

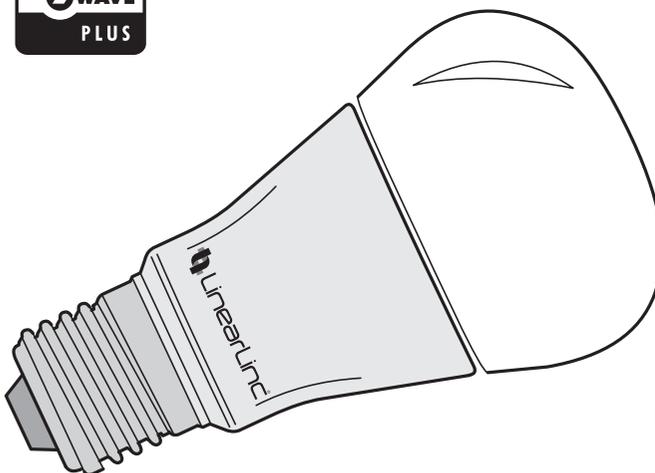
**Linear**<sup>®</sup>  
Building On Innovation.



# LB60Z-1

Radio Frequency Controlled  
Smart LED Light Bulb

750 Lumens  
Equivalent  
to a 60 Watt  
incandescent  
light bulb



**LinearLinc**<sup>®</sup>

**NOTE:** This unit must be "included in the Network" **only where it will be permanently installed.** The proper operation of this node in the mesh network is dependent on it knowing its location with respect to other nodes. You cannot "test bench" configure this bulb, then install.

## LB60Z-1 SMART LED LIGHT BULB

Linear's family of LinearLinc<sup>®</sup> Z-Wave<sup>®</sup> certified wireless lighting products (smart LED bulbs, switches, dimmers, outlets, and plug-in modules) and security devices (alert sounder, passive infrared sensor and door/window transmitter) bring a new level of intelligent wireless capability to commercial and residential environments.

The Z-Wave wireless protocol is an international wireless standard for remote home automation, security and other applications. Embedded in each device, the Z-Wave smart chip enables two-way RF communication among hundreds of Z-Wave enabled devices, allowing products and services from multiple manufacturers to work seamlessly.

The LB60Z-1 Smart LED Light Bulb is simple to set up and provides longer life and more energy efficiency than incandescent or florescent light bulbs. The bulb is instant on, without the warm-up delay common in CFL bulbs.

LinearLinc Z-Wave products are easy to install, and allow dealers to create an integrated wireless network with nearly limitless expansion and interoperability with security, energy management, home entertainment, appliances, and more.

As part of a Z-Wave network, the LB60Z-1 will also act as a wireless repeater to insure that commands intended for another device in the network are received. This is useful when the device would otherwise be out of the radio range of the wireless controller.

For indoor use only. Retain instructions for future use.

## INSTALLATION

1. At the selected location, turn the power to the light bulb socket **OFF**.
2. Screw the Smart LED Light Bulb into the lamp socket.

### For "Inclusion" to (adding to) a network:

Refer to your Controller operating instructions to add this bulb under the command of the Wireless Controller.

1. With your controller in Inclusion Mode, turn the power to the light bulb socket **ON**.
2. You should see an indication on your Controller that the "device was included" in the network. The Smart LED Light Bulb will flash twice.
3. The device will appear in the list of Switches. It should display multi-level switch / Linear.

If the Controller/Gateway shows the inclusion failed, repeat Steps 1-3.

✓ **NOTE:** If you have trouble adding the LB60Z-1 to a group it may be that the Home ID and Node ID were not cleared from it after testing. You must first "RESET UNIT" to remove it from the network. Although adding it to a group includes it in the network, removing it from a group does not remove it from the network. If removed from a group, it functions as a repeater (only). "RESET UNIT" removes it completely from the network.

### To Reset Unit (If Required)

To reset the bulb and clear all network information, follow these steps:

1. Use the wall switch to turn the power to the bulb **ON** then **OFF** four times within four seconds.
  2. The Smart LED Light Bulb will flash once when the reset occurs.
- Before repeating the steps above, try moving the Smart LED Light Bulb to a socket in the same room as the Controller/Gateway in case the preferred socket is out of range initially.

Repeat Steps 1-3 above until the Smart LED Light Bulb is added to the network. Once the bulb has been successfully added to the network, move it to the preferred location.

### For "Exclusion" from (removing from) a network:

The Smart LED Light Bulb can be excluded from the network by the Controller/Gateway. Refer to the Controller operating instructions for details.

1. Set the Controller into "exclusion" mode, and following its instruction to delete the LB60Z-1 from the Controller.
2. Reset the bulb by using the wall switch to turn the power to the bulb **ON**. The Smart LED Light Bulb will flash twice to confirm the exclusion.

## BASIC OPERATION

### Remote Control Operation

The Smart LED Light Bulb can be controlled ON / OFF/ BRIGHT / DIM through wireless signals from the Z-Wave remote controller or through a gateway via an application on a smart phone, tablet, or PC.

Once the Smart LED Light Bulb has been added to the network, depending on the functions supported by your controller, it can be assigned to a Group or Scene and operate when the ALL ON or ALL OFF command is received from the Controller. It can also be set in Association with another Z-Wave device to perform a specific duty.

### Manual Operation

The Smart LED Light Bulb can be manually operated using the wall switch while keeping it on-line with the Z-Wave network.

#### To manually turn the Smart LED Light Bulb ON:

Flip the wall switch **OFF** then **ON**. Be sure the switch is **ON** when finished.

#### To manually turn the Smart LED Light Bulb OFF:

Flip the wall switch **OFF** then **ON** twice within two seconds. Be sure the switch is **ON** when finished.

## CONFIGURATION

The LB60Z-1 supports the Configuration command. The LB60Z-1 can be configured to operate slightly differently than how it works when you first install it. Using the Configuration command you can configure the following:

### Parameter 1: Dim Level Memory

By default, the LB60Z-1 bulb will go to full brightness when turned on. To have the bulb turn on to the last dim level setting, set parameter 1 to 1.

- **Parameter No: 1**
- **Length: 1 Byte**
- **Valid Values = 0 (default) or 1.**
- When the value = 0, the bulb will be full brightness when turned on.
- When the value = 1, the bulb will turn on to the last dim level setting.

### Z-Wave Plus Features

The LB60Z-1 contains a Z-Wave 500 Series Module that supports Z-Wave Plus features. A Z-Wave certified portable or stationary controller can communicate with the Z-Wave 500 Series Module.

Depending on the capability of the controller or gateway software, the following operations can be performed with the Smart LED Light Bulb. Refer to the controller or gateway manual for details.

- Turn the bulb ON and OFF.
- Dim the bulb.
- Add (Include) or Delete (Exclude) the Smart LED Light Bulb.
- Assign the Smart LED Light Bulb to a specific Group/Scene and/or to include the bulb as part of ALL ON or ALL OFF system commands.
- Over-the-air firmware update by the gateway or static controller.
- Lifeline function which automatically notifies the associated modules and the network that a manually reset device is no longer in the network, thus, the corresponding association becomes invalid.

## INTEROPERABILITY WITH Z-WAVE DEVICES

A Z-Wave network can integrate devices of various classes of products, and these devices can be made by different manufacturers. The LinearLinc Smart LED Light Bulb has Z-Wave certification which guarantees interoperability.

## ASSOCIATION

The LB60Z-1 supports one Group with five Nodes for lifeline communication. Group 1 must be assigned the Node ID of the controller to which unsolicited notifications from the LB60Z-1 will be sent. The Z-Wave controller should set this association automatically after inclusion. You can associate up to five Z-Wave devices to Group 1. Lifeline association only supports the "manual reset" event.

For instructions on how to "set lifeline association" please refer to your wireless controller instructions.

## SPECIFICATIONS

<b>Power Supply</b>	120 VAC, 60 Hz
<b>Brightness</b>	750 lumens (Equivalent to 60 Watt incandescent light bulb)
<b>Power Consumption</b>	9 Watts
<b>Color Temperature</b>	2700K
<b>Bulb Lifetime</b>	25,000 hour (equivalent 22.8 years based on 3 hours/day)
<b>Radio Frequency</b>	908.42 MHz / 916 MHz
<b>Wireless Range</b>	Up to 130 feet line of sight between the Z-Wave Controller and/or the closest Z-Wave Repeater
<b>Normal Operating Temp</b>	77°F (25°C)
<b>Repeater</b>	Yes

## REGULATORY INFORMATION

The LB60Z-1 is certified to comply with applicable FCC and IC rules and regulations governing RF and EMI emissions. 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 received that may cause undesired operation.

### FCC Notice

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 to help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

### IC Notice

This Class B digital apparatus complies with Canadian ICES-003

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

## WARRANTY

This Linear product is warranted against defects in material and workmanship for twelve (12) months. **This warranty extends only to wholesale customers** who buy direct from Linear or through Linear's normal distribution channels. Linear does not warrant this product to consumers. Consumers should inquire from their selling dealer as to the nature of the dealer's warranty, if any. **There are no obligations or liabilities on the part of Linear Corporation for consequential damages arising out of or in connection with use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation, or reinstatement.** All implied warranties, including implied warranties for merchantability and implied warranties for fitness, are valid only until Warranty Expiration Date as labeled on the product. **This Linear LLC Warranty is in lieu of all other warranties express or implied.** All products returned for warranty service require a Return Product Authorization Number (RPA#). Contact Linear Returns at 1-855-546-3279 for an RPA# and other important details.

### IMPORTANT !!!

Linear radio controls provide a reliable communications link and fill an important need in portable wireless signaling. However, there are some limitations which must be observed.

- For U.S. installations only: The radios are required to comply with FCC Rules and Regulations as Part 15 devices. As such, they have limited transmitter power and therefore limited range.
- A receiver cannot respond to more than one transmitted signal at a time and may be blocked by radio signals that occur on or near their operating frequencies, regardless of code settings.
- Changes or modifications to the device may void FCC compliance.
- Infrequently used radio links should be tested regularly to protect against undetected interference or fault.
- A general knowledge of radio and its vagaries should be gained prior to acting as a wholesale distributor or dealer, and these facts should be communicated to the ultimate users.



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