

# WELCOME

**LED - "WHAT'S REAL AND WHAT'S NOT"**

**Separating Test Bench fiction from  
real-life results!**



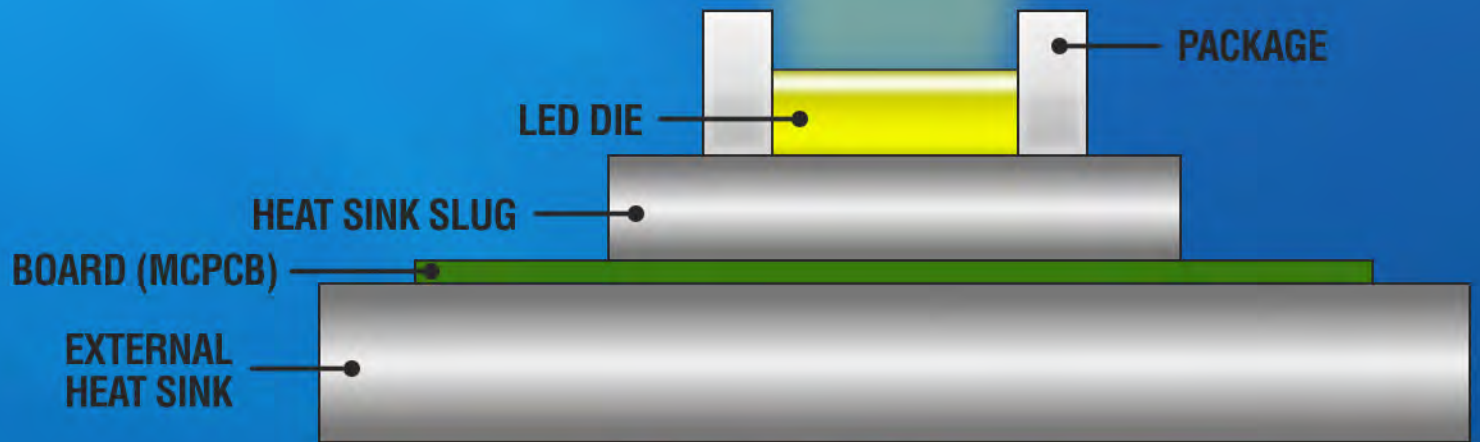
# START HERE:

- LED basics
- Traditional light sources
- Terms you should know
- Power Factor
- Lumens vs. lumens
- Partners



# LED BASICS: HOW THEY WORK!

LEDs work differently from traditional light sources.



**MOUNTED AND INSERTED  
INTO A LUMINAIRE**



# TRADITIONAL LIGHT SOURCES:

- Incandescents, compact and linear fluorescents, and the variety of HID lamps work basically the same.
- They pass an electric current through a glass envelope filled with gases or a filament, and the bulb gives off light.
- The bulb can be unscrewed from one fixture, screwed into another and will produce light again.



# TERMS & STANDARDS YOU SHOULD KNOW:

Knowing these terms and standards will let you compare products accurately...

**L70:** The accepted measure of life for LED luminaires. The L stands for life. The 70 represents 70% of initial lumens. When more than 30% of the initial lumens in a luminaire are lost, you will start to see the light dim.

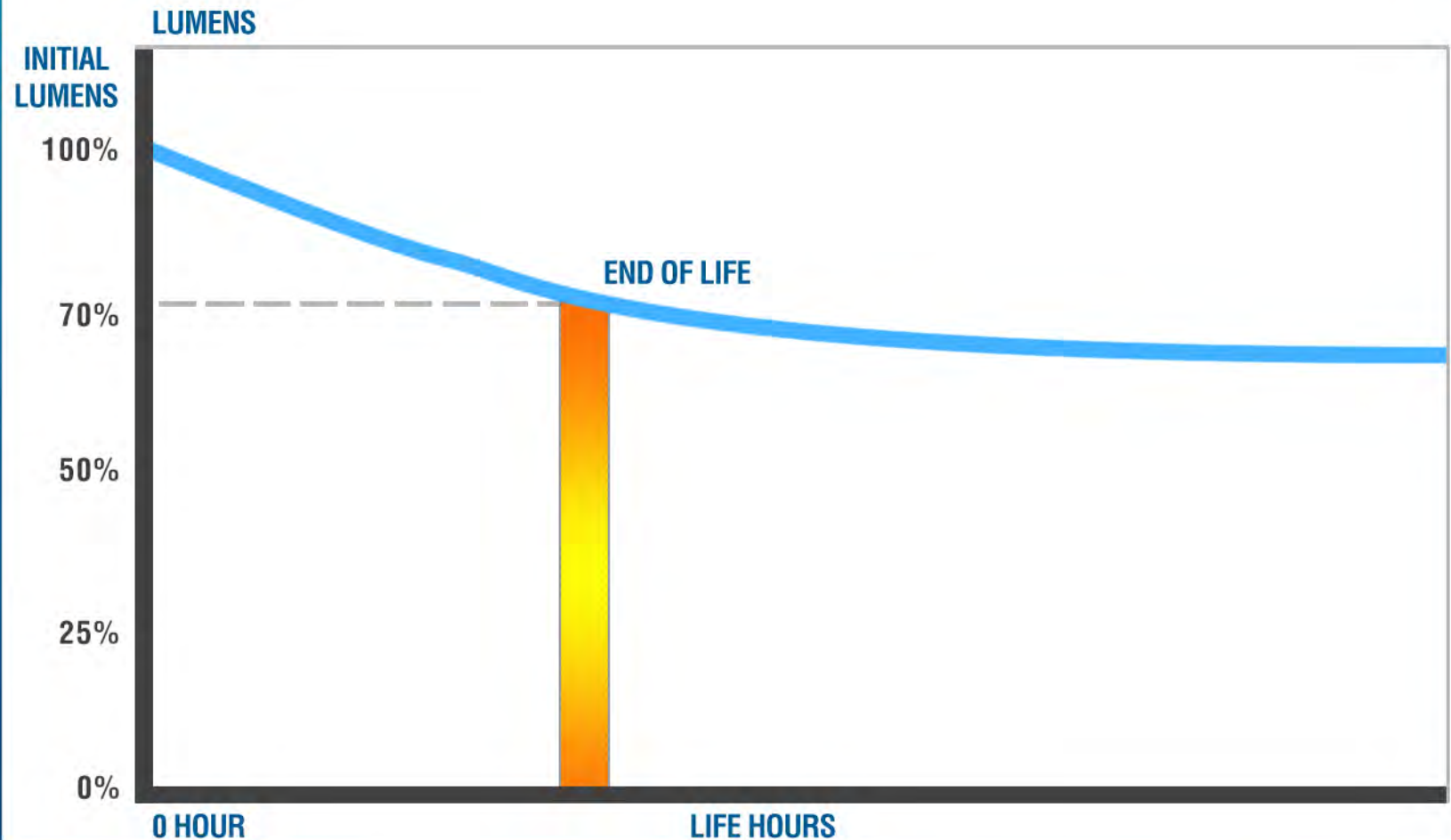
L70 is an important test because unlike CFLs or incandescents, LEDs don't burn out; they keep on burning, even if the light is not at a useful level. So exaggerated claims of life are common.

A claim of life of 50,000 hours should be backed by L70 standards. That says that the loss of lumens will be under 30% after 50,000 hours. A claim of 200,000 hour life with no life standard (L70, or L60, or L50) has no verifiable value and shouldn't be used in comparisons. It is a baseless claim.



# L70

## L70 = 70% OF INITIAL LUMENS



# TERMS & STANDARDS YOU SHOULD KNOW:

Knowing these terms and standards will let you compare products accurately...

**LM79:** Is a standard set by IESNA and is the approved method of measuring the electrical and photometric measurements of solid state lighting products. The standards cover specific procedures for testing LED luminaires and LED retrofit products. The tests measure lumens, luminous intensity, correlated color temperature (CCT) and color rendering index (CRI).

**LM80:** IESNA approved method for measuring lumen maintenance of LED light sources. Specifies procedures for determining the lumen maintenance of LEDs and LED modules.



# POWER FACTOR:

- High vs. Nominal / Low
- Not all high power factors are equal
- Active vs. Passive



# LUMENS VS. LUMENS:

- Per LED output
- Total LED lumen output
- Total collective LED lumen output (per fixture)

Is this how we measure Lumens?

## TRUE LUMENS

Effective Delivered Lumens



# PARTNERS:

## DOE Solid-State Lighting

The U.S. Department of Energy and its partners are working to accelerate advances in solid-state lighting - a pivotal emerging technology that promises to fundamentally alter lighting in the future. No other lighting technology offers as much potential to save energy and enhance the quality of our building environments, contributing to our nation's energy and climate change solutions.

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

Visit website for more information:

<http://www1.eere.energy.gov/buildings/ssl/>



## Solid-State Lighting

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### DOE Solid-State Lighting Portfolio

The U.S. Department of Energy and its partners are working to accelerate advances in solid-state lighting — a pivotal emerging technology that promises to fundamentally alter lighting in the future.

No other lighting technology offers as much potential to save energy and enhance the quality of our building environments, contributing to our nation's energy and climate change solutions.

Read more about the energy-saving potential ([PDF 72 KB](#)). [Download Adobe Reader](#).



**L-PRIZE<sup>SM</sup>**  
The Race for Super Efficient Light Bulbs  
L-Prize Partners stand ready to support the winning products.  
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**Partners**




[Learn more about DOE SSL partners.](#) >

#### For more information, e-mail:

[James Brodrick](#)

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[Next Generation Luminaires™ Announces LED Design Competition Winners](#) >  
February 23, 2011

[San Diego R&D Workshop Presentations Posted](#) >  
February 21, 2011

[2010 R&D Achievements Honored at DOE SSL Workshop](#) >  
February 11, 2011

[DOE Publishes Report Estimating Energy Savings in Niche Markets](#) >  
January 27, 2011

[DOE Educates and Informs at Greenbuild](#) >  
November 29, 2010

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### Events

[Municipal Solid-State Street Lighting Consortium North Central Region Workshop](#) >  
March 8-9, 2011

[2011 DOE Solid-State Lighting Manufacturing R&D Workshop](#) >  
April 12-13, 2011

[2011 DOE Solid-State Lighting Market Introduction Workshop](#) >  
July 2011

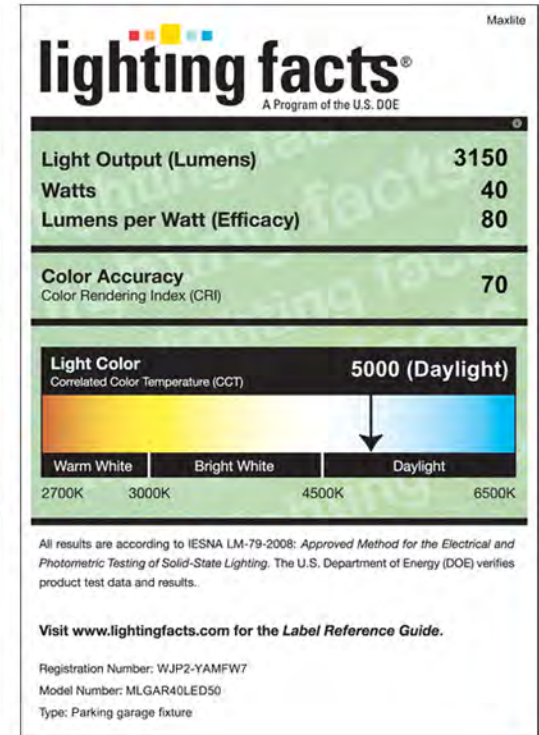


# PARTNERS:

## Lighting Facts

Lighting Facts<sup>®</sup> showcases LED luminaire manufacturers who commit to testing products and reporting performance results according to industry standards. For lighting buyers, designers, and energy efficiency programs, the Lighting Facts label provides information essential to evaluating products and identifying the best options.

Visit website for more information:  
<http://www.lightingfacts.com>





# PARTNERS:

## ENERGY STAR

**ENERGY STAR** is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices.

Visit website for more information:  
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## THE NATIONAL BUILDING COMPETITION

### The 2011 Competition is Here!

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ENERGY STAR U.S. ENVIRONMENTAL PROTECTION AGENCY • U.S. DEPARTMENT OF ENERGY

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EPA's ENERGY STAR Leaders Drive Greater Energy Efficiency

Innovative Energy Technology Transforms Wasted Heat into Electricity

This Winter Keep the Heat Indoors with Five Easy Energy Star Tips

ENERGY STAR Awards Ceremony: April 12, 2011

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
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 ENERGY STAR Podcast	 ENERGY STAR in Affordable Housing	 Recycling with ENERGY STAR

# http://designlights.org/

**DESIGNLIGHTS**  
CONSORTIUM



THE NORTHEAST'S PREMIER RESOURCE FOR HIGH-QUALITY,  
ENERGY-EFFICIENT, COMMERCIAL LIGHTING DESIGN AND INFORMATION!

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The DesignLights™ Consortium (DLC) is the Northeast's premier resource for high-quality, energy-efficient, commercial lighting design and information!

The DLC – a collaboration of utility companies and regional energy efficiency organizations – is committed to raising awareness of the benefits of efficient lighting in commercial buildings.

**OUR SPONSORS** support and enable the efforts of the DLC, and through their participation they demonstrate their commitment to quality and performance in energy efficiency.

**OUR MISSION** is to help – builders, architects, designers, and commercial property owners to implement improved design practices in all areas of the commercial lighting market.

**OUR GOAL** is to ensure that high-quality, energy-efficient lighting design becomes commonplace in all lighting installations.

#### NEWS

**Update: 03/14/2011**

To view the qualified products list as of 03/11/2011 [click here](#)

An updated application tracking sheet has been posted to the member section.

**Update: 01/17/2011**

Information from the private QPL document is now openly available. The QPL document will now be uploaded in Microsoft Excel format in all locations.



# MAXLITE LED OUTDOOR FIXTURES:

## COMMERCIAL FIXTURES AND LAMPS SPECIFICATIONS



### LED 1X1 GARAGE LIGHTER/ SURFACE MOUNT & WALLPACK FIXTURES



**Fixture:** Heavy-duty cast aluminum one-piece housing; epoxy coated; rust and corrosion proof. Fixture is sealed to be dirt and bug proof.

**Lens:** High quality shock-proof polycarbonate, with UV inhibitors added/or shatterproof glass on wallpacks

**LED Module:** Aluminum components in the LED module act as heat sinks to reduce heat and add to life. The module uses directional settings to control the fall of light and the light levels. This makes the fixture an efficient replacement for metal halide and high pressure sodium fixtures, while reducing wattage and extending life.

**LED Driver:** Self contained driver meets UL 1310 UL 48 Class2.

**Finish:** Dark Bronze finish is epoxy coated.

**Installation:** Can mount to recessed outlet box or direct to surface.

#### BENEFITS

- Universal 120-277V
- Maintenance free for up to 13 Years
- Mercury free; no UV
- Heavy-duty cast aluminum housing; rust and corrosion proof; epoxy coated
- High quality shock-proof polycarbonate lens with UV inhibitors added/and shatterproof glass.
- Sealed fixture is dirt and bug free
- Multiple knockouts for mounting convenience
- Occupancy sensor compatible
- LM-79/80 data available
- 5 Year Limited Warranty



Commercial outdoor application

#### LED GARAGE LIGHTER & WALLPACKS SPECIFICATIONS

Watts	Order Code	Model Number	Lumens	Lamp Life (Hrs)	Dimensions (L"xW"xH")	K
30	70724	MLSWP30LED50	1700	50,000	14.25 x 9 x 7.5	5000
40	70723	MLLWP40LED50	2000	50,000	18.5 x 9.5 x 9	5000
40	70722	MLGAR40LED50	3150	50,000	12.25 x 12.25 x 9	5000

SPECIAL NOTES	APPLICATIONS
Replaceable Driver	Hotels, Garages, Commercial Buildings, Public Areas, Schools, Hospitals

IES AND PHOTOMETRIC FILES ARE AVAILABLE CALL FOR CUSTOM LIGHTING LAYOUTS

For more information on MaxLite Products, visit: [www.maxlite.com](http://www.maxlite.com). Click on "PRODUCT LINE"

MaxLite® 1-800-555-5629 | Fax: 973-244-7333 | Web: [www.maxlite.com](http://www.maxlite.com) | E-mail: [info@maxlite.com](mailto:info@maxlite.com)

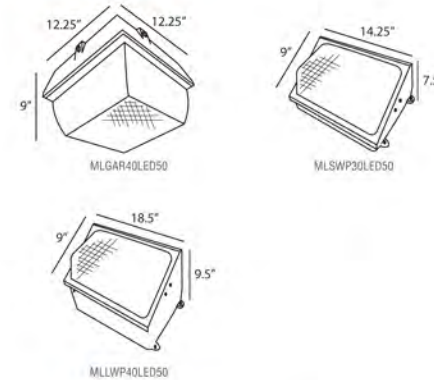


## COMMERCIAL FIXTURES AND LAMPS SPECIFICATIONS



### LED 1X1 GARAGE LIGHTER/ SURFACE MOUNT & WALLPACK FIXTURES

#### DIMENSIONS



MaxLite

### lighting facts™

A Program of the U.S. DOE

Light Output (Lumens)	1640
Watts	33
Lumens per Watt (Efficacy)	50
Color Accuracy Color Rendering Index (CRI)	68

Light Color

Combined Color Temperature (CCT)

5200 (Daylight)

Warm White
Bright White
Daylight
5000K

2700K
3000K
4000K
6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Stock-Stock Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit [www.lightingfacts.com](http://www.lightingfacts.com) for the Label Reference Guide.

Registration Number: 01P3-DANKSP  
Model Number: ML33WP30LED50  
Type: Outdoor wall pack

MLSWP30LED50

MaxLite

### lighting facts™

A Program of the U.S. DOE

Light Output (Lumens)	3150
Watts	40
Lumens per Watt (Efficacy)	80
Color Accuracy Color Rendering Index (CRI)	70

Light Color

Combined Color Temperature (CCT)

5000 (Daylight)

Warm White
Bright White
Daylight
5000K

2700K
3000K
4000K
6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Stock-Stock Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit [www.lightingfacts.com](http://www.lightingfacts.com) for the Label Reference Guide.

Registration Number: 01P3-VAMMYT  
Model Number: MLGAR40LED50  
Type: Parking garage fixture

MLGAR40LED50

MaxLite

### lighting facts™

A Program of the U.S. DOE

Light Output (Lumens)	2000
Watts	40
Lumens per Watt (Efficacy)	50
Color Accuracy Color Rendering Index (CRI)	68

Light Color

Combined Color Temperature (CCT)

5000 (Daylight)

Warm White
Bright White
Daylight
5000K

2700K
3000K
4000K
6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Stock-Stock Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit [www.lightingfacts.com](http://www.lightingfacts.com) for the Label Reference Guide.

Registration Number: W0P2-HHTA13  
Model Number: MLLWP40LED50  
Type: Parking garage fixture

MLLWP40LED50

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The Training Department: Product and Marketing Division:



**Thanks for your time and attention!**



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