









**INSTALLATION INSTRUCTIONS (1/2)**

**REQUIRED COMPONENTS**

-  Lighting Strips  
*Mounted on specific trim*
-  Existing Metal Tracks  
*1 pair per cabinet section*
-  Driver  
*(1) Job-specific requirements*
-  120" End Feed  
*(1) power connector per light strip*
-  Brass Contact Pads  
*(2) per Shelf*
-  Exposed Steel Supports  
*(2) per shelf; not included*
-  Ring Connectors  
*(2) per Shelf*
-  Brass Wood Screws  
*(2) per Shelf*

**READ AND UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLATION – SAVE THESE INSTRUCTIONS!**

These fixtures are intended for installation in accordance with the National Electrical Code and local regulations. To ensure full compliance with local codes and regulations, check with your local electrical inspector before installation. To prevent electrical shock, turn off electricity at fuse box before proceeding. Remove all components from the shipping carton. The instructions are in a step by step sequence for correct and easy assembly. Save the shipping carton and packing materials until job is complete.

**IMPORTANT: THE ULTRA AE SERIES IS INTENDED FOR EXISTING CABINETS W/ EXPOSED METAL SUPPORTS.**  
*For installation on cabinets w/o exposed metal or other applications, please look into our other strip lighting options.*

**1. CALCULATE DRIVER REQUIREMENTS**

Ultra lighting strips **without a lens** use standard LED tape producing 4.2 watts per foot. Example: a cabinet containing 10' of Ultra Lighting Strips, 10' x 4.2 watts/ft = 42 total watts. Always allow a 20% safety factor when sizing to prevent nuisance tripping. Example: 30 watts x 1.2 = 36 watts, requiring a 40-watt driver. **Maximum run length per feed is 8' or 24 watts.**

= 60 total watts. Always allow 20% safety factor when sizing to prevent nuisance tripping. Ex: 60 watts x 1.2 = 72 watts, requiring a 96-watt driver. **Maximum run length per feed = 8.2' or 49.2 watts.**  
*Available driver sizes: 20W, 40W, 60W, 96W, 150W, 200W, 300W*

Ultra lighting strips **with a lens** use high-density LED tape producing 6.0 watts per foot. Example: a cabinet containing 10' of Ultra Lighting Strips, 10' x 6.0 watts/ft

**2. DETERMINE LOCATION OF DRIVER**

The driver should be out of sight, but still accessible for servicing if necessary. Some electricians install it in the attic above the display, while others conceal it in the base or header of the cabinet.

*Note: the installer should use normal voltage drop calculations when determining the distance from the cabinet. Typically, the distance should not exceed 20' from location when using 16-gauge wire. If farther, use larger gauge wire.*

**3. CONNECT DRIVER TO EXPOSED METAL TRACKS**

The driver will be connected to the exposed metal standards with a ring connector. The connection can be made at the top or bottom of the cabinet. See step 2 for information on the location of the driver; more details can be found on our driver cut sheet.

**4. DETERMINE TRIM AND MOUNTING METHOD**

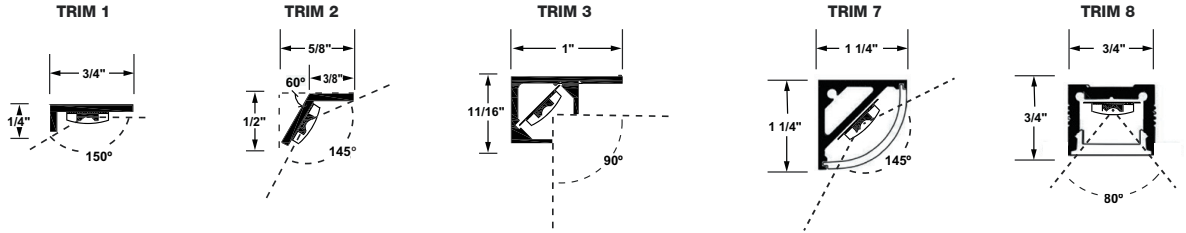
Different trim profiles are offered with this product. The profile of the trim will determine the space required for mounting. The illustrations depicted below are provided to assist in determining the exact location and verifying adequate space to install each of the trims.

**5. DETERMINE LOCATION OF ADJUSTABLE SHELVES**

Once the location is decided, use a brass wood screw to attach the front shelf support clips through the sides of the cabinet into the threaded holes of the cabinet and metal tracks. The brass screws assure completion of the circuit between the concealed metal components. If the shelf needs to be moved, set the location, then move the screw and front shelf clips to the desired location.

*Note: also consider the strip location in the header section of the cabinet/display case before choosing your trim and mounting method.*


*Note: back shelf supports are not included.*



**6. INSTALL PHANTOM ULTRA LIGHTING STRIP**

Noting the polarity of the metal tracks, separate the two wires on the end connecting cable and run one of them to the opposite end of the shelf, making sure this wire matches the polarity of the corresponding metal track. The lighting strip is mounted on the underside of each shelf. Position the wire that runs to the opposite end in the raceway behind the lighting strips.

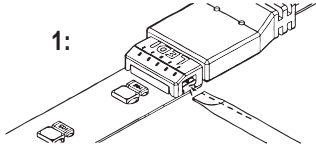
**SEE REVERSE SIDE OF THIS PAGE FOR FURTHER INSTALLATION INSTRUCTIONS**

 TECHNICAL SUPPORT:  
800.863.1184

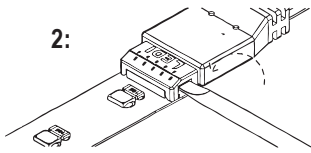
## INSTALLATION INSTRUCTIONS (2/2)

### HOW TO DISCONNECT THE POWER CONNECTOR

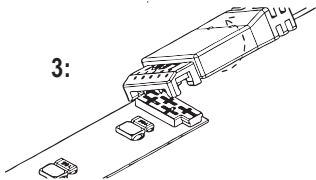
Please note that the most current version of our LED strip lighting tape requires a new method of disconnection:



1: First, insert the tip of a pocket knife or a small screwdriver into the side slot where the connector (male) attaches to the header (female).



2: Next, rotate the knife or screwdriver counter-clockwise to release the clips.



3: Disconnect pieces by gently rotating.

**DO NOT PULL APART – PRODUCT WILL BE DAMAGED**

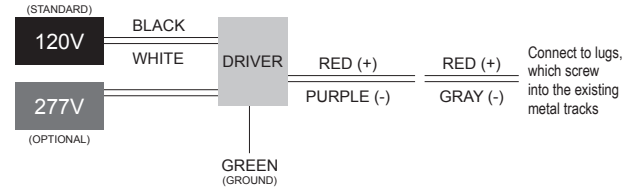
### 6. INSTALL PHANTOM ULTRA LIGHTING STRIP (CONTINUED)

Trim both wires to the correct length and terminate each with supplied ring connectors to be positioned under the contact pads. Contact pads are installed and aligned with the front shelf supports using brass wood screws. When the adjustable shelf is set in place, the contact pads rest on the shelf supports, completing the circuit and allowing the strip to be powered and illuminated.

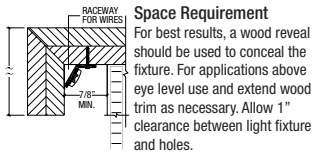
*Note: beware of electrical shortage if contact pads touch any part of the metal trim.*

### 7. CONNECT THE DRIVER

Using a dimmer is optional, but **not required** for this product. Low voltage dimmers are not included with this product; please visit our website for a list of compatible magnetic low-voltage dimmers or call technical support.

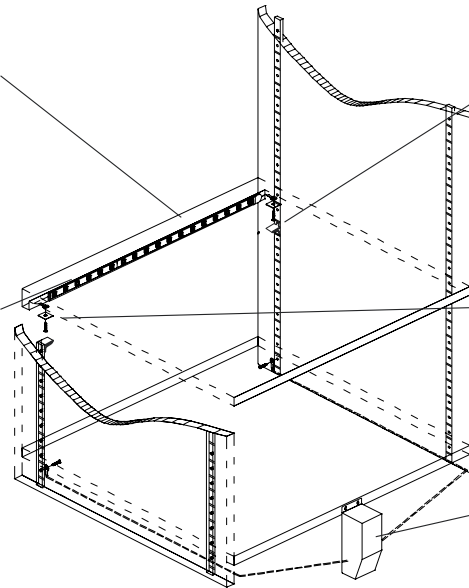


### VISUAL INSTRUCTIONS & ADDITIONAL INFORMATION



**Lighting Strip**  
Each lighting strip contains LED's spaced at 16.9 mm on center. For best results, always use a matte finish on the back of the cabinet to minimize reflections or glare.

**Dimmer Controls (by others)**  
Magnetic low voltage drivers should always be used with a dimmer designated for magnetic or inductive loads.



**Exposed Steel Shelf Supports (by others)**  
You can easily energize new or existing steel supports to conduct safe low voltage current for our exposed wiring method. This system virtually eliminates all the visible wiring and allows you to use standard shelf support clips. The use of aluminum shelf supports is not recommended!

**Note:** Remove any paint on top of the supports to ensure good contact between all brass pieces

**Brass Contact Pads**  
Brass contact pads are designed to transfer electricity from the shelf support clip to the individual fixtures utilizing a safe low voltage current. Contact is made when the shelf is installed. No tools are required to rearrange the shelves!

**Drivers**  
Magnetic drivers are sized to match the total wattage of your lighting load and come equipped with one or more secondary circuit breakers. (See driver sheet for more sizing information and amperage calculations).

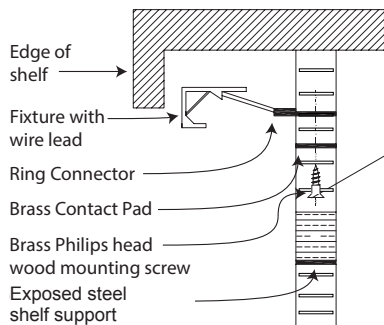
### TERMS & CONDITIONS

To comply with Phantom Lighting System warranty policies and ETL Standards, all lighting strips must be used in conjunction with Phantom Lighting drivers. All Phantom Lighting drivers are ETL Approved and are strongly recommended for proper operation of lighting strips. Phantom Drivers should not be located in areas with no ventilation or subject to high ambient temperatures. If ambient temperature exceeds 115°F (46°C) around the driver, the circuit breakers may nuisance-trip due to excessive heat and void any warranty.

**CAUTION: FAILURE TO CORRECTLY SIZE THE PRIMARY AND SECONDARY CONDUCTORS AND/OR THE OVERLOAD PROTECTION MAY RESULT IN BODILY INJURY OR SERIOUS PROPERTY DAMAGE**

If you have any questions or concerns regarding your application, please contact the Phantom factory or a licensed electrician, or consult the U.S. National Electric Code.

#### SIDE VIEW



#### CALCULATIONS