



# RedBird LED Internally Ballasted Cardinal™ Linear Replacement Lamp

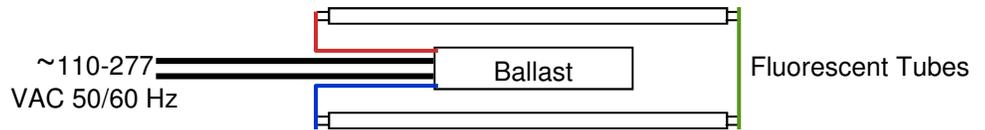
LED RETROFIT LUMINAIRE CONVERSION FOR USE ONLY WITH PRODUCTS DESCRIBED AND INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED WITH THIS RETROFIT KIT, DRY and DAMP LOCATIONS

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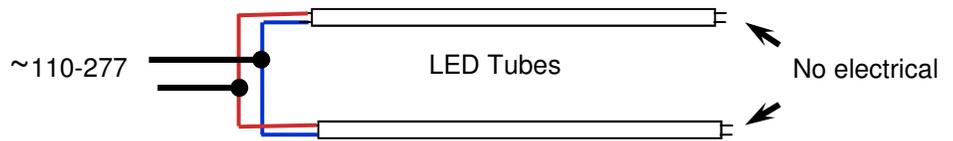
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**TURN OFF POWER TO LIGHT FIXTURE BEFORE DOING ANY WORK. CUT THE POWER AT THE BREAKER.**

A typical 2 lamp fluorescent tube fixture is probably wired like this:

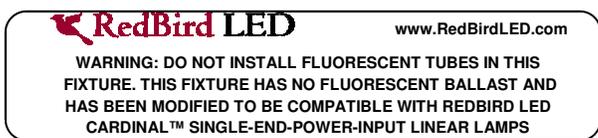


For the single-end-power-input, Internally ballasted version the configuration will be wired like this after the LED retrofit:



### Detailed instructions for the above

1. This product is designed to be installed in any UL, ETL or CSA compliant luminaire designed to operate with T8 or T12 fluorescent tube lamps for dry and damp locations. As part of the installation the fixture wiring and labeling needs to be modified as described in steps 2 through 14 below.
2. Ensure that no power is applied to the fixture by cutting power at the fuse or circuit breaker box to this circuit.
3. **Remove and dispose of properly of any fluorescent lamps that may be installed in the fixture .**
4. Open the fixture's ballast cover shield if present and remove any fluorescent ballast that may be installed in the fixture.
5. **The tube socket that will deliver the power to the LED lamp must be the type that is not shunted internally. If the installed sockets in the fixture are internally shunted, they must be removed and replaced with the non-shunted version of these sockets. Power is only applied to one end of the LED tube, so only one non-shunted socket is required.**
6. Even if the fixture is configured with the required non-shunted sockets, to ensure the overall mechanical and electrical integrity of the completed retrofit it is recommended that all sockets be replaced with a new, non-shunted, locking ring type socket. Specifically, those sockets that do not require the bi-pin tube to be rotated into them **should not** be utilized as they are not necessarily rated to mechanically support the increased weight of the LED tube light. Additionally, all installed sockets should have a solid support on the back side of them to prevent them from 'splaying' open and letting the lamp fall out. See the socket images at the bottom of this page to confirm the recommended type.
7. When it has been ascertained that the socket used to deliver power is indeed a non-shunted style, wire the terminals in the fixture to the primary input power wires. One is neutral (usually white) and the other is the Hot or line-voltage (usually black). Most fluorescent tube sockets accept an 18-20 AWG solid core wire that can simply be pressed into the connection ports. Do not use multi-stranded wire for these connections.
8. Connect the neutral wire to one side of the tube sockets on one end of the fixture. Connect the line hot wire to the other side of the same tube socket the neutral wire is connected to. (If these sockets were internally shunted, this connection would form a dead-short of the primary power, causing the circuit to blow as soon as the power is turned back on.) Make sure that no power is connected to the tube socket at the non-power input end of the tube.
9. Remove as much extra wire from the previous configuration that is not needed. Arrange the remaining wiring neatly in the area under the ballast cover. Cap with wire nuts and/or Tape off any exposed wire tips with electrical tape.
10. Re-install the ballast cover on the light fixture.
11. **Install the Retrofit Conversion Label supplied with the LED tube light to the fixture itself to inform anyone looking to replace the LED tubes that this fixture has been modified and is no longer compatible with fluorescent tubes.**
12. Install your new LED light tubes as if they were standard fluorescent lamps paying attention to ensure that the end of the tube marked as the power input end is installed in the wired socket. Installing the tube backwards will cause no electrical shorts or shock hazards, however the tube will simply not turn on when the power is applied to the fixture.
13. **If the tube light model you are installing has the optional ROTATABLE END-CAPS make certain that the contact pins are located in a plane perpendicular to the long dimension of the terminal socket to ensure both good electrical and mechanical connections.** Finally, aim the light output as desired by twisting the tube about it's long axis as follows. Simultaneously hold both end-caps secure in their sockets while a third hand rotates the central body of the tube.
14. Turn on the power to the lights and enjoy!



**WARNING: DO NOT INSTALL FLUORESCENT TUBES IN THIS FIXTURE. THIS FIXTURE HAS NO FLUORESCENT BALLAST AND HAS BEEN MODIFIED TO BE COMPATIBLE WITH REDBIRD LED CARDINAL™ SINGLE-END-POWER-INPUT LINEAR LAMPS**

Label to be applied to the fixture in step 11

