# Part 1. Wireless LED Fixture Controller

* 1. WIRELESS CONTROLLER
     1. LED Fixture Controller
        1. The Fixture Controller shall be either Echoflex model ELED1-BUN 120-277, ELED1-BUS 120-277, ELED1H-AU 240-347, LED Fixture Controllers by Echoflex Solutions, Inc., or approved equal
        2. Mechanical
           1. The Controller shall be offered in three models

Controller model ELED1-BUN 120-277 will mount to a ½” electrical junction box knock-out using the threaded nipple and retaining nut

All controller wires shall exit the enclosure through the threaded nipple

Controller model ELED1-BUS 120-277 will mount inside a fixture using the provided surface mounting strap

Controller model ELED1H-AU 240-347 will mount to a ½” electrical junction box knock-out using the threaded nipple and retaining nut

All controller wires shall exit the enclosure through the threaded nipple

* + - * 1. The Controller shall have learn and clear buttons for manual linking of switches and sensors

The buttons shall be accessible when the Controller is mounted

* + - * 1. The Controller shall have two LED indicators to display power/operational mode and linked device information
        2. The Controller shall be UL 2043 plenum rated
      1. Electrical
         1. The Controller shall be available in 120-277VAC, 50/60 Hz or 240-347VAC, 50/60 Hz configuration
         2. The Controller shall provide a single, non-isolated latching SPST relay output, fully rated at:

11.5 Amps at 120VAC through 277VAC

16.0 Amps at 347VAC for Electronic or LED Driver loads

20.0 Amps at 347VAC for Magnetic Ballast loads

* + - * 1. The Controller shall support inrush current of 460 A2s @ 277VAC
        2. The Controller shall support low voltage dimming (0-10 VDC @100mA sinking current) for LED drivers and dimming ballasts
        3. The Controller shall use a 902 MHz EnOcean radio. Systems that use other radio frequencies shall not be acceptable
        4. The internal radio shall have a range of at least 80 feet (24m) in commercial office spaces (typical), up to 330 feet (100m) line-of-sight
        5. The Controller shall be UL listed, conform to UL 60730, and certified to CAN/CSA Standard E60730
        6. The Controller shall conform to UL 924 for Directly Controlled Luminaires with 0-10V dimming, NEC 700.24
        7. The Controller shall comply with FCC Part 15.231 and IC RSS-210
      1. Functional
         1. The Controller shall provide switching and/or low voltage dimming control for an individual light fixture or lighting zone

##### The Controller shall support wireless Echoflex switches and sensors for relay control

###### The Controller shall support linking of at least 20 wireless devices in any combination of Echoflex stations, sensors, interfaces or gateways. Systems that do not support at least 20 remote devices shall not be acceptable

##### The Controller shall provide the option of single or dual-hop wireless signal repeating to other controllers. Systems that do not provide signal repeating shall not be acceptable

##### The Controller shall support Central Command functions for use with integrated control systems

* + - * 1. The Controller shall support Demand Response commands that provide a temporary ceiling to the maximum dimming output level
        2. The Controller shall store values for a minimum of 15 Presets

Presets shall include a ramp time and output value

* + - * 1. The Controller shall support Preset Command messages

Supported Preset commands shall include: Preset Teach, Preset Activate, Zone Raise/Lower Start, Zone Raise/Lower End, Zone Set Output Level, Preset Record, Lockout, and Zone Mask Set

* + - * 1. The Controller shall support a minimum of 24 Preset Zones defined by a zone mask

If a Preset Command transmitting device is linked to the Controller and the message includes a zone mask shared with the Controller, the Controller will respond to the command

* + - * 1. The Controller shall support commissioning and linking through software and/or mechanical means. Controllers that do not support both shall not be acceptable
        2. The Controller shall provide configuration variables that allow customization of the controller’s operation with linked sensors, switches, interfaces and gateways
        3. The Controller shall provide the option of reporting relay status wirelessly
        4. The Controller shall save all configuration settings and linked device details in non-volatile memory

The Controller shall provide the option of saving user-defined configuration settings and linked devices as recoverable default settings

* + - * 1. The Controller shall provide the option of resetting to factory defaults