

# Installation Instructions T5 12" Tube Lights

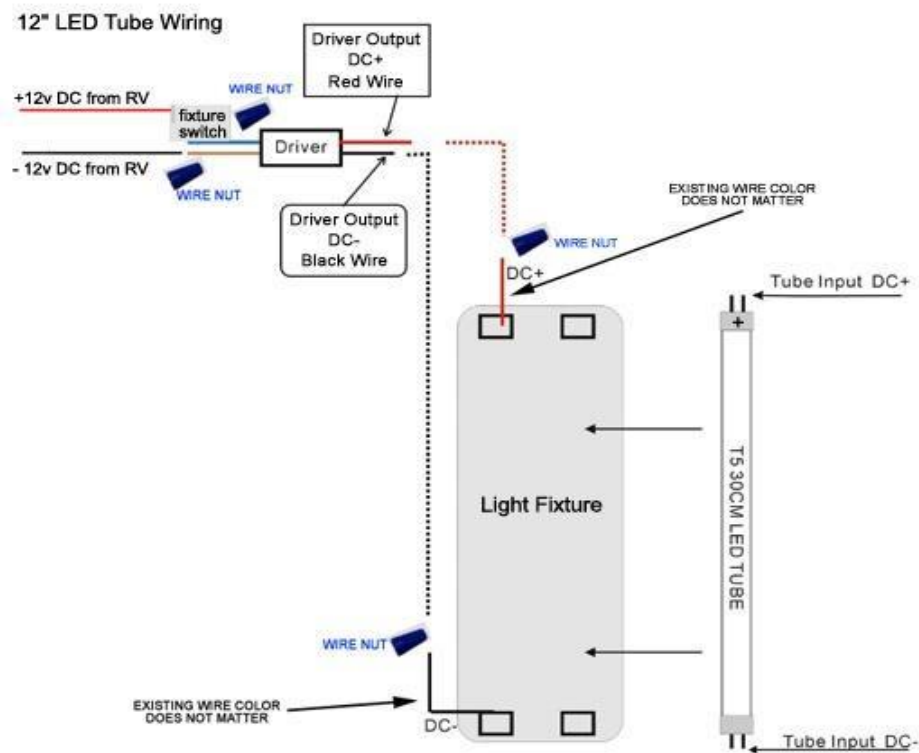
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**PRODUCT NOTES:** The tube lights we sell are different than other 12v LED retrofit lights on the market because ours use the natural pins on the bulb and fixture to supply power to the LED light. This gives a cleaner appearance since there are no wires protruding from the side of the tube light that can be seen dangling from the fixture. Our tube lights also have frosted cover so you cannot see the individual LED lights when looking at the fixture. At one end of the tube, the two pins are internally jumped together. At the other end of the tube, those two pins are jumped together, so you only need to connect a wire to one pin on each end of the tube.

**CAUTION: THESE ARE FOR 12 VOLT DC APPLICATIONS ONLY. Serious Injury and Damage may occur if you try to install these into 110-120v AC Household Current.**

**COMMON INSTALLATION ISSUES:** T5 LED Tube lights themselves are **Polarity Sensitive** and marked DC+ and DC- on the ends of the tubes, they will not work if installed backwards. You must remove the existing fluorescent ballast from the circuit, damage will occur if left in place. You must install the included driver, damage will occur if left in place. Additional and alternative installation instructions can be found on our **Resource Page** at <http://m4sales.com>.

**DISCLAIMER:** To install these retrofit lights, you will be altering the wiring in your fixture to bypass or remove the Fluorescent Ballast as it is no longer necessary. You will be cutting and splicing wires that will void your warranty on your original light fixture. Though this is an easy rewire, if you are not comfortable with basic wiring, please seek a professional's assistance. M4 shall not be accountable for any damage to the existing light fixture or damage caused by shorts, loose wires, or mis-wiring. If you do not want to alter your light fixture, **STOP NOW.**



1. T5 Tubes use an external driver (black with 4 wires). If you have two tubes in one fixture, each must be wired to its own driver separately. Do not interconnect the red and black wires from the driver.

2. Confirm the light to be retrofit is 12v DC. This product is only to be used on 12v DC systems, attempt to use on 120v AC system will damage the bulb and may result in serious injury.
3. A limited number of fixtures have rivet in ballast covers, you can still retrofit these fixtures but you will be required to work around or remove and replace the rivets to convert these fixtures.
4. Turn the Master Power of the RV Off
5. Remove the fixture lens and fluorescent tube light. The tube may pull straight out, or may turn 90 degrees and pull out depending on the design.
6. Test fit your LED Tubes in the sockets. Do not turn on the power during the test fit. Remove the tubes.
7. Refer to the retrofit LED wiring diagram. If you do not understand the diagram, request more information or have a professional continue installation.
8. Locate the wiring and fixture ballast. You will need to remove the ballast from the fixture as it is not necessary with LED tube light and your LED tube light will not work with the ballast in place. The ballast and wiring may be under a tin shroud, or in the end of the fixture. You may have to remove the fixture from the RV in order to disassemble it. Due to the many different fixture designs, we cannot provide specific instruction on finding and removing the ballast.
9. Identify which wires to cut or remove from the fixture and ballast. You should end up with a positive and negative wire coming into the fixture from the RV (through the fixture on/off switch if applicable), and one wire extending from each tube socket. The two pins at each end of the LED tube are wired together internally, so you only need one wire to each socket. Additional wires from each socket may be removed.
10. The LED tube light comes with an external driver covered in black shrink wrap with 4 wires extending from it. Do not remove the covering. Each tube must have its own driver, so if you are retrofitting a two light fixture, you will need two drivers. The purpose of the driver is to convert 10-30v power to clean 12v power and is required in the installation. This should be placed in the fixture in the same area the ballast was removed from.
11. The input wires from the RV for the driver are Blue and Brown. Connect the Brown wire to the RV ground wire entering the fixture. Connect the Blue wire to the Positive wire coming into the fixture, or if the fixture has an integrated on/off switch, connect it to the switch.
12. The output wires from the Driver are Red and Black. With the provided wire nuts, connect the red wire to one wire on one base at one end of the fixture. Connect the black wire to one base at the other end of the fixture.
13. Install a LED tube light and test. The end of the tube marked LED + needs to go to the socket base which is connected to the driver red wire. The end of the tube marked LED – needs to go to the socket base which is connected to the driver black wire. Turn the RV Master Power on.
14. After testing, remove the tubes, reinstall any removed shields, and place the included LED Retrofit sticker inside the fixture behind the LED Tube light. Reinstall the LED Tube lights, and Fixture Cover.

**Enjoy your new LED tube lights, and let everybody know about [M4LED.com](http://M4LED.com)**