER.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1 This device may not cause harmful interference, and

2 This device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Warning

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available.

Certifications (regional):

Z-Wave and Z-Wave Plus are registered trademarks of Sigma Designs and its subsidiaries in the United States and other countries

FCC ID: XBAFT098

CONFORMS TO UL STD.1993
CERTIFIED TO CSA STD.C22.2 NO.1993-09

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