

# Skyliner



Architectural Curvilinear Luminaires for Solid-State Illumination



Patents Pending

U.S. ARCHITECTURAL  
LIGHTING

# Skyliner

Skyliner represents the fullest complement of form and technology in LED illumination. Robust cast aluminum housings stand up to all outdoor conditions while creating a form that is bold and reflective of its technological core.

Four housing styles allow for the selection of the most aesthetically relevant luminaire to provide balance and harmony with the architectural context.

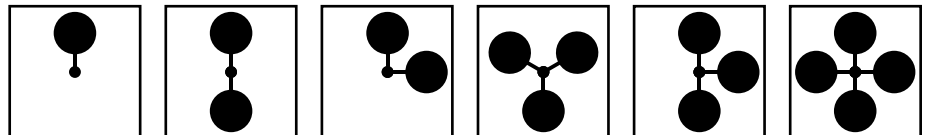
Optically Skyliner allows for the ideal selection of LED count, color temperature, and drive current to provide pleasing illumination levels and complementary illumination of the visual terrain. Controlled optics eliminate uplight (light pollution) and minimize spill light (light trespass) with a wide variety of distribution patterns that include house side shielding.

All told it would be difficult to find any luminaire family better suited to fulfill the task of LED illumination other than Skyliner by U.S. Architectural Lighting.

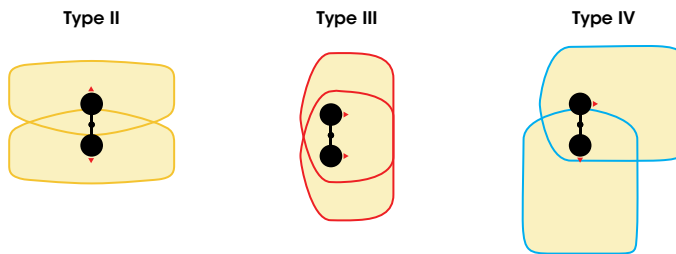


## Site Adaptive Pole Mounting Configurations

The ability to rotate asymmetric optical patterns by 90° increments combines with a wide variety of luminaire mounting configurations to allow complete illumination coverage of any site.



Examples of the flexibility of distribution coverage from twin mount luminaires @ 180°:



The U.S. Architectural **PLED**® (Panel LED) System utilizes a micro reflector behind each LED in asymmetric distributions to enhance forward throw and reduce backlight. Each LED is optically controlled by a lens that has its distribution type and direction of light throw molded into it.

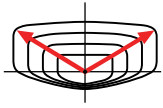


Ultra high performance optics developed by U.S. Architectural

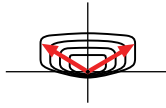
Micro-reflector behind LED enhances forward throw and reduces backlight

Distribution type and direction of light throw

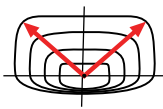
## Available Light Distributions



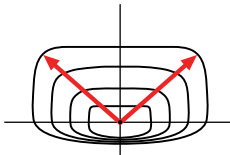
Type II\*



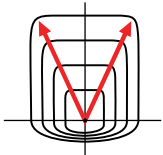
Type II FR\*



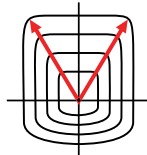
Type III M\*



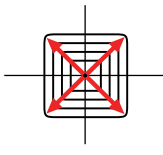
Type III W\*



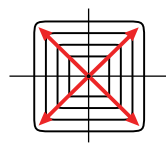
Type IV\*



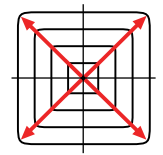
Type IV FT\*



Type V Sq. N

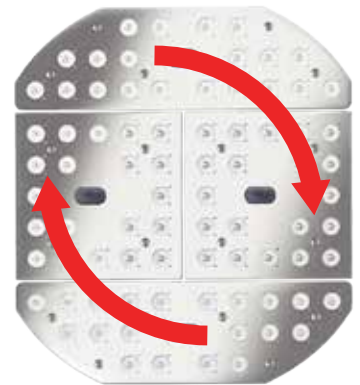
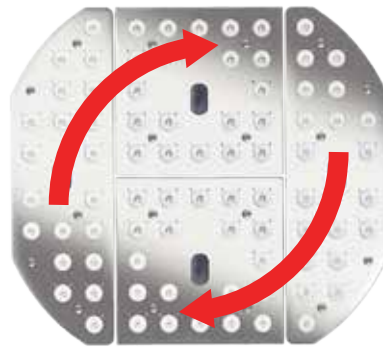


Type V Sq. M



Type V Sq. W

\* Asymmetric optics field rotatable in 90° increments.



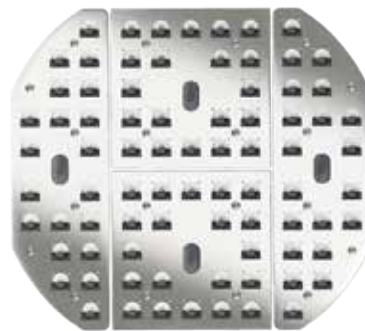
The LED's and lenses are arrayed on circuit boards that are field rotatable as a unit in 90° increments and field replaceable.

## LED Distributions

9 distributions are available to "shape" the output of the LED's to conform to the needs of any roadway or site. Traditional Type II, III, IV, and V - Square patterns are bolstered by variations of those distributions tailored to suit specific needs.

Our Type IV-FT extends the forward throw of illumination to suit the needs of sports facilities (such as tennis courts) by allowing poles to be located outside the field of play.

Standard Type III and Type V-SQ distributions are enhanced with multiple "beamspread" selections (medium and wide Type III's; narrow, medium, and wide Type V-SQ's).

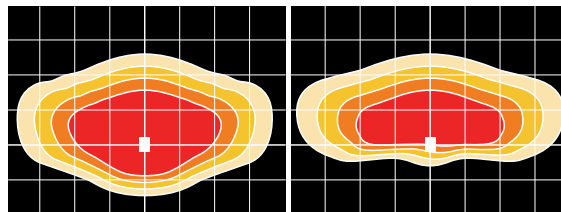


## House Side Shield

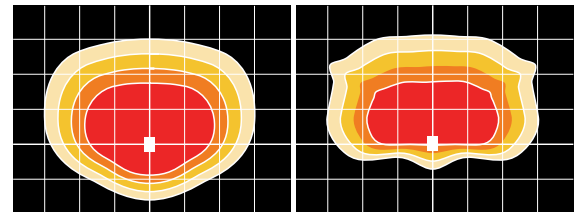
House side shields are applied to each individual LED in asymmetric distributions and result in outstanding house side cutoff to control property line trespass and unwanted brightness in residential areas.

As with standard PLED® panels HS PLED® panels may be field rotated in 90° increments and are field replaceable.

House Side Shielding cuts off backlight to less than .1fc at 1/2 mounting height behind pole



Type II Standard and with House Side Shield



Type IV Standard and with House Side Shield

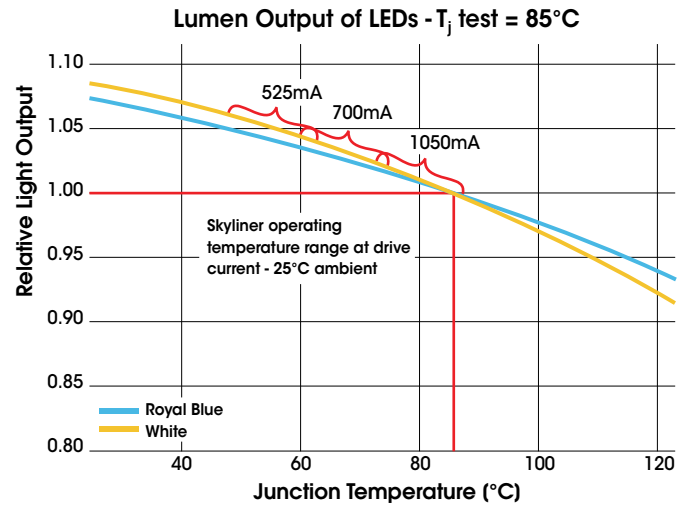


# Thermal Management/ Control Options

## LED's are affected by heat in 3 key ways:

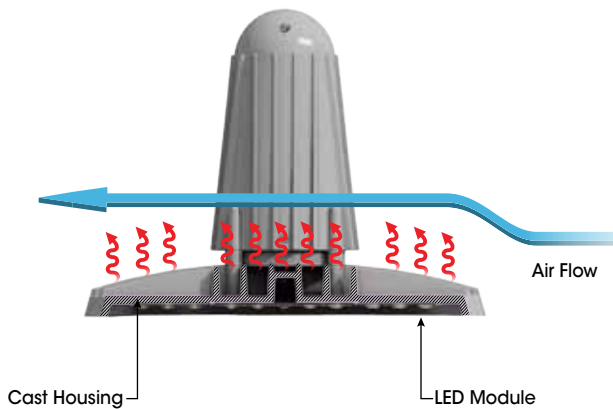
- The higher the operating temperature, the shorter the effective LED lifespan.
- Phosphors that create the color temperature of LED's shift their color the hotter the LED operates.
- The higher the LED operating temperature, the less efficient the lumen output of the LED.

Keeping the internal temperature of the LED (called the junction temperature) as low as possible, maximizes LED performance in all these areas.



**Example of Lumen Output Impact as Junction Temperature rises - 100% Output @ 85°C**

The Skyliner Optical Housing is cast of an A356 aluminum alloy that conducts heat 30% more efficiently than other popular die-cast aluminum alloys. In addition, the mounting surface of the **PLED** Optics is milled to a flatness of .003" over 12" to allow complete contact of the **PLED** and Optical Housing surfaces promoting outstanding thermal control over the LED's.



## Options for Controlling Skyliner

**HLSW** - Selecting the HLSW option provides an externally switched circuit for step dimming the luminaire from 50% to 100%. The control may be an external timer, an on/off signal from the building automation system, a master motion sensor or any other digital on/off signal.

**TPR7** - Selecting the TPR7 option provides a 7-pin ANSI C136.41 dimming receptacle.

**MS-F211** - Selecting this option provides a motion sensor pre-programmed to step dim the fixture from 50% to 100%.

In addition, the Skyliner Electrical Housing has the capacity to be called out with a wide variety of wireless control systems provided by others.









### LED Drivers

Drivers are mounted flush against the electrical compartment housing door for maximum heat dissipation. Quick connect ties the driver to main power for ease of servicing.

### PLED Optical Panels

Optical Housing is milled to a flatness of .003" over 12" to provide maximum surface contact with the PLED Optical Panels thereby greatly reducing the junction temperatures of the LED's.

## Optical Housing

Low copper (A356 alloy; <0.2% Cu) cast aluminum Optical Housing is over 30% more conductive to heat than most other die cast alloys used today.



## Surge Protection

Today's energy efficient products rely heavily on electronic circuitry that requires far less power than was used in the past. The sophistication of these components comes with the challenge of being far more sensitive to power fluctuations than legacy products using transformers or core and winding inductors. Fusing offers a measure of protection to wiring, but fuses react too slowly to properly protect electronic HID ballasts and LED drivers.

Surge protectors react quickly to power spikes, absorbing or completely shunting them away from luminaire components. However, unlike fuses, surge protectors are a perishable item. They are rated according to the number and intensity of spike and surges and when that combination of frequency and intensity are reached, they no longer function to protect components down line and must be replaced. Thus, installing surge protectors in easily accessible locations for future maintenance is the prudent course.

U.S. Architectural Lighting supplies a surge protector with every Skyliner LED luminaire to insure long term performance.





# Specifications

**Optical Housing** - Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling fins. The Optical Panel mounting surface is milled flat (surface variance  $\pm .003$ " over 12") to facilitate thermal transfer of heat to housing and cooling fins. The optical and electrical compartments are integrated to create one assembly. Minimum wall thickness is .188".

**Electrical Housing and Mounting** - Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling ribs surrounding the electrical compartment. Solid barrier wall separates optical and electrical compartments. The optical compartment and electrical compartment combine to create one assembly. Minimum wall thickness is .188". Cast and hinged driver assembly cover is integrated with wiring compartment cover.

**Pendant Mounting** - Trulevel pendant mount allows for luminaire leveling in the field. Incoming power connection through quick-connect in Trulevel assembly.

**Arm Mount** - Arm assembly bolts (2) to side of Electrical/Driver Housing. Incoming power connection utilizes quick-connect.

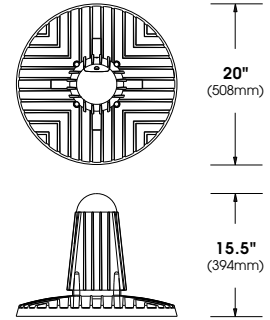
**PLED™ Optics** - Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. In asymmetric distributions, a micro-reflector inside the refractor re-directs the house side emitter output towards the street side and functions as a house side shielding element. Refractors are injection molded H12 acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce standard site/area distributions. Panels are field replaceable and field rotatable as a unit in 90° increments.

**LED Driver(s)** - Constant current electronic with a power factor of >.90 and a minimum operating temperature of -30°C. Driver(s) is/are UL and cUL recognized and mounted directly against the Electrical Housing to facilitate thermal transfer, held down by universal clamps to facilitate easy removal. In-line terminal blocks facilitate wiring between the driver and optical arrays. Drivers accept an input of 120-277V, 50/60Hz or 347V-480V, 50,60Hz.

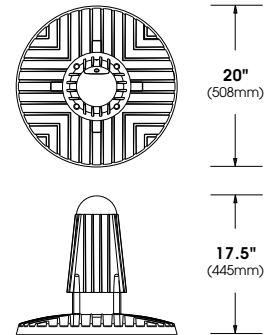
**LED Emitters** - High output LED's are utilized with drive currents ranging from 350mA to 1050mA. 70CRI Minimum. LED's are available in standard Neutral White (4000K), or optional Cool White (5000K) or Warm White (3000K). Consult Factory for other LED options.

**Finish** - Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

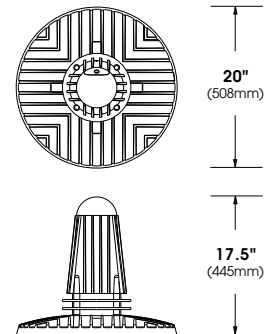
**SKL**  
40/80 **PLED™**  
EPA 0.58



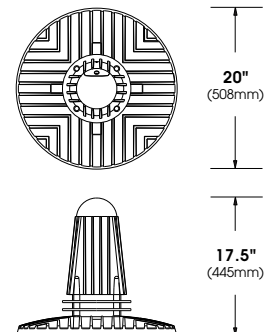
**SKL-L**  
40/80 **PLED™**  
EPA 0.64



**SKL-B**  
40/80 **PLED™**  
EPA 0.65



**SKL-M**  
40/80 **PLED™**  
EPA 0.65



SKL-RA

SKL-RC

SKL-RD

SCALE: 1/2" = 1'-0"



# Ordering Information

Spec/Order Example: SKL-B/RD/PLED-III-M/80LED-535mA/WW/277/1/RAL-9005-T

MODEL	OPTIONAL SHADES	OPTICS	LED MODE	DRIVE CURRENT	MOUNTING	FINISH	OPTIONS
<input type="checkbox"/> SKL STANDARD	<input type="checkbox"/> RA ANGLED SHADE	<b>PLED™ DISTRIBUTION</b>	No. LEDs		ARM MOUNT	STANDARD TEXTURED FINISH	<input type="checkbox"/> HIGH-LOW DIMMING FOR HARDWIRED SWITCHING OR NONINTEGRATED MOTION SENSOR ..... <b>HLSW</b>
<input type="checkbox"/> SKL-L LIT UPPER WINDOW	<input type="checkbox"/> RC CONCAVE SHADE	<input type="checkbox"/> TYPE II <b>PLED-II</b> .....	<input type="checkbox"/> 80LED	<input type="checkbox"/> 1050mA	<input type="checkbox"/> 1 .....	<input type="checkbox"/> BLACK <b>RAL-9005-T</b>	<input type="checkbox"/> INTERNAL HOUSE SIDE SHIELD ... <b>HS-PLED</b>
<input type="checkbox"/> SKL-B w/ RINGS	<input type="checkbox"/> RD DOMED SHADE	<input type="checkbox"/> TYPE II FRONT ROW <b>PLED-II-FR</b> .....	<input type="checkbox"/> 40LED	<input type="checkbox"/> 700mA	<input type="checkbox"/> 2-180 .....	<input type="checkbox"/> WHITE <b>RAL-9003-T</b>	<input type="checkbox"/> PHOTO CELL + VOLTAGE (EXAMPLE: PC120V) ... <b>PC+V</b>
<input type="checkbox"/> SKL-M LIT WINDOW w/ RINGS		<input type="checkbox"/> TYPE III MED. <b>PLED-III M</b> .....		<input type="checkbox"/> 525mA	<input type="checkbox"/> 2-90 .....	<input type="checkbox"/> GREY <b>RAL-7004-T</b>	<input type="checkbox"/> TWIST LOCK PHOTO CELL + VOLTAGE (EXAMPLE: PC120V) ... <b>TPC+V</b>
		<input type="checkbox"/> TYPE III WIDE <b>PLED-III W</b> .....		<input type="checkbox"/> 350mA	<input type="checkbox"/> 3-120 .....	<input type="checkbox"/> DARK BRONZE <b>RAL-8019-T</b>	<input type="checkbox"/> TWIST LOCK RECEPTACLE ONLY ... <b>TPR</b>
		<input type="checkbox"/> TYPE IV <b>PLED-IV</b> .....	COLOR TEMP-CCT	VOLTAGE	<input type="checkbox"/> 3-90 .....	<input type="checkbox"/> GREEN <b>RAL-6005-T</b>	<input type="checkbox"/> 7-PIN TWIST LOCK RECEPTACLE ONLY ... <b>TPR7</b>
		<input type="checkbox"/> TYPE IV <b>PLED-IV-FT</b> .....	<input type="checkbox"/> NW (4000K)* *STANDARD	<input type="checkbox"/> 120	<input type="checkbox"/> 4-90 .....	FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH SUFFIX "S" (EXAMPLE: RAL-9005-S)	<input type="checkbox"/> SINGLE FUSE (120V, 277V, 347V) ... <b>SF</b>
		<input type="checkbox"/> TYPE V NARROW <b>PLED-VSQ-N</b> .....	<input type="checkbox"/> CW (5000K)	<input type="checkbox"/> 208	<b>WALL MOUNT</b>	SEE USALTG.COM FOR ADDITIONAL COLORS	<input type="checkbox"/> DOUBLE FUSE (208V, 240V, 480V) ... <b>DF</b>
		<input type="checkbox"/> TYPE V MED. <b>PLED-V-SQ-M</b> .....	<input type="checkbox"/> WW (3000K)	<input type="checkbox"/> 240	<input type="checkbox"/> WM .....		<input type="checkbox"/> STEP DIM MOTION SENSOR (PROGRAMMED 50/100) ..... <b>MS-F211</b>
		<input type="checkbox"/> TYPE V WIDE <b>PLED-V-SQ-W</b> .....	OTHER LED COLORS AVAILABLE CONSULT FACTORY	<input type="checkbox"/> 277			<input type="checkbox"/> REMOTE MOTION SENSOR CONFIGURATOR ..... <b>MS-FC10</b>
				<input type="checkbox"/> 347			
				<input type="checkbox"/> 480			

# LED Electrical Guide

LED Count	Source Type	Source	Initial Lumens - 4000K CCT	Initial Lumens - 3000K CCT	Initial Lumens - 5000K CCT	L70 Greater than (HR)	Starting Temp.	System Watts	Volts	Max Input Amps
40	LED	40 PLED® Optical Module - 350mA	5,077 - 5,464	4,445 - 4,784	5,199 - 5,595	60,000+	-20°F	45	120 277	0.38 0.17
40	LED	40 PLED® Optical Module - 525mA	6,977 - 7,507	6,108 - 6,573	7,144 - 7,687	60,000+	-20°F	66	120 277	0.58 0.25
40	LED	40 PLED® Optical Module - 700mA	8,425 - 9,067	7,376 - 7,938	8,627 - 9,285	60,000+	-20°F	91	120 277	0.76 0.33
40	LED	40 PLED® Optical Module - 1050mA	10,956 - 11,792	9,592 - 10,324	11,219 - 12,075	60,000+	-20°F	142	120 277	1.19 0.52
80	LED	80 PLED® Optical Module - 350mA	10,153 - 10,926	8,889 - 9,566	10,397 - 11,188	60,000+	-20°F	92	120 277	0.77 0.34
80	LED	80 PLED® Optical Module - 525mA	13,952 - 15,015	12,215 - 13,146	14,287 - 15,376	60,000+	-20°F	136	120 277	1.14 0.50
80	LED	80 PLED® Optical Module - 700mA	16,851 - 18,139	14,752 - 15,877	17,254 - 18,570	60,000+	-20°F	184	120 277	1.54 0.67
80	LED	80 PLED® Optical Module - 1050mA	23,188 - 25,864	20,301 - 22,644	23,745 - 26,448	60,000+	-20°F	266	120 277	2.22 0.96

## NOTES:

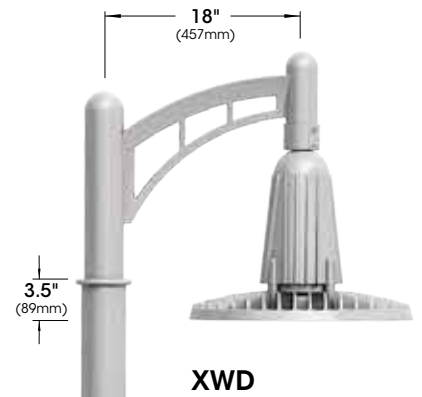
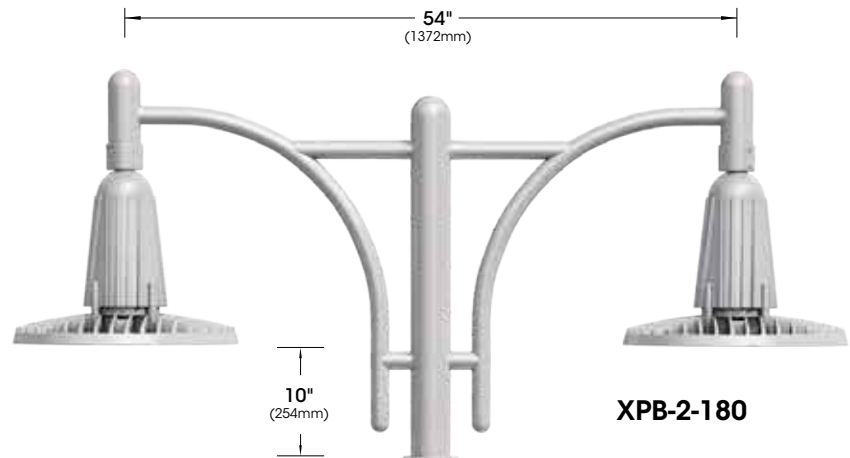
1. Max Input Amps is the highest of starting, operating, or open circuit currents
2. Lumen values for LED Modules vary according to the distribution type
3. System Watts includes the source watts and all driver components.
4. Fuse value should be sufficient to protect all wiring components. For electronic driver and LED component protection, use 10KV - 20KV surge suppressors.
5. L70(9K) - TM-21 6x rule applied
6. The combination of robust heat-sinking technology and lower drive currents result in L70 LED life expectancies well in excess of 100,000 hours.

**WARNING:** All fixtures must be installed in accordance with local codes or the National Electrical Code. Failure to do so may result in serious personal injury.

## Approximate Average Lumens - 4000K (Lumens median of all distributions)

	350mA			525mA			700mA			1050mA		
	Watts	Lumens	HID Eq.	Watts	Lumens	HID Eq.	Watts	Lumens	HID Eq.	Watts	Lumens	HID Eq.
40	45	5291	70-100	66	7454	100-150	87	9331	175	134	12263	200-250
80	87	10581	175-200	131	14907	200-250	174	18673	400	266	24526	450-575

# New Arms Recommended for SKL



# Skyliner

Architectural Curvilinear Luminaires for Solid-State Illumination

MADE IN THE  
**USA**



**U.S. ARCHITECTURAL**  
**LIGHTING**

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Patents Pending

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