



Light Emitting Designs, LLC. specializes in energy efficient and "green" lighting products. I am enclosing some of our literature and press release package for your review.

As you know, energy related products have become a major industry world wide. Our LED lamps are perfect for most any outdoor and landscape applications (12v and 120v). The savings in labor, maintenance and transformer costs are considerable and your contractor customers will clearly see the value and potential profit savings in their business.

Currently, we are offering retro fit lamps for 12v and 120v products. Later this year we will be offering the most comprehensive LED fixtures at extremely competitive prices.

Should you find the information appropriate for your consideration, please contact us at the phone number below.

Best regards,  
**LED, LLC**

9814 Variel Avenue  
Chatsworth, CA 91311  
(818) 407-4309  
(818) 407-4311 fax  
[www.led-llc.com](http://www.led-llc.com)

## Going Green...About Energy Efficient Lighting

We are proud to announce the introduction and incorporation of our new energy saving lighting products in our product selection. As you may know, there is a world wide energy shortage as demand for energy resources continues to grow. Non-renewable energy costs (i.e. electricity) will continue to rise, as State Governments begins to de-regulate energy, power plants reach saturation levels and demand for resources continues to rise.

Worldwide consumption of conventional lighting products contributes to pollution such as green gases, global warming and depletion of our ozone layers. The United States and it's global partners are now on a focused mission to change course and develop alternative energy saving solutions to avert future power "black outs" , dependency on foreign energy and destruction of our precious environment. This new energy consciousness is referred to as the "Green Movement."

As part of our overall business model we are introducing energy saving alternatives to conventional lighting products. New technology such as LED (light emitting diodes), CFL (compact fluorescents) and Solar lighting (photo voltaic) has spurred on new industries and we are aggressively pursuing and utilizing these technologies into our products.

**Spot light on LED (light emitting diode technology)** - LED is the most efficient light source available today. Basically, LED's utilize a semi conductor (also known as a ballast or driver) and special optically designed diodes. These smart lamps eliminate the need for gas or filaments making them 10x more efficient than standard incandescent lamps and 7x more efficient than fluorescents. LED's are available in 12v or 120v and a variety of colors. We offer a full selection of retro fit LED lamps and fixtures.

**Spot light on new CFL (compact fluorescents)** - Fluorescent lamps have been around for quite some time and have become the industry standard for energy saving lamps. CFL lamps use a ballast converter and a gas filament. CFL lamps are primarily available in 120v and several color temperatures. CFL lamps are 3x more efficient than standard incandescent lamps. We offer a full selection of retro fit CFL lamps and fixtures.

**Spot light on Solar (photo voltaic)** - Solar lighting is one of the most sought after technologies as this technology is totally renewable. With the advent of new and more efficient solar collectors as well as new battery storage technology, look for solar lighting to become a viable option to traditional lighting products. LED, LLC is offering a series of professional exterior posts, column and walkway bollards. These products are not to be confused with traditional home center solar products.



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Light Emitting Designs, Inc. is a manufacturer / distributor of high quality LED and Compact Fluorescent (CFL) lamps, components and fixtures. The principals have over 30 years of experience in lighting design, manufacturing and supply chain management.

The company was developed in 2001 to meet the worldwide demand for energy efficient lighting using LED and CFL technology. Our initial offering includes retro- fit lamps (that can replace conventional lamps) and a wide selection of fixtures at affordable price levels.

Our factory is located in Southern China and contains multiple buildings that house over 100,000 sq ft of state of the art manufacturing. This includes 15 laser machines, 20 vacuum machines, multiple CNC machines, 20 injection machines, 51 soldering machines, 15 ovens and a workforce of over 1000 employees. Our Research & Development staff is made up of 30 professors and engineers that are complimented by an experienced team of quality control specialists.

At LED, LLC. we are committed to producing the highest quality energy efficient lighting products available in today's marketplace. Our Factory is ISO 9001 certified and most of our products carry the distinguished UL Listing. Our current production capacity is approximately 4,000,000 light fixtures per month.

Light Emitting Designs corporate office is located just outside of Los Angeles in Chatsworth, California. We warehouse and distribute LED and CFL lamps and fixtures under our brand name, LED, LLC.

Our mission statement at Light Emitting Designs, LLC., is to provide our client partners with the most comprehensive line of energy saving LED and CFL lighting products.... built to meet their exceptionally high standard for quality, delivered at competitive pricing, and with unparalleled service .

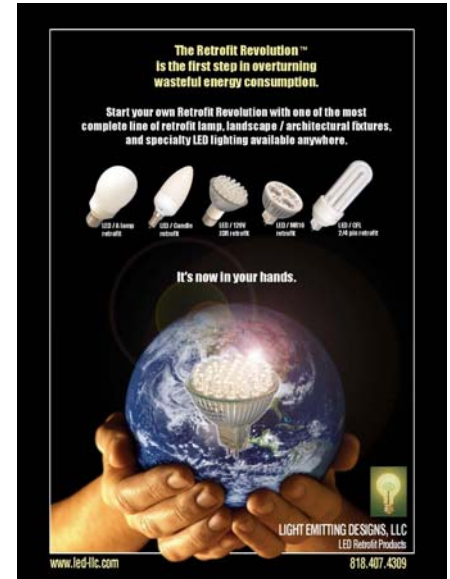
Light Emitting Designs, LLC. Officers are:

Doug Kinney: Principal & Chairman

Bruce Dennis: Principal & President/Director of Sales and Marketing

Eric Sassower: Principal & Chief Operating Officer

For more information please see our web site: [www.led-llc.com](http://www.led-llc.com).



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**LIGHT EMITTING DESIGNS, LLC.**

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# PRESS RELEASE

*Light Emitting Designs, LLC. Innovation through technology...A Breakthrough in Lighting and Bulbs*

**Los Angeles, February 1, 2007:** Light Emitting Designs, LLC. (LED, LLC), was formed to provide an ecologically and socially responsible alternative to conventional lighting products. LED LLC.'s engineers have used the latest LED technology, to provide a safer, energy saving alternative to conventional lamps and lighting fixtures at affordable price levels.

LED technology is by far the safest and most efficient form of lighting available. LED stands for Light Emitting Diodes and are made of solid state electronic components (circuit boards). An electric current is sent from the circuit board to a small semi-conductor or diode that produces light. They are illuminated solely by the movement of electrons, unlike conventional lamps which are illuminated by filament and gas and produce a significant amount of heat and wasted energy.

With the advent of new technology in LED circuits, the quality and light output has come up to levels which can now be adequate for most ambient lighting and some task lighting applications. (LED, LLC), was formed to provide an ecologically and socially responsible alternative to conventional lighting products. LED LLC.'s engineers have used the latest LED technology, to provide a safer, energy saving alternative to conventional lamps and lighting fixtures at affordable price levels.

LED, LLC, will be introducing most of the standard, common lamps in LED format (i.e., MR16, A, PAR, Candle, Medium, etc.) this year. LED, LLC. plans on rolling not only a complete line of retrofit lamps but also a comprehensive line of LED products. In later 2007, look for LED outdoor security lighting, LED indoor accents such as under cabinet, cove lighting and recessed lighting.

The principals of the company have over 30 years of experience in lighting design, manufacturing and supply chain logistics. Light Emitting Designs, LLC. with their overseas partners, have put together a comprehensive product line of LED fixtures and LED replacement (retrofit) products. Please see web site for up to date information.

## ***Why Choose LED?***

- The LED advantage: LED (light emitting diodes) are solid state technology and offers the most efficient (energy savings) form of lighting available. In comparison to conventional incandescent light bulbs, our LEDs can be equated at approx. 7 to 8 time equivalency. For example, a 3 watt LED can produce as much illumination as a 20 watt incandescent light bulb.
- On average, LEDs last 3 to 5 times longer than fluorescents and 20 to 30 times longer than incandescent
- LED lamps allow less maintenance costs, lower heating and utility costs and reduces the need for higher rated cable, transformers and electrical components
- LED lamps are very resilient, shock and vibration proof and virtually waterproof.
- LEDs are smaller and more compact and provide more light output per square inch than any other light source
- LED lamps produce very little heat and no UV rays, making them safer to handle and safer to use. Ideal for sensitive fabrics/paintings.
- LEDs are not sensitive to extreme temperatures (unlike fluorescent)
- Solid state LEDs can be controlled with a processor to achieve unique lighting effects
- LEDs are available in cool white, warm white and multiple colors
- LEDs draw (on average) about 1/10<sup>th</sup> the power of today's conventional lighting, providing new alternative solutions to conventional energy saving lamps. LEDs are the most environmentally friendly lamp technology
- LED technology is the future. It can reduce many types of pollution and meet the need for the continued world wide energy demand

**COMPARE LED to Standard Fluorescent and Incandescent and Light Bulbs\***

	LED	Fluorescent	Incandescent/ Halogen
Avg. Utility Cost per Month- 20w Comparison	.02 cents	.35 cents	.86 cents
Lumens per watt (avg.)	50 to 60	32 to 40	14 to 18
Wattage Equivalent at 20w	3 watt	9 watt	20 watt
Longevity (average)	75,000 hours	15,000 hours	2500 hours
Maintenance	Zero	Ballast issues	Replacement
Average Purchase Cost	3 x	2 x	Variable
Compared to Incandescent Application-General, Ambient or Task Lighting Operation	Ambient and Mood/Variable Task Instant on/ No Flickering	Ambient/ Task Delay and Flickering	General, Ambient and Task Instant on/ No Flickering
Added Cost	Minimal Service	Ballast/ Service	High Service
Safety	No Gas or Glass	Gas and Glass	Glass and Heat
Damage due to Shock and Vibration	Zero Problem	Problematic	Problematic
Size per Unit	Smallest	Medium- Largest	Largest
Heat Issue	Least	Ballast gets hot	Lamp gets hot
UV Stable (ultra violet)	Stablized	Not UV Stable	Stablized
Light Control	Most Control	Least Control	Variable Control
Weather/Temperature Changes	Not Sensitive	Sensitive	Some Sensitivity
Ecology/ Environment	Nominal/ Minimal Issues	Damaging	Damaging

Note: These comparisons are based on national averages.

Summary on Savings: Energy bills, Heating Bills, Fixture Longevity, Maintenance and Replacement Labor. These savings may far outweigh the higher cost of solid state (LED) lighting products.

# LIGHT EMITTING DESIGNS, LLC.

- Comprehensive LED Retro- Fit Product Line
- Innovation through Technology
- Service, Value and Commitment to the Environment

## About us....

Light Emitting Designs, Inc. is a direct supplier of high quality LED lamps, components and fixtures. The principals have over 30 years of experience in lighting design, manufacturing and supply chain logistics.

The company was developed to meet the demand for energy saving LED retro- fit products (that can replace conventional lamps) at affordable price levels.

## Important Facts and Characteristics of LED

LED stands for Light Emitting Diodes. LED lamps are made of solid state electronic components (circuit boards). An electric current is sent from the circuit board to a small semi-conductor or diode that produces light. They are illuminated solely by the movement of electrons, unlike conventional lamps which are illuminated by filament and gas and produce a significant amount of heat.

## Why Choose LED?

- LED is the most efficient light source available
- LED lamps last longer than any other conventional light source- on average, three to five times longer than fluorescents and 20 to 30 times more than incandescents
- LED allows less maintenance costs, lower heating and utility costs and reduces the need for higher rated cable, transformers and electrical components.
- LED lamps are very resilient, shock and vibration proof and even virtually waterproof.
- LEDs are smaller and more compact and provide more light output per square inch than any other light source
- LED lamps produce very little heat and no UV rays making them safer to handle and safer to use
- LED lamps are not sensitive to extreme temperatures (unlike fluorescent)
- Solid state LED lamps can be controlled with a processor to achieve unique lighting effects
- Cool White, Warm White and multiple colors are available
- LED technology provides new alternative solutions to conventional lamp sources
- LED lighting draws about 1/10th the power of today's conventional lighting... As the nation converts to the LED standard (SSL) for lighting, the result will be a dramatic reduction in our national and world wide power consumption

Light Emitting Designs, LLC., with their overseas partners, have put together a comprehensive product line consisting of complete packages of LED fixtures and LED replacement (retrofit) products. See web site for up to date information.

## **What does LED stand for?**

Light Emitting Diode

## **What is an LED?**

LEDs are basically a circuit board (often referred to as a "chip" or "driver") which sends a current of electricity to a small semi-conductor (or diode). Light is produced by the movement of high speed electrons.

## **What are the components of an LED?**

- LEDs
- Driver (power supply)
- Control devices (dimming controls, color mixing controls)
- Optics

## **Do LEDs get hot?**

Unlike conventional lamps, LEDs do not get hot to the human touch. However, there is a heat consideration at the contact points of the diode. LEDs must be properly heat dissipated within the confines of the lamp enclosure.

## **How far can Led lamps project?**

Today, common LED lamps can project light over 80 ft in distance with visibility well over 1000 feet from the light source

## **How long have LED lamps been available?**

LEDs have been available since the early 1940's. They were commonly used as indicator lights in small electronic devices. With the advent of new technology, these small light sources are now able to produce as much light as many low to medium conventional lamps.

## **Why is LED more efficient than other lamp technology?**

With LED, there is no filament, gas or other physical properties for light transmission.

## **What are the main benefits of LED?**

- LEDs can take on a variety of sizes and shapes
- LEDs can place light across a surface to deliver the light in multiple planes.
- LEDs can be integrated into architectural materials
- Rugged and void of catastrophic failure



- LEDs operate on low-voltage DC power, and also directly on AC power
- LEDs can start instantly at temperatures as low as -4 degrees Celsius
- LEDs are easily dimmed and controlled
- Absence of infrared and ultraviolet energy radiation

### **Can you touch the LED lamp (unlike halogen)?**

Yes.

### **How long do is the rated life of LED lamps?**

Lab tested life is 100,000 hours. However, in real life this number reduces to 50,000 hours. However, LED lamps will degrade in lumen output with constant use so to be fair; we rate LEDs at 20,000 hours at peak efficiency.

### **Do LED's require a transformer or ballast?**

LEDs have a built in driver which functions like a ballast or converter. A transformer would only be required with 12v LEDs.

### **What forms and configurations does LED come in?**

LEDs are available in multiple diode packs of 1/8 to 1/4 watt clusters (ideal for wider dispersion of light), single high output LEDs (ideal for narrow spot) and LED power boards (designed to be integrated into various fixture sizes).

### **How do you rate LED output?**

Unlike conventional lamps, LEDs cannot be measured in wattage and lumen equivalency is not 100% translatable/ data transferable. Since LEDs are more of a specific light source they do not put off the same type of light pattern measurement that is common with conventional lamps. The easiest way to measure total power output is to position the LED very near to a large photo detector.

### **What are the standards for measuring light?**

**Lumens:** The unit of luminous flux in the International System, equal to the amount of light given out through a solid angle by a source of one candela intensity radiating equally in all directions. Used to measure light bulbs as stand alone light sources. Lighting fixtures are measured by lux output which is lumens per square meter.

**Lux:** Typically used to measure the light intensity produced by a lighting fixture. The higher the lux reading the more light the lighting fixture is producing over a given area. Known as lumens per square meter

**MCD:** or Mill candela is used to rank/denote the brightness of a LED. 1000mcd is equal to one Candela. The higher the mcd number, the brighter the light the LED emits.

**CRI** is a unit of measure that defines how well colors are rendered by different illumination conditions in comparison to a standard

**Chromaticity:** Chromaticity tells you what the lamp itself or a neutral surface illuminated by a lamp will look like. Chromaticity sets the "tone" or atmosphere of a room: warm, cool or something in between. Chromaticity (sometimes called color temperature) is usually measured in Kelvin. It can also be defined by using x and y coordinated against a standard chromaticity scale developed by the Commission Internationale de l'Éclairage (CIE). Here is a Chromaticity Graph that is commonly used.

**Color Rendering Index (CRI):** Also CCT or Correlated Color Temperature. It is a measure of the quality of light. It is a measurement of the amount of color shift that objects undergo when lighted by a light source as compared with the color of those same objects when seen under a reference light source of comparable color temperature. LED light CRI values generally range from 60 (average) to 90 (best). High CRI equates to sharper, crisper, more natural colored pictures while at the same time reducing glare.

**Color Temperature: (Also Kelvin Color Temperature)** A measure of the color of a light source relative to a black body at a particular temperature expressed in degrees Kelvin (K). Incandescent lights have a low color temperature (approximately 2800K) and have a red-yellowish tone; daylight has a high color temperature (approximately 6000K) and appears bluish (the most popular fluorescent light, Cool White, is rated at 4100K). Lamps with color temperatures below 5000K tend to be more yellow/red, lamps rated between 5000 and 6000K are viewed as white, while lamps above 6000K tend to have a blue cast.

**Foot-Candle:** The unit is defined as the amount of illumination the inside surface of an imaginary 1-foot radius sphere would be receiving if there were a uniform point source of one candela in the exact center of the sphere. Basically, it is the amount of light that a single candle would provide to a 1ft. radius sphere.

## **Is LED AC or DC?**

LED's can be made either way but most are AC or DC. Most LED lamps are AC to match conventional wiring and fixtures.

## **Are LED's dimmable**

Yes but they must be used with specific dimmers. See Pulse Modulation.

## **What is Pulse Width Modulation?**

PWM is a way of controlling the current of the LED. LEDs actually perform best when the current is modulated or quickly pulsed. Turning the LED on and off is actually beneficial to the life of the LED. We recommend PWM dimmers with LED products. By pulsing the LED with current, and varying the duty cycle of the current waveform, The LED rapidly transitions between on and off, and the relative times spent give the impression of being dimmed.

## **Can LED lamps replace standard, conventional lamps?**

At this time, most common incandescent lamps will have an equal in LED.

## **What voltages are LED's offered**

12v or 120v are the most common.

## **Can LEDs be had in various beam spreads?**

LED diodes are available in multiple beam angles. However, the wider the angle the less efficient the light source and hence light output. See manufacturer specs as specific beam angles are built into the LED lamp. With multiple LED packages (as opposed to high power) the most common beam angle is 30 degrees.

## **What colors are LED's available**

Most common are: Cool White (5,000k), Warm White (3,000k), Red, Blue, Green and Yellow.

## **Why are LED colors more vibrant than conventional colored lamps?**

Due to the high efficiency of the LED design, colors are true and crisp

## **What are the limitations of LED?**

Check manufacturers specs on 12v transformers (magnetic preferred) and dimming

## **What sizes do LEDs come in?**

LED lamps come in different shapes, among them the light bulb shape with a large E27 Edison screw and MR16 shape with a bi-pin base. Other models might have a small Edison E14 fitting, GU5.3 (Bipin cap) or GU10 (bayonet socket).

### What fixtures are available with LED?

LED-LLC is currently producing all types of task and decorative luminaries for residential and commercial applications.

### What is RGB and Color Changing?

Red, Blue and Green are the standard colors and often used with a built in color changing controller.

### What is the best way to clean LED lamps

Recommended: Isopropyl Alcohol

### Do LEDs meet Title 24?

As far as Title 24 considerations, LED lamps fall well within the guidelines for Title 24 efficiency. However, to pass Title 24 lamps cannot be a retro fit design; and only hard wired lamps are acceptable in fixtures. LED, LLC is currently producing hard wired LED lamps and fixtures and is prepared for Title 24 consideration next year.

Technology	Future solid state lighting	Incandescent	Fluorescent
Luminous efficacy (lm/W)	200	16	85
Lifetime (kh)	>100	1	10
Flux (lm/lamp)	1,500	1,200	3,400
Input power (W/lamp)	7.5	75	20
Lumen cost (\$/klm)	< 2	0.4	1.5
Lamp cost (\$/lamp)	<3	0.5	5
Color Rendering Index (CRI)	>80	95	82

## **LED8-PL LED Light Tube (Fluorescent Replacements)**

### **LED Flood 15W Replaces 32W T8 (48") Fluorescent**

2', 4' AND 5' 110V or 277V(optional) Neutral White Wide Beam 1,050 lumen



**For general lighting purpose the LED Light Tubes are great replacements for fluorescent lamps. You will find the application everywhere mainly in markets, commercial buildings and factories; some are behind displays and many other indoor applications.**

LEDs, the solid state technology are now available to replace Incandescent, Fluorescent and Neon lighting. The savings is normally between 80-90% on electricity. There is no hazardous waste. No mercury. No gases. All are environmentally friendly.

Fluorescent Lights - use vast amounts of electricity. They buzz and cause eye fatigue. Their waste is hazardous and costly to dispose of. We have two easy, very cost effective solutions to offer.

LED - T5/T8 LED Light Tubes Fluorescent Replacements. These tubes fit into a both T5 and T8 fluorescent fixture. With 150-300 super-bright wide angle commercial white(4,000-4,500 Kelvin) LEDs the brightness is the same as a 40W T5 & T8 bulb, but ours uses 15-18W of electricity. You save 22-25W per bulb. Now times that with every fluorescent light in your building and the KW savings is staggering. We can either supply these bulbs you can upgrade by taking out the ballast and then just put the tubes in as you would a fluorescent bulb. We can offer optional beautiful warm white color that will be almost the same as an incandescent (Edison) bulb, however please consider the 40% light reduction. These tubes will last about 17 years if used 8 hours a day.

**Savings Example** (based on \$0.06 kwh, 4-foot, 40W fluorescent tube x 80,000 hours/the lifespan of the LED light)

**1 small store with 60 lights would save over \$10,000!**

60 lights with \$172.00 in total savings = \$10,320.00 and uses 160,458.6 kilowatts less.

Within seconds after your change you are saving around 40% on electricity. The Return on Investment for either of these solutions is less than one year.



## AC110V(277V optional) LED Light Tube

Product No.	Length	LED Count	Lumen	Watt	Protect Grade	Color Temperature	Material
LED8-PL24-120-8-150-SW LED8-PL24-120-8-150-DL	600mm	150-171	560lm	8w	IP54	SW-3500 <sup>o</sup> K/ DL-5000 <sup>o</sup> K	Acrylic
LED8-PL48-120-15-300-SW LED8-PL48-120-15-300-DL	1200mm	276-300	1050lm	15W	IP54	SW-3500 <sup>o</sup> K DL-5500 <sup>o</sup> K	Acrylic

### Model No. Description:

1. PL refers to the LED Light Tube Fluorescent Replacements
2. 8-15 refers to the wattage of one Tube.
3. SW refers to the color temperature is 3000-3500K . DL is 5000-5500 K
4. 24/48 refers to the length dimension of a lamp; 600mm(24")/1200mm(48").

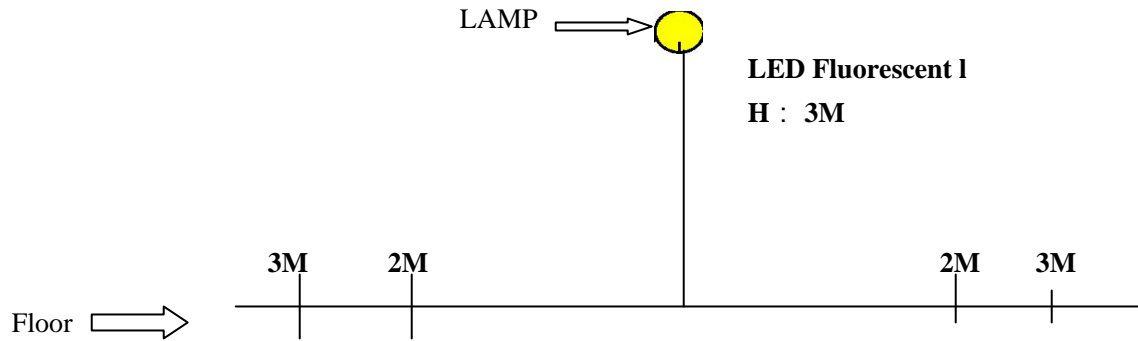
### Characteristics of LED Florescent Light:

1. Special Purpose product; professionally designed to international standards. A saving of 75% of electricity. No ballast required.
2. Product adopts the latest electric light source technology of semiconductor. No harmful UV, no contamination and very safe.
3. Light is strong: Equivalent to the energy-saving bulb of 60W (Traditional Florescent 36W+ Ballast 24W).
4. In the factory & office, it is very efficient for the worker to identify the various kinds of raw materials, components and parts. This is due to lights true genuine color. It improves products quality control in the factory.

### III. LED Fluorescent Lamp vs. Traditional Fluorescent Lamp.

	LED Fluorescent Light	Traditional Fluorescent Light
Rated Wattage	15-18W	40-50W
Life Span	>50,000 hours , 5-6 times longer.	8,000-10,000 hours.
Ballast & Starter	NO need	Needed
Brightness Device	NO need	Needed
Consumed Power	18W (saves 75%)	65W (ballast extra power)
Heat Generation	Low	High
Maintenance Cost	Low	High
Radiation	No	Mercury Vapor contained
Pollution	No	High

## V. Comparison Chart Traditional Fluorescent vs. LED Light



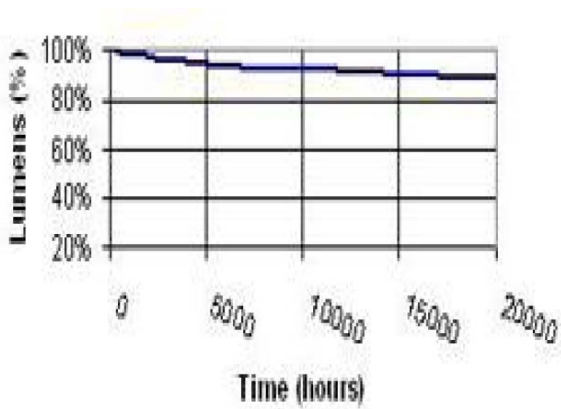
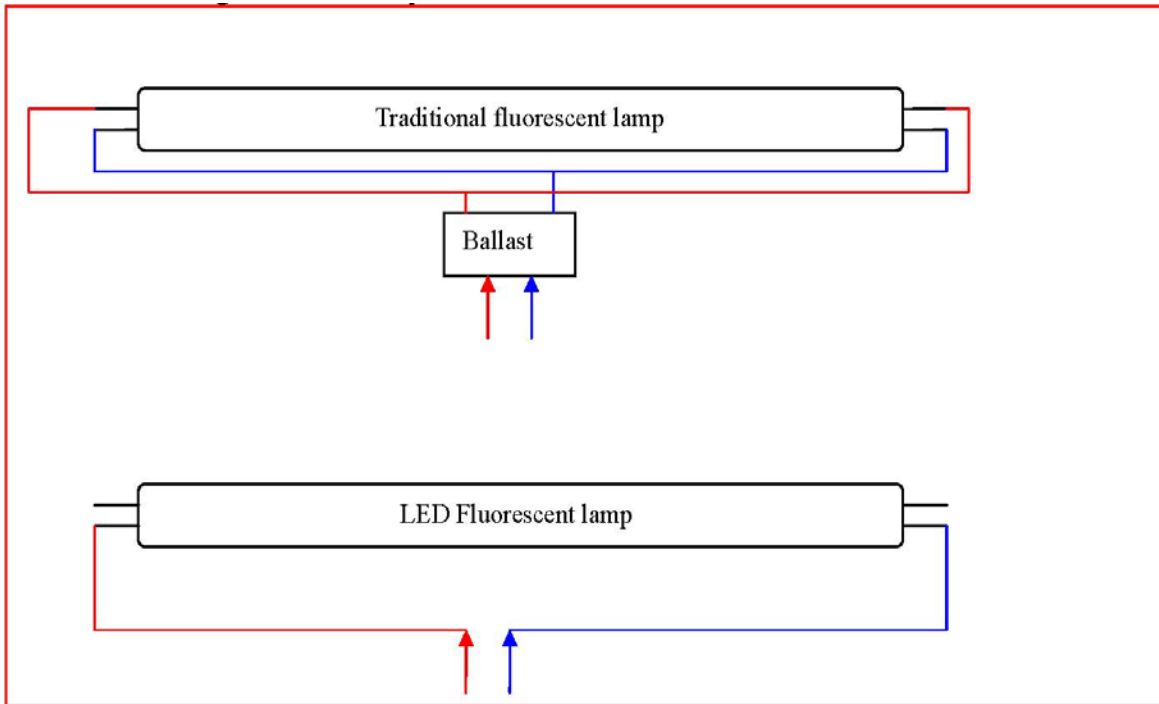
Brand	Wattage (W)	Power Consumption (W)	Right 3M from Floor lux	Left 2M from Floor lux	Left 2M from Floor lux	Right 3M from Floor lux
Light Emitting Designs fluorescent lamp	15W	16.5	21	34.6	34.6	21.5
Foshan fluorescent lamp	40W	68.5	17.6	24	24.2	18.1
Philips fluorescent lamp	40W	68.7	20	29.2	29.2	21

## Packing Picture :

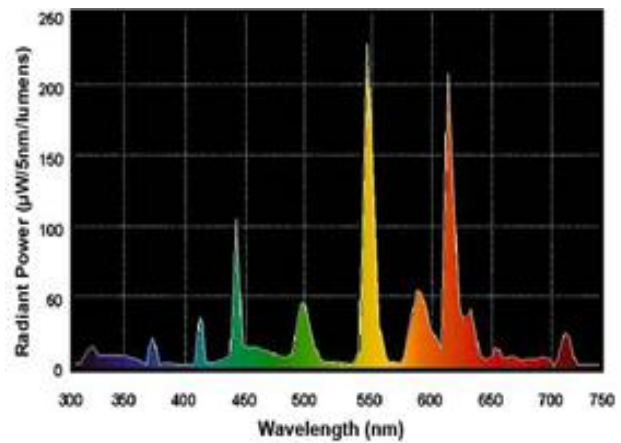


## Installation instruction :

\*Use in existing fixtures requires the ballast be disconnected or removed.



Luminance Maintenance



Spectral Power Distribution

### PRODUCT INFORMATION

ANSI Code	2009-1
Base	Medium Bi-Pin- (G13)
Product Code	LED8-PL48-
Description	T8-230C/DW, T8-230
Beam Angle	90-120 Degrees





### GENERAL CHARACTERISTICS

Lamp type	Linear
Bulb	T8,
Base	Medium Bi-Pin (G13)
Wattage:	
T8(150-171 LEDs) 2'	9W
T8(270-300 LEDs) 4'	15W
Operating Voltage	80-127V AC 50/60 Hz
Rated Life:	
Minimum	50,000 hrs
Average	100,000 hrs
Bulb Lighting Material	5mm LED Wide Angle
Installation Class:	Plug & Play 2-Pin Ends Allows Direct Plug-in into Existing Fixtures
Primary Application	Indoor

### PHOTOMETRIC CHARACTERISTICS

Initial Lumens:	1000-1100
Soft White	1350-1400
Daylight White	
Mean Lumens	1400-1500
Nominal Initial Lumens per Watt	62
Color Temperature:	
Soft White	5,000-5,500 K
Daylight White	3,000-3,500 K
Color Rendering Index (CRI)	>80

### DIMENSIONS

Maximum Overall Length (MOL)	47.78in	(1213.6 mm)
Minimum Overall Length	47.67in.	(1210.8 mm)
Nominal Length	48.0in.	(1219.2 mm)
Bulb Diameter (DIA)	1.0 in.	(25.4 mm)
Bulb Diameter (DIA) (MIN)	0.94 in.	(23.8 mm)
Bulb Diameter (DIA) (MAX)	1.1 in.	(27.9 mm)
Max Base Face to Base Face (A)	47.22 in.	(1199.3 mm)
Face to End of Opposing Pin (B) (MIN)	47.4 in.	(1203.9 mm)
Face to End of Opposing Pin (B) (MAX)	47.5 in.	(1206.5 mm)
End of Base Pin to End of Opposite Pin End (C)	47.67 in.	(1210.8 mm)

**Amperage:** The strength of an electrical current measured in amperes. The higher the amperage number, the higher the ability to place more devices on a circuit that will be driven by that amperage.

**Amp:** The basic unit of electric current adopted under the System International d'Unites; "a typical household circuit carries 15 to 50 amps"

**Bulb:** It is not a LED. A bulb is a light bulb, a flashlight bulb, a MR16 or E27 light bulb. A LED light bulb is a finished product that has the LEDs installed, electrical components installed and is ready to be used by the consumer. A LED light bulb is screwed in place, twisted and locked in place, pressed into sockets or contact terminals. This is a LED bulb.

**Bulb Base:** The part of the bulb that is used to set it into place and to make contact with electricity. There are many types and sizes. Most common are E26/27, USA and European standard household size, or medium base as it often is called. The 26 or 27 equates to the diameter measurement in millimeters of the threads of a screw-in bulb base. This type of bulb also includes the PAR 20, PAR 30 and PAR38 types, and a few others. There are MR16 and MR11 type base LED bulbs as well as GU10s.

**Dimmer:** 12vdc only. Used with LED lights powered by 12vdc - never 110/120vac. PWM built-in, as is an On/Off Switch. Will dim majority of 12vdc LED lights and a few 12vdc LED bulbs such as MR16s with the proper transformer/power supply.

**Intensity:** Is a measure of the time-averaged energy flux or amount of light striking a given area. For bulbs alone this is measured in terms of lumens while for lighting fixtures it is measured in lux (lumens/sq. meter).

**L.E.D.:** LED means light emitting diode. LEDs are a solid state device and do not require heating of a filament to create light. Rather, electricity is passed through a chemical compound that is excited and as a result, generates light.

LEDs are not bulbs or lamps in the true sense of the word and application. LEDs require a lot of work to make them ready to be used by the consumer. They need to be placed on a circuit board or other material which will allow electricity to pass through it at a specific voltage and current, and with components required to operate them at specific voltages such as 12vdc, 24vdc or 120vac. They do not come ready to plug into a 12volt or 120 volt power source.

**LED Bar:** Refers to a solid strip of material on which LEDs have been soldered, along with resistors and other components which a specific product requires to make it operate at the stated operating voltage. The Bars are usually an enclosed strip of LEDs. Enclosures are plastic, or aluminum, or metal composites with various types of lens/cover plates.

**LED Cluster or Array:** A group of LEDs set in a square, rectangular or linear pattern, and formatted to be operated at a specific voltage. They will always include two wires called leads. One is positive, the other negative.

**LED Drivers:** are current control devices which replace the need for resistors. LED Drivers respond to the changing needs of a LED or a LED circuit, and supply a constant amount of power to the LED as its electrical properties change with temperature.

**LED Lighting:** A general term used by those who do not know the specific type or category of LED lighting they are after. LED lighting includes LED bulbs and fixtures, flashlights, strips, clusters and other LED light sources.

**LED Strip:** LED Strips are usually printed circuit boards with LEDs soldered to the board. The strip can be rigid, or flexible and without any enclosure to protect the LED and circuit.

**Low Voltage:** With LEDs, that means 12vDC 24vDC or 48vDC, as opposed to 110/120vac which is high voltage. With LEDs, low voltage is commonly 12vdc; sometimes at 24vdc. To run these low voltage lights, power will have to be sent to the light through a power supply/transformer/adapter that is hooked up to 110/120/240vac power lines. The actual voltage reaching the light will be at 12vdc.

**Lumen Maintenance:** How well a LED light bulb is able to retain its intensity when compared to new. Typically a high power smd LED bulb will retain 70% of its intensity for 40,000-50,000 hours. That means a good quality LED bulb will run 8 hours a day for 13 years at 70% of its new condition. No other light source can do this.

**Lumens:** The unit of luminous flux in the International System, equal to the amount of light given out through a solid angle by a source of one candela intensity radiating equally in all directions. Used to measure light bulbs as stand alone light sources. Lighting fixtures are measured by lux output which is lumens per square meter.

**Lux:** Typically used to measure the light intensity produced by a lighting fixture. The higher the lux reading the more light the lighting fixture is producing over a given area. Known as lumens per square meter

**mA:** stands for milliamp. 1000mA equals 1.0 amp. All LEDs run on current and current is measured in milliamps. All LED products have a mA rating at which they are to be powered at.

**MCD:** or Millicandela, is used to rank/denote the brightness of a LED. 1000mcd is equal to one Candela. The higher the mcd number, the brighter the light the LED emits.

**Nanometers:** or nm. Used to measure the wavelength of light. The lower the wavelength for example, 400nm, the bluer and stronger the light source. Longer wavelengths above 600nm are red. Above 680nm, they fall into the InfraRed category, which is colorless to our eyes. White LEDs have no specific wavelength. They are measured by the color of white against the chromaticity scale.

**PCB/Printed Circuit Board:** are made from various materials including fiberglass and aluminum. The pcb has an electrical circuit imprinted in silver etching. That circuit says how the LED will operate. The pcb is also the platform by which LEDs are employed in various applications. It can be a rigid board or flexible to twistable.

**Power Supply:** and Transformer and Voltage adapter apply to the electrical conversion of 110/120/240vac line power into 12vdc which will then be applied directly to the LED light product. Power Supplies are rated according to the current/amperage load capacity each will handle. It is an electrical or electro-mechanical device.

**PWM:** Pulse Width Modulation with regards to LEDs means that the LED will be pulsed or strobed at a rate so fast that the eye will see the light as being constantly on. In fact it is not. This pulsing or turning the LED on and off lowers the potential heat stress on the chemical that makes the light, thus allowing the LED to perform longer than anticipated. This is why we strongly recommend a dimmer/PWM with every purchase of a 12vdc LED product.

**RGB:** RGB stands for Red, Blue, Green, the 3 primary colors that make white light and all other colors. It can be a pre-programmed 7 color automatically changing LED bar or strip that is non-adjustable. It also means a RGB color changing system that allow adjustment of color change frequency, strobing, chasing and other action modes.

**SMD/SMT:** A type of low profile LED that is surface mounted to a PCB. These type LEDs are very powerful and range in lumen output from 35 up to 170 lumens. With the latest LED technology being applied today, these have shown to have the most promise in delivering light levels and coloring that we are used to having. Those smd LEDs we talk about, use and sell are in the .5 watt, 1 watt, 3 watt and 5 watt power range. When you see a 7 watt or 9 watt LED light, it will contain 1 watt LEDs x 7, or 1 watt LEDs x 9, or 3 watt LEDs x 3.

**SSL:** SSL means Solid State Lighting. It does not use heating of a thin fragile filament to create light. Rather, it uses electrical current passing through a chemical which will get excited and thus emit light.

**Task Lighting/Lamp:** A LED light used to specifically light a particular area used for work or reading. Typically found in the form of a desk, floor, or clamp-on lamp, it can be a high powered LED light in any form.

**View Angle Degree:** Also referred to as directivity, or the directional pattern of a LED light beam. The expressed degree dictates the width of the light beam and also controls to some extent, the light intensity of a LED. View angles range from 8 to 160 degrees, and are provided through the use of optics, special lenses made to collimate light to into a desired veiw angle.

**Voltage:** The rate at which energy is drawn from a source that produces a flow of electricity (amperage) in a circuit. The difference in electrical charge between two points in a circuit is expressed as volts.

**Voltage Regulator:** A device which limits or controls and stabilizes the voltage being applied to a using unit such as LED lights and motors. Regulators also take higher voltages than required and reduces it to the working voltage that makes a specific product run correctly. In many instances a lack of a Voltage Regulator will allow higher voltage than a product can work with and will cause irreparable damage.

**Volts:** The International System unit of electric potential and electromotive force, equal to the difference of electric potential between two points on a conducting wire carrying a constant current of one ampere when the power dissipated between the points is one watt.

**Waterproof:** meaning the LED product can be submerged into calm water but there is a limited depth as stated for each specific product. Most aluminum bodied LED products will not do well in salt or acidic water.

**Watts:** The unit for measuring electrical power. It defines the rate of energy consumption by an electrical device when it is in operation. The energy cost of operating an electrical device is calculated as its wattage times the hours of use. In single phase circuits, it is related to volts and amps by the formula: Volts x Amps x PowerFactor = Watts.

**Watt per LED:** It can be confusing when two watt numbers are used in product specifications. For the application to smd high powered LEDs, the 1 watt, 3 watt, 5 watt, etc, refers to the power consumption of that specific LED installed in that product. The watt numbers expressed as light output are a comparison to an incandescent light bulb light output, for example; a 60 watt light output is equal to a 60 watt incandescent light bulb.

**Weatherproof:** meaning the product will take water splashing and high humidity without deterioration to the LED or circuit. LED product cannot be submerged into water.



**LIGHT EMITTING DESIGNS, LLC**

LED Retrofit Products



## **LED Counter Top Display**

Counter display includes:

(4) LED samples • Literature holder  
with tri-fold handouts • Cord and Plug  
Size: 10"W x 5"D x 11"H • Stainless Steel Finish

Cost: Free with \$2,000 opening order (per location)  
or \$200.00 list price.



**LIGHT EMITTING DESIGNS, LLC**  
LED Retrofit Products

9814 Variel Ave., Chatsworth, CA 91311  
818-407-4309 • FAX: 818-407-4311

• [www.led-llc.com](http://www.led-llc.com)

To Whom It May Concern:

Thank you for your recent inquiry into our LED line of products and retrofit bulbs. We believe that you will be as excited as we are to see our new energy saving retro-fit lamps and fixtures.

After reviewing our price sheet, if you are interested in opening an account with us please fax the attached customer set up forms to 818-407-4311.

We know that you will be extremely satisfied with our line of products and the service we provide to our customers.

We will look forward to a great partnership in this growing field.

Best regards,

The LED Team

## NEW DISTRIBUTOR PROFILE

<b>COMPANY NAME:</b>	
<b>CORPORATE NAME:</b>	
<b>HOW LONG IN BUSINESS:</b>	
<b>PHONE:</b>	
<b>FAX:</b>	
<b>EMAIL:</b>	
<b>CELL PHONE:</b>	
<b>ALTERNATE PHONE:</b>	
<b>WEBSITE ADDRESS:</b>	
<b>HOURS OF OPERATION:</b>	
<b>DAYS OPEN:</b>	
<b>PURCHASING MANAGER:</b>	
<b>A/R MANAGER:</b>	
<b>TYPE OF BUSINESS:</b>	
<b>SHOWROOM:</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>TERRITORY COVERED:</b>	
<b># OF EMPLOYEES:</b>	
<b>INTERNET SALES:</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>ESTIMATED ANNUAL SALES FOR LED, LLC.:</b>	
<b>OTHER OUTDOOR LIGHTING LINES CARRIED:</b>	
<b>NUMBER OF LOCATIONS:</b>	
<b>APPROXIMATE SQUARE FEET OF WAREHOUSE:</b>	
<b>LOADING DOCK:</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>FORK LIFT:</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>LED SALES REP:</b>	



## 2007 NEW CUSTOMER SET UP AND CREDIT APPLICATION

### Account Set Up

**Company name:**

**Contact:**

**Phone:**

**Fax:**

**E-mail:**

**Shipping address:**

**City:**

**State:**

**ZIP Code:**

**Billing address:**

**City:**

**State:**

**ZIP Code:**

**Lead Time Expected:**

**Will you accept back orders?:**

Yes

No

**Preferred method of Communication:**

Fax

Mail

Phone

Email

**Terms:**

**Will you accept back orders?:**

Yes

No

**Preferred shipment Method:**

Will Call

UPS-Our Account

UPS Your Account

Other (Please call to set up alternative shipping methods)

**Your UPS Account #:**

**Anticipated Order Pattern:**

1X week

2X a week

1X month

Other (Please Specify)

**Sales Rep:**

**Please attach the following to this signed application for credit**

- 1. Resale Card (only customers based in California)**
- 2. 2007 New Distributor Profile**

**2007 NEW CUSTOMER SET UP AND CREDIT APPLICATION**

**Account Set Up**

<b>Contact Person:</b>				<b>Title:</b>					
<b>A/P contact name:</b>									
<b>Phone:</b>				<b>Fax:</b>					
<b>E-mail:</b>									
<b>Purchasing contact name:</b>									
<b>Phone:</b>				<b>Fax:</b>					
<b>E-mail:</b>									
<b>Where would you prefer invoices be mailed to ?:</b>				<input type="checkbox"/> Billing Address		<input type="checkbox"/> Shipping Address		<input type="checkbox"/> Email	
<input type="checkbox"/> Other Please Specify				<input type="checkbox"/> Email Please Specify					

**Business and Credit Information**

<b>Primary business address:</b>									
<b>City:</b>		<b>State:</b>		<b>ZIP Code:</b>					
<b>Date business commenced:</b>									
<b>Type of business:</b>		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Partnership		<input type="checkbox"/> Corporation		<input type="checkbox"/> Other	
<b>How long at current address?:</b>									
<b>Resale Number (If in California):</b>									

**\*Please Attach a valid Resale Certificate if in California**

## 2007 NEW CUSTOMER SET UP AND CREDIT APPLICATION

### Bank Information

**Bank name:**

**Bank address:**

**City:** **State:** **ZIP Code:**

**Account number:** **Phone:**

**Type of account:**  Savings  Checking  Other

### Business/trade references

**1. Company name:** **Contact Name:**

**Address:**

**City:** **State:** **ZIP Code:**

**Phone:** **Fax:**

**2. Company name:** **Contact Name:**

**Address:**

**City:** **State:** **ZIP Code:**

**Phone:** **Fax:** **E-mail:**

**3. Company name:** **Contact Name:**

**Address:**

**City:** **State:** **ZIP Code:**

**Phone:** **Fax:**



## WARRANTY

All products are warranted for 3 years or 20,000 hours if used in accordance with the guidelines listed below. Any product returned will require factory inspection and approval before any credits can be issued. Prices and designs are subject to change without notice.

The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by LED, LLC for any infringements of intellectual property or other rights of the third parties which may result from its use.

- LED, LLC is continually working in an effort to improve the quality of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing LED, LLC products, to comply with the standards of safety in making a safe design for the entire system and to avoid situations in which a malfunction or failure may be caused.
- In developing your designs, please ensure that LED, LLC products are used within specified operating ranges as set forth in the most recent LED, LLC products specifications.

## WARRANTY GUIDELINES

- 12V products must be used with magnetic transformers (or approved electronic units)
- 120 Volt range: 110V-130V
- 12 Volt range: 10V-12V
- Used with GFI and overload protection devices

## ABSOLUTE MAXIMUM RATINGS

Parameter	Rating	Unit
DC Voltage	12	V
AC Voltage	12	V
Average LED Driver Current	560	mA
Operating ambient temperature	-40~+122	°F

## SHIPPING

If you require same day shipment order must be placed by 1:00 PM Pacific Time and must have a written request to ship the same day. Orders placed after 1:00 PM Pacific Time or without same day shipping request will ship two to three days later, excluding weekends. Orders placed on the weekend ship the following Wednesday or Thursday unless otherwise requested.

If you provide us with an email address, an email is sent to confirm that your order has been received and is being processed. Another email will be sent to you with the tracking information when your order ships.

OverNight and 2-Day shipping options are only available to destinations within the USA. OverNight and 2-Day shipments ship via UPS and are delivered in 1 or 2 Business days (not weekends). If you need Saturday delivery, you must request it in writing. Saturday delivery usually costs about twice as much as normal business day delivery. Shipping costs cannot be provided prior to the time of shipping.

## MINIMUM ORDER

Minimum Order: \$100.00.

## STOCK

Out of stock items will be back ordered unless otherwise requested.

## RETURN POLICY

10 day return policy with approved RGA #. Replacement items will be invoiced upon shipment and a possible credit may be given after receipt and evaluation of returned items. No returns allowed without RGA# on cartons. All merchandise returned must be shipped prepaid and marked with RGA# provided by factory and may be subject to a 25% restocking fee.

(a) Merchandise CANNOT be returned without prior authorization from LED, LLC.. Please refer to your P.O. and/or Invoice number against which the return is being made. Returns will not be accepted after 30 days of purchase.

(b) Transportation charges must be prepaid by the purchaser

(c) R.G.A. number must be submitted with all returns.

(d) Unsold factory-sealed merchandise may be returned only with written permission from LED-LLC.

(e) All merchandise returns must be shipped prepaid, in factory sealed original cartons, and is subject to 25% restocking charge. Custom or discontinued items are not returnable.

(f) Please see the Credit Memo for return procedure.

You are responsible for return shipping.

## CUSTOM ORDERS

For custom LED products, Circuit Boards and Design Services – please email the specifications of the desired product along with expected lead time and quantity to [brucedennis@sbcglobal.net](mailto:brucedennis@sbcglobal.net)

9814 Variel Avenue  
Chatsworth, CA 91311

(818) 407-4309

(818) 407-4311 fax

[www.led-llc.com](http://www.led-llc.com)

## SAMPLES

Distributors: Three samples will be available per distributor @ 20% off of dist net cost

Agencies: Six samples will be provided to sales agency at no charge.

All Others: All others will be memo invoiced at 20% off of dist net cost

## FREIGHT POLICY ORDERS

Orders of \$2,000.00 or more will be freight allowed under the following terms:

- account must be receivable current
- invoice must be paid within specified terms (net 30)
- does not include transformers or cable
- COD and prepaid orders are not eligible
- Continental US only



**CREDIT MEMO  
SC 3000**

RGA # \_\_\_\_\_  
Date \_\_\_\_\_

**BILLED TO ORIGINALLY**

Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City, ST ZIP Code \_\_\_\_\_  
Phone \_\_\_\_\_  
e-mail \_\_\_\_\_

**SHIPPED TO ORIGINALLY:**

Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City, ST ZIP Code \_\_\_\_\_  
Phone \_\_\_\_\_

**PICK UP OR SHIP TO ADDRESS:**

Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City, ST ZIP Code \_\_\_\_\_  
Phone \_\_\_\_\_

**CONTACT NAME** \_\_\_\_\_

**To insure proper and efficient handling of any claim(s) we ask that all returns comply with the following RGA procedures:**

1. Authorized returns are to be shipped prepaid to **9814 Variel Ave Chatsworth, CA 91311**
  - a. Please note that shipping and insurance charges are not refunded.
  - b. **RGA # must be placed on the outside of the package**
2. This form, accompanied by the invoice or packing slip, must be completed and faxed to **818-407-1450**
3. Upon receipt of the above, an RGA # will be given to you. This # is to be written on the outside of any return packages.
4. Physically damaged items, shortages, or item mistakes must be reported within 30 days of item receipt.
5. Upon approval, a Credit Memo will be mailed to you along with your next invoice.
6. Please contact the accounting dept. at **818-407-4050** to have the credit applied.

**Return Policy**

LED, LLC warranties its lamps for two years if used in accordance with manufacturers guidelines

- To receive a replacement or credit, your purchase must be returned with shipping pre-paid in "as new" condition, with a preapproved RGA# marked on the outside of the box. Any variance from these conditions could result in processing delays.
- **Shipping and insurance charges are not refunded.**
- Refunds on purchases made with a credit card will only be credited to the same card.
- Refunds or credits are issued after receipt and inspection of returned goods. Refunds or credits do not include original shipping and handling charges.
- Shortages, returns or claims must be made within 10 days

QTY	ITEM #	Reason for return	PO/SO#	Credit	Replace	Repair	Return ed	Rec'd	Call Tag& Auth	Credit Amt
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Y	

Total Packages being returned \_\_\_\_\_

Weight of each Package \_\_\_\_\_

SUBTOTAL	
SALES TAX	
TOTAL	

**Office Administration Section**

PLEASE ATTACH A COPY OF ORIGINAL ORDER PAPERWORK TO THIS FORM DATE ITEMS REC'D \_\_\_\_\_  
 ITEMS REPLACED?  YES (ATTACH NEW SO) DATE REPLACEMENT ITEMS SENT \_\_\_\_\_ DATE ITEMS RET'D \_\_\_\_\_  
 RESOLUTION:  REPAIRED&RET'D  NO PROB.-RET'D  MISUSE-RET'D BROKEN  RET'D TO STOCK  25% FEE  
 COMMENTS: \_\_\_\_\_

**PLEASE MARK THE OUTSIDE OF ANY RETURNS WITH RGA#  
Please include copy of invoice or packing slip**



## Conventional Lamp Styles

120V / 3W



### Medium Base (A19)

Clear poly material that fits standard sockets. Available in SW Soft White (3000°) or DL Daylight (5000°). Size: 2-3/8" x 5". Available in frosted envelope - special order.

Cat. No.	Description	Compare to
LED-A19-120-3-36-DL-CL	A19, 3W, 36 LED, Med. Base, Daylight	20W
LED-A19-120-3-36-SW-CL	A19, 3W, 36 LED, Med. Base, Soft White	15W

120V / 2W



### Candelabra and Globe Decorative Retrofit

Clear poly material, fits candle base or medium base sockets. Available in SW Soft White (3000°) or DL Daylight (5000°). Candle: Size: 1-5/8" x 3-3/4".

Cat. No.	Description	Compare to
LED-CAN-120-2-30-DL-CL	120V, 2W, 30 LED, Candle Base, Daylight	20W
LED-CAN-120-2-30-SW-CL	120V, 2W, 30 LED, Candle Base, Soft White	15W
LED-CMED-120-2-30-DL-CL	120V, 2W, 30 LED, Med. Base, Daylight	20W
LED-CMED-120-2-30-SW-CL	120V, 2W, 30 LED, Med. Base, Soft White	15W
LED-G16-120-2-30-DL or SW	120V, 2W, 30 LED, Candle Base, 2-1/4"W	10W

120V / 5W  
120V / 7W



### Retrofit Globes (E50 Dimmable)

Compact globe in poly material that fits standard sockets. Available in SW Soft White (3000°) or DL Daylight (5000°).

Cat. No.	Description	Compare to
LED-E50-120-7-5-DL or SW	120V, 7W, Hi Pwr. 5 LED, Med. Base	75W
LED-E60-120-5-18-DL or SW	120V, 5W, Hi Pwr. 18 LED, Med. Base	40W

### LED Rope Light



Create dramatic, colorful decorative and architectural lighting

Rope Dia: 1/2" • Lamp Spacing: 1" • Lamp wattage: 1/2W • 120V  
Cutting: 18" section • Sold by 150' roll or by the foot • 28,000 hr. lamp life

Cat. No.	Color	Power Kit	Mounting
LED-RL-110-65-BL	Blue	LED-RL-PWR SET Cord, Plug and End Cap (inc. with 150' roll)	LED-RL-MOUNTING CLIPS Attachment Clip (inc. with 150' roll)
LED-RL-110-65-GN	Green		
LED-RL-110-65-RD	Red		
LED-RL-110-65-YE	Yellow		
LED-RL-110-65-WH-3000	Clear Warm		
LED-RL-110-65-WH-5000	Clear Cool		

\*3000 = Soft White / 5000 - Daylight\*

## Fluorescent / Hi Lumen Retrofits

120V / 15W



### T8 Retrofit

Fully encapsulated FL replacement acrylic tube. 120V or 277V. 15W (48"). Also available in 24" length, consult factory. Daylight (DL) 5000°K.

Cat. No.	Length	Watts	Voltage	Color Temp.	Compare to
LED8-PL48-120-15-300-DL	4' T8	15W	120V	Daylight	32W FL
LED8-PL48-277-15-300-DL	4' T8	15W	277V	Daylight	32W FL

NOTE: UL requires 12V T8 - special order.

120V / 6W  
120V / 10W



### Hi Lumen Dimmable Retrofit

Fully encapsulated hi power retrofit bulb in poly material that fits standard medium base sockets. Size: 2" x 5-1/2"

Cat. No.	Description	Compare to
LED-CFLA-120-6-104-DL	120V, 6W, 104 LED, Daylight	60W
LED-CFLA-120-6-104-SW	120V, 6W, 104 LED, Soft White	40W
LED-CFLA-120-10-195-DL	120V, 10W, 195 LED, Daylight	80W
LED-CFLA-120-10-195-SW	120V, 10W, 195 LED, Soft White	60W

### Voyager 38 - Energy Saving Site/Roadway Hi Power 38W = 300W Incandescent

Save up to 90% on energy and maintenance costs. Lasts 50,000 hours.

- Site / Roadway
- Wall Packs
- Security
- Facility / Industrial
- Parking
- Loading Bay
- 160° Beam



Base: Mogul E39/E40  
Voltage: 85-265V  
Wattage: <38.0W  
Color Temp: 6000°K  
Size: 10-7/8" x 3-1/2"  
277V Available - Special Order

We're reducing global energy waste one lamp at a time.

Cat. No.	Length	Watts	Voltage	Color Temp.	Compare to
LED-CFLM-120-38-42-DL	10-7/8"	38W	85-265V	Daylight	300W HPS

Distributed by:

### LIGHT EMITTING DESIGNS, LLC

9814 Variel Ave., Chatsworth, CA 91311 • 818-407-4309 FAX: 818-407-4311

Lamp comparisons are for general reference only, and not to be used for exact specifications.

©2007 Light Emitting Designs, LLC. Specifications subject to change without notice.

See our website for complete product line: [www.led-llc.com](http://www.led-llc.com)



**Light Emitting Designs, LLC**  
Environmental Lighting Solutions

How many people  
does it take  
to screw in  
this  
light bulb?

Only one...  
and only once every  
10 Years.

We retrofitted this lamp with  
**LED technology**

the world's most efficient light source.



**L**ighting has achieved a milestone with the development of LED technology.

Fluorescent, long the saviour of environmentalists has now taken a back seat to LED. One 6 watt LED light bulb can potentially last up to 58,500 or more hours than a 60 watt incandescent bulb, and potentially 50,000 more hours than a CFL. We comfortably claim 20,000 - 50,000 hours on our retrofit LED bulbs while providing socially responsible lighting technology.

We didn't start the 'retrofit revolution'. The environment's need for an alternative light source did. However, LED-LLC is feeding the retrofit revolution with high quality, dependable LED retrofit lamps.

**JOIN THE RETROFIT REVOLUTION**  
COMMERCIAL - RESIDENTIAL INDUSTRIAL



**INCANDESCENT RETROFFITS**

**MR16 RETROFFITS**

**CANDLE RETROFFITS**

**HI LUMEN RETROFFITS**

**DIMMABLE PAR RETROFFITS**

**FLUORESCENT RETROFFITS**



**LED Retrofit for MR16 and MR11 - 12V / 120V**

12V / 2W



**2W MR16 Medium Flood**

Fully encapsulated with lens. 2W, bi-pin mounting. Available in Soft White SW (3000°K) or Daylight DL (5000°K). Beam: 30°. Optional colors available. Consult factory. Application: Soft mood lighting. Size: Standard MR16 - 1-7/8" Dia. x 1-3/4"

Cat. No.	Description	Compare to
LED-MR16-12-2-21-DL	12V, 2W, 21 LED, Bi Pin, 30°	20W Med. Flood
LED-MR16-12-2-21-SW	12V, 2W, 21 LED, Bi Pin, 30°	20W Med. Flood

12V / 3W  
120V / 3W



**3W Medium 30° Flood**

Fully encapsulated 3W. Available in Soft White SW (3000°K) or Daylight DL (5000°K). Beam: 30°. Application: Task lighting, retail display, track lighting, recessed lighting. Size: 1-7/8" Dia. x 1-3/4".

Cat. No.	Description	Compare to
LED-MR16-12-3-48-DL or SW	12V, 3W, 48 LED, Bi Pin, 30°	35W Med. Flood
LED-JDR-120-3-48-DL or SW	120V, 3W, 48 LED, Bi Pin, 30°	35W Med. Flood
LED-GU10-120-3-48-DL or SW	120V, 3W, 48 LED, GU, 30°	35W Med. Flood

12V / 3W



**3W MR16 Hi Power Medium Flood**



Fully encapsulated. 3W, Hi Power, bi-pin mounting. Available in Soft White SW (3000°K) or Daylight DL (5000°K). Beam: 40°. Size: Standard MR16 - 1-7/8" Dia. x 1-3/4"

Cat. No.	Description	Compare to
LED-MR16-12-3-3-DL or SW	12V, 3W, 3 LED, Bi Pin, 40°	50W Med. Flood

12V / 3W  
120V / 3W



**3W Hi Power Wide/Narrow Beam**

Fully encapsulated. 3W, GU10 mtg., MR16 bi-pin, or JDR med. base (as shown). Available in soft white SW (3000°K) or Daylight DL (5000°K). Size: 1-7/8" Dia. x 2-1/2". Special order: to specify narrow beam, replace -60 with -15 (for 15°).

Cat. No.	Description	Compare to
LED-MR16-12-3-3-SW-60 or DL-60	12V, 3W, 3 LED, MR16 Bi Pin	45W Wide Flood
LED-JDR-120-3-3-SW-60 or DL-60	120V, 3W, 3 LED, JDR	45W Wide Flood
LED-GU10-120-3-3-SW-60 or DL-60	120V, 3W, 3 LED, GU	45W Wide Flood

12V / 2W



**3W MR11 Medium Flood**

Fully encapsulated. 3W, bi-pin mounting. Available in Soft White SW (3000°K) or Daylight DL (5000°K). Beam: 30°. Size: 1-1/4" Dia. x 1-5/8"

Cat. No.	Description	Compare to
LED-MR11-12-3-30-DL	12V, 3W, 30 LED, Bi Pin, 30°	25W Med. Flood
LED-MR11-12-3-30-SW	12V, 3W, 30 LED, Bi Pin, 30°	25W Med. Flood

**Ordering Example:**

WARRANTY: 1 YEAR UNLESS FIXTURE SPEC IS APPROVED BY FACTORY.

Lamp Type	Voltage	Wattage	No. of Diodes	Color	*Beam Angle
LED-MR16	12	3	3	SW	15

**LED PAR Retrofit - 12V / 120V**

120V / 3W  
120V / 4W  
120V / 5W  
120V / 10W



**PAR Series**

Fully encapsulated PAR, asst. wattages, medium base mounting. Available in soft white SW (3000°K) or Daylight DL (5000°K). Beam: 60°. Colors available. Consult factory. Size: PAR20 - 2-1/2" x 3" PAR30 - 3-3/4" x 4", PAR38 - 4-3/4" x 5"

Cat. No.	Description	Compare to
LED-PAR20-120-3-60-SW or DL	120V, 3W, 60 LED, Med. Base, 60°	40W Wide Flood
LED-PAR30-120-4-70-SW or DL	120V, 4W, 70 LED, Med. Base, 60°	50W Wide Flood
LED-PAR38-120-5-80-SW or DL	120V, 5W, 80 LED, Med. Base, 60°	60W Wide Flood
LED-PAR38-120-10-23-SW or DL	120V, 10W, 23 LED, Med. Base, 60°	75W Wide Flood

120V / 9W



**9W JDR PAR Medium Flood**

Fully encapsulated. 9W, JDR (med. base) screw-in base mounting. Hi-power LED. Available in soft white SW (3000°K) or Daylight DL (5000°K). Beam: 60°. Size: 2-1/8" Dia. x 3-3/8"

Cat. No.	Description	Compare to
LED-JDR-120-9-1-DL or SW	120V, 9W, 1 LED, JDR, 60°	60W Wide Flood

12V / 6W  
120V / 6W



**6W Hi Power Wide/Narrow Beam**

Fully encapsulated. 6W, GU10 mounting (shown), MR20 bi-pin, or JDR med. base. Available in soft white SW (3000°K) or Daylight DL (5000°K). Size: 2-3/8" Dia. x 2-1/4". Special order: to specify narrow beam, replace -60 with -15 (for 15°).

Cat. No.	Description	Compare to
LED-MR20-12-6-3-SW-60 or DL-60	12V, 6W, 3 LED, MR20 bi-pin	60W Wide Flood
LED-JDR-120-6-3-SW-60 or DL-60	120V, 6W, 3 LED, JDR	60W Wide Flood
LED-GU10-120-6-3-SW-60 or DL-60	120V, 6W, 3 LED, GU	60W Wide Flood

120V / 7W



**7W PAR30 Hi Power Dimmable Wide Flood**

Fully encapsulated PAR30 7W, medium base. Available in soft white SW (3000°K) or Daylight DL (5000°K). Hi power LED. Beam: 60°.

Cat. No.	Description	Compare to
LED-PAR30-120-7-7-SW-60 or DL-60	120V, 7W, 7 LED, Med. Base	75W Wide Flood

120V / 15W



**15W PAR38 Hi Power Dimmable Wide Flood**

Fully encapsulated PAR 38 15W, medium base. Available in soft white SW (3000°K) or Daylight DL (5000°K). Hi power LED. Beam: 60°.

Cat. No.	Description	Compare to
LED-PAR38-120-15-12-SW-60 or DL-60	120V, 15W, 12 LED, Med. Base	100W Wide Flood

Narrow Beam = 15°  
Wide Flood = 60°  
DL = Daylight ±5000°K  
SW = Soft White ±3000°K



**Light Emitting Designs, LLC**

**Environmental Lighting Solutions**

**Product Specs and Information**

**Version 1.0**

**Release date: 081007**

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# Light Emitting Designs, LLC

## About L.E.D., LLC

The environment has been demanding new, energy saving technologies that reduce the 'carbon footprint' without sacrificing power and efficiency. Lighting drains an enormous percentage of our total energy usage, making the search for a viable alternative lighting source the mandate for many facility engineers and specifiers. The result, LED (Light Emitting Diodes) has proven itself as a viable and effective alternative to conventional lamps and fixtures.

Our company, LED, LLC was formed to meet the worldwide demand for energy efficient lighting using LED technology. Our product line consists of retro-fit lamps (that can replace conventional lamps) and a wide selection of fixtures.

We have extensive capabilities and resources. Our main facility

is comprised of a manufacturing and R&D campus that houses over 100,000 sq. ft. of state of the art manufacturing equipment. This includes 15 laser machines, 20 vacuum machines, multiple CNC machines, 20 injection machines, 51 soldering machines, 15 ovens and a workforce of over 1000 employees. The Research & Development staff is made up of 30 professors and engineers that are complimented by an experienced team of quality control specialists, enabling LED, LLC to stay at the forefront in the development of more powerful and efficient LED lamps and fixtures.

At LED, LLC we are committed to supplying the highest quality energy efficient lighting products available in today's marketplace.



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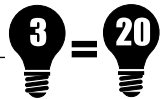
9814 Variel Ave., Chatsworth, CA 91311  
(818) 407-4309 • FAX: (818) 407-4311 • [www.led-llc.com](http://www.led-llc.com)



# LED Incandescent Series

LED-A19-120-3-36-DL-CL

LED-A19-120-3-36-SW-CL



### Description:

Fully encapsulated, 120 Volt, 3 Watt, A19 medium base mount retrofit LED bulb. Available in Soft White (SW) or Daylight (DL). Also available with frosted acrylic envelope.

- A19 Standard medium base allows mounting wherever incandescent E26 lamps are accepted.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 20W light output
- 36 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

### Applications:

The LED-A19 bulb has been designed to retrofit existing incandescent bulb installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Lobby lighting
- Chandeliers
- Display cases
- Recessed cans
- Hotel Room retrofit
- Signage
- Step lighting
- Shopping malls
- Pathway Lighting
- Amusement parks

### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

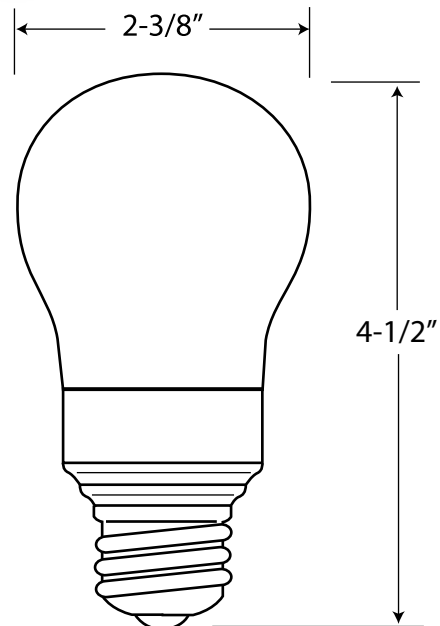
### Packaging:

White cartons, blister pack or color box.

### Special Order Options:

- Clear Acrylic Bulb
- Frosted Acrylic Bulb
- Red  Blue  Green
- Color Changing

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### Technical Specifications:

Bulb Type:	A	Base Type:	E26 Medium
Bulb Material:	Clear Acrylic	Replaces:	20W
Lumens:	195	Life Time:	50,000 hrs.
Input Voltage:	120V	Output Power:	3W
Dimensions:	2-3/8" x 4-1/2"	Beam Angle:	n/a
Light Source:	36 pc. LED	Kelvin Temp.:	(DL) est. 5000°K (SW) est. 3000°K
Lumens / Watt:	65		
CRI:	85	Mercury:	No

Note: All specification information falls within a ± 2% range



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# LED Candelabra Series



## LED-CMED-120-2-30-DL-CL (Daylight - Clear Bulb)

## LED-CMED-120-2-30-SW-CL (Soft White - Clear Bulb)

### Description:

Fully encapsulated, 120 Volt, 2 Watt, E26 medium base mounting that integrates energy saving LED technology into a clear poly envelope standard candelabra type 'candle' format.

Available in Soft White (SW) and Daylight (DL).

- E26 medium base screw in base.
- 2 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 15W (SW) or 20W (DL)  
Candle bulb light output.
- 30 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Available with clear or white poly envelope (consult factory).
- Very low heat output.

### Applications:

The LED Candelabra 2W lamp has been designed to retrofit existing Candelabra and Candle Lamp installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Decorative lighting
- Hospitality and restaurant lighting
- Residential lighting

### Technical restrictions:

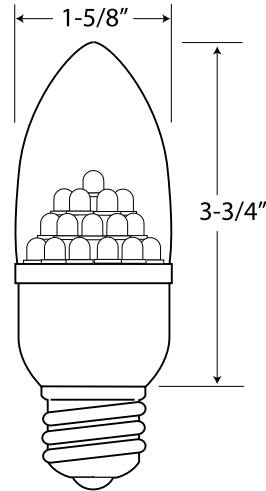
Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

### Packaging:

White cartons, or color box.

### Special Order Options:

- White Acrylic Bulb  Flame Tip
- Red  Blue  Green
- Color Changing



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### Technical Specifications:

Bulb Type:	Candle	Base Type:	E26 Medium
Bulb Material:	Clear Poly	Replaces:	15W / 20W
Lumens:	130	Life Time:	50,000 hrs.
Input Voltage:	120V	Output Power:	2W
Dimensions:	1-5/8" x 3-3/4"	Beam Angle:	n/a
Light Source:	30 pc. LED	Kelvin Temp.:	(SW) est. 3000°K (DL) est. 5000°K
Lumens / Watt:	65		
CRI:	85	UV / IR radiation:	No

Note: All specification information falls within a  $\pm 2\%$  range



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Specifications subject to change without notice. 121507\_CMED120230

# LED Candelabra Series

## LED-CAN-120-2-30-DL-CL

## LED-CAN-120-2-30-SW-CL



### Description:

Fully encapsulated, 120 Volt, 2 Watt, candelabra E12 base mounting that integrates energy saving LED technology into a clear poly envelope standard candelabra type 'candle' format. Available in Soft White (SW) or Daylight (DL).

- E12 screw in base.
- 2 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 15W (SW) or 20W (DL) Candle light output.
- 30 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Available with clear or white poly envelope (consult factory).
- Very low heat output.

### Applications:

The LED Candelabra 2W lamp has been designed to retrofit existing Candelabra and Candle Lamp installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Decorative lighting
- Hospitality and restaurant lighting
- Residential lighting

### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

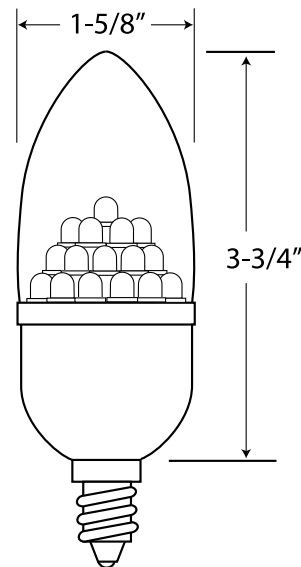
### Packaging:

White cartons, or color box.

### Special Order Options:

- White Acrylic Bulb
- Flame Tip
- Red
- Blue
- Green
- Color Changing

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### Technical Specifications:

Bulb Type:	Candle	Base Type:	E12 Candelabra
Bulb Material:	Clear Poly	Replaces:	15W / 20W
Lumens:	130	Life Time:	50,000 hrs.
Input Voltage:	120V	Output Power:	2W
Dimensions:	1-5/8" x 3-3/4"	Beam Angle:	n/a
Light Source:	30 pc. LED	Kelvin Temp.:	(SW) est. 3000°K (DL) est. 5000°K
Lumens / Watt:	65		
UV / IR radiation:	No	CRI:	85

Note: All specification information falls within a ± 2% range

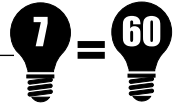


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## LED E50 Retrofit Series



### LED-E50-120-7-5-DL (Daylight) LED-E50-120-7-5-SW (Soft White)

#### Description:

Fully encapsulated, 120 Volt, 7 Watt, E26 medium base mounting that integrates energy saving High Power LED technology into a standard incandescent format. Available in Soft White (SW) or Daylight (DL).

- E27 medium base.
- 7 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 60W incandescent light output.
- 5 on-board Hi Power LED diodes.
- Approximately 50,000 hour lamp life.
- Very low heat output and no harmful gasses.

#### Applications:

The E50 7W lamp has been designed to retrofit existing incandescent installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

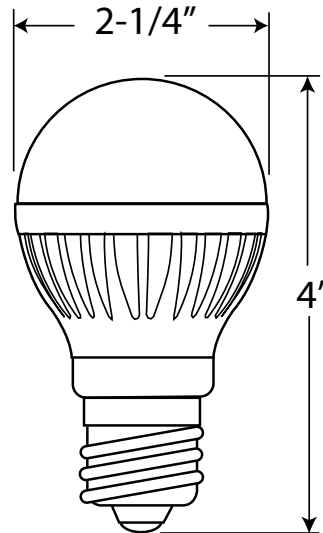
- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor
- Landscape retrofit
- Ceiling fans
- Residential lighting

#### Dimming:

Standard dimming available.  
High (100%), Low (15%).

#### Packaging:

White cartons, or color box.



#### Technical Specifications:

Bulb Type:	Standard	Base Type:	E26 Medium
Life Time:	50,000 Hrs.	Input Voltage:	AC 100/240V
Output Power:	7W	Replaces:	60W
Dimensions:	4" x 2-1/4"	Beam Angle:	300°
Light Source:	5pc HP LED	Color:	(SW) est.3000°K (DL) est. 5000°K
Dimming:	Yes		
Mercury:	None	Lumens / Watt:	80

Note: All specification information falls within a  $\pm 2\%$  range

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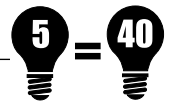
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121507\_E5012075



## LED E60 Retrofit Series

### LED-E60-120-5-18-DL (Daylight) LED-E60-120-5-18-SW (Soft White)



#### Description:

Fully encapsulated, 120 Volt, 5 Watt, E27 medium base mounting that integrates energy saving LED technology into a standard incandescent format. Available in Soft White (SW) or Daylight (DL).

- Medium E27 screw in base.
- 5 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K) or Daylight DL (5000°K)
- Compare to 40W incandescent light output.
- 18 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output and no harmful gasses.

#### Applications:

The E60 5W lamp has been designed to retrofit existing incandescent installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor
- Landscape retrofit
- Ceiling fans
- Residential lighting

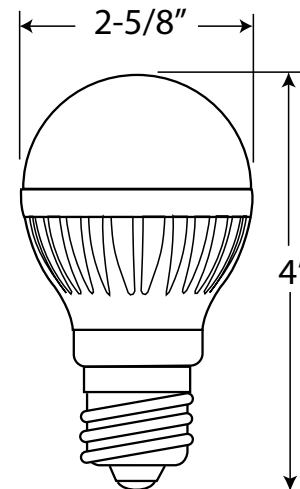
#### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

#### Packaging:

White cartons, or color box.

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#### Technical Specifications:

Bulb Type:	Standard	Base Type:	E27 Medium
Life Time:	50,000 Hrs.	Input Voltage:	AC 100/240V
Output Power:	5W	Replaces:	40W
Dimensions:	4" x 2-5/8"	Beam Angle:	300°
Light Source:	18pc LED	Color:	(SW) est.3000°K (DL) est. 5000°K
Dimming:	Consult Factory		
Mercury:	None	Lumens / Watt:	65

Note: All specification information falls within a  $\pm 2\%$  range



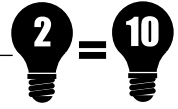
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Specifications subject to change without notice. 121507\_E60120518

# LED G16 Retrofit Series



## LED-G16-120-2-30-DL (Daylight) LED-G16-120-2-30-SW (Soft White)

### Description:

Fully encapsulated, 120 Volt, 2 Watt, E12 candle base mounting that integrates energy saving LED technology into a standard G16 format. Available in Soft White (SW) or Daylight (DL).

- E12 Candle base.
- 2 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 10W incandescent light output.
- 30 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output and no harmful gasses.

### Applications:

The G16 2W lamp has been designed to retrofit existing G16 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

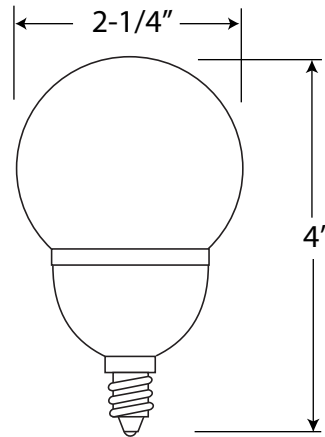
- Retail display applications
- Signage
- Hospitality
- Ceiling fans
- Residential lighting
- Candelabras

### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

### Packaging:

White cartons, or color box.



### Technical Specifications:

Bulb Type:	Globe	Base Type:	E12 Candle
Life Time:	50,000 Hrs.	Input Voltage:	AC 100/240V
Output Power:	2W	Replaces:	10W
Dimensions:	4" x 2-1/4"	Beam Angle:	300°
Light Source:	30pc LED	Color:	(SW) est.3000°K (DL) est. 5000°K
Dimming:	Consult Factory		
Mercury:	None	Lumens / Watt:	65

Note: All specification information falls within a ± 2% range

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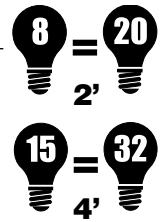
# LED Fluorescent T-8 Retrofit Series

LED8-PL24-120-8-171 DL/SW (Daylight / Soft White)

LED8-PL24-277-8-171-DL/SW (Daylight / Soft White)

LED8-PL24-120-8-171 DL/SW (Daylight / Soft White)

LED8-PL24-277-8-171-DL/SW (Daylight / Soft White)



## Description:

Fully encapsulated, 110 or 277 Volt, 8 Watt (24"), or 15 Watt (48"), T8 medium bi-pin mounting that integrates energy saving LED technology into a standard T8 fluorescent format. Available in Soft White (SW) or Daylight (DL).

- T8 medium bi-pin base.
- 8 Watt (24"), 15 Watt (48")
- 120 or 277 Volt operation.
- Daylight DL (5000°K)
- Soft White SW (3000°K)
- Compare to 20W or 32W standard fluorescent
- 171 or 300 on-board LED diodes
- Approximately 50,000 hour lamp life. Minimal to no heat output.

## Applications:

LED T8 Retrofits can impact energy usage and costs in a major way with absolutely no danger of mercury vapor contamination.

- Cold display
- Computer and equipment rooms
- Hospitality lighting
- Residential and institutional utility room
- Lab and clean room lighting

## Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

## Packaging:

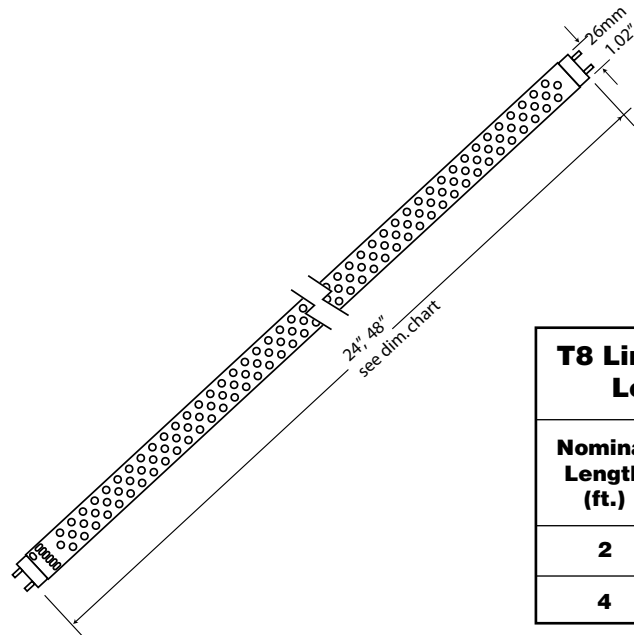
White cartons.

**NOTE: Ballast must be by-passed when present. Eliminating the ballast saves additional costs related to maintenance, energy consumption and performance. Additionally, by-passing ballast will insure no RFI interference.**

## Special Order Options:

- Glass (G)  277V
- T5 and T8 Cold Case Tube Available

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T8 Linear Lamp Lengths	
Nominal Length (ft.)	Actual Length (in.)
2	23.6
4	47.2

## Ordering Information :

Catalog No.	Length	Watts	Voltage	Color Temp.
<b>LED8-PL24-120-8-171-SW</b>	2' T8	8W	120V	Soft White
<b>LED8-PL24-120-8-171-DL</b>	2' T8	8W	120V	Daylight
<b>LED8-PL24-277-8-171-SW</b>	2' T8	8W	277V	Soft White
<b>LED8-PL24-277-8-171-DL</b>	2' T8	8W	277V	Daylight
<b>LED8-PL48-120-15-171-SW</b>	4' T8	15W	120V	Soft White
<b>LED8-PL48-120-15-171-DL</b>	4' T8	15W	120V	Daylight
<b>LED8-PL48-277-15-171-SW</b>	4' T8	15W	277V	Soft White
<b>LED8-PL48-277-15-171-DL</b>	4' T8	15W	277V	Daylight

## Technical Specifications:

Bulb Type:	T8	Base Type:	Med. T-8 bi-pin	Mounting:	Med. T-8 bi-pin
Bulb Material:	Acrylic (P)	Replaces:	20W / 32W	Life Time:	50,000 Hrs.
Lumens	520 (2'), 975 (4')	Output Power:	8W / 15W	Beam Angle:	90° - 120°
Input Voltage:	AC120V/60Hz	Kelvin Temp.:	(SW) est.3000° K (DL) est. 4000° K	CRI:	85
Dimensions:	2', 4' NOM. X 1-1/8"	Lumens / Watt:	70		

Note: All specification information falls within a ± 2% range

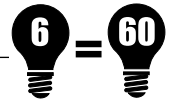


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www.led-llc.com Specifications subject to change without notice. 121507\_T81208171

# LED 6W Hi Lumen Retrofit Series



## LED-CFLA-120-6-104-DL (Daylight)

## LED-CFLA-120-6-104-SW (Soft White)

### Description:

Fully encapsulated, 120 Volt, 6 Watt, E27 medium base mounting that integrates energy saving LED technology into a standard A19 or CFL format. Available in Soft White (SW) or Daylight (DL).

- 6 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White 120 lumens SW (3000°K) or Daylight 160 lumens DL (5000°K)
- Compare to 40W (SW) or 60W (DL) light output.
- 104 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output and no harmful gasses.
- Dimmable

### Applications:

The 6W CFLA lamp has been designed to retrofit existing incandescent and/or CFL installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

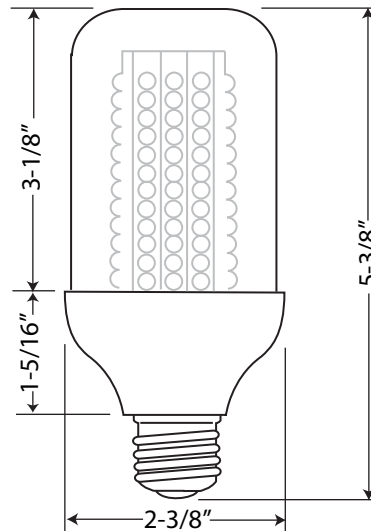
- Task lighting
- Hospitality lighting
- Recessed downlighting
- Residential lighting

### Dimming:

Standard dimming available.  
High (100%), Low (40%).

### Packaging:

White cartons with label



### Technical Specifications:

Bulb Type:	Standard	Base Type:	E27 Medium
Life Time:	50,000 Hrs.	Input Voltage:	AC 110-120V
Output Power:	6W	Replaces:	40W - 60W
Dimensions:	5-3/8" x 2-3/8"	Beam Angle:	175°
Light Source:	104 pc. LED	Color:	(SW) est.3000°K (DL) est. 5000°K
Dimming:	100% - 40%		
Mercury:	None	Lumens / Watt:	70

Note: All specification information falls within a  $\pm 2\%$  range

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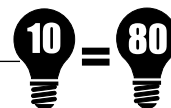
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# LED 10W Hi Lumen Retrofit Series

## LED-CFLA-120-10-195-DL (Daylight) LED-CFLA-120-10-195-SW (Soft White)



### Description:

Fully encapsulated, 120 Volt, 10 Watt, E27 medium base mounting that integrates energy saving LED technology into a standard A19 or CFL format. Available in Soft White (SW) or Daylight (DL).

- 10 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White 200 lumens SW (3000°K) or Daylight 300 lumens DL (5000°K).
- Compare to 60W (SW) or 80W (DL) light output.
- 195 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output and no harmful gasses.
- Dimmable

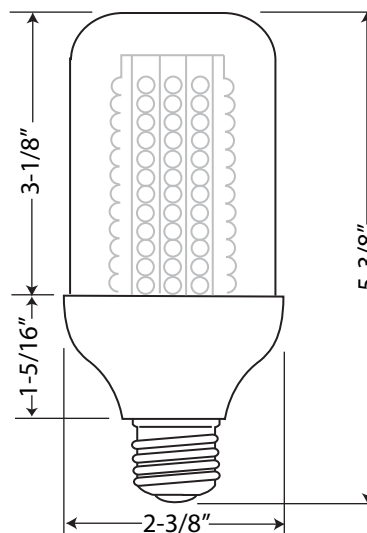
### Applications:

The 10W CFLA lamp has been designed to retrofit existing incandescent and/or CFL installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Task lighting
- Hospitality lighting
- Recessed downlighting
- Residential lighting

### Packaging:

White cartons with label



### Technical Specifications:

Bulb Type:	Standard	Base Type:	E27 Medium
Life Time:	50,000 Hrs.	Input Voltage:	AC 110-120V
Output Power:	10W	Replaces:	60W - 80W
Dimensions:	5-3/8" x 2-3/8"	Beam Angle:	175°
Light Source:	195 pc. LED	Color:	(SW) est.3000°K (DL) est. 5000°K
Dimming:	100% - 40%		
Mercury:	None	Lumens / Watt:	80

Note: All specification information falls within a ± 2% range

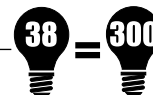
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## LED-CFLM-120-38-42-DL

### Fixture Description:

Mogul base Hi Power 38W LED Site / Roadway or Wall Pack lamp that produces the equivalent of 300W HPS light output in an energy saving, 50,000 hr. alternative to Metal Halide, HPS, Fluorescent, or Incandescent lighting.

### Construction Features:

1. Die cast oxygenation aluminum alloy with a clear plastic shield to protect the Hi Power LED diodes.
2. Mogul screwed base E39/E40
3. Maximum Overall Length: 275mm (10-7/8")
4. Bulb Diameter: 90mm (3-5/8")

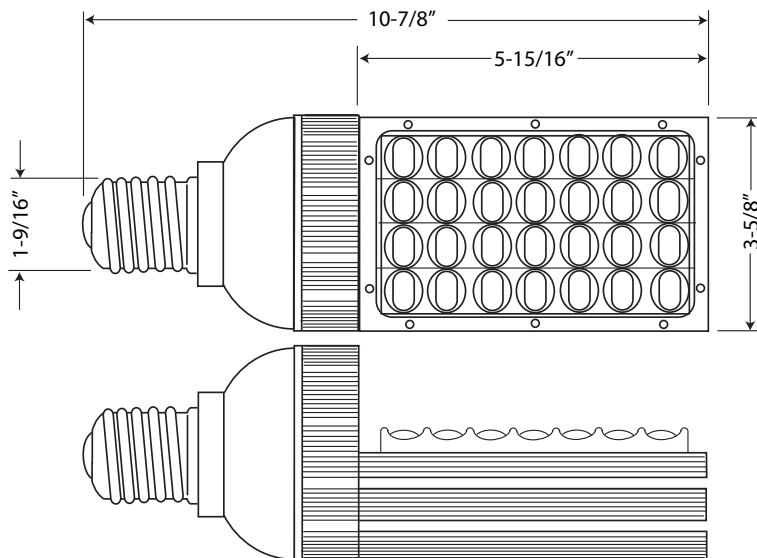
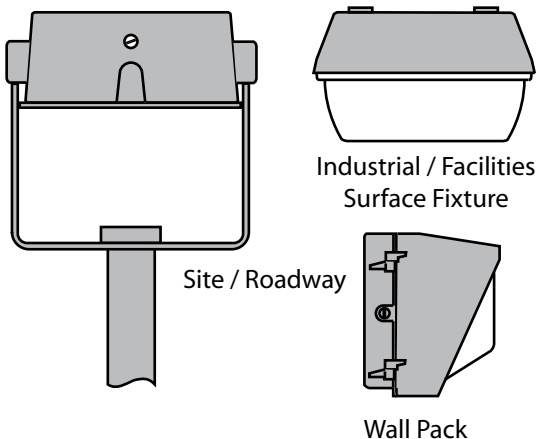
### Electrical Features:

5. 42 Hi Power Cool White LED dice.
6. 50,000 hours minimum
7. 85-265Volts - 50/50 Hz.
8. <38.0 Watts

### Photometric Characteristics:

9. Color Temp: Pure White 5,000 - 7,000° K
10. Nominal Initial Lumens per Watt: 55.2

### For Fixtures (not included):



### Technical Specifications:

Bulb Type:	Site / Roadway	Mounting:	Mogul E39/E40
Bulb Material:	Aluminum/Acrylic	Replaces:	300W HPS
Lumens	2100	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	38W
Dimensions:	10-7/8" x 3-5/8"	Beam Angle:	N/A
Light Source:	42 Hi Power LEDs	Kelvin Temp.:	(SW) est.3000° K (DL) est. 4000° K
CRI:	85	Lumens / Watt:	55

Note: All specification information falls within a ± 2% range

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# LED MR16 Series



## LED-MR16-12-2-21-SW (Soft White)

## LED-MR16-12-2-21-DL (Daylight)

### Description:

Fully encapsulated, 12 Volt, 2 Watt, GX5.3 bi-pin mounting that integrates energy saving LED technology into a lensed MR16 format.

Available in Soft White (SW) and Daylight (DL).

- GX5.3 Standard bi-pin base allows mounting wherever MR16 bi-pin is accepted.
- 2 Watt, 12 Volt Low Voltage operation. Fixture mounted or remote transformer required.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 20W MR16 medium flood light output.
- 21 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

### Applications:

The LED-MR16 2W lamp has been designed to retrofit existing MR16 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Undercabinet lighting (especially where heat is a factor)
- Hospitality and institutional retrofit
- Underwater fixtures and applications
- Residential lighting

### Technical restrictions:

Use with magnetic transformers only or approved LED electronic. Dimming: Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

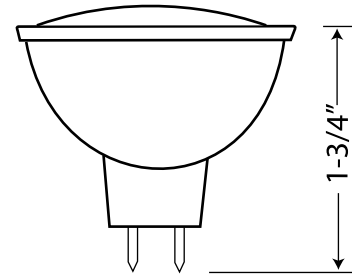
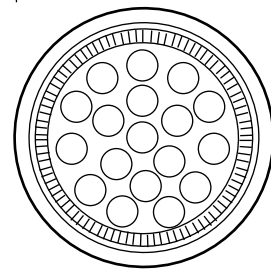
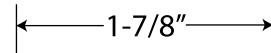
### Packaging:

White cartons, blister pack or color box.

### Special Order Options:

- Red  Blue  Green  
 Color Changing

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### Technical Specifications:

Bulb Type:	MR16	Base Type:	Gx5.3 Bi-pin
Bulb Material:	Glass	Replaces:	20W
Lumens:	130	Life Time:	50,000 Hrs.
Input Voltage:	12V	Output Power:	2W
Dimensions:	1-7/8" x 1-3/4"	Beam Angle:	30°
Light Source:	21 pc LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
Luminosity:	Distance 2 feet		
CRI:	85	Lumens / Watt:	65

Note: All specification information falls within a ± 2% range



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## LED MR16 Series



### LED-MR16-12-3-48-SW (Soft White)

### LED-MR16-12-3-48-DL (Daylight)

#### Description:

Fully encapsulated, 12 Volt, 3 Watt, GX5.3 bi-pin mounting that integrates energy saving LED technology into a MR16 format. Available in Soft White (SW) or Daylight (DL).

- GX5.3 Standard bi-pin base allows mounting wherever MR16 bi-pin is accepted.
- 3 Watt, 12 Volt Low Voltage operation. Fixture mounted or remote transformer required.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 35W MR16 light output.
- 48 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

#### Applications:

The LED-MR16 3W lamp has been designed to retrofit existing MR16 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Undercabinet lighting (especially where heat is a factor)
- Hospitality and institutional retrofit
- Underwater fixtures and applications
- Residential lighting

#### Technical restrictions:

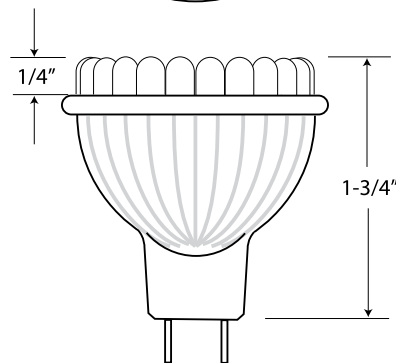
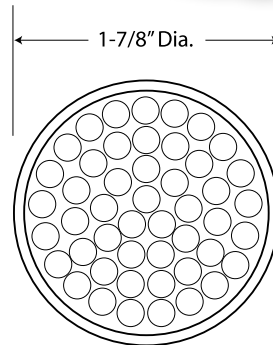
Use with magnetic transformers only or approved LED electronic.

Dimming: Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

#### Packaging:

White cartons, blister pack or color box.

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#### Technical Specifications:

Bulb Type:	MR16	Base Type:	Gx5.3 Bi-pin
Bulb Material:	Glass	Replaces:	35W
Lumens:	195	Life Time:	50,000 Hrs.
Input Voltage:	12V	Output Power:	3W
Dimensions:	1-7/8"x1-3/4"	Beam Angle:	30° Med. Flood
Light Source:	36pc LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
UV/IR Radiation:	No		
CRI:	85	Lumens / Watt:	65

Note: All specification information falls within a ± 2% range



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## LED MR16 Series



### LED-JDR-120-3-48-SW (Soft White)

### LED-JDR-120-3-48-DL (Daylight)

#### Description:

Fully encapsulated, 120 Volt, 3 Watt, JDR E26 med. base mounting that integrates energy saving LED technology into a MR16 format.

Available in Soft White (SW) and Daylight (DL).

- JDR med. base allows mounting an MR16 formatted lamp into a JDR socket.
- 3 Watt, 120 Volt Low Voltage operation. Remote transformer not required. Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 35W MR16 medium flood light output.
- 48 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

#### Applications:

The LED-MR16 3W JDR med. base lamp has been designed to retrofit JDR base fixtures where a low profile MR16 is desired, also reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

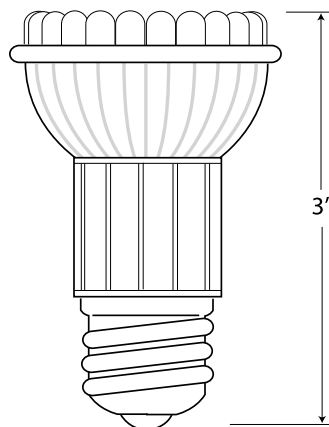
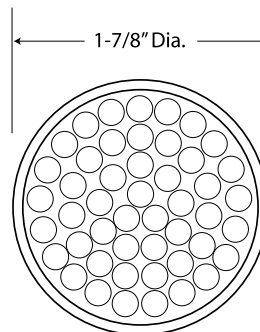
- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional retrofit
- Underwater fixtures and applications
- Residential lighting

#### Technical restrictions:

Dimming: Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

#### Packaging:

White cartons



#### Technical Specifications:

Bulb Type:	MR16	Base Type:	JDR E26 Med. Base
Bulb Material:	Glass	Replaces:	35W
Lumens:	195	Life Time:	50,000 Hrs.
Input Voltage:	12V	Output Power:	3W
Dimensions:	1-7/8"x3"	Beam Angle:	30° Med. Flood
Light Source:	36pc LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
UV/IR Radiation:	No		
CRI:	85	Lumens / Watt:	65

Note: All specification information falls within a ± 2% range

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# LED GU10 Series



## LED-GU10-120-3-48-SW (Soft White)

## LED-GU10-120-3-48-DL (Daylight)

### Description:

Fully encapsulated, 120 Volt, 3 Watt, GU10 mounting that integrates energy saving LED technology into a MR16 format. Available in Soft White (SW) and Daylight (DL).

- GU10 base allows mounting an MR16 formatted lamp into a 120V GU10 socket.
- 3 Watt, 120 Volt operation. Remote transformer not required. Operates off of house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 35W MR16 medium flood light output.
- 48 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

### Applications:

The LED-MR16 3W GU10 lamp has been designed to retrofit GU base fixtures where a low profile MR16 is desired, also reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

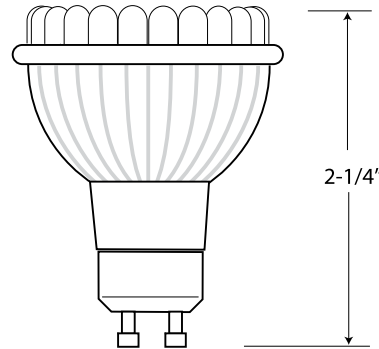
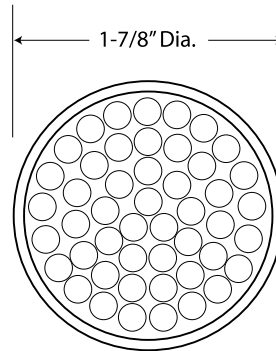
- Retail display applications
- Task lighting
- Recessed downlighting
- Undercabinet lighting (especially where heat is a factor)
- Hospitality and institutional retrofit
- Underwater fixtures and applications
- Residential lighting

### Technical restrictions:

Dimming: Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

### Packaging:

White cartons



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### Technical Specifications:

Bulb Type:	MR16	Base Type:	GU10
Bulb Material:	Glass	Replaces:	35W
Lumens:	195	Life Time:	50,000 Hrs.
Input Voltage:	12V	Output Power:	3W
Dimensions:	1-7/8"x2-1/4"	Beam Angle:	30° Med. Flood
Light Source:	48pc. LED	Color:	(SW) est. 3000°K
UV/IR Radiation:	No		(DL) est. 5000°K
CRI:	85	Lumens / Watt:	65

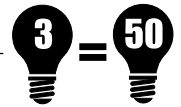
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# LED Hi Lumen Retrofit Series



## LED-MR16-12-3-3-DL (Daylight) LED-MR16-12-3-3-SW (Soft White)

### Description:

Fully encapsulated, 12 Volt, 3 Watt, bi-pin mounting that integrates energy saving High Power LED technology into a standard MR16 format. Available in Daylight (DL) 5000°K.

- 3 Watt, 12 Volt operation.
- Daylight 240 lumens DL (5000°K)
- Soft White 200 lumens SW (3000°K)
- Compare to 50W (DL) halogen light output.
- 3 on-board Hi Power LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output and no harmful gasses.

### Applications:

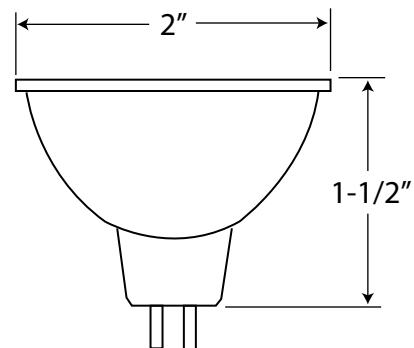
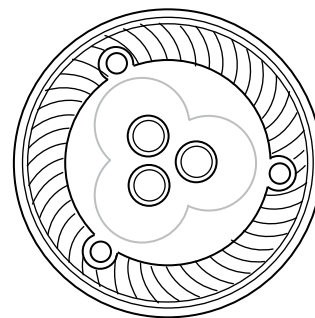
The 3W MR16 lamp has been designed to retrofit existing MR16 halogen installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Recessed lighting
- Track lighting
- Accent lighting
- Decorative / track lighting

### Technical restrictions:

Use with magnetic transformers only or approved LED electronic.

Dimming: Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.



### Technical Specifications:

Lamp Type:	MR16	Base Type:	GX 5.3 bi-pin
Life Time:	50,000 Hrs.	Input Voltage:	AC 12V
Output:	3W	Replaces:	50W
Dimensions:	2" x 1-1/2"	Beam Angle:	40°
Light Source:	3pc. HP LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
UV/IR Radiation:	No	Lumens / Watt:	80
Mercury:	None		

Note: All specification information falls within a ± 2% range

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# LED JDR Series



**LED-JDR-120-3-3-SW/DL-60 (Soft White / Daylight - Wide 60° Beam)**

**LED-JDR-120-3-3-SW/DL-15 (Soft White / Daylight - Narrow 15° Beam)**

**Description:**

Fully encapsulated, 120 Volt, 3 Watt, JDR E26 med. base mounting that integrates energy saving Hi Power LED technology into a JDR format. Available in Soft White (SW) and Daylight (DL). Three beam angles available.

- JDR E26 med. base allows mounting an MR16 formatted lamp into a 120V E26 socket.
- 3 Watt, 120 Volt operation. Remote transformer not required
- Soft White SW (3000°K) in a Narrow (-15) 15° or Wide (-60) 60°
- Daylight DL (5000°K) in a Narrow (-15) 15° or Wide (-60) 60°
- Compare to 45W MR16 medium flood light output.
- 3 on-board Hi-Power LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

**Applications:**

The LED-MR16 3W JDR lamp has been designed to retrofit JDR medium base fixtures where a MR16 look is desired, also reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

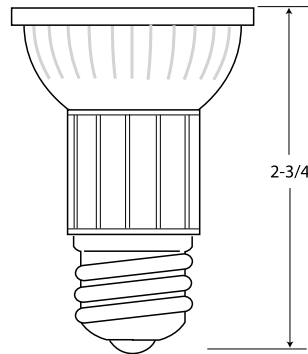
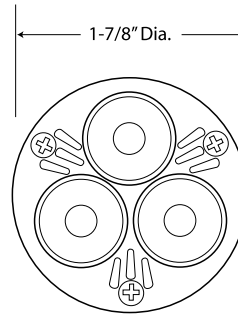
- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional retrofit
- Underwater fixtures and applications
- Residential lighting

**Dimming:**

Standard dimming available High (100%), Low (40%).

**Beam Angle:**

Specify beam angle in ordering suffix. See Beam



**Technical Specifications:**

Bulb Type:	MR16	Base Type:	JDR E26 Med. Base
Bulb Material:	Glass	Replaces:	45W
Lumens:	240	Life Time:	50,000 Hrs.
Input Voltage:	120V	Output Power:	3W
Dimensions:	1-7/8" x 2-3/4"	Beam Angle:	15° (N) 60° (W)
Light Source:	3 pc LED	Lumens / Watt:	80
CRI:	85	Color:	(SW) est. 3000°K (DL) est. 5000°K
UV/IR Radiation:	No		

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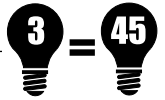
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Note: All specification information falls within a ± 2% range

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# LED MR16 Series



**LED-MR16-120-3-3-SW/DL-60 (Soft White / Daylight - Wide 60° Beam)**

**LED-MR16-120-3-3-SW/DL-15 (Soft White / Daylight - Narrow 15° Beam)**

**Description:**

Fully encapsulated, 120 Volt, 3 Watt, MR16 bi-pin mounting that integrates energy saving Hi Power LED technology into a MR16 format.

Available in Soft White (SW) and Daylight (DL).

- 3 Watt, 12 Volt operation.  
Remote transformer not required.
- Soft White SW (3000°K) in a Narrow (-15) 15° or Wide (-60) 60°.
- Daylight DL (5000°K) in a Narrow (-15) 15° or Wide (-60) 60°.
- Compare to 45W MR16 medium flood light output.
- 3 on-board Hi-Power LED diodes.
- Approximately 50,000 hour lamp life.
- Very low heat output.

**Applications:**

The LED-MR16 3W bi-pin lamp has been designed to retrofit MR16 bi-pin base fixtures where a MR16 look is desired, also reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

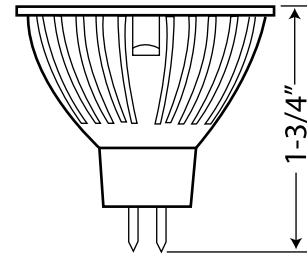
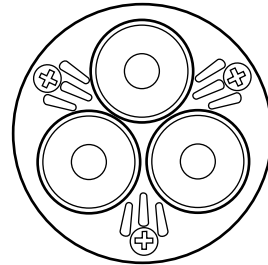
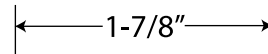
- Retail display applications
- Task lighting
- Recessed downlighting
- Undercabinet lighting (especially where heat is a factor)
- Hospitality and institutional retrofit
- Underwater fixtures and applications
- Residential lighting

**Dimming:**

Standard dimming available High (100%), Low (40%).

**Beam Angle:**

Specify beam angle in ordering suffix. See Beam Angle below.



**Technical Specifications:**

Bulb Type:	MR16	Base Type:	GX 5.3 bi-pin
Bulb Material:	Glass	Replaces:	45W
Lumens:	240	Life Time:	50,000 Hrs.
Input Voltage:	120V	Output Power:	3W
Dimensions:	1-7/8" x 1-3/4"	Beam Angle:	15° (15) 60° (60)
Light Source:	3 pc LED	Lumens / Watt:	80
CRI:	85	Color:	(SW) est. 3000°K
UV/IR Radiation:	No		(DL) est. 5000°K

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## LED GU10 Series



LED-GU10-120-3-3-SW/DL-60 (Soft White / Daylight - Wide 60° Beam)

LED-GU10-120-3-3-SW/DL-15 (Soft White / Daylight - Narrow 15° Beam)

### Description:

Fully encapsulated, 120 Volt, 3 Watt, GU10 mounting that integrates energy saving Hi Power LED technology into a GU10 format. Available in Soft White (SW) and Daylight (DL) and in two beam angles Wide 60° (60) and Narrow 15° (N).

- GU10 base allows mounting an MR16 formatted lamp into a 120V GU10 socket.
- 3 Watt, 120 Volt operation. Remote transformer not required.
- Soft White SW (3000°K) in a Narrow (-15) 15° or Wide (-60) 60°
- Daylight DL (5000°K) in a Narrow (-15) 15° or Wide (-60) 60°
- Compare to 35W MR16 medium flood light output.
- 3 on-board Hi-Power LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

### Applications:

The LED-MR16 3W GU 2-pin lamp has been designed to retrofit GU base fixtures where a low profile MR16 is desired, also reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Undercabinet lighting (especially where heat is a factor)
- Hospitality and institutional retrofit
- Underwater fixtures and applications
- Residential lighting

### Dimming:

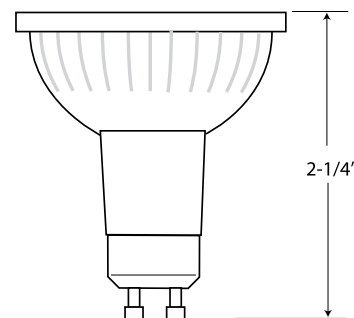
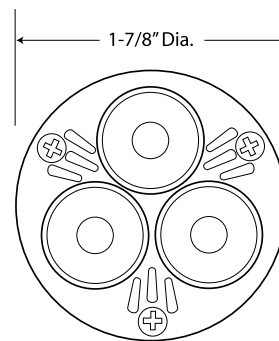
Standard dimming available High (100%), Low (40%).

Linear option: Dimmable to 15% output.

### Packaging:

White cartons

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### Technical Specifications:

Bulb Type:	MR16	Base Type:	GU 10
Bulb Material:	Glass	Replaces:	45W
Lumens:	255	Life Time:	50,000 Hrs.
Input Voltage:	120V	Output Power:	3W
Dimensions:	1-7/8" x 2-1/4"	Beam Angle:	15° (N) 60° (W)
Light Source:	3 pc LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
CRI:	85		
UV/IR Radiation:	No	Lumens / Watt:	80

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# LED MR11 Series



## LED-MR11-12-3-30-DL (Daylight) LED-MR11-12-3-30-SW (Soft White)

### Description:

Fully encapsulated, 12 Volt, 3 Watt, G4 bi-pin mounting that integrates energy saving LED technology into a MR11 format. Available in Soft White (SW) and Daylight (DL).

- Standard G4 bi-pin base allows mounting wherever MR11 bi-pin is accepted.
- 3 Watt, 12 Volt Low Voltage operation. Fixture mounted or remote transformer required.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 35W MR11 light output.
- 30 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

### Applications:

The LED-MR11 3W lamp has been designed to retrofit existing MR11 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Undercabinet lighting (especially where heat is a factor)
- Hospitality and institutional retrofit
- Underwater fixtures and applications
- Residential lighting

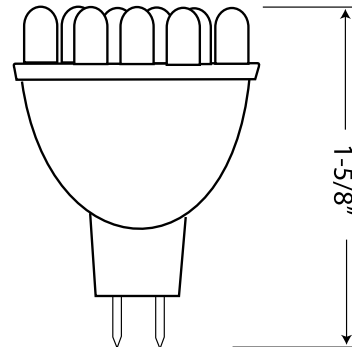
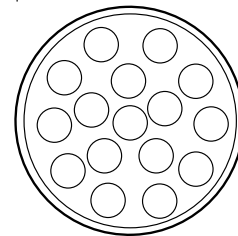
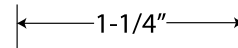
### Technical restrictions:

Use with magnetic transformers only or approved LED electronic.

Dimming: Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

### Packaging:

White cartons, blister pack or color box.



### Technical Specifications:

Bulb Type:	MR11	Base Type:	G4 Bi-pin
Bulb Material:	Glass	Replaces:	25W
Lumens:	195	Life Time:	50,000 Hrs.
Input Voltage:	12V	Output Power:	3W
Dimensions:	1-1/4" x 1-5/8"	Beam Angle:	30°
Light Source:	30 pc LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
Luminosity:	Distance 2 feet		
CRI:	85	Lumens / Watt:	65

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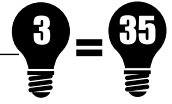


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## LED PAR Series



### LED-PAR20-120-3-60-SW (Soft White)

### LED-PAR20-120-3-60-DL (Daylight)

#### Description:

Fully encapsulated, 120 Volt, 3 Watt, screw-in medium base mounting that integrates energy saving LED technology into a standard PAR20 format. Available in Soft White (SW) or Daylight (DL).

- Medium screw in base.
- 3 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 35W PAR20 light output.
- 60 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

#### Applications:

The PAR20 3W lamp has been designed to retrofit existing PAR20 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

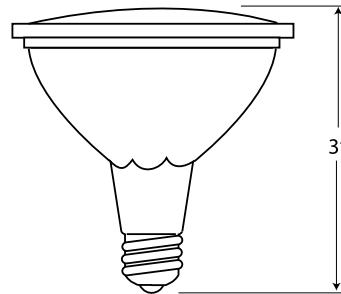
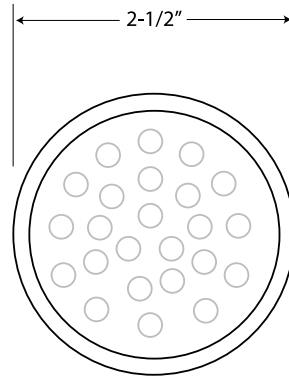
- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

#### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate

#### Packaging:

White cartons, or color box.



#### Technical Specifications:

Bulb Type:	PAR20	Base Type:	E26 Medium
Bulb Material:	Glass	Replaces:	35W
Lumens:	195	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	3W
Dimensions:	2-1/2"x3"	Beam Angle:	60°
Light Source:	60pc LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
CRI:	85		
UV/IR Radiation:	None	Lumens / Watt:	65

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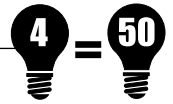
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## LED PAR Series



### LED-PAR30-120-4-70-SW (Soft White)

### LED-PAR30-120-4-70-DL (Daylight)

#### Description:

Fully encapsulated, 120 Volt, 4 Watt, medium base mounting that integrates energy saving LED technology into a standard PAR30 format. Available in Soft White (SW) or Daylight (DL).

- Medium screw in base.
- 4 Watt, 120 Volt operation. Remote transformer not required. Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 50W PAR30 light output.
- 70 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

#### Applications:

The PAR30 4W lamp has been designed to retrofit existing PAR30 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

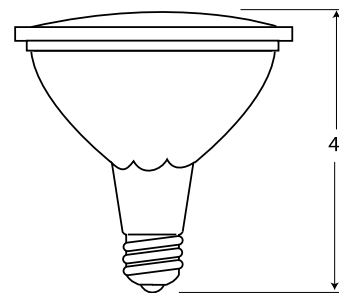
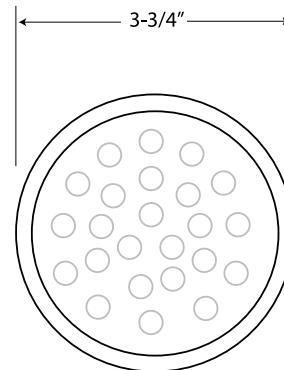
#### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

#### Packaging:

White cartons, or color box.

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#### Technical Specifications:

Bulb Type:	PAR30	Base Type:	E26 Medium
Bulb Material:	Glass	Replaces:	50W
Lumens:	260	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	4W
Dimensions:	3-3/4" x 4"	Beam Angle:	60°
Light Source:	70pc LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
UV/IR Radiation:	No		
CRI:	85	Lumens / Watt:	65

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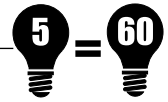


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## LED PAR Series



### LED-PAR38-120-5-80-SW (Soft White)

### LED-PAR38-120-5-80-DL (Daylight)

#### Description:

Fully encapsulated, 120 Volt, 5 Watt, screw-in medium base mounting that integrates energy saving LED technology into a standard PAR38 format. Available in Soft White (SW) or Daylight (DL).

- Medium screw in base.
- 5 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DW (5000°K)
- Equals 60W PAR38 light output.
- 80 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

#### Applications:

The PAR38 5W lamp has been designed to retrofit existing PAR38 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

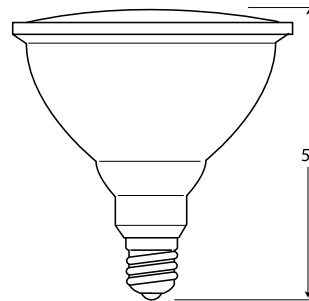
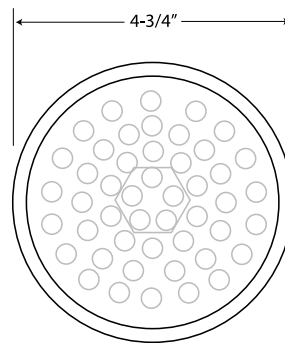
#### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

#### Packaging:

White cartons, or color box.

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#### Technical Specifications:

Bulb Type:	PAR38	Base Type:	E26 Medium
Bulb Material:	Glass	Replaces:	60W
Lumens:	325	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	4W
Dimensions:	4-3/4"x5"	Beam Angle:	100°
Light Source:	80pc LED	Color:	(SW) est.3000°K (DL) est. 5000°K
UV/IR Radiation:	No		
CRI:	85	Lumens / Watt:	65

Note: All specification information falls within a  $\pm 2\%$  range



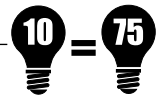
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# LED PAR Series



## LED-PAR38-120-10-23-SW (Soft White)

## LED-PAR38-120-10-23-DL (Daylight)

### Description:

Fully encapsulated, 120 Volt, 10 Watt, screw-in medium base E26 mounting that integrates energy saving High Power LED technology into a standard PAR38 format. Available in Soft White (SW) or Daylight (DL).

- Medium screw in base.
- 10 Watt, 120 Volt operation. Remote transformer not required. Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Equals 75W PAR38 light output.
- 23 on-board Hi Power LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

### Applications:

The PAR38 10W lamp has been designed to retrofit existing PAR38 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

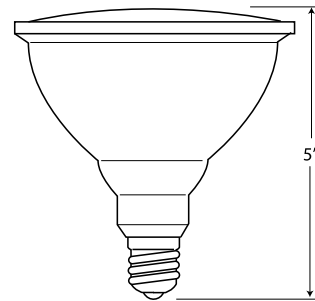
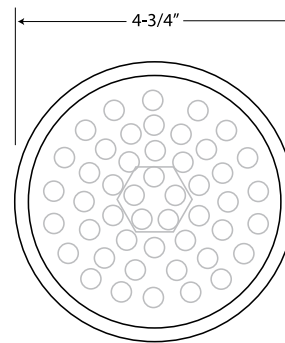
### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.

### Packaging:

White cartons, or color box.

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### Technical Specifications:

Bulb Type:	PAR38	Base Type:	E26 Medium
Bulb Material:	Glass	Replaces:	75W
Lumens:	850	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	10W
Dimensions:	4-3/4"x5"	Beam Angle:	100°
Light Source:	23pc LED	Color:	(SW) est.3000°K (DL) est. 5000°K
UV/IR Radiation:	No		
CRI:	85	Lumens / Watt:	85

Note: All specification information falls within a ± 2% range

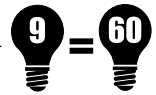


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## LED PAR Series



### LED-JDR-120-9-1-SW (Soft White)

### LED-JDR-120-9-1-DL (Daylight)

#### Description:

Fully encapsulated, 120 Volt, 9 Watt, JDR/ E26 mounting that integrates energy saving High Power LED technology into an unusual and decorative format. Available in Soft White (SW) and Daylight (DL).

- Standard widely accepted JDR/E26 mounting.
- 9 Watt, 120 Volt operation. Remote transformer not required. Operates off of standard house current.
- Soft White SW (3000°K)
- Daylight DL (5000°K)
- Compare to 60W light output.
- 1 on-board High Power LED diode
- Approximately 50,000 hour lamp life.
- Very low heat output.
- High intensity magnifier lens.

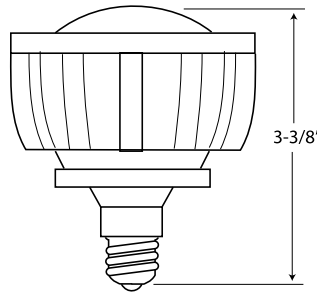
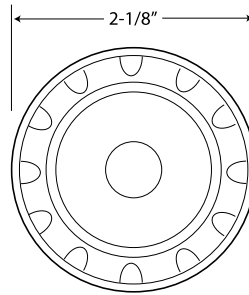
#### Applications:

The LED 9W lamp has been designed to create dramatic display lighting where the lamp is integral to the design aesthetic. Simply use wherever existing 120V incandescent has been used, including:

- Retail display applications
- Task lighting
- Hospitality and institutional retrofit
- Themed lighting
- Residential lighting

#### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate.



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#### Technical Specifications:

Bulb Type:	PAR20	Base Type:	E26 Medium
Bulb Material:	Cast Brass/Alum.	Replaces:	60W
Lumens:	720	Life Time:	50,000 Hrs.
Input Voltage:	AC: 85-268V	Output Power:	9W
Dimensions:	2-1/8"x3-3/8"	Beam Angle:	80°
Light Source:	1pc LED	Color:	(SW) est. 3000°K (DL) est. 5000°K
CRI:	85		
Lumens / Watt:	80	UV or IR Radia:	No

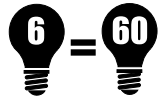
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# LED JDR Series



**LED-JDR-120-6-3-SW/DL-60 (Soft White / Daylight - Wide 60° Beam)**

**LED-JDR-120-6-3-SW/DL-15 (Soft White / Daylight - Narrow 15° Beam)**

**Description:**

Fully encapsulated, 120 Volt, 6 Watt, JDR E26 med. base mounting that integrates energy saving hi power LED technology into a standard MR20 format. Available in Soft White (SW) or Daylight (DL).

- JDR E26 med. base.
- 3 Watt, 120 Volt operation. Remote transformer not required. Operates off of standard house current.
- Soft White SW (3000°K) in a Narrow (-15) 15° or Wide (-60) 60°.
- Daylight DL (5000°K) in a Narrow (-15) 15° or Wide (-60) 60°.
- Compare to 60W PAR16 light output.
- 3 on-board hi power LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

**Applications:**

The 6W lamp has been designed to retrofit existing PAR16 / PAR20 and medium base installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

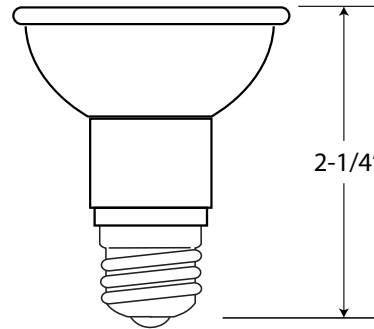
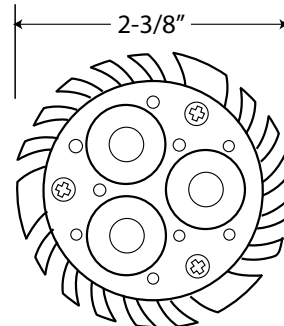
- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

**Technical restrictions:**

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate

**Packaging:**

White cartons, or color box.



**Technical Specifications:**

Bulb Type:	MR20	Base Type:	JDR E26 med. base
Material:	Aluminum	Replaces:	60W
Lumens:	480	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	6W
Dimensions:	2-3/8" x 2-1/4"	Beam Angle:	15° (N) 60° (W)
Light Source:	3 pc LED	Lumens / Watt:	80
CRI:	85	Color:	(SW) est. 3000°K
UV/IR Radiation:	No		(DL) est. 5000°K

Note: All specification information falls within a ± 2% range

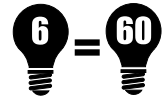
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# LED Bi-Pin Mount Series



LED-MR20-120-6-3-SW/DL-60 (Soft White / Daylight - Wide 60° Beam)

LED-MR20-120-6-3-SW/DL-15 (Soft White / Daylight - Narrow 15° Beam)

### Description:

Fully encapsulated, 120 Volt, 6 Watt, bi-pin base mounting that integrates energy saving hi power LED technology into a standard MR20 format. Available in Soft White (SW) or Daylight (DL).

- Bi-pin base.
- 6 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K) in a Narrow (-15) 15° or Wide (-60) 60°.
- Daylight DL (5000°K) in a Narrow (-15) 15° or Wide (-60) 60°.
- Compare to 60W MR20 light output.
- 3 on-board hi power LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

### Applications:

The 6W lamp has been designed to retrofit existing bi-pin installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

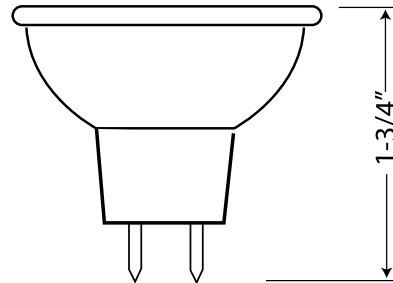
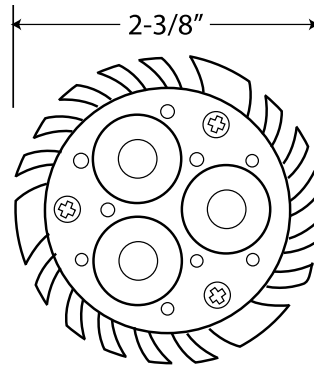
- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

### Technical restrictions:

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate

### Packaging:

White cartons, or color box.



### Technical Specifications:

Bulb Type:	MR20	Base Type:	GX 5.3 bi-pin
Material:	Aluminum	Replaces:	60W
Lumens:	480	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	6W
Dimensions:	2-3/8" x 2-1/2"	Beam Angle:	15° (N) 60° (W)
Light Source:	3 pc LED	Lumens / Watt:	80
CRI:	85	Color:	(SW) est. 3000°K
UV/IR Radiation:	No		(DL) est. 5000°K

Note: All specification information falls within a  $\pm 2\%$  range

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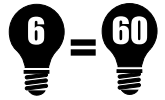


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www.led-llc.com Specifications subject to change without notice. 121507\_MR2012063

# LED GU Mount Series



LED-GU10-120-6-3-SW/DL-60 (Soft White / Daylight - Wide 60° Beam)

LED-GU10-120-6-3-SW/DL-15 (Soft White / Daylight - Narrow 15° Beam)

**Description:**

Fully encapsulated, 120 Volt, 6 Watt, GU10 base mounting that integrates energy saving hi power LED technology into a standard PAR20 format. Available in Soft White (SW) or Daylight (DL).

- GU10 base.
- 3 Watt, 120 Volt operation. Remote transformer not required. Operates off of standard house current.
- Soft White SW (3000°K) in a Narrow (-15) 15° or Wide (-60) 60°.
- Daylight DL (5000°K) in a Narrow (-15) 15° or Wide (-60) 60°.
- Compare to 60W MR20 light output.
- 3 on-board hi power LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

**Applications:**

The 6W lamp has been designed to retrofit existing GU base installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

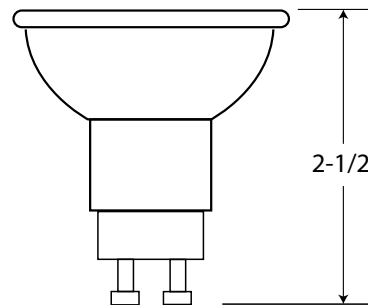
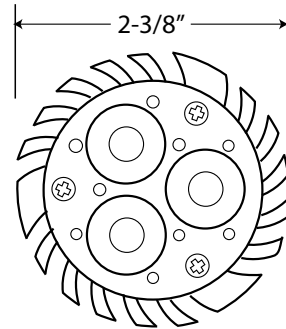
- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

**Technical restrictions:**

Please contact factory for LED dimming instructions. Although dimmers do not damage LED's, the performance will fluctuate

**Packaging:**

White cartons, or color box.



**Technical Specifications:**

Bulb Type:	MR20	Base Type:	GU10
Material:	Aluminum	Replaces:	60W
Lumens:	480	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	6W
Dimensions:	2-3/8" x 2-1/2"	Beam Angle:	15° (N) 60° (W)
Light Source:	3 pc LED	Lumens / Watt:	80
CRI:	85	Color:	(SW) est. 3000°K
UV/IR Radiation:	No		(DL) est. 5000°K

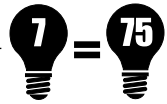
Note: All specification information falls within a ± 2% range

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## LED-PAR30-120-7-7-SW/DL (Soft White / Daylight)

### Description:

Fully encapsulated, 120 Volt, 7 Watt, screw-in medium base mounting that integrates energy saving Hi Power LED technology into a standard PAR30 format. Available in Soft White (SW) or Daylight (DL) in a Wide (60°) beam spread.

- Medium screw in base.
- 7 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K) in a wide beam angle.
- Daylight DL (5000°K) in a wide beam angle.
- Compare to 75W PAR30 light output.
- 7 on-board LED diodes
- Approximately 50,000 hour lamp life.
- Very low heat output.

### Applications:

The PAR30 7W lamp has been designed to retrofit existing PAR30 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

### Dimming:

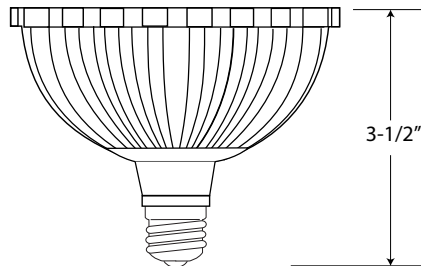
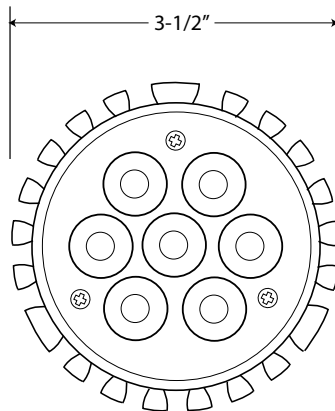
Standard dimming available High (100%), Low (40%).

Linear option: Dimmable to 15% output.

### Packaging:

White cartons, or color box.

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### Technical Specifications:

Bulb Type:	PAR30	Base Type:	E26 Med. Base
Material:	Aluminum	Replaces:	75W
Lumens:	595	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	7W
Dimensions:	3-1/2" x 3-1/2"	Beam Angle:	60°
Light Source:	3 pc LED	Lumens / Watt:	80
CRI:	85	Color:	(SW) est. 3000°K
UV/IR Radiation:	No		(DL) est. 5000°K

Note: All specification information falls within a ± 2% range

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## LED-PAR38-120-15-12-SW/DL (Soft White / Daylight)

### Description:

Fully encapsulated, 120 Volt, 15 Watt, medium base mounting that integrates energy saving hi power LED technology into a standard PAR38 format. Available in Soft White (SW) or Daylight (DL) in a Wide (60°) beam spreads.

- Medium base.
- 15 Watt, 120 Volt operation.  
Remote transformer not required.  
Operates off of standard house current.
- Soft White SW (3000°K) in a wide beam angle.
- Daylight DL (5000°K) in a wide beam angle.
- Compare to 100W PAR38 light output.
- 12 on-board hi power LED diodes
- Approximately 50,000 hour lamp life.
- Low heat output.

### Applications:

The PAR38 15W lamp has been designed to retrofit existing PAR38 installations, thereby reducing maintenance and energy expenditures - and as an energy saving light source for new fixtures and installations.

- Retail display applications
- Task lighting
- Recessed downlighting
- Hospitality and institutional outdoor and landscape retrofit
- Underwater fixtures and applications
- Residential lighting

### Dimming:

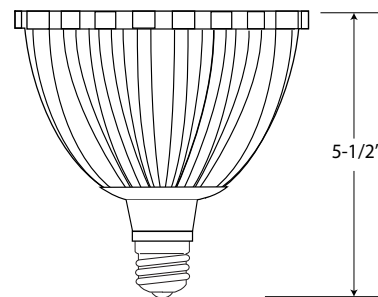
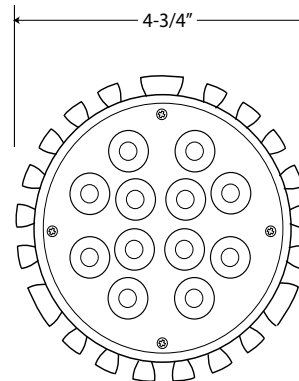
Standard dimming available High (100%), Low (40%).

Linear option: Dimmable to 15% output.

### Packaging:

White cartons

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### Technical Specifications:

Bulb Type:	PAR38	Base Type:	E26 Med. Base
Material:	Aluminum	Replaces:	100W
Lumens:	1200	Life Time:	50,000 Hrs.
Input Voltage:	AC120V/60Hz	Output Power:	15W
Dimensions:	4-3/4" x 5-1/2"	Beam Angle:	60°
Light Source:	3 pc LED	Lumens / Watt:	80
CRI:	85	Color:	(SW) est. 3000°K
UV/IR Radiation:	No		(DL) est. 5000°K

Note: All specification information falls within a ± 2% range

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**LED Specialty Lighting Series - LED Rope Light**

Create dramatic, colorful decorative and architectural effects.

**PROJECT INFORMATION**

Type \_\_\_\_\_

Project \_\_\_\_\_

Catalog No. \_\_\_\_\_

Lamp/Voltage \_\_\_\_\_

**Fixture Description:**

Flexible transparent 1/2" diameter rope that houses horizontally arranged LED diodes that creates a unique linear glow - creating architectural detail illumination, decorative accent lighting, and colorful linear light displays without heat, flicker and utilizing extremely low energy levels.

**Construction Features:**

1. Rope Diameter: 1/2"
2. Rope Length: Sold by 150' roll or by foot.

**Lamp Data:**

3. Bulbs per foot: 12
4. Bulb spacing: Horizontal
5. Watts: .067W per bulb / 0.8W per foot for white and blue only.  
0.4W per foot for other colors.
6. Colors: White, Blue, Green, Yellow, Red
7. Lamp Life: 28,000 Hrs.



**Electrical:**

8. Voltage: 120V
9. Power Set-Up: Cord, Plug and End-Cap  
Specify: **LED-RL-PWR SET**  
Included with 150' Roll. 3 included in each

**Mounting and Cutting:**

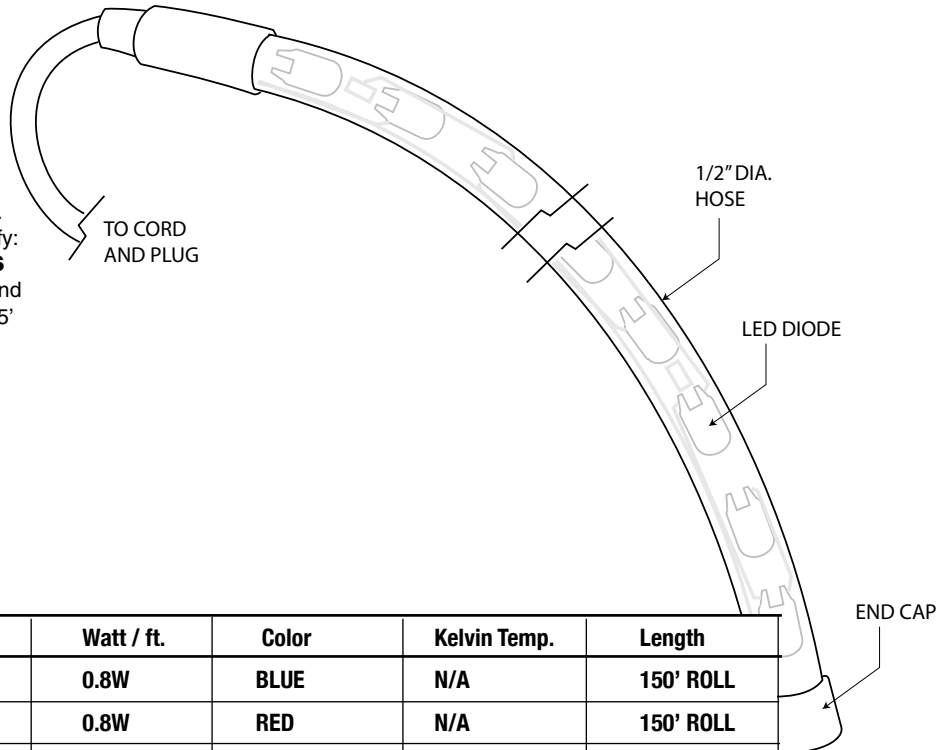
10. Mounting Clips: Attachment clips included with each order (2 for every 3' feet). To order additional clips, specify: **LED-RL-MOUNTINGCLIPS**
11. Cutting: Can be cut every 3' for white and blue only. Can be cut every 4.5' for other colors.

**Options:**

12. Vertical Lamp Position

**Label and Environmental Data:**

12. UL Listed: UL listed and approved for outdoor and indoor use.
13. Emissions: UV Protected. No mercury vapor or harmful emissions.



Catalog Number	Input Voltage	Watt / ft.	Color	Kelvin Temp.	Length
LED-RL-110-65-BL-ROLL	120V	0.8W	BLUE	N/A	150' ROLL
LED-RL-110-65-RED-ROLL	120V	0.8W	RED	N/A	150' ROLL
LED-RL-110-65-WH-3000-ROLL	120V	0.8W	WARM WHITE	3000°	150' ROLL
LED-RL-110-65-WH-5000-ROLL	120V	0.8W	COOL WHITE	5000°	150' ROLL
LED-RL-110-65-YELLOW-ROLL	120V	0.8W	YELLOW	N/A	150' ROLL

**NOTE: Custom colors and lengths available. Consult factory. Recommended for use with Ground Fault Interruoper (GFI)**



**Light Emitting Designs, LLC**  
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Specifications subject to change without notice. 081507\_LED-Ropelight

# Light Emitting Designs, LLC

## Warranty and Product Information

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### **WARRANTY**

All products are warranted for 3 years or 20,000 hours if used in accordance with the guidelines listed below. Any product returned will require factory inspection and approval before any credits can be issued. Prices and designs are subject to change without notice.

The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by LED, LLC for any infringements of intellectual property or other rights of the third parties which may result from its use.

- LED, LLC is continually working in an effort to improve the quality of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing LED, LLC products, to comply with the standards of safety in making a safe design for the entire system and to avoid situations in which a malfunction or failure may be caused.
- In developing your designs, please ensure that LED, LLC products are used within specified operating ranges as set forth in the most recent LED, LLC products specifications.

### **WARRANTY GUIDELINES**

- 12V products must be used with a regulated magnetic transformer, or approved electronic unit that does not produce more than 12 volts.
- 120 Volt range: 110V-130V.
- 12 Volt range: 10V-12V.
- Used with GFI and overload protection devices.
- Retrofits for use only in LED-LLC approved fixtures or environments.
- Clean environment.
- Indoor only and outdoor where approved.
- Stable and consistent voltage / current.

### **ENVIRONMENTAL CONCERNS**

- There are no known or recognized handling or disposal issues regarding LED.
- There are no known issues regarding UV or IR radiation.
- We do not use lead based solders or materials in the production of our LED lamps.
- Unlike fluorescents, LED's do not contain mercury or other toxic materials.

### **ABSOLUTE MAXIMUM RATINGS**

<b>Parameter</b>	<b>Rating</b>	<b>Unit</b>
DC Voltage°	12	V
AC Voltage	12	V
Avg. LED Driver Current	560	mA
Operating Ambient Temp.	-40 / +122	F°



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