

ValuLume LED

The Promise of LED Illumination



Patents Pending

U.S. ARCHITECTURAL
LIGHTING

ValuLume LED

ValuLume expresses exactly what this new robust offering from U.S. Architectural Lighting is all about bringing value and performance to the world of outdoor illumination.

The simple, contemporary rectilinear lines of ValuLume make it an outstanding companion for a wide variety of today's architecture.

The engineering and materials built into ValuLume allow current solid state technology to be exploited to its fullest. The PLED (Panel Optical System) optics allow for unmatched flexibility in site illumination. The ability to incorporate a wide variety of control packages make ValuLume an ideal companion for new or existing sites that use integrated energy management systems of all types; and ValuLume's outstanding thermal management promises years of maintenance free illumination.

THIS is the luminaire you've been looking for...
ValuLume -

Realizing the Promise of LED Illumination

Housing

The ValuLume Optical Housing is cast as a single unit to promote outstanding thermal conduction to remove heat from the LED's. The material used is 30% more heat conductive than that found in standard fixtures on the market.

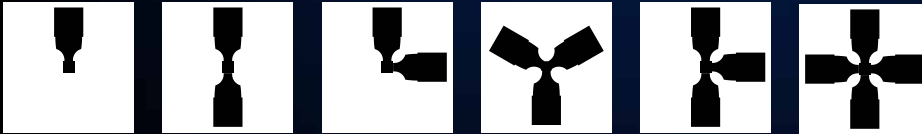
Electrical Compartment

The Electrical Compartment is sized to allow for a variety of LED drivers, wireless control modules, hi-lo dimming modules and motion sensors. Its shape visually flows into the Optical Housing to create a continuous form.

PLED[®] (panel LED) Optical Module

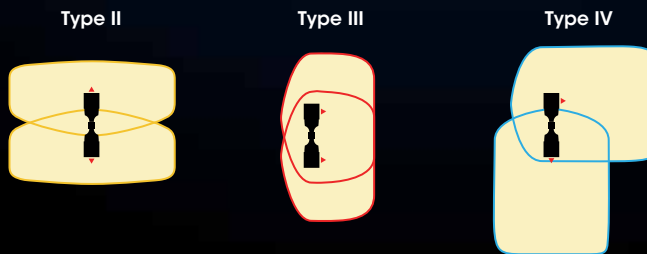
The PLED[®] Optical Module offers the ultimate in performance, optical flexibility, and serviceability available.

Site Adaptive Pole Mounting Configurations

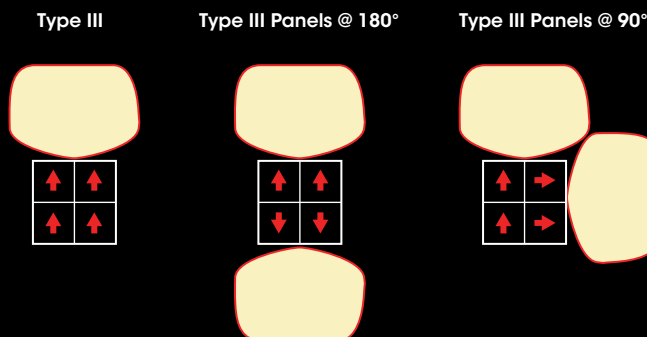


The PLED[®] Optical System incorporates individually rotatable panels allowing the orientation of the lighting pattern to be set independent of the physical orientation of the luminaire.

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



In addition, the individually rotatable panels create the same effect by rotating the panels in a single luminaire independently.

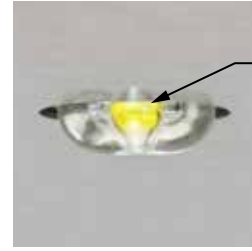


PLED® Optics

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.

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

Ultra high performance optics developed by U.S. Architectural



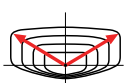
Micro-reflector behind LED enhances forward throw and reduces backlight

Distribution type and direction of light throw

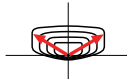


90° field rotatable

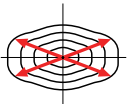
Available Light Distributions



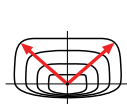
Type II*



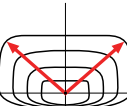
Type II FR*



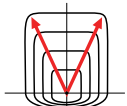
Type II ML



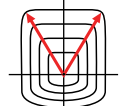
Type III M*



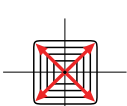
Type III W*



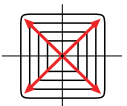
Type IV*



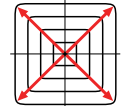
Type IV FT*



Type V Sq. N



Type V Sq. M



Type V Sq. W

* Asymmetric optics field rotatable in 90° increments.

LED Distributions

10 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.

For auto dealerships, the Type II-FR distribution increases illumination on the front row of cars on display and the Type V-SQ-N concentrates more light in a tighter area to enhance the retail effect.

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).

Rotatability of the **PLED**® "panels" allows for the simulation of back-to-back luminaires using only one housing. The Type II-ML arranges standard Type II distributions in a single fixture the same as formerly required by back-to-back luminaire orientation.

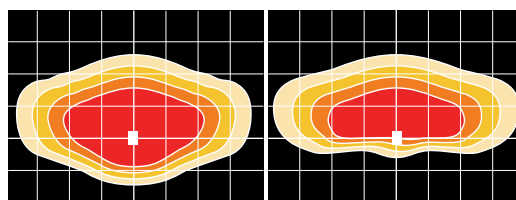
House Side Shield

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.

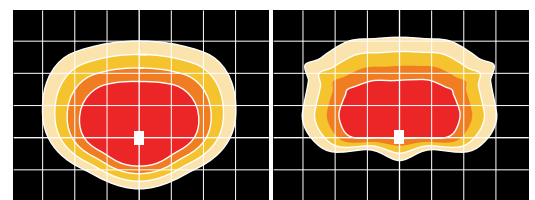
As with standard **PLED**® panels HS **PLED**® panels may be field rotated in 90° increments and are field replaceable.



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

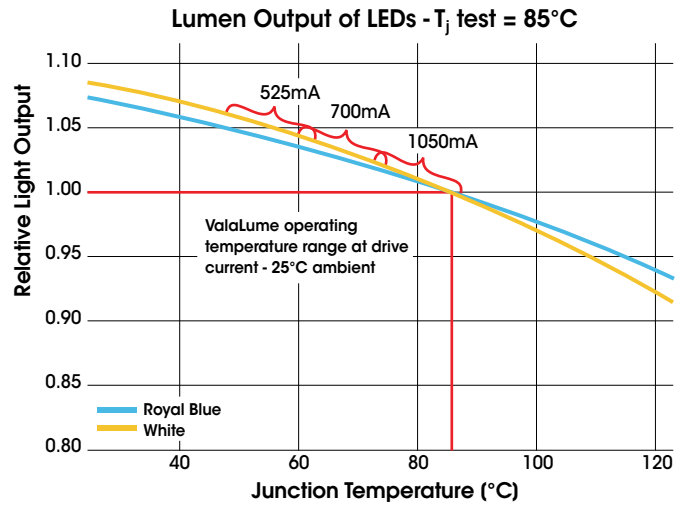
■ .1 - .2Fc ■ .2 - .5Fc ■ .5 - 1Fc ■ 1Fc and above

Thermal Management/ Control Options

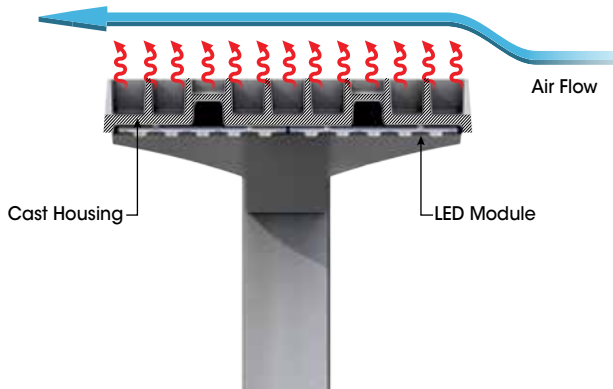
LED's are affected by heat in 3 key ways:

- 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 ValuLume 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.

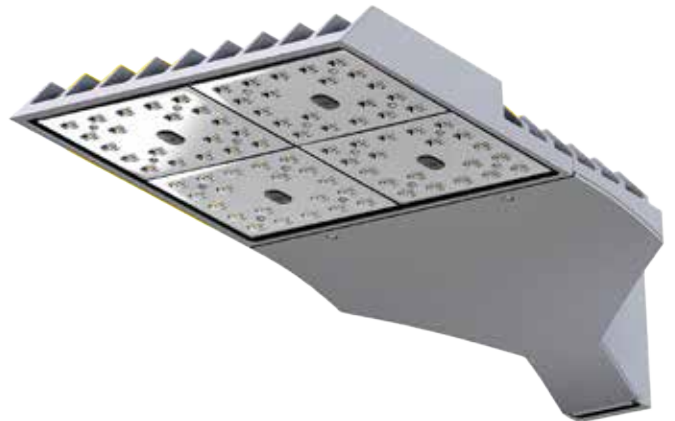
Options for Controlling ValuLume

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



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 $\leq \pm .003''$ over 12") to facilitate thermal transfer of heat to housing and cooling fins. Solid barrier wall separates optical and electrical compartments. The optical and electrical compartments are integrated to create one assembly. Minimum wall thickness is .188".

Electrical Housing w/ Integral Arm - Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling ribs surrounding the electrical compartment and a flat surface on the top of the arm to accommodate a photocell receptacle. Solid barrier wall separates optical and electrical compartments. The optical compartment and electrical compartment with the integrated support arm combine to create one assembly. Minimum wall thickness is .188". Cast and hinged driver assembly cover is integrated with wiring compartment cover.

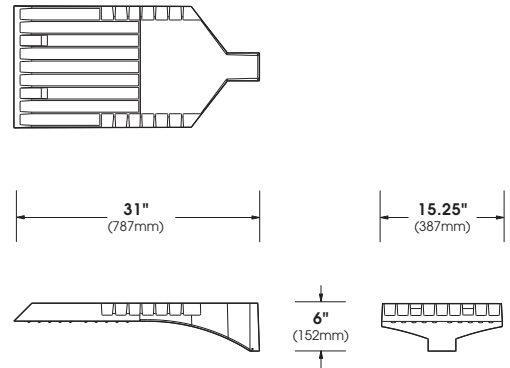
PLED™ Optics - Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. In asymmetric distributions, a micro-reflector inside the refractor re-directs the house side emitter output towards the street side and functions 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 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.

ValuLume LED
40/80 PLED™
EPA 0.77



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

No. of LEDs	Drive Current	System Watts	HID Equivalent
40	350mA	45	70 - 100
	525mA	66	100 - 150
	700mA	91	175
	1050mA	142	200 - 250
80	350mA	92	150 - 175
	525mA	136	200 - 250
	700mA	184	400
	1050mA	266	450

LED Electrical Guide

LED Count	Source Type	Source	Initial Lumens - 4000K	Initial Lumens - 3000K	Initial Lumens - 5000K	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.

Ordering Information

Spec/Order Example: VLL-LED/PLED-V-SQ-W/80LED-700mA/NW/277/1/RAL9005

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

ValuLume LED

The Promise of LED Illumination



U.S. ARCHITECTURAL
LIGHTING

U.S. POLE COMPANY
660 West Avenue O
Palmdale, California 93551
Toll Free (800) 877-6537
www.usaltg.com

Patents Pending

0416