



TMNT CAMPAIGN
LOS ANGELES, CA



An overview and instructions include suggestions for handling, installation, and dismantling of posting. With step by step guides to support our patented Light Tape® Billboard installation process.

Please review checklist at the end to help with items that should be in place for posting day for a successful posting.

Billboard Installation Training & On-site checklist

How to create something out of nothing



ADD ANOTHER DIMENSION TO YOUR BILLBOARD CREATIVE

If you have seen some of our latest billboard campaigns, you may wonder how does the magic happen? By utilizing novel printing techniques in conjunction with revolutionary Light Tape® Lamps as the backlight, you can add another dimension.

You can completely change the advertising meaning from day to night like the “Call of Duty” campaign for Jeep®, which won the SilverOBIE.



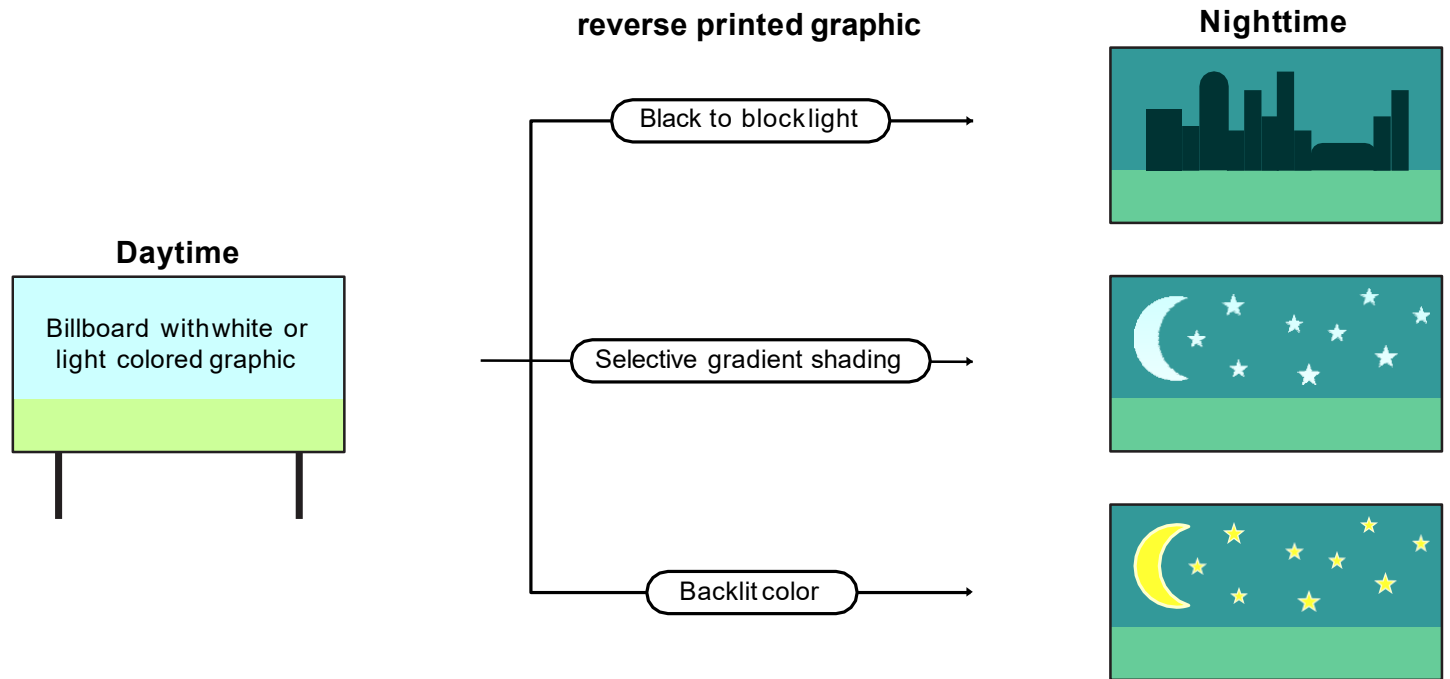
CREATING A DAY TO NIGHT TRANSITION

Completely change a day scene into something different at night. You have the ability to create texture or definition, using layers of shading on the rear of the creative.

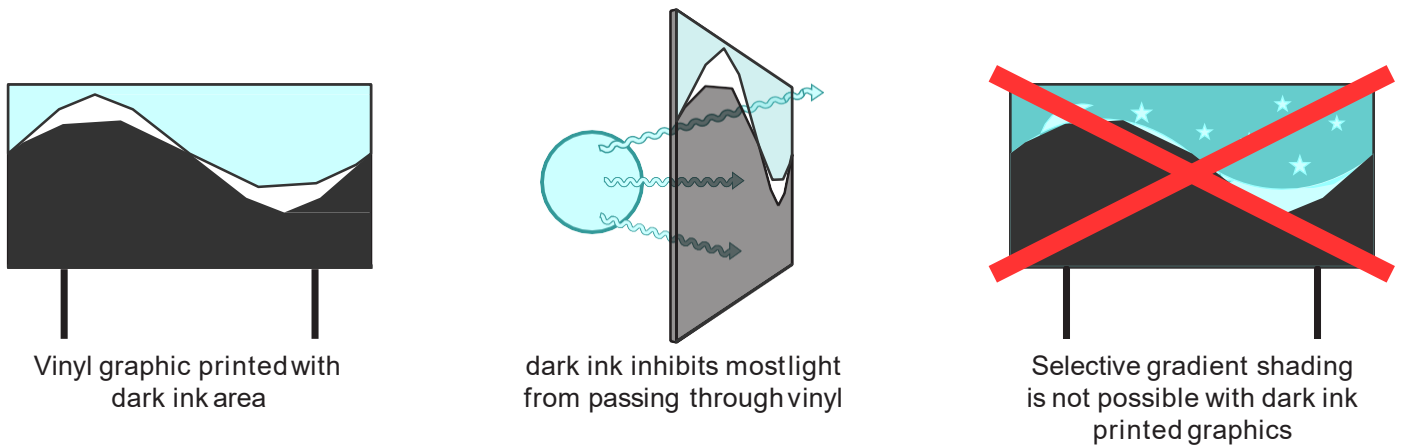
For a day night illumination, versus a selective, you are now able to create a ghost image. At night, when backlit a secondary image is visible.

Things to consider when designing for a Light Tape® Backlit Billboard

For Day/Night creative effects, there are a few things consider. If the creative is white or light in color, it is then possible to reverse print another image on the rear. When illuminated, the reverse image blocks the light, and gives the illusion the shaded images is now on the surface. The key is to have a contrast between the front image and rear.



Light Tape® does not illuminate dark areas like a television would. When illuminated, dark areas tend to stay dark.



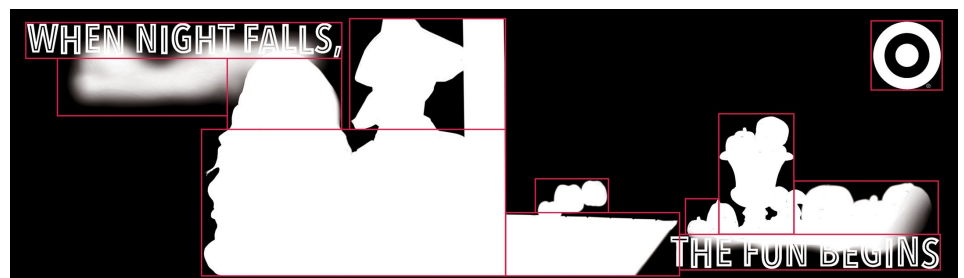
How to selectively backlight



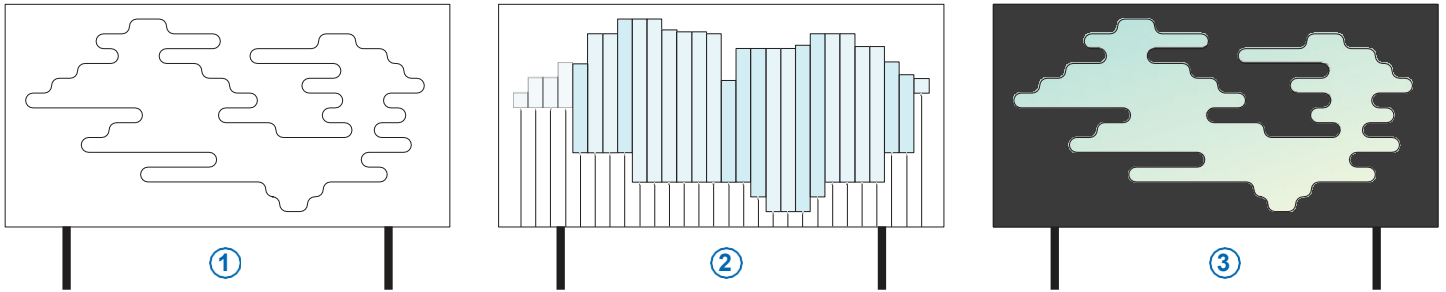
To accomplish this effect, the reverse side of the graphic is blacked out forming a delineation outline around the elements of the design that are to be featured when the creative transitions from day to night.

Notice in this graphic how a witch also appears in the shadow behind the children as the doors opens for their treats.

This is the view of the reverse side of the creative. To delineate the illuminated from non-illuminated, areas around the desired imaged are 'blacked-out' to prevent the light from penetrating. This method enables any shape to be precisely illuminated.

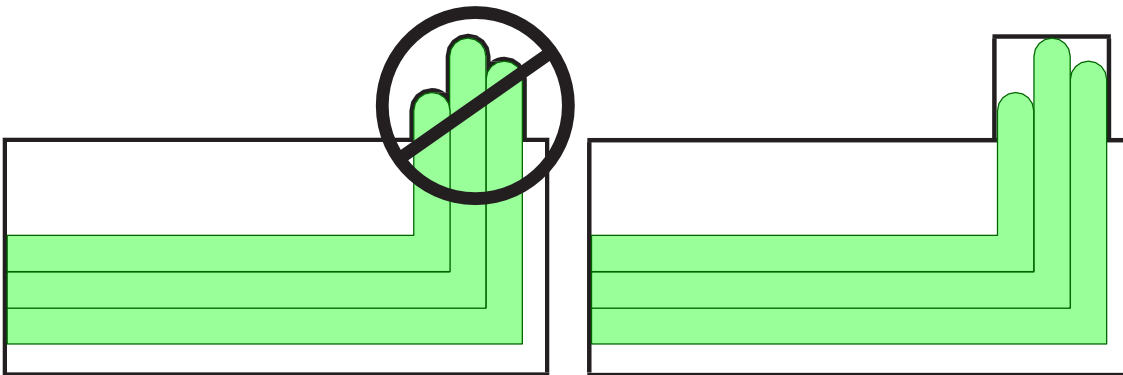


Light Tape® lamps layout for selective illumination



We illuminate objects using 12 “ or 24” wide Light Tape® panels at a variety of lengths to form backlit squares and rectangles. The black out on the rear of the creative creates the delineation around the desired illuminated area, blocking out the unwanted light. The cloud on the left is an example of how we form the illumination grid for the graphics. You can see that we would illuminate a “box” around the desired area and black out unwanted light. Below is the grid that we created for the selective lighting creative that was utilized by Target, as seen on page 3.

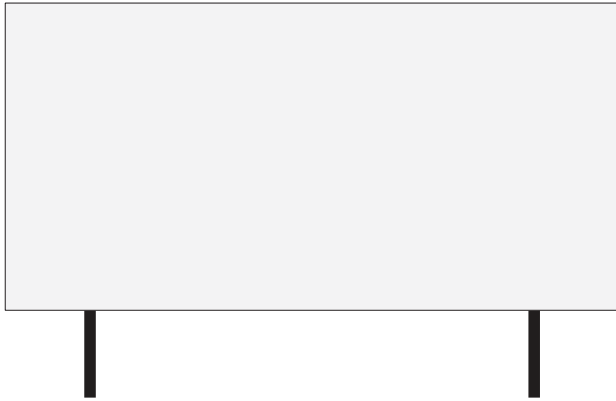
How Light Tape® handles extensions



We can illuminate extensions but curves will be blacked out, not cut to shape. The non-illuminated area tends to disappear at night.

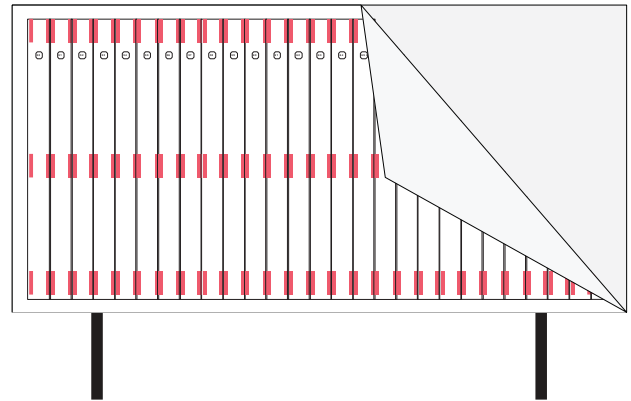
Light Tape® Billboard Installation Steps

① Standard Billboard



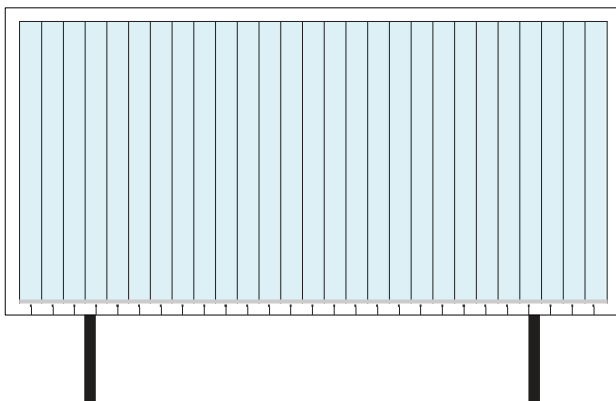
Start with pre-existing large format billboard with a smooth surface, remove any protrusions such as screw heads.

② Hang Base Vinyl



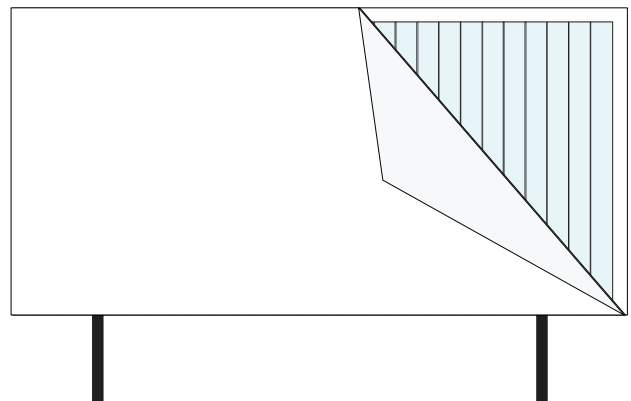
The 'base' vinyl layer that will support the Light Tape® OOH Panel System. This layer is printed with a layout template that guides the installation of Light Tape® panels using industrial Velcro denoted in red.

③ Mount Light Tape®



Install custom Light Tape® OOH Panels on the printed template, starting from left to right and using the red mark on the grid with pre-applied Velcro.

④ Hang the creative



Hang the final vinyl graphic as usual, taking care not to pull on electrical connections when tensioning. Then illuminate and tune with a voltage meter.

Installation Materials & Equipment

PROVIDED MATERIALS

- Base Vinyl to mount the Light Tape® panels: 3M Hook system applied to front of base vinyl to facilitate installation
- Light Tape® panels: 3M Loop System applied to back of Light Tape® panels
- 1 outdoor rated Quick Disconnect™ per panel to connect into wire harness
- Wire Harness: plug and play wire harness to connect Light Tape® panels to Smart Driver™ power supply
- NEMA Box power enclosure (dimensions 24"x 20"x 7")
- UL Smart Driver™ inverters with 110V input, engineered with short circuit and overload protection.
- Surge protector in each NEMA to protect power supplies and prevent board for tripping off.

REQUIRED EQUIPMENT & MATERIALS

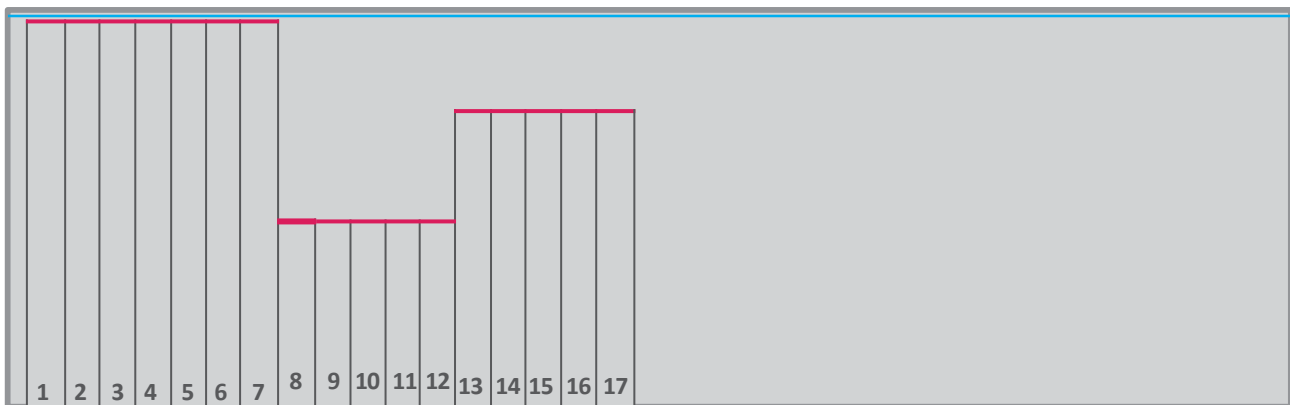
- Grounding Rod from service panel to Earth
- 1 20 Amp breaker per NEMA Box Type 2 - Do not overload breaker. We recommend 10 amps surge capacity to prevent tripping board.
- 1 Dusk to Dawn Timer or photocell
- Voltage meter (Fluke or equal) for setting Light Tape® panel brightness during day when light source is not as visible.
- Boom Truck to facilitate hanging Light Tape® panels

Installation

Please refer to lighttape.com for billboard installation tutorial video

1. Board power to support Light Tape® system should be in place
 - a. Install 20 Amp breaker(s): (1) 20 Amp breaker per NEMA Box Type 2 (10 to 12 amp load)
 - b. Best practice is to load breakers +/- 50% to prevent board tripping with a power grid surge.
 - c. Have Dusk to Dawn timer in place to control power to NEMA enclosure.
2. Open packages and confirm receipt of all pieces are undamaged (refer to materials page)
3. Install base vinyl
 - a. Examine board to ensure it is free of any protruding objects
 - b. Center and square registration marks with billboard framework
 - c. Blue registration line denotes the top of base vinyl
 - d. Numbers printed on back vinyl correspond to Light Tape® panel placement (see graphic)

BASE VINYL ON BILLBOARD

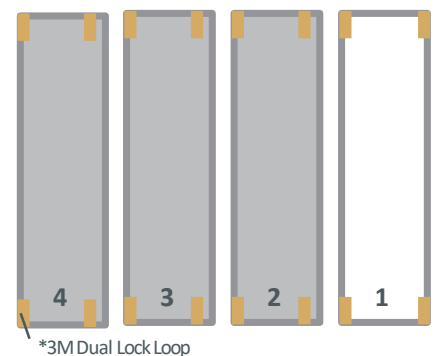


*blue registration line denotes top of base vinyl; red registration line denotes top of Light Tape® panels

5. Install NEMA Boxes
 - a. Locate NEMA Boxes within 20 feet of lit area (note* extensions possible)
 - b. Mount NEMA vertically to prevent water from entering
6. Install Light Tape® panels
 - a. Install in numerical order starting with number 1 mounting left to right.
 - b. Match number on back of Light Tape® with number on back vinyl
 - c. Line top edge of Light Tape® with red registration mark (the top edge will be denoted on back side of Light Tape®)
 - d. Lightly push both parts of dual lock Velcro system together to secure panels in place and flat against the back vinyl. Make sure panels are flat without ripples

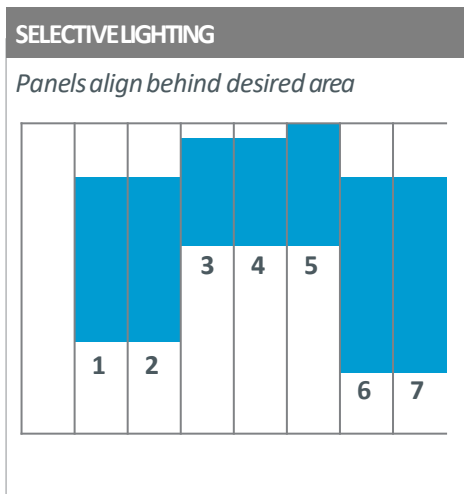
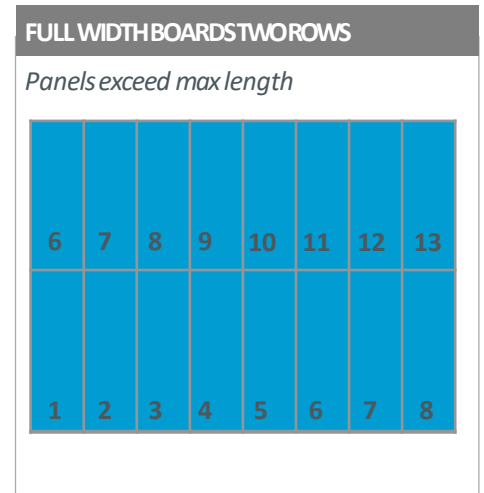
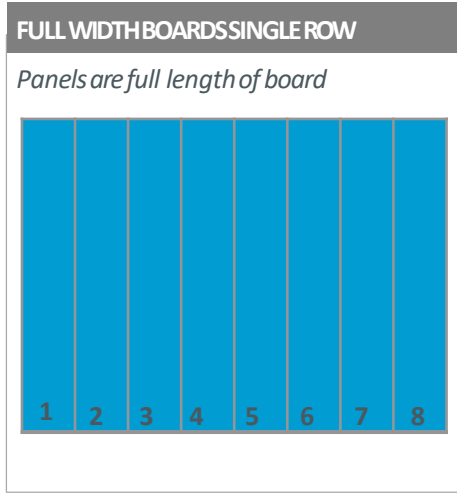
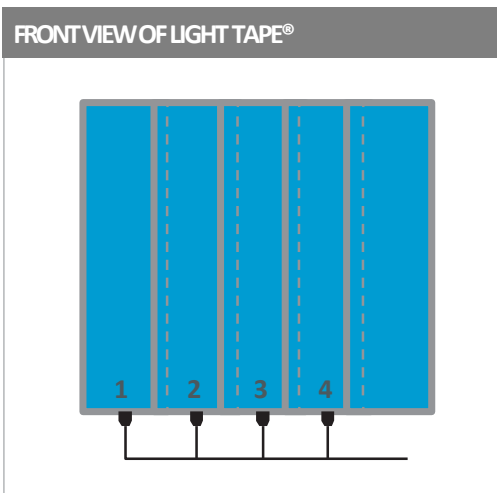
BACKVIEW OF LIGHT TAPE® PANELS

Reverse of panels before mounting



Installation Continued

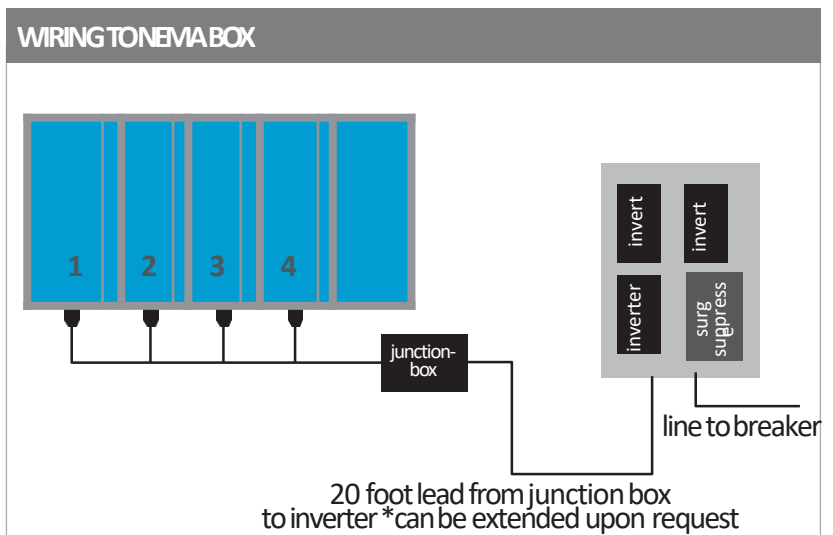
e. Allow a 1/2 inch overlap on top of the previous Light Tape® panel installed. Velcro is adhered to panels to allow for overlap and are wired in parallel.



Depending on your creative artwork and focal points for lighting. Selective backlighting allows you to target the backlit area, and panels can be arranged to only light certain areas.

6. Install the wire harness

- aa. Pair up numbers on quick disconnects to the wire harness junction boxes. Each wire will be pre-marked accordingly to help with connections.
- b.b. Install wiring strain relief on base vinyl to secure wire harness in place. This is to prevent the wiring or panel from being pulled when tensioning.



Installation Continued

8. ALL quick disconnects, junction boxes and Light Tape® panels should be above 6 inches of the registration marks on base vinyl. This ensures all quick disconnects are BETWEEN the backvinyl and backlit vinyl.
9. Do NOT attempt to power Smart Driver™ inverter without attached Light Tape® load
10. Power Smart Driver™ Inverters and tune to recommended voltage of 270 volts
11. Run for a minimum of a half hour to confirm all connections have been made properly. If red light comes on the Smart Drivers™, a fault has been detected. Please check wiring or power output to ensure in range.
12. Install top layer translucent vinyl.
13. Set photocell or Dawn to Dusk timer so Light Tape is running during desired night time hours.
14. Save packing crates/tubes for reuse when dismantling. Run for a minimum of a half hour to confirm all connections have been made properly. If red light comes on the Smart Drivers™, save packing crates/tubes for reuse when dismantling.

HOW TO POWER LIGHTTAPE® SYSTEM

- Confirm brightness knob on Smart Driver™ is completely closed before initial powering (turn knob counterclockwise until all the way down) and
- Inside the NEMA box will be wire nuts. Use them to connect the wire extensions from the Light Tape panel splitter to the Smart Driver™ inverter(s)
- Once load is attached, turn on power to the Smart Driver™ and a steady green light should display indicating it has power.
- Using the voltage meter, slowly turn brightness adjustment knob clockwise and set at 270 volts for initial tuning.
- Take voltage reading between Light Tape® panel splitter and Smart Driver™ to check output.

Dismantling and Packaging

DISMANTLING LIGHT TAPE®

1. Power down NEMA's
2. Remove translucent top vinyl
3. When cutting wire between Light Tape panels and junction boxes, make the cut on the junction side (leave connector on panel side)
4. Gently work loose the Velcro and carefully remove Light Tape® from back vinyl and lay flat in original packaging
5. Disconnect wire extensions between junction boxes and NEMA
6. Put wire harness in NEMAs
7. Remove back vinyl

REPACKING LIGHT TAPE®

Packing supplies used: 24 x 24 x 18" double walled box, 3" cores, bubble wrap, 48" x 40" pallet, banding material (green), do not double stack cones, shrink wrap. (Uline, Direct Solutions)

1. Build a 24 x 24 x 18" double walled box and place 4 24 x 24 sheet of bubble in the bottom of the box. Make sure you cut the corners of the bubble before placing in the box so the 3" cores can fit.
2. Next cut 4, 3" cores to 18" long. This will help keep the box from being crushed in shipping. This is an extra safety feature.
3. After you have placed the 3" cores in the box start to coil the billboard panels from the outside in. We typically place 25-30 panels in 1 box.
4. Once all the panels are coiled in the box, you can place the bags of junction boxes and sticky backs in the center of the box. There will be room.
5. Fill the hole with bubble and then repeat what you did on the bottom of the box with the bubble.
6. Seal the box up and make sure to label the number of panels on the outside of the box. (for example, if a board has 50 panels one box might say 1-30 panels and the next 31-50)
7. We put 2 boxes on one pallet and band it with the green banding material. This helps the boxes from moving or falling off the pallet in transport. Remember to put the do not double stack cone on each of the billboard pallets. (see pictures in manual)
8. NEMA cans, which house the power supplies are a little easier to pack. We use the same standard pallet and we place 4 NEMA cans on the pallet.
9. Band the cans to the pallet and then shrink wrap them. These can be double stacked if necessary. (see picture in manual)
10. We also ship the back vinyl that the light tape is attached to on site. This will either come in a huge cardboard tube or folded on a pallet. It is harder to roll the vinyl and place back in the tube so if at all possible place on a pallet and shrink wrap so it does not get dirty. Place a big piece of cardboard on the pallet before putting the back vinyl down.

XYZ posting support guidelines

- ✓ Board should be prepared before the post date with a flat surface, free of metal fasteners or uneven warped wooden surfaces. The base vinyl will support the Light Tape load, the under surface needs to be flat and not obtrusive.
- ✓ One twenty (20) amp breaker per Smart Driver™ power supply NEMA enclosure. Each SD NEMA is set at the factory to illuminate all or part of the attached load. On-site calibration to tune the board may be needed once installed to local power grid.
- ✓ Do not overload circuit breaker, we recommend no more than 50% of rating. One Smart Diver™ NEMA is around 10 amps.
- ✓ Turn off up-lights to board to allow creative day/night creative effect to happen.
- ✓ Install a photocell or dawn to dusk timer to prevent Light Tape® from running during the day.
- ✓ Make electrical connections at the bottom of the board and ensure proper drainage.
- ✓ Leave slack with Light Tape panel wiring to allow for some strain relief when main vinyl is installed over top. It is important to not pull and damage the Light Tape connection tabs.
- ✓ Handle Light Tape® with reasonable care. Avoid hard creases when handling. If there is damage, better to correct now. If repositioning the Light Tape® is required, be careful when pulling from back vinyl not to kink, crease etc. Gently pull at Velcro and work loose. Do not pull-on lamp or connector.

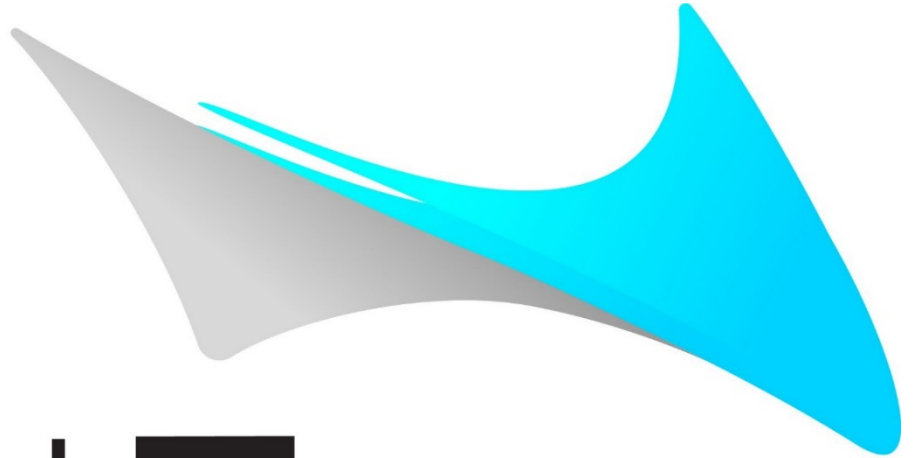
Special instructions: This posting will require 3 - 20 amp breakers

Posting company team debrief on July 23, 2023:

Posting company team leader name and signature.

Handling Guidelines

- Never operate Light Tape® Billboard Panel when in a coil. Unroll first before powering.
- When Light Tape® panels are rolled up, you must maintain a minimum of 12 inch I.D. Avoid rolling into a tight coil as can damage lamp.
- Always consult local electrical codes for wiring or other specifications and regulations
- **DO NOT** step on Light Tape® during installation. Avoid hard creases.
- **DO NOT** stretch, puncture or crease the Light Tape®, as it will destroy the conductive layers.
- If repositioning the Light Tape® is required, be careful when pulling from back vinyl not to kink, crease etc. Gently pull at Velcro and work loose. Do not pull on lamp or connector.
- **DO NOT** install Light Tape® system in wet conditions or expose open ends to moisture. Ensure electrical connection are not underwater.
- **DONOT** cut Light Tape® panels.
- **DO NOT** fold, twist, rotate or kink lamination.
- For best results, **DO NOT** operate Light Tape® outdoors during peak daylight hours and use a photo-cell or Dawn to Dusk timer.
- **DO NOT** operate the Smart Drivers™ outdoors unless in a NEMA enclosure
- **DO NOT** power Smart Drivers™ until all wiring connections have been made.



Light Tape

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protected by US patent number 10,215,370

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