

## BEFORE YOU START

It's simply not possible to provide detailed instructions for all installation scenarios. Far too many variables and variations. **The information in this manual is intended to be used as a guide.** It is not a detailed step-by-step how-to installation manual. We do not spell out every single step along the way. We cover the essential steps related to installing this kit. Beyond that we assume the installer has the skills, knowledge and tools necessary to do the work using the information we provide as a guide. You may need to vary your installation and/or make adjustments based on your vehicle. This is particularly the case with electrical wire routing, electrical connections, electrical load sizing and switching. If you're unsure about how to do the installation – particularly the electrical components – we urge you to seek assistance from someone who has those skills.

### UNDERSTANDING 12V POWER

An essential skill with installation of any Boogey Lights LED products is knowing how to correctly wire the product to a 12vdc circuit. This includes understanding the importance of having a properly sized fuse at the power source, polarity, how to properly seal an electrical connection, using properly sized wire gauge for the load, measuring voltage and measuring the additional amperage draw you're adding. If you are uncertain or unfamiliar with any of these concepts, we urge you to ask someone who has the knowledge to assist you. Electricity is unforgiving.

### KNOW YOUR POWER CONSUMPTION

Be mindful of the amount of amperage you're drawing through your lighting circuit and to not exceed the circuit component limitations. The amount of power (amps) you're pulling through the circuit will vary based on a combination of three factors: 1) The number of LEDs in the circuit, 2) the amount of copper wire in the circuit and 3) the input voltage to the circuit. The amperage ratings for our switches, controllers and LEDs assume 12.5 vdc input or less. If you're wiring your lights to a vehicle that has a charging mechanism (e.g. alternator), the input voltage will likely increase when the engine is on; particularly as RPMs increase. It's not unusual for an alternator to charge the battery at a rate of 13.5 to 14 vdc depending upon the vehicle. Increasing the input voltage to the LED Controller/LEDs will also increase the amperage draw of those LEDs because they'll burn brighter. For example, we've seen circuits that draw 17 amps when the engine is off and the input voltage is 12.5vdc but jump up to drawing 24 amps when the engine is on and RPMs increased. This is because the input voltage jumps to 14vdc when the engine is running.

For our RV products, you usually don't have to be concerned with this issue by connecting directly to the house batteries. Most RV house batteries are charged via a multi-stage battery charger (converter/inverter) and/or has a power regulator to avoid over-charging the house batteries. Connecting to the house batteries too also eliminates the possibility of over-loading an existing circuit in the RV or interfering with any other electrical systems in the RV. For all other motorized vehicles though your only option is usually to connect to the vehicle's starter battery which is likely being charged by an alternator. Generally speaking, you don't have to be concerned about this issue if you're not within 60% or more of the collective max amperage rating for the components in your circuit. If however you're at or above that 60% rated load, we strongly suggest measuring actual amperage drawn for your installation to make sure it's fused and wired appropriately given the highest possible amperage draw .