

## **Populating the Channel Letter**

Populating a channel letter with LED Modules is as easy as peeling the liner off the mounting tape and firmly pressing the light modules in the desired locations.

**NOTE:** Bonding surface should be clean and dry.

To determine where the LED Modules should be placed and how many to use, LED, Inc. offers the following guidelines: (Results may vary based upon desired light intensity and letter construction).

1. LED Modules are designed to be placed in rows:
  - a. LED Modules should have approximately a 2.5 inch spacing between modules within the row. This will result in 3 modules per foot.
2. LED Modules are designed to cover a stroke width of 4 inch in a channel letter (letter depth of 4 to 8 inches). Letters with a 4 inch stroke width or smaller should have one row of LED Modules. Letters with a stroke width larger than 4 inches should have multiple rows of LED Modules placed according to the following schedule;
  - a. 4 to 6 inch stroke= 2 rows
  - b. 6 to 8 inch stroke= 3 rows
  - c. 8 to 10 inch stroke= 4 rows
  - d. Actual number of rows/modules may vary depending upon the application. The above schedule is offered only as a guideline.
3. When all modules are in place, the secondary output from the power supply can be connected. Multiple letters in a sign must be connected to the power supply in parallel. Use UL listed Insulation Displacement Connectors to make this connection and to cap off the open ends of the row.

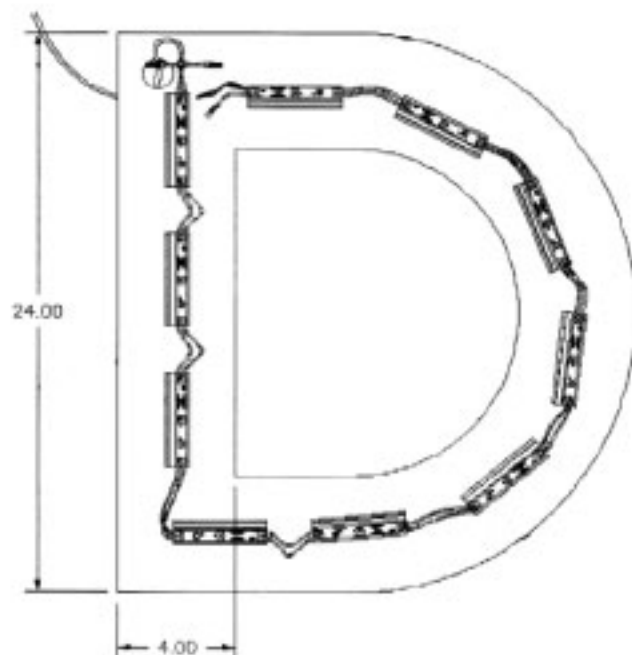


Fig. 3 Example of 24" Channel letter with 4" stroke populated with one stroke of LED Modules.

## Power Supply Installation



Fig. 5 Power Supply options. Clockwise from top left, 40Watt Remote P/S (P/N 05012-0033), 20Watt Class 2 P/S (P/N 05012-1020), 40Watt Class 2 P/S (P/N 05012-1040) and 60Watt Class 2 P/S (P/N 05012-1060)

### **Mounting**

Mount the power supply directly to the wall with #8 or #10 pan head screws. The power supply must be mounted in a well ventilated area that allows for accessibility after installation and must not be adjacent to combustible materials or in an area that exceeds temperatures of 50°C (122°F). Mount the power supply indoors, out of the weather, and do not leave exposed to rain or water. For outdoor or wet location, power supply can be enclosed inside a raceway, inside the channel letter itself, in a UL Listed for wet location transformer box or in a NEMA 3R box with ventilation. Some acceptable Boxes for power supplies being mounted outdoors are Hoffman p/n A12R126, Westrim TC18SO-UL or equivalent. Use of a Class 2 power supply can also be used for outdoor or wet locations.

## **Power Supply Loading for LED Module**

<b>LED Module Type</b>	<b>Modules per foot</b>	<b>Maximum Modules per 40Watt Remote (Indoor) Power Supply</b>	<b>Maximum Modules per 20Watt Class 2 (Outdoor) Remote Power Supply</b>	<b>Maximum Modules per 40Watt Class 2 (Outdoor) Remote Power Supply</b>	<b>Maximum Modules per 60Watt Class 2 (Outdoor) Remote Power Supply</b>
<b>04001-2000, Red</b>	3	100	50	100	150
<b>04001-4000, Yellow</b>	3	100	50	100	150
<b>04001-5000, Green</b>	3	100	50	100	150
<b>04001-6000, Blue</b>	3	100	50	100	150
<b>04001-9000, White</b>	3	100	50	100	150

Table 1 Power Supply Loading Schedule

If extra wire is needed  
between units, use UL  
listed 20 AWG or larger

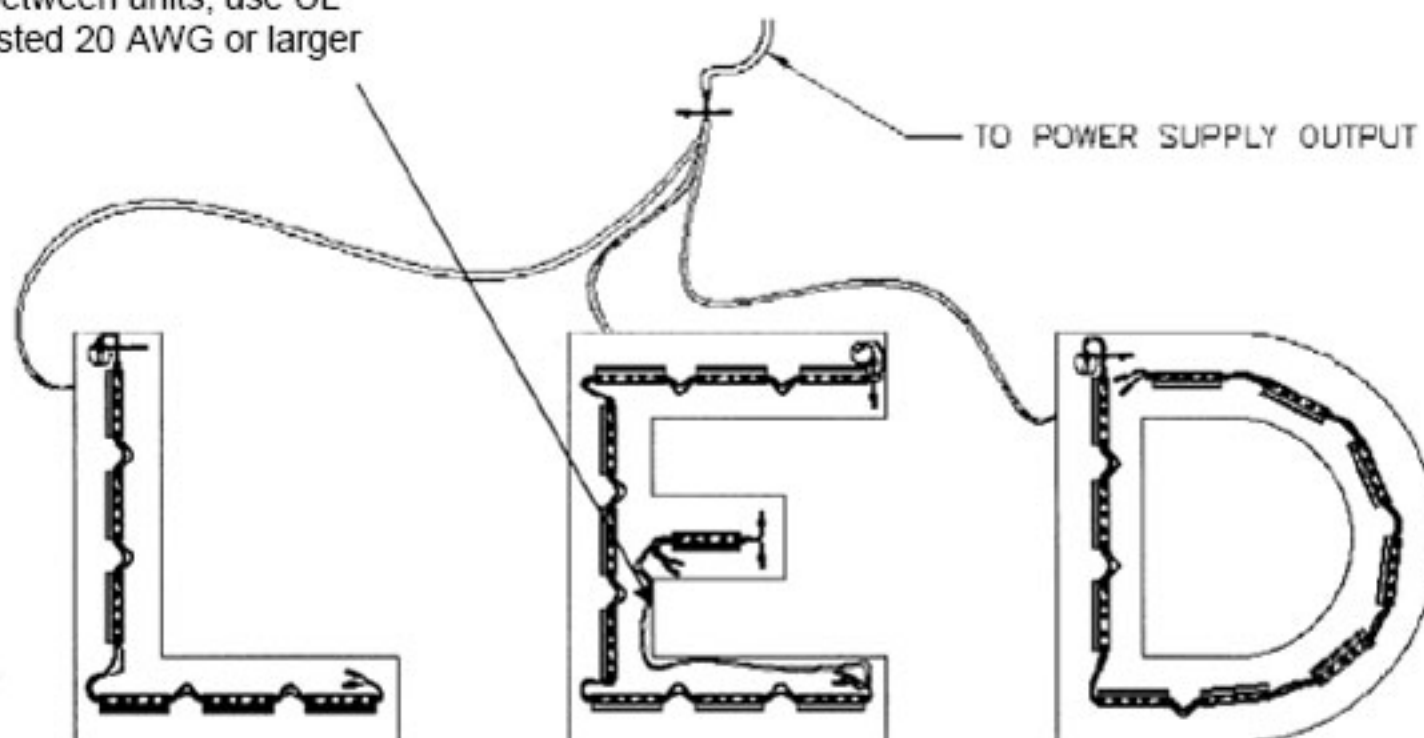


Fig. 4 Sample Sign Layout and Connections

**NOTE:** All LED Modules operate on 12VDC. All color modules can be connected to the same power supply. Colors can be mixed on the same power supply. Different colors can be connected to the same power supply and mixed on the same power supply output.

## Connecting the Primary

After securely mounting the power supply, have the primary connected by a licensed electrician in accordance with local and national codes. For the 40Watt Remote Power Supply simply plug the AC power cord into a standard 3 prong grounded outlet.

## Connecting the Output

LED, Inc power supplies have Class 2 DC outputs. For reliability and performance the following loading is not to be exceeded.

Power Supply Part Number	Outputs	Input Voltage (Volts- AC)	Output Power (Watts)	Output Voltage (Volts- DC)	Maximum Output Current (Amps)
05012-0033	1	100-240	40	12	3.3
05012-1020	1	90-264	20	12	1.6
05012-1040	1	90-264	40	12	3.3
05012-1060	1	90-264	60	12	5

Table 2 Power Supply Output Schedule

It is recommended that the current be checked on each power supply output after loading is complete. The current drawn by each leg should not exceed the current rating on the power supply label. If the measured current does exceed the rated current, reduce the number of LED modules on that leg until the current is below the rated output. **The total number of module per power supply is not to exceed the schedule as shown in Table 1.**

**NOTE:** If any power supply output leads are left unused, the unterminated wires must be individually capped inside an UL Listed junction box, race way or sign housing.

## Routing Secondary Wires

When wiring the secondary outputs of the power supply, all routing through walls must be sealed with outdoor rated caulk to protect the sign and building from water damage and the cable from chafing. The power supply leads and letter to letter jumpers can be routed through walls, inside and outside without conduit. It is recommended that all connections be enclosed in a UL listed junction box with strain relief.

## Extension of Power Supply Leads

If a longer lead wire from the power supply to lighting modules is needed, an extension can be used. The extension should be kept as short as possible (under 15 feet for 18 AWG UL Listed or under 50 feet for 14 AWG UL Listed).