Customer Installation/Tips/Troubleshooting Guide
Enclosed are your fabricated lit letters, populated with UL certified LEDs. Each individual letter/logo has been custom filled with LED modules, designed to provide a consistent Lumen output.

Components Used
All components used in Gemini lit letters are UL approved for LED lighting. Gemini’s UL EFILE #E319118 - UL Certified & CSA approved.

LEDs (letters) to Power Supply Connections
It is recommended that all electrical connections be performed by a licensed electrical contractor. Each component has been filled with UL approved LEDs, and contains a 3-wire cable. 100 watt power supplies are equipped with two separate channels. Each channel can carry a maximum of 3.9amps, at 12VDC, to the LEDs.

Standard wire connections from letter cable wires to power supply:
Power Supply (to LEDs) Letters
CH#1 White (+) Red/Blue 18AWG wire (+)
Black (-) Blue coated silver 18AWG wire (-)
CH#2 Red (+) Red/Blue 18AWG wire (+)
Green (-) Blue coated silver 18AWG wire (-)

Connect 14AWG, Green ground wires to main ground wire, then to PS ground or a proper grounding location.

Power Supply (PS) to Power Source Connection
Power Supplies provided are UL approved, Class 2, 12VDC output, wet location rated, max. 277VAC input.
Do NOT mount power supply directly into letters. Amperage ratings are listed on the power supply labels. It is recommended that lead cables not exceed 10 feet long, for proper LED performance. Each 100 watt power supply has 3 wires for input from power source.

Power Supply Wiring - Example
"MA" are powered by Channel #1 of the 100 watt power supply #1. "IL" are powered by Channel #2 of the 100 watt power supply #1. "RO" are powered by Channel #1 of the 100 watt power supply #2. "OM" are powered by Channel #2 of the 100 watt power supply #2

Caution: Plugging LEDs direct into 110VAC will destroy them. Use ONLY Class 2,12VDC power supplies
Notes:

**LED Modules**
Individual LED modules have been secured to the LEXAN backs with double faced tape. Every other module has been further secured with a plastic support blocks. Should you need to reposition any LED modules, break off the support block with pliers, re-tape module, then secure with silicone on sides and wires.

**Lexan Backs**
All UL required components are supplied with weep (drain) holes in the Lexan backs, per UL requirements. Weep holes are used to allow moisture or water to escape from all letter drops.

**Letter Stand-Off**
Halo lit letters are designed to stand-off the mounting surface by using studs and spacers. Adjusting the spacer length or stand-off from the wall will effect the halo lighting effect. Typical stand-offs for optimal halo lighting is around 1-1/2" from the mounting surface.

**Mounting Surface**
When Halo (back) lighting, it is best to install on a non-glossy, lighter colored mounting surfaces. Dark, Glossy backgrounds will absorb the LED light and will not produce a desirable halo effect.

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**LED Troubleshooting Guide**

**Blinking LEDs:**

- Blinking LEDs: Too many LEDs connected to a given power supply. Reduce the number of letters or modules attached to your power supply.

**LEDs in one or more letters will not light:**

- LEDs will not light: Too many LED modules are connected to a given power supply. Reduce the number of letters or modules attached to your power supply.
- Check letter connections. Make sure lead cables are properly wired to power supply line. Make sure all wires are connected per wiring diagram.
- Reduce length of lead cables to 10ft. Maximum lengths. Check AC input connection and/or check circuit breaker.

**One LED module is Dark (not lit):**

- You may have a bad module. Check lighting of letter with face covered to determine impact of one dark LED. If the face is too dark or visible shadows exist, additional LEDs may have to be added to the letter.

**I see light shadows:**

- Insure that all modules are secured to the Lexan backs. If a module has come loose, press it back down and secure with additional DF tape and/or silicone.

**Some LEDs appear dim:**

- Ensure that the overall length of the LED system does not exceed the maximum load. Ensure that the length of supply wire is equal to or below the recommended remote distance.

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**Electrical Contractor Required**
It is recommended that all electrical connections be performed by a licensed electrical contractor.

**WARNINGS!**

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<thead>
<tr>
<th>RISK OF ELECTRIC SHOCK:</th>
<th>RISK OF FIRE:</th>
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<tbody>
<tr>
<td>Turn power OFF before inspection, installation or removal.</td>
<td>Use only UL approved supply wires, minimum 18 AWG.</td>
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<tr>
<td>Properly ground any Power Supply enclosures.</td>
<td>Follow all NEC and Local Electrical Codes.</td>
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<tr>
<td>Shut off power at fuse box or circuit breaker before install.</td>
<td>Use only UL approved wire for input connection. Minimum size 1.02mm</td>
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**Prepare Electrical Wiring**

- The grounding and bonding of the LED Driver shall be done in accordance with NEC Article 600. Always understand and follow all National Electric Codes (NEC) and local electrical codes.