LightPlane Panels are engineered, edge-lit LED panels that allow you to seamlessly illuminate a wall, column, elevator interior, or standalone panel. This innovative product combines our cutting-edge lighting technology, our VividGlass laminated glass, and a highly engineered framing system to create an illuminated panel unlike any other.

With a remarkably thin profile and a minimal bezel, LightPlane Panels offer uniform light output, energy efficiency, and the unparalleled performance of Cree[®] LEDs, delivering up to 50,000 hours (roughly 5-6 years) of illumination. Each panel is manufactured with a size-specific algorithm to ensure the look of even, natural light, and eliminate hot spots, haloes or dark areas. LightPlane Panels represent a complete system that is designed to be easily configured to meet your project needs.

PRODUCT FEATURES

- Suitable for dry, climate-controlled, interior applications.
- Designed as a decorative lighting solution and are not intended for functional lighting.
- Panel shapes and sizes can vary according to specification and field requirements.
- Can be made compatible with energy conserving building systems. Please contact us for additional information.
- · Can be specified for walls, elevator interiors and columns, and for illuminated displays, architectural accents or custom fabrications.

STANDARD COMPONENTS

LightPlane Panel, Mounting Components, Power Box and Electrical Lead

EXAMPLE: LIGHTPLANE PANEL

| A. Glass Inset | C. Aluminum Backer | E. Panel Frame |
|---------------------|--------------------|--------------------|
| B. Acrylic Diffuser | D. LED Strip | F. Electrical Lead |



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SYSTEM COMPONENTS



LIGHTPLANE PANEL & INSET MATERIAL OPTIONS

Decorative glass insets serve as the primary visual element in LightPlane Panels. Insets draw from various VividGlass families and offers an impressive array of options. Please refer to the related VividGlass Product Data Sheet for complete product and material information.

| VIVIDGLASS | CONFIGURATION | GLASS FINISH | | | |
|-----------------------|---------------|--------------|-----------|---------|-----------|
| | LIGHTPLANE™ | STANDARD | PEARLEX+™ | OPALEX™ | DIAMALEX™ |
| VIVICHROME* | • | • | • | ٠ | • |
| VIVIGRAPHIX GLEAM | • | • | • | | |
| VIVIGRAPHIX GRADIANCE | | • | • | ٠ | |
| VIVIGRAPHIX GRAPHICA | • | • | • | | |
| VIVIMUSE PAINTERLY | | • | • | ٠ | |
| VIVITELA SHIBORI | • | • | • | | |
| VIVISPECTRA SPECTRUM | • | • | • | | |
| VIVISPECTRA VEKTR | • | • | • | | |
| VIVISPECTRA ZOOM | • | • | • | | |
| VIVISTONE | • | • | • | | |
| VIVISTRATA | • | • | | | |
| VIVITELA LOOM | | • | • | | |
| VIVITELA MESH | | • | • | | |
| SCRIBE GLASS | | • | • | | |

*ViviChrome interlayers with Taupe or metallic colors are not compatible with LightPlane Panels.

COMPATIBILITY & WEIGHT

| PANEL WEIGHTS & SIZES | MOUNTING COMPONENTS | | | |
|---|--|--|--|--|
| Panel Weight: approximately 8lbs/sq.ft | Mounting components vary per application: Standalone, LEVELe Wall Panel & Column | | | |
| Min Panel Size: cannot be smaller than 6" in any direction | System, and LEVELe Elevator Interiors. See pages 3-5 for details. | | | |
| Max Panel Size: cannot exceed 5' wide x 10' high | | | | |
| Panel Depth: varies per application, see page 3-5 for panel details | | | | |

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MOUNTING & APPLICATION DETAILS

STANDALONE PANELS

LightPlane Panels can be specified as accents for existing walls or as unique design elements. Standalone LightPlane Panels are designed with a horizontal extrusion channel that interlocks with the provided mounting cleats for easy installation on existing walls.

F+S recommends a 1/4" gap between standalone panels. Gaps are required for heat dissipation and should NOT be caulked closed. 0.5" lift off clearance is required for installation of standalone LightPlane Panels.



If LightPlane panels are installed in third-party frames, a minimum clearance of .125" is required on each side of the panel for assembly tolerance and thermal expansion of materials.

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MOUNTING & APPLICATION DETAILS

LEVELe WALL PANEL & COLUMN SYSTEM

LightPlane Panels seamlessly integrate into our LEVELe Wall Panel & Column Systems. LightPlane Panels have the same visible profile as LEVELe Capture panels. Panels used within our LEVELe Systems incorporate a self-revealing mounting system.

0.5" lift off clearance is required for LightPlane Panels installed in LEVELe Wall Panel & Column Systems.



LEVELe Wall Panel System with LightPlane Panels in ViviChrome glass with White color interlayer and Opalex finish





If LightPlane panels are installed in third-party frames, a minimum clearance of .125" is required on each side of the panel for assembly tolerance and thermal expansion of materials.

MOUNTING & APPLICATION DETAILS

LEVELe ELEVATOR INTERIORS

LightPlane Panels are available as a standard option in our LEVELe Elevator Interiors. LightPlane Panels have the same visible profile as LEVELe Capture panels. Panels are installed in LEVELe Elevator Interiors using the same methodology as standard (non-LightPlane) panels.

LightPlane Panels used in LEVELe Elevator Interiors will use an independent power box from the elevator ceiling.



If LightPlane panels are installed in third-party frames, a minimum clearance of .125" is required on each side of the panel for assembly tolerance and thermal expansion of materials.

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LED STRIP LIGHTING LightPlane Panels are designed as a decorative lighting solution and are not intended for LED Specs: functional lighting Lamp type: Cree® LED* Panel lighting is designed to be bright, even and dimmable to elegantly illuminate the • Wattage: 0.25 watts selected glass inset in the most aesthetically pleasing way. Final light/brightness settings Color temperature: 5,000K (3,500K LEDs available upon request) • may vary depending on preference, glass inset selected, surrounding illumination and Rated life: 50,000 hours (at recommended illumination) proximity to natural lighting. • Running temperature: 72° F Forms+Surfaces does not quantify the output for our LightPlane Panels in terms of watts per square foot. To calculate the power consumption of a LightPlane panel, take the length of the longest panel side and divide that by 1.024". Multiple that number by 0.96W to determine the final power consumption in Watts. **POWER BOX & DRIVERS** The LightPlane Panel power box includes one or more high efficiency drivers with dimming controls, on/off switch and 25-50' electrical leads with quick disconnects. The Lightplane Panel Power Box will be equipped with the necessary quantity and size AC Power In (80/120/240W) Meanwell driver modules depending on the size of the associating panel. Power Switch One power box can often supply power and dimming capabilities to more than one LightPlane Panel, depending on the panel size(s). Cooling Fan All power boxes are prepped with four Ø.21 holes for mounting provision on rear of unit as well as knockouts on the side of unit for wire connectors/conduit. Clearance of at least 3" is recommended on all sides of power box (except rear) for proper airflow, access to electrical hook-ups, and wire entry/exit. Drivers (2) 2-Module Power Box: 0 Model No: LP PSU DIGI-2 LightPlane Panel • Input: 100-277 VAC, 50/60Hz, 3.5A Max Harness Out • Output: 15VDC • Dimensions: 18" L x 8" W x 3" H 5-Module Power Box: AC Power In Model No: LP PSU DIGI-5 Input: 100-277 VAC, 50/60Hz, 8.0A Max Power Switch Output: 15VDC Cooling Fan • Dimensions: 18" L x 18" W x 3" H Drivers (5) 0 LightPlane Panel Harness Out

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LIGHTING COMPONENTS

POWER CONTROLS

LightPlane Panels can be dimmed at the power box using the integral digital controller that incorporates PWM (pulse-width modulation) dimming. Connection will vary for third-party dimming systems. Please contact us to discuss your specific system requirements.

A certified electrician will be required to provide a 110 VAC-277 VAC power lead to the power box for final hookup. For AC power switching options, please refer to LightPlane Panel Power Box Setup Instructions located on our website.

WARNING: DO NOT SWITCH THE POWER CIRCUIT FEEDING THE POWER BOX.

PROGRAMMING & CALIBRATION

LightPlane Panels are always pre-calibrated prior to leaving our facility to ensure any adjacent panels match. Refer to the LightPlane Power Box Programming Instructions located on our website for further information.

ELECTRICAL INSTALLATION

A certified electrician will be required to provide a 110 VAC-277 VAC power lead to each power box for final hookup.

LightPlane Panel Power Box unit should not be powered up until all installation work is complete, all required connections have been made, and all access doors to the unit are closed and secure.

LightPlane installers must supply an accessible mounting surface or vented enclosure for the supplied power box within 25-50 running feet of the final LightPlane Panel location. Clearance of at least 3" is recommended on all sides of power box (except rear) for proper airflow, access to electrical hook-ups, and wire entry/exit.

Run properly sized conduit and cabling to each power box according to local code requirements. AC power circuit(s) feeding the Power Box are to be identified on the Warning Sticker located on the top access panel. The location of the disconnect switch after installation shall comply with Article 600 of the National Electrical Code.

If customer desires to switch the panels on and off, customer must supply a switch with a dry contact and add a separate wire to run to the switch connection provided in the box. WARNING: DO NOT SWITCH THE POWER CIRCUIT FEEDING THE POWER BOX.

SAFETY CERTIFICATION*

LightPlane Panels have been ETL tested and certification has been met for the following:

• UL 48 - UL Standard for Safety for (Interior) Electric Signs

• UL 8750 - UL Standard for Safety for Light Emitting Diodes (LED)

• CSA C22.2 - Canadian Standard for (Interior) Portable and Stationary Electric Signs and Displays

*For safety information concerning the glass lite inset, see relating Product Data Sheet.

DELIVERY & HANDLING

DELIVERY

- LightPlane Panels are packed in vacuum sealed packaging which should remain intact until the panel is ready to be installed.
- · Allow LightPlane Panels to acclimate in a climate controlled indoor environment at least 3 hours prior to opening vacuum sealed packaging.
- Panels are shipped in A-frame crates and are grouped by similar sizes. The crate arrives with components neatly organized and includes the back system components and installation instructions. The LightPlane power box will arrive packaged with the panels.
- Prepare boxing, trailer and floor loading schedules in consideration of weight limitations and handling and distribution needs.

RECEIVING

- Before unloading, inspect handling equipment, rigging and surrounding conditions for safety compliance and inspect the general condition of the shipment for load shifting or possible damage in transit.
- Inspect the shipment for any shortage, abuse, wetness or other transit damage; note such on the bill of lading or delivery ticket and obtain the driver's signature as
 acknowledgment.

STORAGE

- Plan the order to avoid off-site storage and to minimize rehandling and time in storage at the job site before installation.
- Store indoors at moderate temperature (above the dew point).
- · Support both sides of vertically stored cases.
- · Wet glass must be towel dried prior to storage as prolonged moisture exposure can cause permanent surface staining

HANDLING

- During handling, wear hard-hats, safety shoes, gloves, and glazing gauntlets and follow all established safety procedure.
- Exercise care to prevent damage to the glass; edge damage may lead to thermally associated glass breakage after installation.
- Check finished surfaces and glass edges for damage before installation; set only acceptable material.

INSTALLATION & MAINTENANCE

| INSTALLATION | MAINTENANCE |
|--|--|
| Install LightPlane Panels after completion of potentially damaging construction activities nearby—such as | The glass surface of LightPlane Panels can be maintained using standard commercial, non-streaking cleaners and polishes formulated for use on glass. |
| welding, sandblasting and fireproofing. | • When cleaning the panels, avoid excessive amounts of liquid solution on the glass, as this can damage the lamps |
| If the construction schedule does not allow for this, protect | and electrical wiring in the panels. |
| the glazing from damage by other processes. | • Aluminum frames can be cleaned as needed using a soft brush or cloth with a minimal amount of warm water and |
| Power Box unit should not be powered up until all installation work is complete, all required connections | a mild detergent. Do not use harsh abrasives, acids or chlorine-based cleaners or cleaning tools containing carbon steel, such as steel wool or wire brushes. |
| have been made, and all access doors to the unit are closed and secure. | • Do not let liquid sit on or near the panels for an extended period of time. Avoid puddling near the base of the panels. |

TECHNICAL SUPPORT & PROJECT MANAGEMENT

Because each project is unique, our knowledgeable support team is ready to help. Our technical sales, engineering, sustainability, and project management professionals regularly assist our clients worldwide. Please contact us at 800.451.0410 or sales@forms-surfaces.com to discuss your project.

HOW TO SPECIFY

A Design Guide is available to lead you through the specification process in a simple checkbox format. Design Guides are also available for each of our VividGlass products to lead you through the glass selection process. Please use the two Design Guides together to capture all the information needed to generate a quote: applications, dimensions, VividGlass selections, and other options.