GEMINI

LIGHTING GEMINI GEMLITE CHANNEL LETTERS WITH LEDS

Customer Installation/Tips/Troubleshooting

Enclosed are your Gemini, GemLite Channel Letters designed to be lit with Low Profile LED Systems.
Use the following guidelines when selecting and installing the proper LED system for your letters.

Choosing the Proper LED system

There are literally hundreds of LED systems available in the market today. Choose a system that will
properly light your letters and provide a consistent light output.

Recommended LED systems

The following LED Systems have been tested and were found to work best with GemLite Channel Letters:

GE Tetra miniMAX or Sloan V Series (systems with a wide viewing angle)
Do NOT use an LED system that requires a metal can or has a narrow viewing angle.

Viewing Angle

The single most important LED consideration is the lamp viewing angle.
Based on the letter depth and face opacity, you want to select a system
that will minimize visible "hot spots".
Choose an LED system with a "low Profile" lens and viewing angle of at least
150 degrees. The larger the number, the wider the spread of light and thus
fewer or no hot spots or shadows should will be visible in the face, when lit.
Smaller letters with thinner depths are designed to be lit with wider viewing angle LEDs,
while deeper traditional channel letters may allow a narrow viewing angle.

Color Match

Make sure you match the LED color with your GemLite face color. GemLite faces are thermoformed
with custom co-extruded CAB sheet with built in light diffusion.
A white LED light may appear bright, but may not properly light a red faced letter. Typically, you want
to match the LED color with the face color (based on the system you select).
If your face color does not have an LED color match, then consult with your supplier on the best
temperature of white that may work for your color. Ex: 3200-9000K (warm to cool white).

Ease of Installation

While price is always a consideration, make sure you choose a system that is designed for lighting
letters. The proper system will allow modules to be secured to the letters with DF Tape, has enough built
in flexibility to navigate tight inside corners, and utilizes the proper LEDs for letter illumination.

Warranty

Based on your desire for future service work, select an LED system that has been tested and carries
a warranty. Cheaper system are available in the market, but make sure you consider future service costs.
It is recommended that you always use UL certified components and check into local electric codes.

Preparing letters for LEDs

Drill Holes

1) Drill a lead wire/cable hole through each letter back. Locate hole based on
how letters will be mounted. Ex: Most raceway holes are in the center of letters.

2) Place letter faces over backs and drill 3 to 4 (1/16"dia) holes through the
letter returns (sides) and backs, to accept face attachment screws.

3) If using letters outside, UL requires weep holes in each letter drop. Drill 1/4"
weep holes into each drop on letter backs. Ex: The letter "H" has two drops.

Clean out Backs

Before you secure any modules to the letter backs, thoroughly wipe letter backs
clean with alcohol or cleaner such as Windex. This will help with your tape bond.

Filling GemLite letters with LEDs
Layout LEDs
Balancing visible light output in letter faces is your main goal when lighting with LEDs. Layout your modules in a manner than provides ample face light, but minimizes hot spots or shadows.

As a general rule, keep modules around 1" away from the letter returns. Less bright colors such as Blue and Green may require extra modules to properly light.

Layout modules and lightly press down, keeping spacing consistent from letter to letter.

Test Light
Test light each letter to insure proper connections, minimized shadows, and consistent light output from letter to letter.

After modules are aligned, strip wires on the first module and connect to your system power supply (do NOT connect direct to standard 110 plugs).

Place letter face over the back, then test light. Check light intensity and consistent lighting - do a visual inspection.

Remove face and adjust modules as needed to create lighting balance.

Secure Modules
Once module placement is finalized, press down and fully secure each module to the letter backs.

Securing modules to the backs is critical. Double faced tape alone may not be sufficient, so most modules contain holes to allow for hold down blocks, screws, or pop-rivets to add to long term module adhesion. Some installers choose to run a bead of silicone on some module wires to further secure.

Electrical Connections   (Caution: Do NOT plug LEDs direct into 110v outlets)
It is recommended that all final electrical connections be performed by a licensed electrical contractor.

GemLites are designed to be lit with low, 12volt systems and can be wired in parallel.

Most installers will connect lead wires or cables to a central main line using UL wire connectors.

Power supplies cannot be installed into GemLite letters, so proper electrical enclosures or Wet location rated Class 2 power supplies must be used. Always follow system recommendations and install in in accordance with all NEC, local, and UL codes and requirements.

Note: If your connection wires are passing through a wall or enclosed ceiling, a UL certified cable can be used in place of conduit - as these are low volt Class 2 systems.

Mounting Letters (two common options)
Wall Mount
Based on the mounting surface, choose your installation hardware for securing letter backs to the wall.

Plot out or make a full sized drawing of your copy, then align, level and tape this plot to the wall.

One letter at a time, align backs over the plot and drill holes through the backs and into the wall.

Drill enough holes to properly secure. As an example, a typical 12" high letter can be secured with 4-5 screws. Remove plot, insert anchors into holes (if using) and secure letter backs to wall (keep lead cable in letters). Once all backs are secure, drill through your pre-drilled power supply holes and through wall.

Blow out drilled holes and feed lead wires-cables through holes. Complete final wiring on back of wall.

Once final wiring is complete and tested, secure letter faces to cans with #4 screws (paint heads to match face color), using pre-drilled face holes. Tightened screws by hand. If over-tight, the letters may crack.

Raceway Mount
GemLite letters can be pre-assembled onto a raceway in your shop. As LED systems are low voltage, use of thin narrow raceways may be possible. Consult with your local electrical codes or UL representative.

Plot out your full sized copy. Align and tape plot onto your raceway. Align letter backs over plot and drill holes through backs and raceway - slightly oversize holes in plastic to allow for expansion. Round letters, such as a letter "C" may require additional support in areas not touching the raceway. Secure as needed.

Remove paper plot, re-align letter backs to raceway and secure with self tapping sheet metal screws.

Drill power supply holes, feed lead wires through raceway, flip unit over and perform letter connections.

When wiring is complete, secure letter faces to backs using #4 screws (paint heads to match letter color).

At the jobsite, align, level and secure raceway to wall using screws through raceway flange.

Perform final wiring following NEC, local and UL codes and recommendations.   **Rev**. 1/15/15