



Redbird LED Cardinal[®] Ultra Stripit Kit[®] Installation Instructions

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678-RED-BIRD [733-2473]

Required Tools & Supplies

- ✓ Cordless drill/driver, with torque limiting adjustable clutch-head with 1/4" magnetic hex bit. Set torque limit with the adjustable clutch-head to be ~ 5-10 in/Lbs to ensure that when used to install the TEK-screws they do not get over-tightened and 'strip-out' in the thin sheet metal of the fixture.
- ✓ Wire stripper/cutter tool
- ✓ 18 gauge solid core, insulated copper wire for Primary Power and the LED Plus and Minus power connections
- ✓ (Typically Black for LINE, White for NEUTRAL, Black for LED- and Red for LED+)
- ✓ Wire nuts and/or WAGO-style connectors or quick-disconnect fitting for primary power connection

Pre-Installation Steps:

1. Turn off power to the fixture to be retrofitted. If the existing fixture has a quick disconnect on the power lines, this can be unplugged to remove the power to the fixture.
2. Remove Prismatic lens or Parabolic louvers.
3. Remove all Fluorescent tubes and dispose of properly. Fluorescent tubes contain mercury and must be recycled properly to safely contain the mercury from the environment.
4. Remove ballast cover.
5. Disconnect power wiring to the ballast. If possible, save the wire nuts commonly employed here to re-use for power connection to new LED Driver
6. Remove Ballast and dispose of properly.
7. Remove all mechanical components associated with the original fluorescent light system such as the tombstones [tube sockets], terminal bars that hold the sockets, and internal fixture wiring and dispose of properly.

Installing the Stripit Kit,

Model # USK4-2-50.65-50K (Example Kit commonly used to retrofit a 2X4 drop ceiling troffer)

Driver set for 650 mA output delivering 22.1 watts to the LED Strip for ~ 4100 Lumens light output. Input voltage 90-305Vac, drawing 24 watts

Installing TEK-Screws Properly: When installing the supplied #8 self-drilling/self-tapping TEK Screws, one must be careful to not 'OVER-TIGHTEN' them. Proper TEK-Screw installation can be insured by using a power driver with a adjustable torque-limit set at the appropriate level equivalent to 5-10 inch/lbs!

The many different fixtures which can be retrofitted with the Stripit Kits means that many different gauges of sheet metal may be encountered during the installation process. If a TEK-Screw is inadvertently over-tightened and 'stripped' during the installation process, one should remove said Screw (s) and reposition the component being mounted by a small amount to allow a new, non-stripped, TEK-Screw installation into fresh metal.

The TEK-Screws have a sharp drill-point to initially penetrate the sheet metal they are attaching the kit components to. If this point presents in an area that may contain electrical wiring, a short piece of heat-shrink tubing or electrical tape should be installed to cover these sharp edges to protect against damaging the electrical wiring as shown in the photo below.

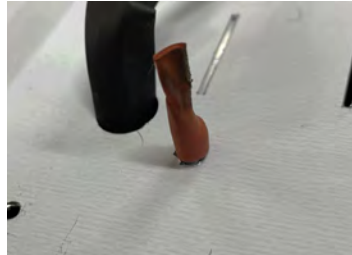


Figure (1) Using heat-shrink tubing to cover the sharp-point of the TEK screw if present where wiring is run

1. Mount the RedBird LED Driver in the area where the old ballast was located using supplied TEK screws. Most RedBird Drivers are pre-programmed to the correct power level for each application and are labeled accordingly. The D15 and D21 drivers can be programmed at the factory to between 15 and 50 watts (D15) and 20 to 72 watts (D21). The DIP-Switch Power adjustable drivers can be set during installation at the desired level needed to deliver the preferred light output level as defined on the driver labelling.
2. Using black and white, 18 gauge solid core hook-up wire connected to the driver's push-in connectors or flying leads for Line and Neutral Primary power, connect these lines to the primary power coming into the fixture with wire nuts or WAGO style splicers or quick-disconnect fittings.



Figure(2) Connecting Primary Power to the LED Driver



Figure(3) Connecting LED+ and LED- Output Lines



Figure(4) Field Adjustable Drive Current Selection

All Ultra Stripit Kit drivers are Dimmable via the 0-10 volt control signal. If installing one of the dimmable drivers when they will NOT be utilizing the Driver's dimming function make sure that the DIM+ and DIM- control inputs are insulated and are not able to touch each other or anything conductive within the fixture. All drivers are fully isolated electrically and do not require a separate ground connection however the primary power feeding the fixture should have a ground line connected to the fixture chassis.

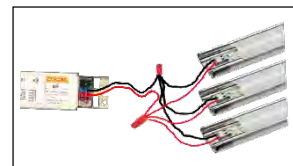
3. Strip approx. 7/16"-1/2" of insulation from the end of the RED and BLACK leads of the driver's low voltage DC Output side, and connect to one of WAGO-style push-in connector at one end of the Stripit Kit LED strip; POLARITY MUST BE OBSERVED IN THIS STEP. Make sure to connect the RED wire to the (+) push-in terminal and the BLACK wire to the (-) push-in terminal. To make sure the wires have been completely engaged in the spring-loaded, push-in terminals, gently pull on the wires to ensure they can't be pulled out. Some RedBird Drivers come with two pairs of red(+) and black(-) output lines. If you are only powering a single strip with the driver, you should cut and/or Tape the ends of the extra set of output lines to ensure that they do not touch anything conductive. If a single driver is powering more than one LED strip, then add an additional pair of the RED(LED+) and BLACK(LED-) power delivery leads by splicing them to the output leads of the Driver as shown below in Figure(7) to provide a direct, 'home-run' power connection to each Strip.



Figure (5) Prepare ends of the solid core, 18 gauge LED power delivery wire by stripping ~5"



Figure(6) Observe correct polarity when connecting LED power delivery wires



Figure(7) Correct Wiring Method for 'Home-Run' Parallel wiring of Multiple Strips to a single driver.

- Using the supplied #8 X 3/4" , 1/4" hex head TEK screws, mount the LED Strips in the fixture in the desired position, usually symmetrically within the fixture opening. Be careful to not over-torque the screw and strip the self-threading attachment mechanism out from the sheet-metal of the fixture. If your cordless driver has a clutch-head feature it is useful to set this at a low level to avoid the too-tight mistake. Using the supplied #8 X 3/4" , 1/4" hex head TEK screws, mount the LED Strips in the fixture in the desired position, usually symmetrically within the fixture opening. Be careful to not over-torque the screw and strip the self-threading attachment mechanism out from the sheet-metal of the fixture. If your cordless driver has a clutch-head feature it is useful to set this at a low level to avoid the too-tight mistake.
- Connect LED power leads to each strip being installed. For Connecting Additional Strips Measure distance from the driver to each strip and cut suitable sections of the 18 gauge solid-core wire to length of each color.. For the D15 and D21 drivers Strip approx. 7/16"-1/2" off both ends of each wire. For the D400, D500, and D800 strip approximately 7/16" – 1/2" of insulation off of the LED+ and LED- leads coming from the driver. Insert one end of the wire into the new Strip, following the RED(LED +) and BLACK(LED-) polarity convention.
- If the LED drive lines need to be routed near or through areas with sharp metal edges, use the short pieces of heat-shrink tubing to cover these wires in that area as shown in the photo below.
- If multiple strips need to be connected to the driver output, splice additional LED drive wires for both the LED+ and LED- lines and connect all strips in parallel with 'home-run' wiring from the driver to each LED strip as shown in



Using heat-shrink tubing to protect the LED drive lines from sharp metal edges

- When all Strips have had their power leads attached mount each strip in the fixture using one TEK screw on each end to fasten it securely. Caution-do not over torque the TEK screws causing them to strip-out the self-formed threads in the fixture. If this happens, slightly relocate the strip so a new mounting point can be used. If the LED power leads must be routed near a sharp metal edge, use the supplied pcs of heat shrink to protect the wires there..
- With all Strips and the Driver installed in the fixture, connect all of the Red power leads from the strips to the Red Lead coming from the driver and all of the Black power leads from the strips to the Black Lead coming from the driver using wire-nuts, WAGO connectors, or crimp connectors.



Installing LED Strips in Fixture With TEK Screws, Connecting power lines, replacing Ballast cover and install snap-on diffusers

- Replace the ballast cover, which now covers the RedBird LED driver, making sure that the LED power leads exit through an area with adequate clearance to avoid being pinched or cut by any sharp edges.
- Install the 'Fixture Retrofitted' Label supplied with the kit to the fixture to ensure that anyone servicing this fixture in the future is fully aware that it has been modified by the installation of the RedBird LED Cardinal® Stripit Kit® retrofit system. This also ensures that any inspectors can readily ascertain that all UL compliance of the original fixture has been maintained by the proper installation of this UL listed retrofit kit.

FIXTURE LABEL TO BE APPLIED AFTER RETROFIT HAS BEEN INSTALLED

WARNING-FIXTURE HAS BEEN MODIFIED

FIXTURE HAS BEEN RETROFITTED WITH ULTRA STRIPIT KIT LED RETROFIT SYSTEM USING AN EXTERNAL LOW-VOLTAGE CONSTANT CURRENT DRIVER. USE ONLY REDBIRD LED ORIGINAL PARTS TO REPAIR OR REPLACE ANY COMPONENTS IN THIS FIXTURE.

L'AVERTISSEMENT-FIXATION A ÉTÉ MODIFIÉ

LE LUMINAIRE A ÉTÉ REMIS À NIVEAU AVEC LE SYSTÈME DE MODIFICATION À DEL DU KIT ULTRA STRIPIT UTILISANT UN CONDUCTEUR EXTERNE DE COURANT CONSTANT À BASSE TENSION. UTILISEZ UNIQUEMENT DES PIÈCES D'ORIGINE À DEL REDBIRD POUR RÉPARER OU REMPLACER TOUT COMPOSANT DE CE LUMINAIRE.



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- Leave trim such as a Prismatic Lens or Parabolic Grill components off to allow higher light output from retrofitted fixture. Optionally replace any trim as desired in the fixture.
- Turn power to the fixture back on – and enjoy the energy savings and high-quality light output of RedBird LED's Ultra Stripit Kits!

WARNINGS

– Risk of fire or electric shock. LED Retrofit Kit installation requires knowledge of luminaires electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.

– Risk of fire or electric shock. Install this kit only in luminaires that have the construction features and dimensions shown in the photographs and/or drawings and where the input rating of the retrofit kit does not exceed the input rating of the luminaire.

–To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.