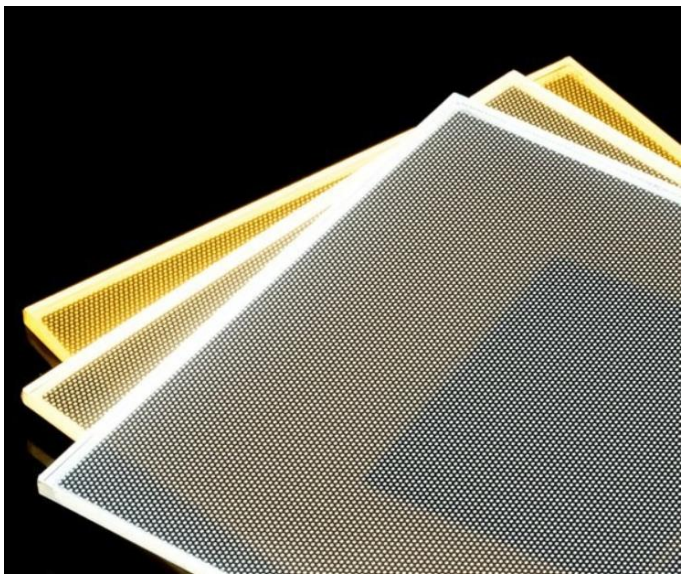
Ultra-Thin LED Light Panels

Part number: UTLP-XXX-XXX-X-XXV-XA



Ultra Thin LED Light Panels from Environmental Lights create a bright and uniform light surface. The Ultra Thin LED Light Panels are energy efficient, light weight, easy to configure, customizable, and UL listed (E345867).

Features

- Ultra Slim Profile: 0.236" to 0.630" thick
- Even distribution of light exceeds industry standard
- Custom colors, shapes and sizes available
- RoHS compliant, CE Certified and UL listed
- Double-sided panels available
- Wide variety of light color options: 3000K, 4100K 5500K 6500K, tunable white, multicolor RGB & RGBW

Applications

- Retail Displays
- Backlighting Graphics
- Signage
- Menu Boards
- Interior décor
- Fixtures

Panel Design

LED strip light is placed into an aluminum profile and fixed to the edge(s) of an acrylic panel. The LEDs shine light into the laser dot acrylic panel, creating even light distribution across the surface to uniformly backlight a graphic, sign or diffuser.

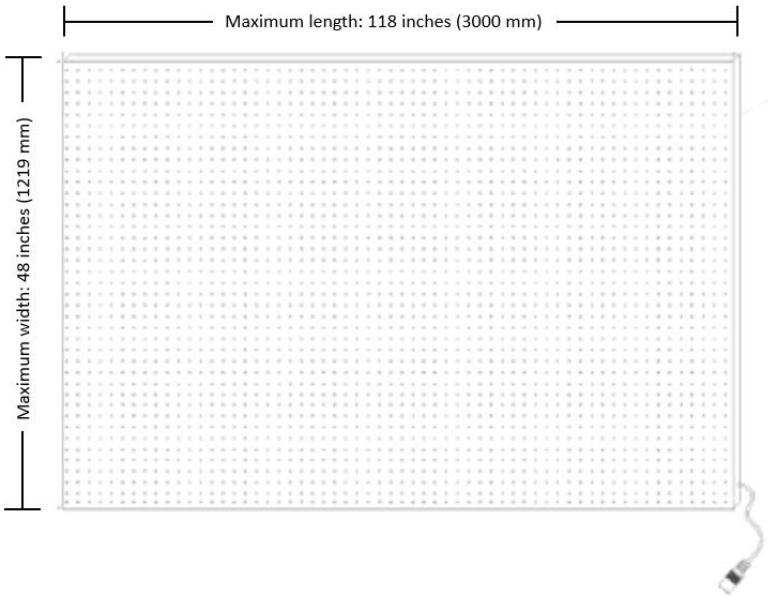


Figure 1: Front view of standard panel with maximum size constraints for a monochrome panel.

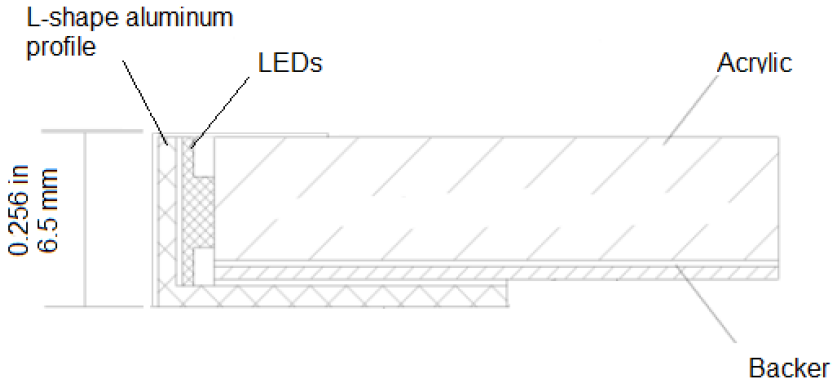


Figure 2: Cross Sectional view of standard panel.

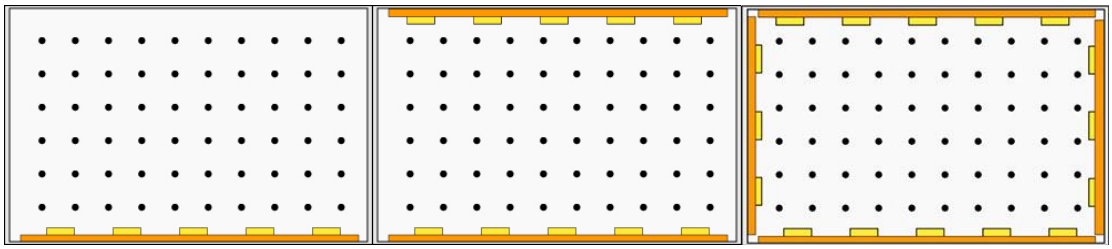


Figure 3: LED strips are mounted to the edges of the panel and shine inwards. Depending on panel size, the amount of edges with LED strip light can vary.

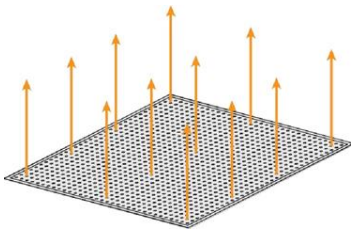


Figure 4: Standard panels are single-sided with light shining out of one surface.

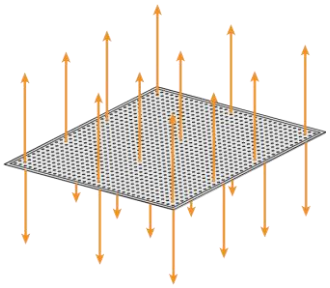


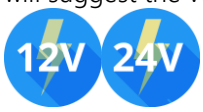
Figure 5: Double-sided panels are considered custom and are available upon request.

Customization Options

Input Voltage	12 or 24 VDC
Connector	2.1mm Female Barrel Plug, Standard Length 36 Custom connector and length available upon request
Custom Colors	White: 3000K, 4100K, 5300K, 6500K Multicolor: Tunable White, RGB, RGBW
International Protection Rating	Standard IPX1 Upon Request: IP65 (refer to International Protection Rating section for more information)
Length	1.57 to 118 inches* (0.4 centimeters to 299.7 centimeters)*
Width	1.57 to 48 inches* (0.4 centimeters to 121.9 centimeters)*
Thickness	0.236 to 0.630 inches (0.6 centimeters to 13 centimeters)*
Custom Shape	Geometrically defined shapes and cutouts
Wire Exit Location/Direction	Refer to Figure 6
Mounting Options	Z-clips (Refer to Figure 7) Mounting holes

*The sizes listed above are dependent on panel configuration. Please discuss with a sales engineer to confirm panel feasibility.

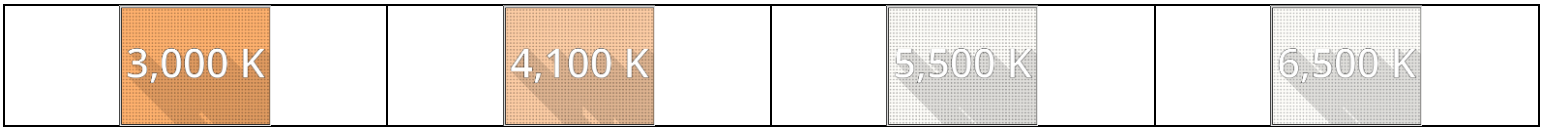
Input Voltage
Panels can be made to 12V or 24V. If the system does not have strict requirements, please allow the Environmental Lights engineering team to suggest the optimal voltage. 12V and 24V each have their advantages and disadvantages. The experienced engineering team will suggest the voltage that best meets your application.



Connector
Standard single color panels include a 36 inches black wire lead with a female barrel plug. Multicolor panels require a controller and therefore have bare wires instead of a female barrel plug. We can customize the wire length and gauge. For custom connectors, please provide a specification sheet and clarify the polarity of your connector.

Custom Colors
Please refer to the charts below for common color options. More custom colors are available upon request. Uncommon custom colors may require longer lead time, minimum order quantity, and higher prices.

White Panels

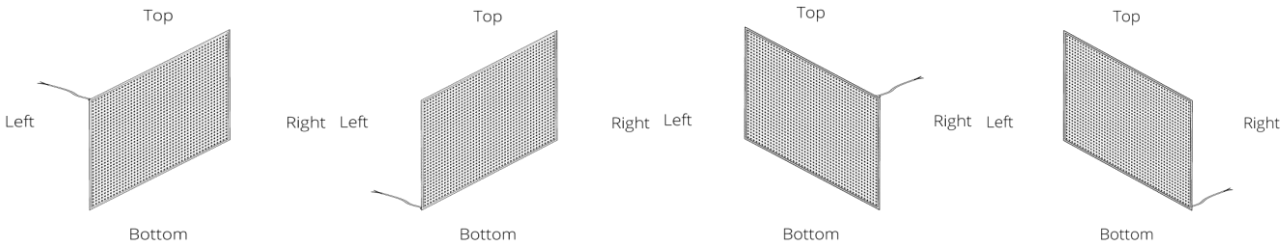
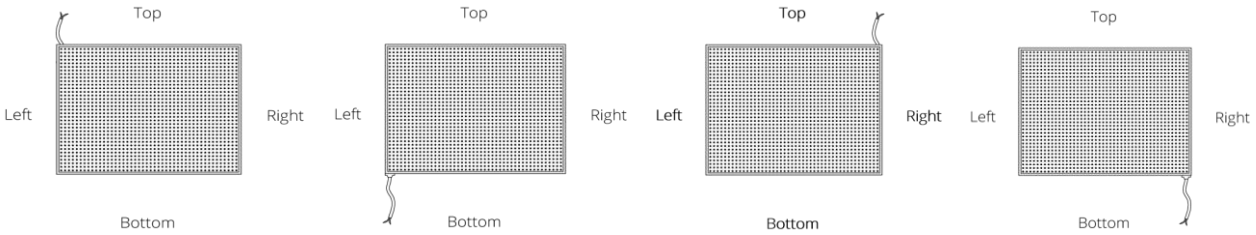
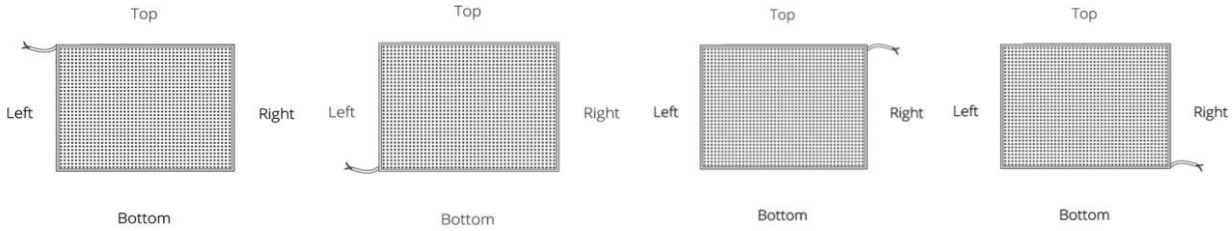


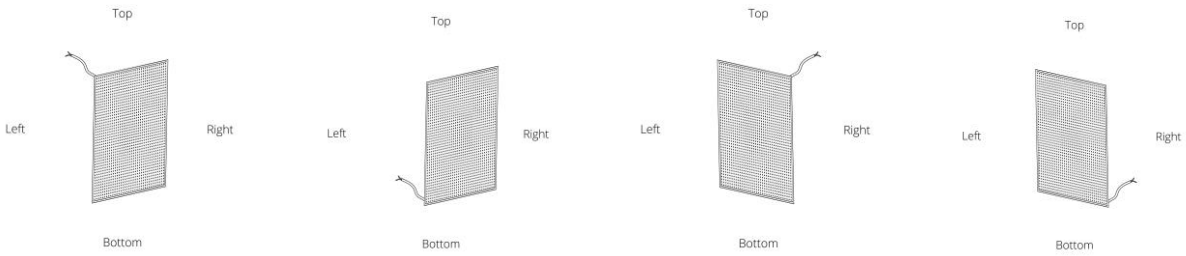
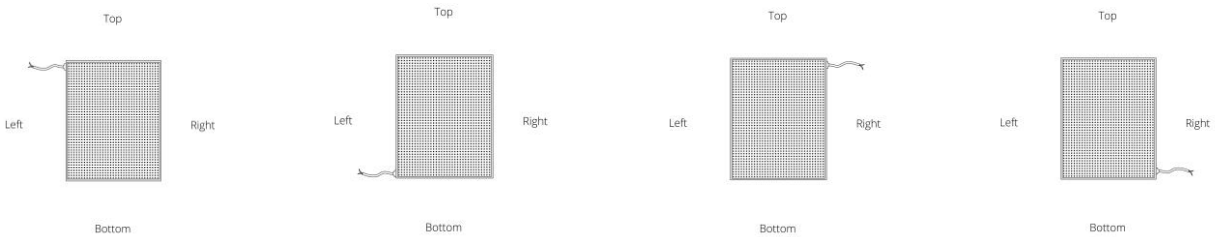
Multicolor Panels

International Protection Rating
Standard panels are not designed for water exposure. The IP Rating for standard panels is X1. Upon request, panels can be waterproofed up to IP65. Application is needed to customize the panel for the environment. Due to the waterproofing methods, the panels can be damaged by prolonged sun exposure resulting in warping and yellowing. IP65 waterproofing is available for monochrome panels up to 39.37 inches by 39.37 inches (mm???).

Custom Shapes
Panels can be made to geometrically defined shapes. Panels may also have cutouts or holes. In order to cut these unique shapes, fully dimensioned drawings are required. Geometrically defined shapes are reserved to straight edges, circles and corners/edges with a specified radius.

Wire Exit Locations/Directions
Before determining wire exit location, establish the orientation. Orientation can be landscape or portrait. There are many custom locations to place the wire exit. Additionally, there are a multiple wire exit direction options. We recommend one of the following combinations. More options are available upon request but may require non-standard design changes. When looking at the front, lit surface of the panel, the left/right/top/bottom are established as the viewer's left/right/top/bottom.

Landscape	
Back	
Long side edge	
Short side edge	

Portrait	
Back	
Long side edge	

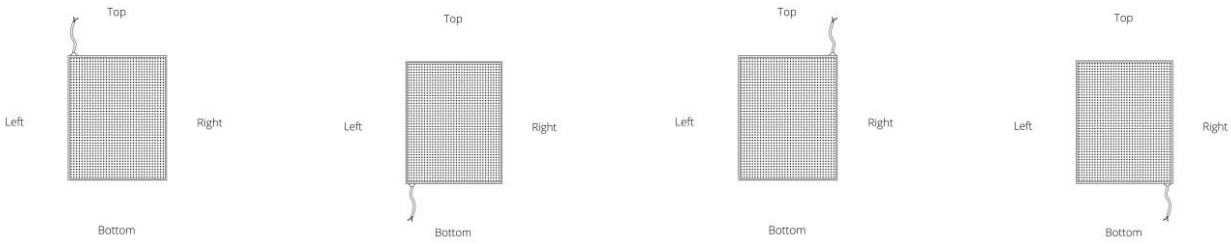
Short side edge	

Figure 6: Standard wire exit configurations.

Installation

Standard panels are designed to be placed inside of a panel fixture or frame. Standard panels do not include mounting accessories or holes but can be provided upon request depending on the panel size and type.

To power single color panels, connect the output of a DC driver to the panel.
Warning: Driver output voltage must match the panel input voltage. Any discrepancy may permanently damage the LEDs and potentially cause a fire.

To power multi-color panels, connect the bare wires of the panel to the appropriate channels in the output of a controller.
Warning: Follow the wiring diagrams in the respective controller manual to avoid circuit issues.

Mounting Options
Z-clips may be used to mount panels and are available upon request. Z-clips are placed on the edges of the panel. Screws fix the clip to the wall. The size and amount of z-clips depends on panel weight. If requested, Z-clips and screws would come unassembled with the panel. When mounting, make sure to space the clips evenly around the panel to best distribute weight.

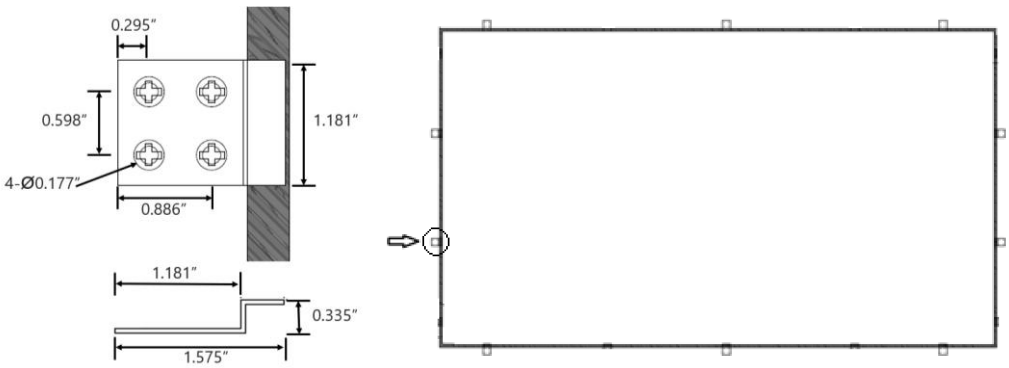


Figure 7: Dimensions for standard z-clips.

Instructions for Removing Panels from Box/Crate
After the box/crate is open, please be careful when removing the panels from the packaging. Panels are not designed to flex or bend. It is critical for one to follow the instructions below in order to reduce chance of failure.

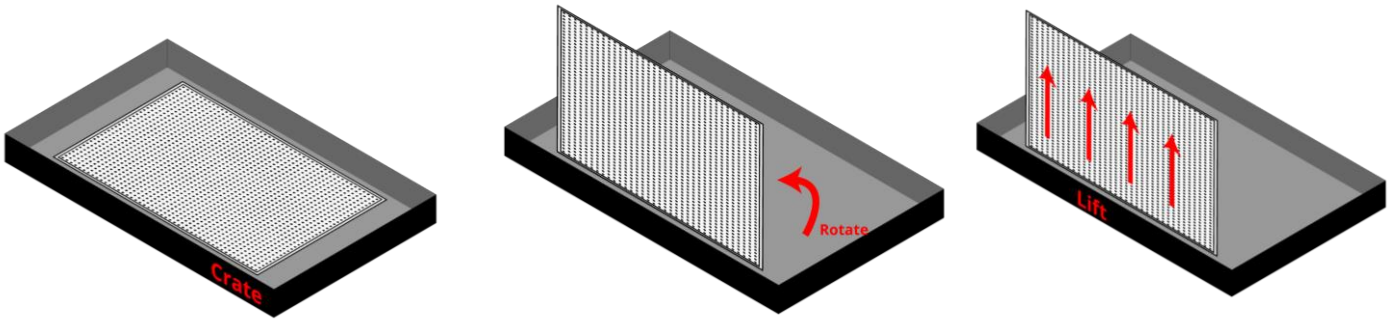


Figure 8: Proper light panel removal from box/crate.

Handling Instructions for Small Panels
Small panels (under 36 inches in length) should be handled from specific locations to reduce bending. Panels should be carried in the vertical orientation. Panels are flexible but should not be flexed because the LEDs can be damaged. This can lead to panel failure and unwanted dark areas. Therefore, follow the panel handling instructions specified below. The large faces of the panel should not be parallel with the floor. Please see the following diagrams for more information.

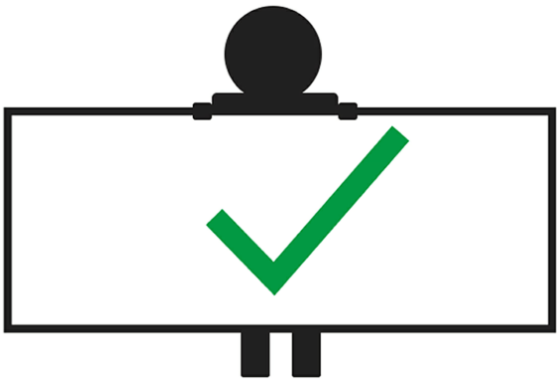


Figure 9: Proper handling for panels under 36 inches in length.

Handling Instructions for Medium Panels
Medium panels (between 36 and 48 inches in length) should be handled by two or more people in the vertical orientation. Panels are flexible but should not be flexed because the LEDs can be damaged. This can lead to panel failure and unwanted dark areas. Therefore, follow the medium panel handling instructions specified below. The large faces of the panel should not be parallel with the floor. Please see the following diagrams for more information.

1. We recommend two people to carry each medium panel, one person on each end.
2. The panel should be carried with the lit surface(s) perpendicular to the floor.
3. Please keep the panel as straight as possible. Any bending can damage the LEDs leading to panel failure.

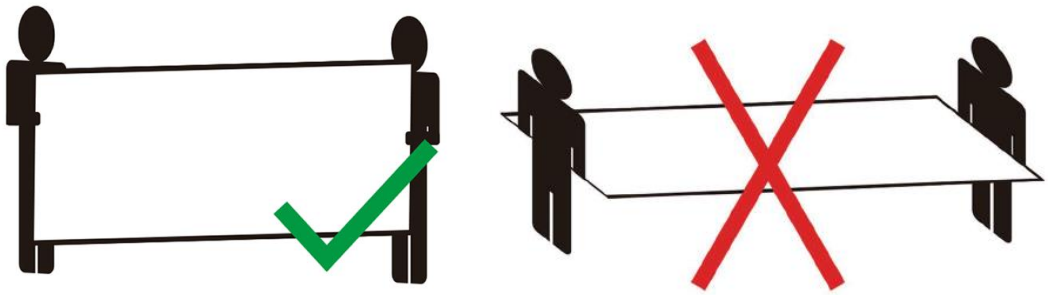


Figure 10: Proper and Improper handling for panels between 36 and 48 inches in length.

Handling Instructions for Large Panels
Large panels (over 48 inches in length) should be handled by two or more people in the vertical orientation. Panels are flexible but should not be flexed because the LEDs can be damaged. This can lead to panel failure and unwanted dark areas. Therefore, follow the large panel handling instructions specified below. The large faces of the panel should not be parallel with the floor. Please see the following diagrams for more information.

1. We recommend three people to carry each large panel. One person on each end and one person in the middle to help reduce bending.
2. The panel should be carried with the lit surface(s) perpendicular to the floor.
3. Please keep the panel as straight as possible. Any bending can damage the LEDs leading to panel failure.

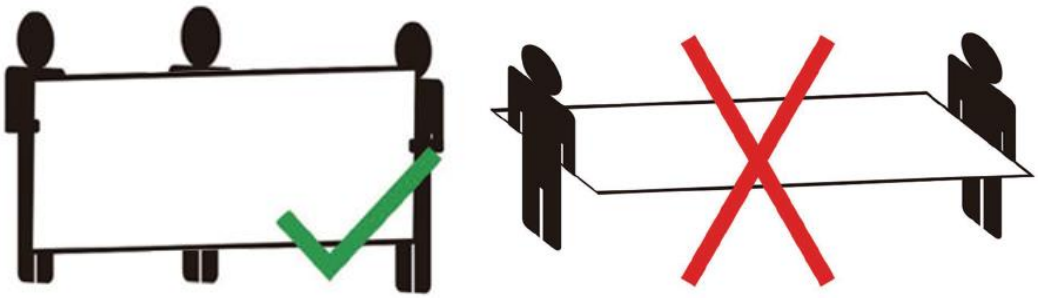


Figure 11: Proper and Improper handling for large panels over 48 inches in length.

Please call us at 1-(888)-880-1880 for quotes/orders/questions