

## **INSTALLER'S GUIDE FOR DIMMING LED BULBS USING THE LETZGO DIMMER**

- There are **Active** LED and **Passive** LED bulbs.
- Active bulbs contain a constant current driver circuit. (typical dimmable MR16)
- Passive bulbs contain a resistor and diode bridge. (typical Bistro or strip/tape light)
- Our dimmer is popular for dimming Bistro strings and LED tape lights. (passive bulbs)
- If you plan to dim MR16s (or other active bulbs) then follow these guidelines.

### **GUIDELINES**

- Our dimmer uses high speed circuits for detecting hard faults such as short circuits.
- Our dimmer uses overload detection based on peak current for thermal protection.
  - When overload is detected the bulbs will consistently cycle off and on.
  - This indicates the peak current load is too high and alerts the installer.
- Active LED bulbs draw a high peak current on every half cycle of the AC sinewave.
- The majority of MR16 bulbs regardless of the wattage or brand will draw the same 2-amp peak current. Most manufacturers use the same constant current circuit for all their MR16 styles regardless of wattage.
- The highest peak current occurs when dimming at the 50% set-point which is the peak of the sinewave.
- This peak current must be taken into account when designing your system.
  - Example – The typical MR 16 bulb (2-amp peak)
  - Limit your design to dimming no more than 6-7 of these bulbs.
  - Our dimmer is designed to handle 10 amps of RMS current.
  - The peak of a 10-amp rms current is 14.14 amps
  - The overload indicator will trip around 16 amps peak.
- Use a current clamp/meter with peak detect (inrush) to verify your installation.
- You can combine different types of bulbs on the same dimmer, but we always recommend using a current clamp to test the RMS and peak currents.
- Not all transformers deal well with the high peak currents that active LED bulbs place on the system. For example, using 15 MR16s will place a 30-amp peak current on the transformer and wiring.

### **TYPICAL PEAK CURRENTS**

MR16 = 2A

MR11 = 1.5A

T3 = 0.72A

### **POWER RATINGS ON PASSIVE BULBS**

We have tested multiple bistro style bulbs and have found their power ratings to be very inaccurate. The typical 1-watt bistro bulb might read 1.5 watts when tested on our engineering bench, and 2-watt bulb might read 3 watts, etc. Please keep this in mind when designing and quoting a lighting system and always verify each job using a current clamp meter.