Ex. 1013





## **OptoElectronix Plug-&-Play LED Light Engine Products**

OptoElectronix™ high-reliability LED Universal Light Engine™, LightBlox™, LightDisc™, and LightStix™ products deliver clean LED light with a very long life at very low power consproducts include the LED, optics, power supply, heat management, and drivers in a compact plug-and-play package. All of our products will last a minimum of 50,000 hours and

Product	Applications	Light Output	Lens	Power	Light Color	Key Features
LightBlox Rectang	ular LED Light Engines					4X More Ef
2.99" (76 mm) wide x 5.98" (152 mm) long x 1.34 (34mm) high excluding flanges	LightBlox ULE4000A Series  ADA-compliant* wall sconces  Wall-washing luminaires  Floodlights  General illumination  *Americans With Disabilities Act-compliant	Cool white: 1000 lumens Warm white: 700 lumens 60-watt bulb equivalent	120-degree rectangular lens	Integrated power supply connects directly to 120V <sub>AC</sub> power	Warm white or cool white light	<ul> <li>Triac dimmer compatible</li> <li>Integrated power supply connects directly to junction box: replace the ballast, sockets, and bulbs with just one part</li> <li>High light output in a compact package</li> <li>Proprietary Dynamic Dimming Compensation Control™ circuitry eliminates dimmer flicker</li> <li>Integrated optics and heat sink</li> <li>Proprietary Dynamic Thermal Management Control™ circuitry ensures optimal operating temperature</li> <li>4X more efficient than incandescent or halogen bulbs</li> <li>End flanges for easy mounting</li> <li>Minimum 34-lumen-per-watt efficacy (varies with desired LED color)</li> <li>Power factor correction (PFC) to 90 percent</li> </ul>
LightDisc High-Ou	tput Round LED Light Engines					3X More Ef
8.09" (205.4 mm) diameter x 1.44" (36.7 mm) high	LightDisc ULE5000 Series Ceiling fans Drum lights Large cylinder lighting Semi-flush lighting Rectangular wall sconces Bollard lighting Stand-alone bowl lights	Cool white: 1530 lumens Warm white: 1300 lumens 90-watt bulb equivalent	120-degree floodlight pattern UL94-5VA optical-quality plastic lens for extreme flammability protection	Integrated power supply connects directly to 120V <sub>AC</sub>	Warm white or cool white light	Plug-and-play: Simple three-wire connection to 120V <sub>AC</sub> Triac-compatible dimmer Proprietary Dynamic Dimming Compensation Control circuitry eliminates dimmer flicker 50,000-hour life 3X more energy efficient than incandescent or halogen; consumes only 28 watts of power Warm white or cool white light Proprietary Dynamic Thermal Management Control circuitry ensures optimal operating temperature Power factor correction (PFC) to 80 percent





		Bulb			Light				
Product	Applications	Equivalent	Lens	Power	Color	Key Features			
Compact Flush-Mo	Compact Flush-Mount Round LED Universal Light Engines 5X More E								
2.35" (60 mm) diameter x 0.85" (22 mm) deep	ULE21VW-F-25 Series ULE21VW-F-38 Series ULE21VW-F-45 Series ULE21VW-F-60 Series Commercial refrigerator and freezer lighting Retail display lighting Under-counter lights Vending machines Range hoods Vanity lights Desk lights Uorkshop lights Emergency exit lights Landscape lighting Low-watt MR16 replacement	ULE21VW-F-25 170 lumens; 25-watt bulb equivalent  ULE21VW-F-38 300 lumens; 38-watt bulb equivalent  ULE21VW-F-45 495 lumens; 45-watt bulb equivalent  ULE21VW-F-60 615 lumens; 60-watt bulb equivalent	180-degree wide flood pattern	ULE21VW-F-25 and -38: Integrated power supply connects directly to 12V <sub>AC</sub> or 12V <sub>DC</sub> ULE21VW-F-45 and -60: Integrated power supply connects directly to 24V <sub>AC</sub> or 24V <sub>DC</sub>	Warm white or cool white light	<ul> <li>High light output in compact housing</li> <li>Flange for flush mounting</li> <li>Three-point screw-in mounting—ideal for recessed applications</li> <li>Brushed aluminum finish</li> <li>Housing designed for optimal thermal management</li> <li>IP66 (ingress protection) rating: dust tight and protected against powerful water jets</li> <li>Low power consumption:         <ul> <li>ULE21VW-F-25 consumes only 3.6 watts of power ULE21VW-F-38 consumes only 6.1 watts of power ULE21VW-F-45 consumes only 8.9 watts of power ULE21VW-F-60 consumes only 10.7 watts of power</li> <li>Proprietary Dynamic Thermal Management Control™ circuitry ensures optimal operating temperature</li> </ul> </li> </ul>			
ULE3000  ULE 3200  2.17" (55 mm) diameter x 1.49" (37.86 mm) deep	ULE3000 Series and ULE3200 Series  Recreational vehicle lighting Aircraft lighting Cabinet lighting Display case lighting Diffuser option provides moisture protection for: Refrigeration lighting Cooler lighting Boat and marina lighting Bath lighting Landscape lighting	65 lumens; 8-watt bulb equivalent	7.5-degree spot lens	ULE3000 Electrical connection directly to the LED  ULE3200 Integrated power supply connects directly to 12V <sub>AC</sub> or 12V <sub>DC</sub>	Warm white or cool white light	<ul> <li>Ideal for flush mounting</li> <li>3000 Series: Electrical input is directly to the LED—the designer can choose the LED drivers</li> <li>3200 Series: integrated power supply for 12V<sub>AC</sub> and 12V<sub>DC</sub> operation</li> <li>Aluminum housing provides optimal thermal management</li> <li>Optional flat, multifaceted diffuser is attached with a strong adhesive that provides protection from moisture</li> <li>Customization is available: diffusers, color filters, or polarizers</li> <li>UL-recognized component in the U.S. and Canada</li> </ul>			

Availability: To purchase or for further information, please contact our corporate office, sales@optoelectronix.com or (408) 437-9455; our distributor, Nu Horizons Electronics, woei/; or one of our local sales representatives, listed at www.optoelectronix.com. Complete data sheets are available at www.optoelectronix.com.





Product	Applications	Bulb Equivalent	Lens	Power	Light Color	Key Features
Compact Round LE	5X More Ef					
1.57" (40 mm) diameter x 0.91" (23.18 mm) deep	<ul> <li>ULE2210A/2211A</li> <li>Landscape lighting</li> <li>Safety &amp; security lighting</li> <li>Vehicle lighting</li> <li>General-purpose lighting</li> </ul>	60 lumens; 8-watt bulb equivalent	Lamp	Integrated power supply connects directly to 12V <sub>AC</sub> or 12V <sub>DC</sub>	Warm white or cool white light	<ul> <li>Integrated optics and lamp lens for cylinder lighting</li> <li>Integrated aluminum heat spreader and heat sink ensure extended life</li> <li>Threads directly into industry-standard 1/8" IPS light fixtures for optimal heat sinking</li> <li>UL-recognized component in the U.S. and Canada</li> </ul>
1.57" (40 mm) diameter x 0.89" (22.6 mm) deep	<ul> <li>ULE2260A/2261A</li> <li>Landscape lighting</li> <li>Safety &amp; security lighting</li> <li>Vehicle lighting</li> <li>General-purpose lighting</li> </ul>	60 lumens; 8-watt bulb equivalent	Dome	Integrated power supply connects directly to 12V <sub>AC</sub> or 12V <sub>DC</sub>	Warm white or cool white light	Integrated optics with dome lens Integrated aluminum heat spreader and heat sink ensure extended life Threads directly into industry-standard 1/8" IPS light fixtures for optimal heat sinking UL-recognized component in the U.S. and Canada
LightStix Linear LE	D Light Engines					5X More Eff
24" (609.6 mm) long x 1.18" (30 mm) wide x 0.87" (22 mm) deep	LightStix ULE8000 Series  Low-watt T5 florescent replacement  Display cases  Retail display lighting  Vending machine lighting  Under-counter lights  Beverage dispenser lighting  Lighted signs  Desk lights  Emergency exit lights	100 lumens per foot T5 florescent bulb equivalent	180-degree linear light pattern	Integrated power supply connects directly to 12V <sub>AC</sub> or 12V <sub>DC</sub>	Warm white or cool white light	<ul> <li>100 lumens (10 LEDs) per foot</li> <li>End-to-end connections</li> <li>200 lumens light output in compact housing</li> <li>5X more efficient than incandescent or halogen</li> <li>Flange for easy mounting</li> <li>Brushed aluminum finish</li> <li>Negligible hot-spotting</li> <li>Housing designed for optimal thermal management</li> <li>Proprietary Dynamic Thermal Management Control circuitry ensures optimal operating temperature</li> </ul>

Availability: To purchase or for further information, please contact our corporate office, sales@optoelectronix.com or (408) 437-9455; our distributor, Nu Horizons Electronics, woei/; or one of our local sales representatives, listed at www.optoelectronix.com. Complete data sheets are available at www.optoelectronix.com.





Product	Applications	Bulb Equivalent	Lens	Power	Light Color	Key Features
Waterproof LED Li	ght Engines for Landscape Li	ghting				5X More Et
1.97" (50 mm) diameter x 1.56" (39.5 mm) deep	ULE7000 Series  Landscape bullet lights  Landscape floodlights  Underwater lighting	150 to 600 lumens MR16 diameter 25-, 38-, and 45-watt bulb equivalents		1- and 2-LED versions: Connects directly to 12V <sub>AC</sub> 3-LED version: Connects directly to 24V <sub>AC</sub>	Warm white or cool white light	<ul> <li>IP67 rating: safe to use under water to a depth of one meter</li> <li>50,000-hour life with OptoElectronix-designed VersaSink heat-sink sleeve</li> <li>Dynamic Thermal Management™ circuitry for intelligent thermal protection</li> <li>MR16 size-compatible</li> </ul>

Availability: To purchase or for further information, please contact our corporate office, sales@optoelectronix.com or (408) 437-9455; our distributor, Nu Horizons Electronics, woei/; or one of our local sales representatives, listed at www.optoelectronix.com. Complete data sheets are available at www.optoelectronix.com.

