



ProLED[®]

LED LAMP CATALOG

Volume 1.0

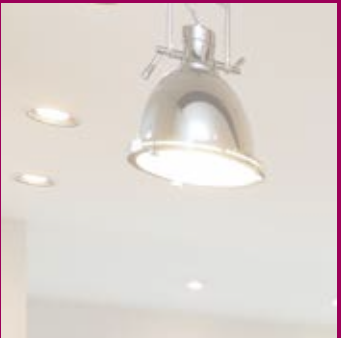


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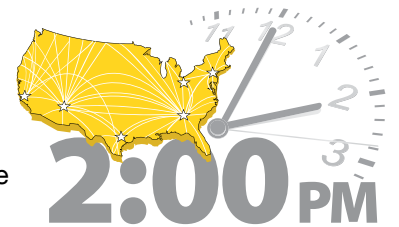


About Halco Lighting Technologies

Established in 1974, Halco Lighting Technologies is a leader in lamp, luminaire and ballast solutions. We are dedicated to providing you with the latest in energy efficient technologies; illustrated by our ProLED luminaires and full offering of ProLED lamps. Halco's luminaire offering features indoor recessed solutions such as ProLED Panel, Volumetric Panel and Downlight Retrofit Series luminaires. Our broad selection of long life, energy efficient ProLED lamps is available in popular shapes with an array of color temperatures and beam spreads. Halco is your single source for LED lamps for replacement and retrofit applications.

Service

We measure our success by one standard - your satisfaction. Halco carries deep inventory of a broad SKU offering to assure we have what you need when you need it. With strategically located warehouses in Atlanta, Carlstadt, Cleveland, Houston, Los Angeles and Phoenix, orders placed by 2:00 PM local warehouse time ship the same day. Will-call and courier service is also available for your convenience.



Quality

Our in-house lighting laboratory allows us to perform a variety of testing services including photometric, light output, color metrics and electrical measurements, including IES LM-79 testing. This product testing facility operates under a quality management system and ensures continuous quality control and outstanding product performance.

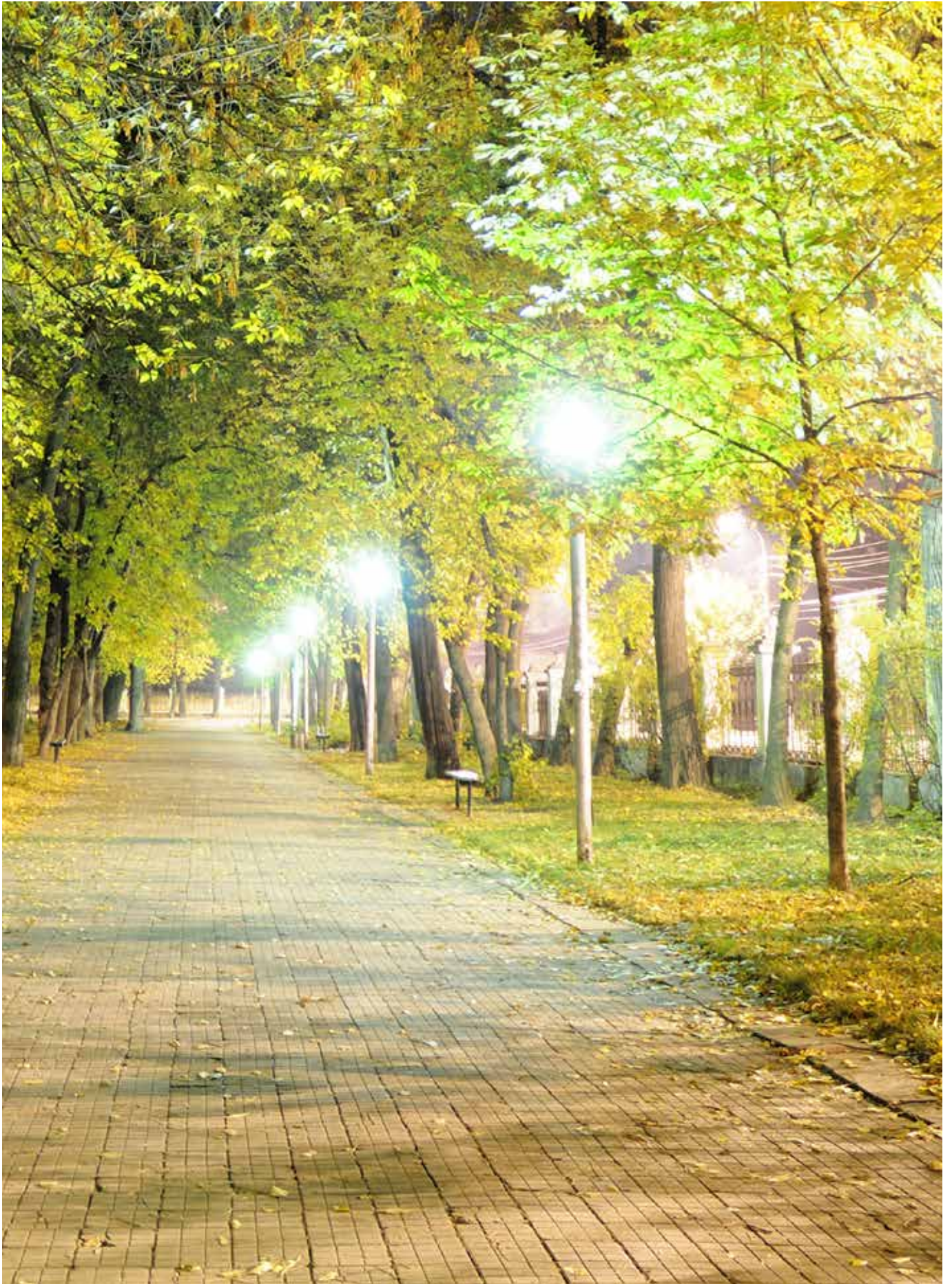


Halco's Quality Assurance policy ensures we deliver on our commitment to your satisfaction. If our product does not perform according to specifications, rest assured we'll provide a replacement or credit.

Performance



ProLED luminaires and lamps are backed by a warranty you can rely on. Luminaires, Reflector, PAR, A-Shape, G25, Decorative, MR, PAR36 and IP65 Rated JC lamps are backed by a 5-Year Limited Warranty. ProLED 912, C7/C9 and standard JC lamps are backed by a 2-Year Limited Warranty.



U.S. Department of Energy estimates LEDs offer the potential for cutting general lighting energy use nearly in half by 2030.

ENERGY STAR®

Halco is a proud ENERGY STAR® partner. ENERGY STAR® is a voluntary program by the U.S. Environmental Protection Agency that aims to educate and increase awareness of energy saving and environmentally friendly products. Halco boasts a portfolio of ENERGY STAR® qualified products, specifically in our ProLED and ProLume Compact Fluorescent product offerings.



The Design Lights Consortium®

The Design Lights Consortium (DLC) is intended to accelerate energy efficiency in the building sector through public policy, program strategies and education. The DLC promotes quality, performance and energy commercial sector lighting solutions. Halco ProLED luminaires and T8 Linear lamps are on the DLC Qualified Product List.



LED Lighting Facts®

Halco is a participating partner of the U.S. Department of Energy (DOE) LED Lighting Facts® program, which assures that the performance of LED lighting products is accurately represented. The program helps manage the adoption of the new technology by mandating the use of a label that verifies the product has been tested according to industry standard procedures and that those results are accurately presented. The DOE LED Lighting Facts® label identifies light output, wattage, efficacy, correlated color temperature (CCT) and color rendering index (CRI).



Halco also complies with Federal Trade Commission (FTC) Lighting Facts labeling regulations of medium base screw lamps. Similar to the DOE program, the FTC program establishes consistency among manufacturers so that consumers can easily identify LED product specifications. The FTC label requires lumen output, estimated annual energy cost, life expectancy, color temperature, wattage and mercury content, if applicable.

Lighting Facts/Datos de Iluminación	
Per Bulb/Per Bombilla	
Brightness/Brillo	830 lumens/lúmenes
Estimated Yearly Energy Cost/ Costo Estimado Anual de Energía	\$1.20
Based on 3 hrs/day, 11c/kWh. Cost depends on rates and use. / Basado en 3 hrs/día, 11c/kWh. Costo depende de la tarifa y el uso.	
Life/Duración	22.8 years/años
Based on 3 hrs/day / Basado en 3 hrs/día	
Light Appearance/Apariencia de Iluminación	Warm/Cálida Cool/Fría
3000K	
Energy Used/Usó de Energía	10 watts/watios



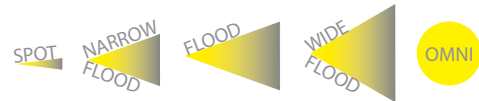
Halco's ProLED lamps feature an unrivaled combination of efficiency, long life and light quality, providing the best overall performance in LED technology.

ProLED Advantage

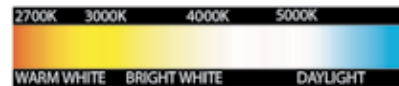
ProLED products utilize the highest quality components, including LEDs, precision manufactured optics, optimally engineered drivers and special heat sinks for superior thermal management.



Optics designed for precise beam control providing smooth illumination virtually identical to traditional sources



Achieve consistent lamp-to-lamp color through rigorous adherence to design and manufacturing specifications



Utilize a phosphor that creates a rich R-9 value to enhance reds and skin tones and produce high CRI values

Dimmable down to 5% of rated light output for flicker-free, reliable performance*

Optimal thermal management through the use of an engineered heat sink housing and quality componentry

*Visit www.halcolighting.com/ProLEDdim for a comprehensive Dimmer Compatibility List.

Why Choose ProLED

Using LED retrofit or replacement lamps reduces total cost of ownership of the lighting system without sacrificing performance. ProLED lamps have a longer rated life than traditional sources while consuming less energy. ProLED lamps also produce the same quality of illumination as traditional light sources making them a popular choice for an easy lighting upgrade.

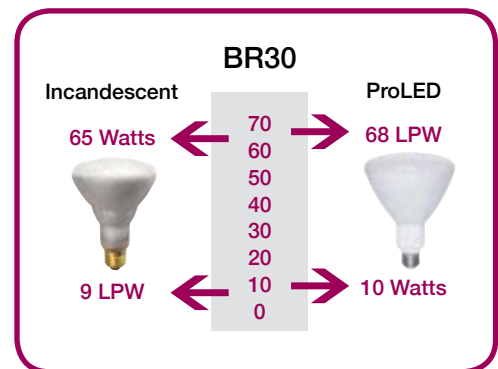
ProLED Payback

Advances in technology have allowed LED lamps to provide equivalent light output while consuming a fraction of the energy. To calculate energy savings of a lighting upgrade compare the wattage, the measure of energy consumed in order to power the lamp. The lower the wattage the greater the energy savings. For example, a 10W ProLED BR30 lamp will provide light output equivalent to a 65W Halogen reflector lamp and save as much as 85% in energy.

Operating Details		
	Electricity Cost	\$0.11 kWh
	Annual Operating Hours	3650
Energy Analysis	Existing	Retrofit
Wattage Per Lamp	65W	10W
Annual Energy Costs	\$26	\$4
Annual Energy Savings		85%

Think Lumens

When evaluating energy efficient lamp options refer to the lamp's light output, which is measured in lumens. Lamps with relatively equivalent lumens and center beam candle power (CBCP) will provide similar illumination in the application. ProLED lamps are extremely efficient light sources. Efficacy is measured in lumens per watt (LPW). ProLED lamps feature high LPW versus Halogen and Incandescent lamps.



Maintenance Free Operation

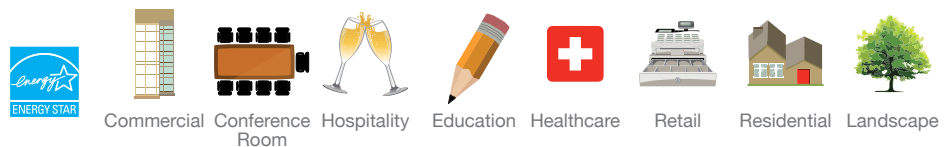
The life of a lamp impacts maintenance and relamping costs. The longer the life the fewer times the lamps need to be replaced, the fewer lamps that need to be purchased and the less time spent replacing lamps. Over the 40,000 hour useful life of (1) ProLED BR30 lamp, an Incandescent lamp (3,000 hr life) would need to be replaced 14 times!





Application Solutions

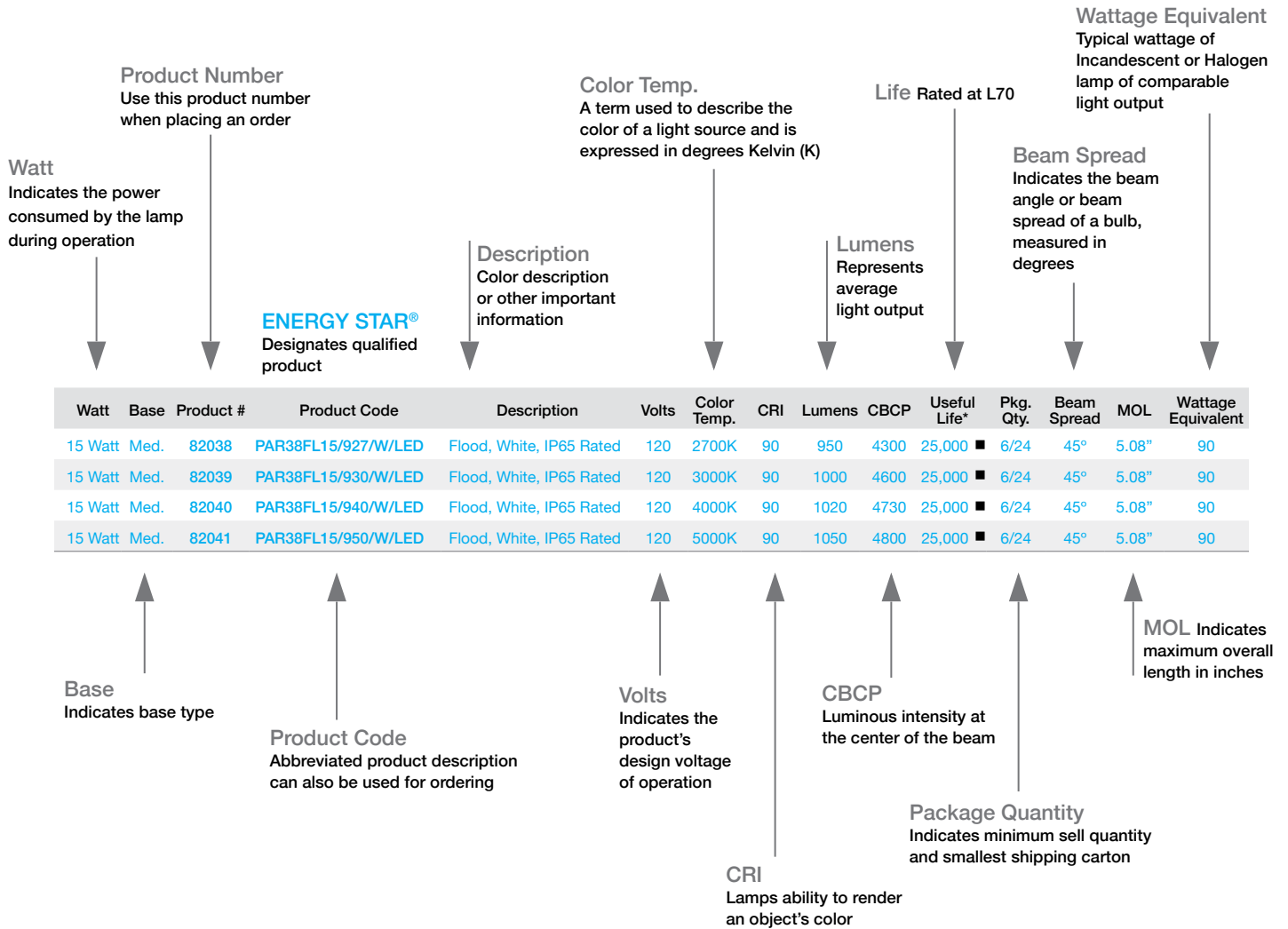
Halco's ProLED lamps are designed for optimal performance in a variety of applications. We have identified the most commonly used applications specific to each lamp type, designated by the strength of shading in the chart.

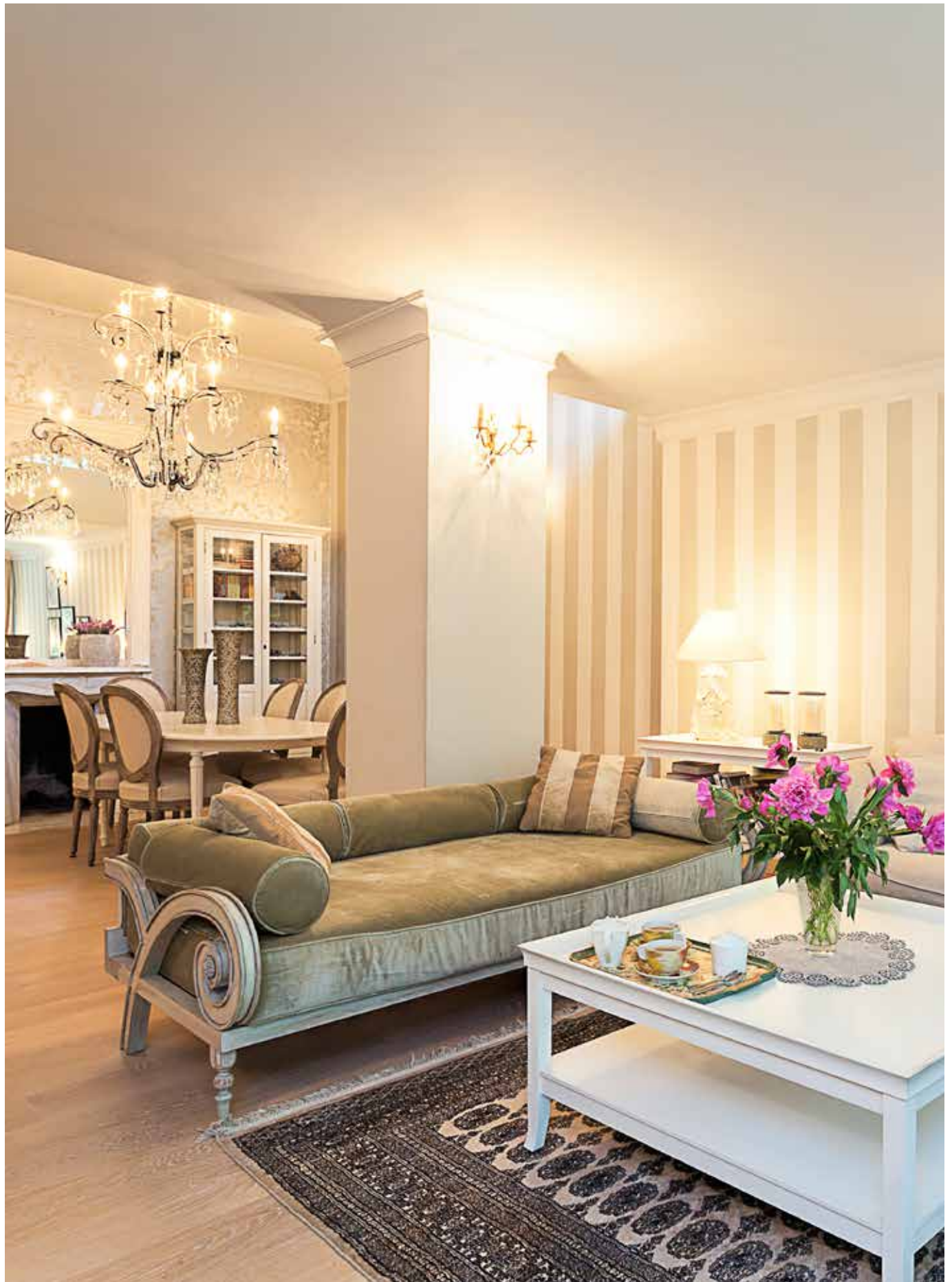


	Commercial	Conference Room	Hospitality	Education	Healthcare	Retail	Residential	Landscape
PL Direct	✓	✓	✓	✓	✓	✓		
Linear Direct T8	✓	✓	✓	✓	✓	✓	✓	
Linear Bypass T8	✓	✓	✓	✓	✓	✓	✓	
Downlight Replaceable Trim ✓	✓	✓	✓	✓	✓	✓	✓	
HID Retrofit	✓						✓	✓
PAR38 ✓	✓	✓	✓	✓	✓	✓	✓	✓
PAR30L, PAR30S ✓	✓	✓	✓	✓	✓	✓	✓	✓
PAR20, PAR16 ✓	✓	✓	✓	✓	✓	✓	✓	✓
Commercial MR16 ✓	✓	✓	✓	✓	✓	✓	✓	
BR40, BR30 ✓	✓	✓	✓	✓	✓	✓	✓	
R20 ✓	✓	✓	✓	✓	✓	✓	✓	
A-Shape Omnidirectional ✓	✓	✓	✓	✓	✓	✓	✓	
A-Shape Non-Dimmable	✓		✓	✓	✓	✓	✓	
Globe ✓	✓		✓		✓	✓	✓	
Chandelier ✓	✓		✓		✓	✓	✓	
Sign Lamps	✓					✓		
Decorative Chandelier			✓				✓	
Indoor PAR36	✓		✓	✓	✓	✓		
MR11	✓		✓	✓	✓	✓	✓	✓
MR16	✓	✓	✓	✓	✓	✓	✓	✓
Black MR16	✓					✓	✓	✓
Outdoor PAR36	✓							✓
JC	✓		✓					✓
R12 GBF & 1383	✓		✓	✓	✓	✓		
3155								✓



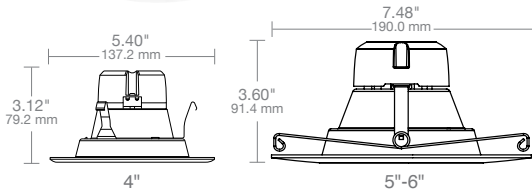
How to Read Ordering Information







ProLED Downlight Replaceable Trim Series



Specifications

- Six Designer Trim Options With Easy Twist Technology™
- 9 Watt (4") and 12 Watt (5"-6") Replace Up To 65 Watt Incandescent (82% Energy Savings), 18W LED Retrofit Replaces 120W Incandescent
- 5" - 6" downlight includes 2 additional friction clips for recessed cans that do not use torsion springs
- E26 socket adapter assembly included, GU24 adapter available
- All CCT versions are Title 24 Compliant; 2700K, 3000K and 4000K are CEC Listed
- 2700K and 3000K lamps' performance meets California Quality Lamp Specifications
- UL Classified for damp locations; RoHS Compliant
- Low profile designs are compatible with 4", 5" or 6" recessed downlight luminaires
- Torsion springs and friction clips adjust to snugly fit in either 5" or 6" recessed cans
- Dimmable to 5% for design flexibility and increased energy savings
- Umbilical E26 socket assembly included, GU24 adapter available
- Replaceable Designer Trim Options Available Separately

Markets & Applications



Ordering Information

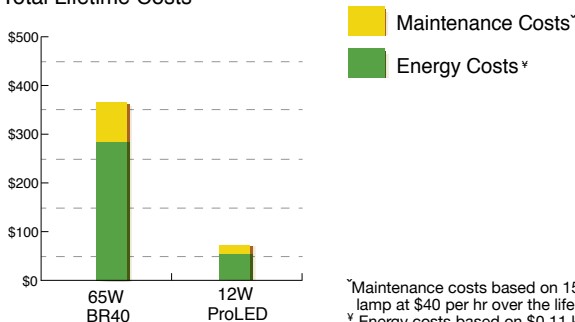


Watt	Product #	Product Code	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	Luminaire Size	Wattage Equivalent
9 Watt	99924	DL4FR9/927/RT/LED	120	2700K	90	600	50,000	1/12	4"	50
9 Watt	99925	DL4FR9/930/RT/LED	120	3000K	90	600	50,000	1/12	4"	50
9 Watt	99926	DL4FR9/940/RT/LED	120	4000K	90	600	50,000	1/12	4"	50
9 Watt	99927	DL4FR9/950/RT/LED	120	5000K	90	600	50,000	1/12	4"	50
12 Watt	99920	DL6FR12/927/RT/LED	120	2700K	90	800	50,000	1/6	5" - 6"	65
12 Watt	99921	DL6FR12/930/RT/LED	120	3000K	90	800	50,000	1/6	5" - 6"	65
12 Watt	99922	DL6FR12/940/RT/LED	120	4000K	90	800	50,000	1/6	5" - 6"	65
12 Watt	99923	DL6FR12/950/RT/LED	120	5000K	90	800	50,000	1/6	5" - 6"	65
18 Watt	99942	DL6FR18/927/RT/LED	120	2700K	90	1200	50,000	1/6	5" - 6"	120
18 Watt	99943	DL6FR18/930/RT/LED	120	3000K	90	1200	50,000	1/6	5" - 6"	120
18 Watt	99940	DL6FR18/940/RT/LED	120	4000K	90	1200	50,000	1/6	5" - 6"	120
18 Watt	99941	DL6FR18/950/RT/LED	120	5000K	90	1200	50,000	1/6	5" - 6"	120

* Useful Life is defined as the point in time at which the LED will maintain at least 70% of its initial lumens. The LED will continue to operate past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life. Represents lamps that are ENERGY STAR® certified.

Savings Comparison

Total Lifetime Costs



ProLED Downlight Replaceable Trim Series

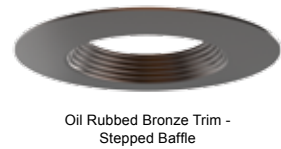
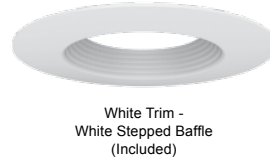
Trim Specifications

- Low profile designs are compatible with 4" and 5-6" Downlight Retrofit Replaceable Trim Series products
- Complement your existing décor with easy-to-install trim options
- Trims install and lock securely with twist on and off tabs, no tape or adhesive required
- Available in six popular finishes to complement any decor

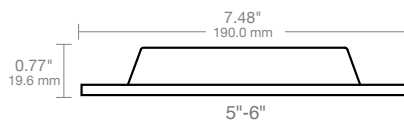
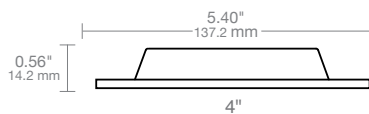
4" Trims



5" - 6" Trims



GU24 Adapter



Trim Ordering Information

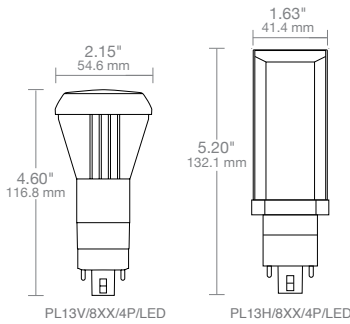


Product #	Product Code	Description	Finish	Pkg. Qty.	Baffle Height	Diameter	Weight
99934	DL4/WB	White Trim - Black Stepped Baffle	White/Black	1/24	0.56"	5.40"	0.10 lbs.
99935	DL4/WSS	White Trim - Specular Silver Baffle	White/Silver	1/24	0.56"	5.40"	0.10 lbs.
99936	DL4/BN	Brushed Nickel Trim - Stepped Baffle	Brushed Nickel	1/24	0.56"	5.40"	0.10 lbs.
99937	DL4/ORB	Oil Rubbed Bronze Trim - Stepped Baffle	Oil Rubbed Bronze	1/24	0.56"	5.40"	0.10 lbs.
99939	DL4/BLK	Black Trim - Stepped Baffle	Black	1/24	0.56"	5.40"	0.10 lbs.
99930	DL6/WB	White Trim - Black Stepped Baffle	White/Black	1/24	0.77"	7.48"	0.15 lbs.
99931	DL6/WSS	White Trim - Specular Silver Baffle	White/Silver	1/24	0.77"	7.48"	0.15 lbs.
99932	DL6/BN	Brushed Nickel Trim - Stepped Baffle	Brushed Nickel	1/24	0.77"	7.48"	0.15 lbs.
99933	DL6/ORB	Oil Rubbed Bronze Trim - Stepped Baffle	Oil Rubbed Bronze	1/24	0.77"	7.48"	0.15 lbs.
99938	DL6/BLK	Black Trim - Stepped Baffle	Black	1/24	0.77"	7.48"	0.15 lbs.
91003	ADP/DL/GU24/LED	GU24 Socket Adapter		1	-	-	-

Trims are not compatible with legacy ProLED® Downlight models: 80855, 80858 and 80871.

ProLED PL Direct Series

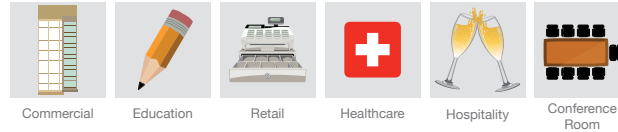
NEW!



Specifications

- Dedicated horizontal and vertical orientation versions (horizontal features rotatable socket alignment)
- Lasts 5 times longer than CFL
- Electronic CFL ballast compatible
- 50,000 hour life resulting in lower maintenance costs over time
- Horizontal lamp base rotates for proper orientation in luminaire
- Works with existing 18W, 26W, 32W and 42W electronic CFL ballasts
- Mercury-free for safer operation and disposal
- RoHS Compliant
- Fits G24q and GX24q Sockets (26, 32, and 42W CFL)
- Instant-On
- Dimmable when used with a compatible dimming ballast (0-10V)
- -20C (-4F) to 45C (113F) operating temperatures
- UL classified 1598C Retrofit Kit

Markets & Applications



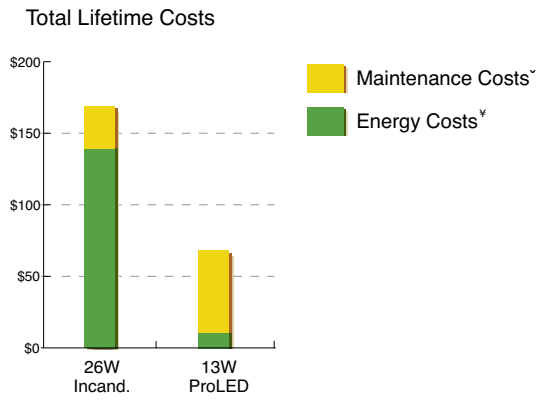
Ordering Information



Watt	Base	Product #	Product Code	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
VERTICAL										
13 Watt	G24q/GX24q	81110	PL13V/827/4P/LED	2700K	82	1000	50,000	1/10	4.60"	26
13 Watt	G24q/GX24q	81111	PL13V/830/4P/LED	3000K	82	1000	50,000	1/10	4.60"	26
13 Watt	G24q/GX24q	81112	PL13V/835/4P/LED	3500K	82	1000	50,000	1/10	4.60"	26
13 Watt	G24q/GX24q	81113	PL13V/841/4P/LED	4100K	82	1000	50,000	1/10	4.60"	26
13 Watt	G24q/GX24q	81114	PL13V/850/4P/LED	5000K	82	1000	50,000	1/10	4.60"	26
HORIZONTAL										
13 Watt	G24q/GX24q	81115	PL13H/827/4P/LED	2700K	82	1000	50,000	1/10	5.20"	26
13 Watt	G24q/GX24q	81116	PL13H/830/4P/LED	3000K	82	1000	50,000	1/10	5.20"	26
13 Watt	G24q/GX24q	81117	PL13H/835/4P/LED	3500K	82	1000	50,000	1/10	5.20"	26
13 Watt	G24q/GX24q	81118	PL13H/841/4P/LED	4100K	82	1000	50,000	1/10	5.20"	26
13 Watt	G24q/GX24q	81119	PL13H/850/4P/LED	5000K	82	1000	50,000	1/10	5.20"	26

* Useful Life is defined as the point in time at which the LED will maintain at least 70% of its initial lumens. The LED will continue to operate past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDDim for dimmer compatibility information.

Savings Comparison



[~]Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.
[¶]Energy costs based on \$0.11 kWh over 40,000 hour life.

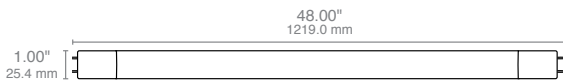


ProLED Linear Direct T8 Series

NEW!



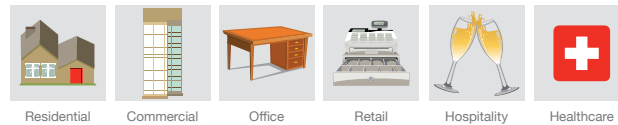
DIRECT
BALLAST
COMPATIBLE



Specifications

- 48" T8 LED Tube with bi-pin base
- No rewiring of existing luminaire necessary
- Operates on electronic T8 fluorescent ballasts
- 100 Lumens Per Watt versus T8 Fluorescent's 90 LPW
- -4°F(-20°C) to 122°F(50°C) operating temperature range
- Instant-on, no flicker
- Frosted glass design
- UL Listed
- 50,000 hour rated life, up-to 2 times the life of standard Fluorescent
- Available in 3500K, 4000K and 5000K CCT
- Dimmable when used with a compatible dimming ballast (0-10V)
- CEE Listed Tier 2
- Conforms to requirements of NSF/ANSI standard 2-food equipment
- Acceptable for use in damp locations and enclosed luminaires
- 82 CRI
- Mercury-free for safer operation
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information



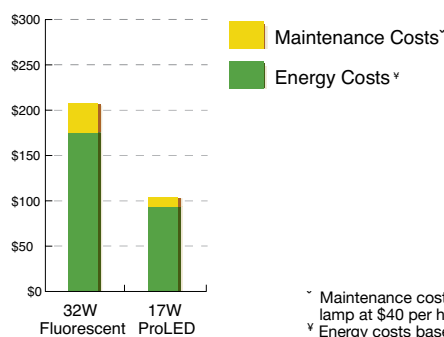
Watt [§]	Base	Product #	Product Code	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	Beam Spread	MOL	THD	DLC [®] Qualified
17 Watt	G13	80880	T8FR17/835/DIR/LED	3500K	82	1800	50,000	1/25	270°	48"	<20%	Yes
17 Watt	G13	80881	T8FR17/840/DIR/LED	4000K	82	1800	50,000	1/25	270°	48"	<20%	Yes
17 Watt	G13	80882	T8FR17/850/DIR/LED	5000K	82	1800	50,000	1/25	270°	48"	<20%	Yes

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point but at decreased light levels. Must be operated with an ambient luminaire temperature between -4°F(-20°C) and 122°F(50°C).

§ Specifications are based on use with normal ballast factor ballasts (0.88). For LBF and HBF ballast performance, see the chart below. Please check the DLC qualified products List <https://www.designlights.org/qpl> for all qualified Halco products.

Savings Comparison

Total Lifetime Costs



† Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.
‡ Energy costs based on \$0.11 kWh over 50,000 hour life.

Ballast Performance

Bare Lamp Wattage	System Wattage			Lumen Output		
	.78 BF	.88 BF	1.18 BF	.78 BF	.88 BF	1.18 BF
14.0	14.8	17.0	22.4	1560	1800	2280

ProLED Linear Bypass T8 Series

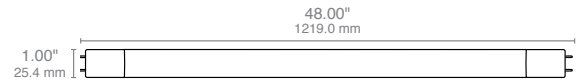
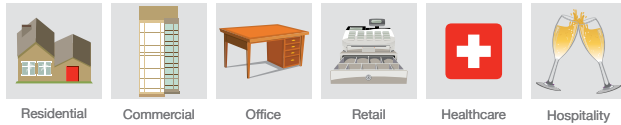
NEW!

Specifications

- 48" T8 LED Tube with bi-pin base
- Single-end powered, operates on 120V - 277V line voltage range
- Reliable and efficient way to retrofit existing Linear Fluorescent luminaires with simple rewiring
- No external ballast or driver required
- Up-to 111 lumens per watt
- -4°F(-20°C) to 122°F(50°C) operating temperature range
- Instant-on, no flicker
- Frosted glass design
- UL Classified 1598C Retrofit Kit
- 50,000 hour rated life, up-to 2 times the life of standard Fluorescent
- Available in 3500K, 4000K and 5000K CCT
- Acceptable for use in damp locations and enclosed luminaires
- Conforms to requirements of NSF/ANSI standard 2-food equipment
- 80 CRI
- Mercury-free for safer operation
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



Ordering Information



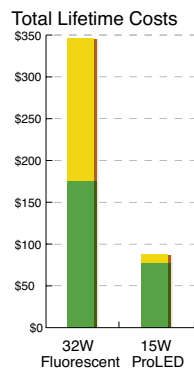
Watt	Base	Product #	Product Code	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	Beam Spread	MOL	THD	DLC® Qualified
15 Watt	G13	80883	T8FR15/835/BYP/LED	120-277	3500K	82	1800	50,000	1/25	270°	48"	<20%	Yes
15 Watt	G13	80884	T8FR15/840/BYP/LED	120-277	4000K	82	1800	50,000	1/25	270°	48"	<20%	Yes
15 Watt	G13	80885	T8FR15/850/BYP/LED	120-277	5000K	82	1800	50,000	1/25	270°	48"	<20%	Yes

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. Must be operated with an ambient luminaire temperature between -4°F(-20°C) and 122°F(50°C). Please check the DLC qualified products List <https://www.designlights.org/qpl> for all qualified Halco products.

Warning

Halco ProLED® Linear Bypass T8 will not operate on a linear fluorescent ballast or with shunted lampholders. Please re-wire the luminaire as shown in the installation instructions included with the product and ensure non-shunted lampholders are installed in the luminaire before installing this product.

Savings Comparison



† Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.
* Energy costs based on \$0.11 kWh over 50,000 hour life.

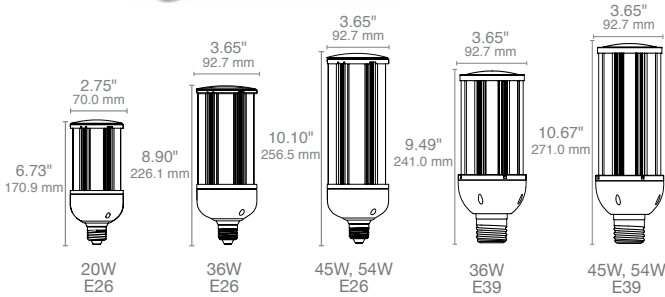
ProLED HID Retrofit Series

NEW!

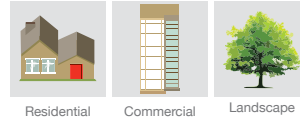


Specifications

- Acceptable for enclosed luminaires
- Replacement for HID high bay or post top applications
- Can be used in base up or base down position
- -22°F (-30°C) to 140°F (60°C) operating temperature range
- 120-277V input range (ballast must be bypassed)
- 50,000 hour life
- Available in 5000K CCT
- 82 CRI for quality and consistent color rendering
- UL Listed for damp locations
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications

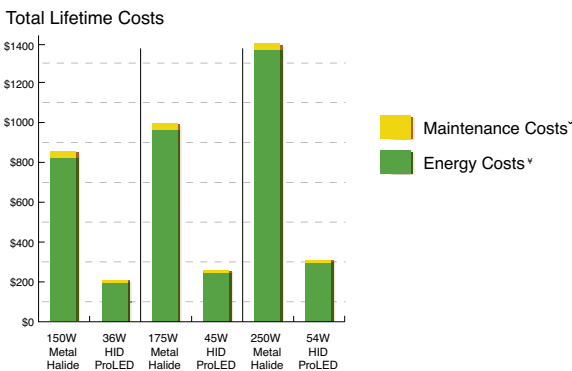


Ordering Information

Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent	DLC® Qualified
20 Watt	E26	80941	HID20/850/MV/LED	Omnidirectional	120-277	5000K	82	2100	50,000	1/12	6.73"	70	-
36 Watt	E26	80936	HID36/850/MV/LED	Omnidirectional	120-277	5000K	82	4200	50,000	1/12	8.90"	150	-
36 Watt	E39	80950	HID36/850/MV/E39/LED	Omnidirectional	120-277	5000K	82	4200	50,000	1/12	9.49"	150	Yes
45 Watt	E26	80937	HID45/850/MV/LED	Omnidirectional	120-277	5000K	82	5400	50,000	1/12	10.10"	175	-
45 Watt	E39	80951	HID45/850/MV/E39/LED	Omnidirectional	120-277	5000K	82	5400	50,000	1/12	10.67"	175	Yes
54 Watt	E26	80938	HID54/850/MV/LED	Omnidirectional	120-277	5000K	82	6200	50,000	1/12	10.10"	200	-
54 Watt	E39	80952	HID54/850/MV/E39/LED	Omnidirectional	120-277	5000K	82	6200	50,000	1/12	10.67"	200	Yes

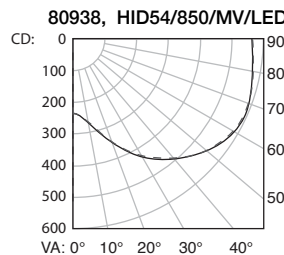
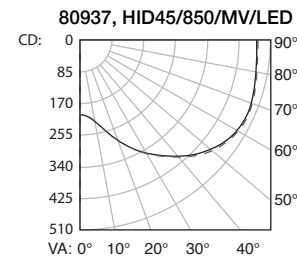
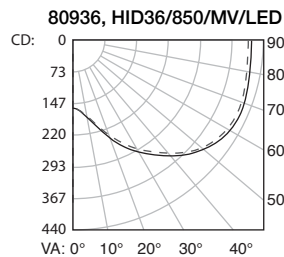
* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to operate past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life. Please check the DLC qualified products List <https://www.designlights.org/qpl> for all qualified Halco products.

Savings Comparison



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.
 † Energy costs based on \$0.11 kWh over 40,000 hour life.

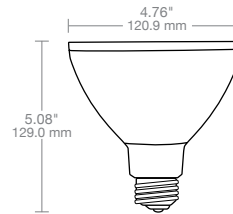
Photometrics



ProLED Universal Voltage PAR38

Specifications

- 120-277V range
- IP65 Rated for wet locations
- Available in 4000K and 5000K CCT
- 82 CRI for quality and consistent color rendering
- No Mercury or UV/IR emissions
- Non-dimmable
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
17 Watt	Med.	82061	PAR38FL17/940/W/MV/LED	Flood, White, IP65 Rated ✕	120-277	4000K	90	1200	2590	40,000	6/24	40°	5.08"	120
17 Watt	Med.	82062	PAR38FL17/950/W/MV/LED	Flood, White, IP65 Rated ✕	120-277	5000K	90	1200	2630	40,000	6/24	40°	5.08"	120

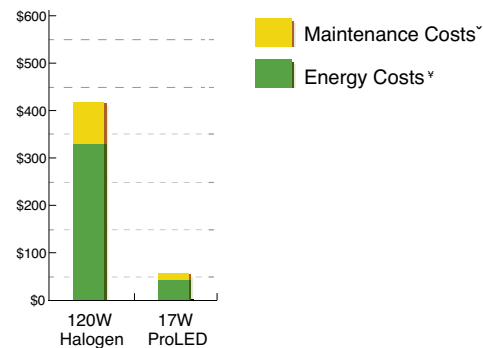
* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. Acceptable for use in sealed metal landscape luminaires when protected from the elements.

✕ Non-dimmable

Represents lamps that are ENERGY STAR® certified.

Savings Comparison

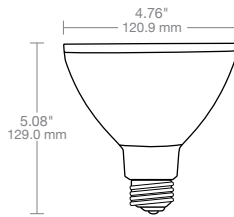
Total Lifetime Costs



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.

† Energy costs based on \$0.11 kWh over 40,000 hour life.

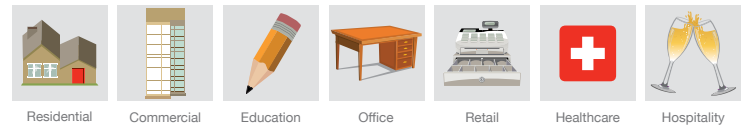
ProLED High CRI PAR38



Specifications

- Acceptable for use in ICAT rated luminaires
- Available in white and black finishes
- UL Listed for wet locations
- Dimmable to 5% for design flexibility
- 120-277V Rated PAR38 available
- Available in 2700K, 3000K, 4000K and 5000K CCT
- 90 CRI provides superior quality and color accuracy
- 2700K and 3000K lamps' performance meets the California Quality Lamp Specifications
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
15 Watt	Med.	82038	PAR38FL15/927/W/LED	Flood, White, IP65 Rated	120	2700K	90	950	2250	25,000	6/24	40°	5.08"	90
15 Watt	Med.	82039	PAR38FL15/930/W/LED	Flood, White, IP65 Rated	120	3000K	90	1000	2300	25,000	6/24	40°	5.08"	90
15 Watt	Med.	82040	PAR38FL15/940/W/LED	Flood, White, IP65 Rated	120	4000K	90	1020	2340	25,000	6/24	40°	5.08"	90
15 Watt	Med.	82041	PAR38FL15/950/W/LED	Flood, White, IP65 Rated	120	5000K	90	1050	2380	25,000	6/24	40°	5.08"	90
15 Watt	Med.	82042	PAR38NFL15/927/W/LED	Narrow Flood, White, IP65 Rated	120	2700K	90	950	4560	25,000	6/24	25°	5.08"	90
15 Watt	Med.	82043	PAR38NFL15/930/W/LED	Narrow Flood, White, IP65 Rated	120	3000K	90	1000	4620	25,000	6/24	25°	5.08"	90
17 Watt	Med.	82046	PAR38FL17/927/W/LED	Flood, White, IP65 Rated	120	2700K	90	1150	2500	25,000	6/24	40°	5.08"	120
17 Watt	Med.	82047	PAR38FL17/927/B/LED	Flood, Black, IP65 Rated	120	2700K	90	1150	2500	25,000	6/24	40°	5.08"	120
17 Watt	Med.	82048	PAR38FL17/930/W/LED	Flood, White, IP65 Rated	120	3000K	90	1200	2550	25,000	6/24	40°	5.08"	120
17 Watt	Med.	82049	PAR38FL17/930/B/LED	Flood, Black, IP65 Rated	120	3000K	90	1200	2550	25,000	6/24	40°	5.08"	120
17 Watt	Med.	82050	PAR38FL17/940/W/LED	Flood, White, IP65 Rated	120	4000K	90	1220	2590	25,000	6/24	40°	5.08"	120
17 Watt	Med.	82051	PAR38FL17/940/B/LED	Flood, Black, IP65 Rated	120	4000K	90	1220	2590	25,000	6/24	40°	5.08"	120
17 Watt	Med.	82052	PAR38FL17/950/W/LED	Flood, White, IP65 Rated	120	5000K	90	1250	2630	25,000	6/24	40°	5.08"	120
17 Watt	Med.	82053	PAR38NFL17/927/W/LED	Narrow Flood, White, IP65 Rated	120	2700K	90	1150	5900	25,000	6/24	25°	5.08"	120
17 Watt	Med.	82054	PAR38NFL17/927/B/LED	Narrow Flood, Black, IP65 Rated	120	2700K	90	1150	5900	25,000	6/24	25°	5.08"	120
17 Watt	Med.	82055	PAR38NFL17/930/W/LED	Narrow Flood, White, IP65 Rated	120	3000K	90	1200	5960	25,000	6/24	25°	5.08"	120
17 Watt	Med.	82056	PAR38NFL17/930/B/LED	Narrow Flood, Black, IP65 Rated	120	3000K	90	1200	5960	25,000	6/24	25°	5.08"	120
17 Watt	Med.	82057	PAR38NFL17/940/W/LED	Narrow Flood, White, IP65 Rated	120	4000K	90	1220	6010	25,000	6/24	25°	5.08"	120
17 Watt	Med.	82059	PAR38NFL17/950/W/LED	Narrow Flood, White, IP65 Rated	120	5000K	90	1250	6050	25,000	6/24	25°	5.08"	120

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.

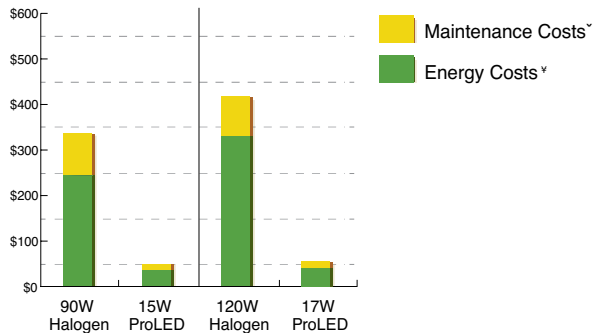
Acceptable for use in sealed metal landscape luminaires when protected from the elements.

Represents lamps that are ENERGY STAR® certified.

■ ENERGY STAR® mandates that lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements. Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.

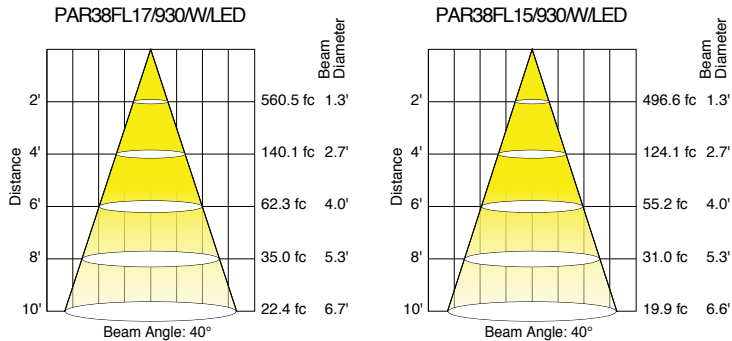
Savings Comparison

Total Lifetime Costs



~ Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.
 † Energy costs based on \$0.11 kWh over 40,000 hour life.

Photometrics



ProLED High CRI PAR30



Specifications

- PAR30S and PAR30L with smooth sided, lightweight construction
- Acceptable for use in ICAT rated luminaires
- Available in white and black finishes
- UL Listed for wet locations
- Dimmable to 5% for design flexibility
- Available in 2700K, 3000K, 4000K and 5000K
- 90 CRI provides superior quality and color accuracy
- Narrow Flood and Flood beam angles available
- 2700K and 3000K lamps' performance meets the California Quality Lamp Specifications
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information

Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
10 Watt	Med.	82012	PAR30FL10L/927/W/LED	Flood, White, IP65 Rated	120	2700K	90	750	1560	25,000	6/24	40°	4.61"	75
10 Watt	Med.	82013	PAR30FL10L/927/B/LED	Flood, Black, IP65 Rated	120	2700K	90	750	1560	25,000	6/24	40°	4.61"	75
10 Watt	Med.	82014	PAR30FL10L/930/W/LED	Flood, White, IP65 Rated	120	3000K	90	800	1600	25,000	6/24	40°	4.61"	75
10 Watt	Med.	82015	PAR30FL10L/930/B/LED	Flood, Black, IP65 Rated	120	3000K	90	800	1600	25,000	6/24	40°	4.61"	75
10 Watt	Med.	82016	PAR30FL10L/940/W/LED	Flood, White, IP65 Rated	120	4000K	90	820	1630	25,000	6/24	40°	4.61"	75
10 Watt	Med.	82017	PAR30FL10L/940/B/LED	Flood, Black, IP65 Rated	120	4000K	90	820	1630	25,000	6/24	40°	4.61"	75
10 Watt	Med.	82018	PAR30FL10L/950/W/LED	Flood, White, IP65 Rated	120	5000K	90	850	1670	25,000	6/24	40°	4.61"	75
10 Watt	Med.	82019	PAR30NFL10L/927/W/LED	Narrow Flood, White, IP65 Rated	120	2700K	90	750	3540	25,000	6/24	25°	4.61"	75
10 Watt	Med.	82020	PAR30NFL10L/927/B/LED	Narrow Flood, Black, IP65 Rated	120	2700K	90	750	3540	25,000	6/24	25°	4.61"	75
10 Watt	Med.	82021	PAR30NFL10L/930/W/LED	Narrow Flood, White, IP65 Rated	120	3000K	90	800	3600	25,000	6/24	25°	4.61"	75
10 Watt	Med.	82024	PAR30NFL10L/950/W/LED	Narrow Flood, White, IP65 Rated	120	5000K	90	850	3670	25,000	6/24	25°	4.61"	75
10 Watt	Med.	82025	PAR30FL10S/927/W/LED	Flood, White, IP65 Rated	120	2700K	90	750	1590	25,000	6/24	40°	3.35"	75
10 Watt	Med.	82026	PAR30FL10S/927/B/LED	Flood, Black, IP65 Rated	120	2700K	90	750	1590	25,000	6/24	40°	3.35"	75
10 Watt	Med.	82027	PAR30FL10S/930/W/LED	Flood, White, IP65 Rated	120	3000K	90	800	1640	25,000	6/24	40°	3.35"	75
10 Watt	Med.	82028	PAR30FL10S/930/B/LED	Flood, Black, IP65 Rated	120	3000K	90	800	1640	25,000	6/24	40°	3.35"	75
10 Watt	Med.	82029	PAR30FL10S/940/W/LED	Flood, White, IP65 Rated	120	4000K	90	820	1680	25,000	6/24	40°	3.35"	75
10 Watt	Med.	82030	PAR30FL10S/940/B/LED	Flood, Black, IP65 Rated	120	4000K	90	820	1680	25,000	6/24	40°	3.35"	75
10 Watt	Med.	82031	PAR30FL10S/950/W/LED	Flood, White, IP65 Rated	120	5000K	90	850	1720	25,000	6/24	40°	3.35"	75
10 Watt	Med.	82032	PAR30NFL10S/927/W/LED	Narrow Flood, White, IP65 Rated	120	2700K	90	750	3700	25,000	6/24	25°	3.35"	75
10 Watt	Med.	82033	PAR30NFL10S/927/B/LED	Narrow Flood, Black, IP65 Rated	120	2700K	90	750	3700	25,000	6/24	25°	3.35"	75
10 Watt	Med.	82034	PAR30NFL10S/930/W/LED	Narrow Flood, White, IP65 Rated	120	3000K	90	800	3760	25,000	6/24	25°	3.35"	75
10 Watt	Med.	82035	PAR30NFL10S/930/B/LED	Narrow Flood, Black, IP65 Rated	120	3000K	90	800	3760	25,000	6/24	25°	3.35"	75
10 Watt	Med.	82036	PAR30NFL10S/940/W/LED	Narrow Flood, White, IP65 Rated	120	4000K	90	900	3820	25,000	6/24	25°	3.35"	75

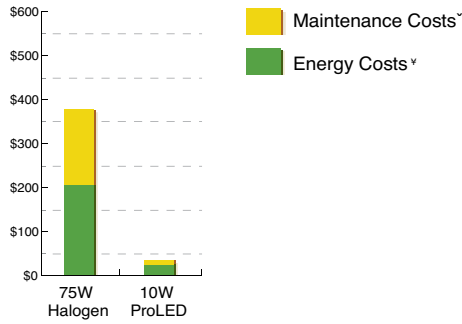
* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.

Represents lamps that are ENERGY STAR® certified.

■ ENERGY STAR® mandates that lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements. Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.

Savings Comparison

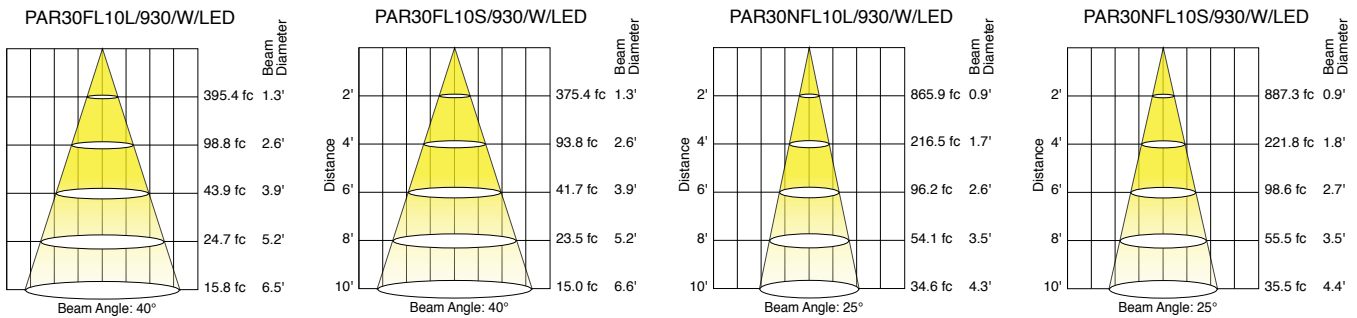
Total Lifetime Costs



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.

† Energy costs based on \$0.11 kWh over 40,000 hour life.

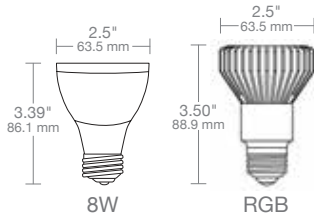
Photometrics



ProLED PAR30 Series IP65 rated long and short neck lamps are ideal for retail applications. Compared to Incandescent and Halogen, ProLED lamps generate less heat and emit no ultraviolet or infrared rays eliminating fading concerns. ProLED PAR30 lamps' labor saving long life - up-to 40,000 hours - reduces maintenance costs *keeping the store open for business.*

ProLED High CRI PAR20

High
CRI



Specifications

- PAR20 with smooth sided, lightweight construction
- Acceptable for use in ICAT rated luminaires
- Available in white and black finishes
- UL Listed for wet locations
- Dimmable to 5% for design flexibility
- Available in 2700K, 3000K, 4000K and 5000K
- 90 CRI provides superior quality and color accuracy
- Narrow Flood and Flood beam angles available
- 2700K and 3000K lamps' performance meets the California Quality Lamp Specifications
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



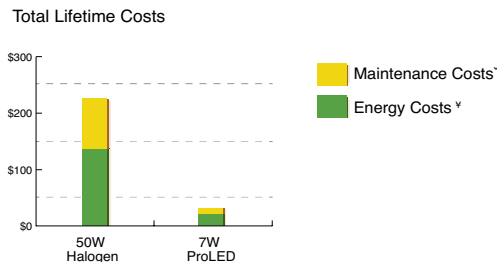
Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
7 Watt	Med.	82000	PAR20NFL7/927/W/LED	Narrow Flood, White, IP65 Rated	120	2700K	90	460	1500	25,000	6/24	25°	3.39"	50
7 Watt	Med.	82001	PAR20NFL7/930/W/LED	Narrow Flood, White, IP65 Rated	120	3000K	90	470	1540	25,000	6/24	25°	3.39"	50
7 Watt	Med.	82003	PAR20NFL7/930/B/LED	Narrow Flood, Black, IP65 Rated	120	3000K	90	470	1540	25,000	6/24	25°	3.39"	50
7 Watt	Med.	82004	PAR20NFL7/940/W/LED	Narrow Flood, White, IP65 Rated	120	4000K	90	500	1590	25,000	6/24	25°	3.39"	50
7 Watt	Med.	82005	PAR20NFL7/950/W/LED	Narrow Flood, White, IP65 Rated	120	5000K	90	525	1630	25,000	6/24	25°	3.39"	50
7 Watt	Med.	82006	PAR20FL7/927/W/LED	Flood, White, IP65 Rated	120	2700K	90	460	920	25,000	6/24	40°	3.39"	50
7 Watt	Med.	82007	PAR20FL7/927/B/LED	Flood, Black, IP65 Rated	120	2700K	90	460	920	25,000	6/24	40°	3.39"	50
7 Watt	Med.	82008	PAR20FL7/930/W/LED	Flood, White, IP65 Rated	120	3000K	90	470	970	25,000	6/24	40°	3.39"	50
7 Watt	Med.	82009	PAR20FL7/930/B/LED	Flood, Black, IP65 Rated	120	3000K	90	470	970	25,000	6/24	40°	3.39"	50
7 Watt	Med.	82010	PAR20FL7/940/W/LED	Flood, White, IP65 Rated	120	4000K	90	500	1020	25,000	6/24	40°	3.39"	50
7 Watt	Med.	82011	PAR20FL7/940/B/LED	Flood, Black, IP65 Rated	120	4000K	90	500	1020	25,000	6/24	40°	3.39"	50
7 Watt	Med.	82060	PAR20FL7/950/W/LED	Flood, White, IP65 Rated	120	5000K	90	525	1050	25,000	6/24	40°	3.39"	50
8 Watt	Med.	80638	PAR20/8RGB/NFL/LED	Narrow Flood Color Changing Red, Green, Blue †	120	-	-	-	-	40,000	1/6	25°	3.50"	-
		80649	RGB/REMOTE	Remote Control for Color Changing Lamp										

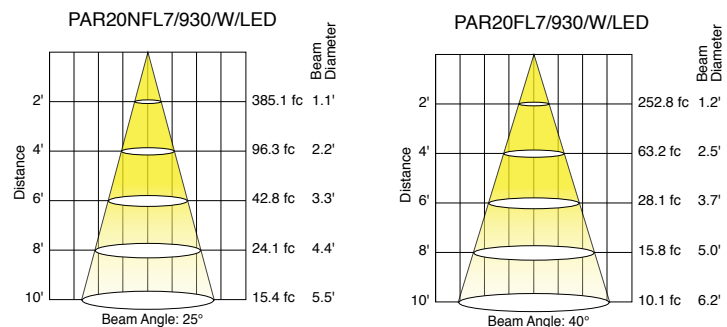
* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels.
 † May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.
 ‡ Represents lamps that are ENERGY STAR® certified.
 ■ ENERGY STAR® mandates that lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements. Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.
 † Non-dimmable

Savings Comparison



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.
 † Energy costs based on \$0.11 kWh over 40,000 hour life.

Photometrics



ProLED ECO PAR Series

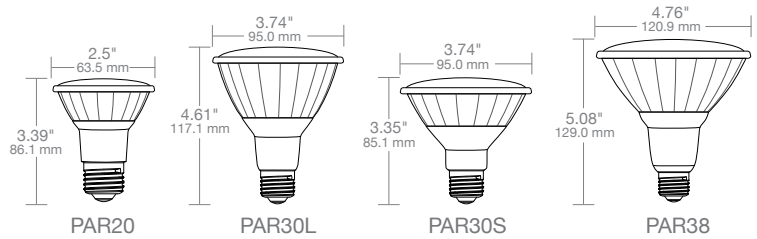
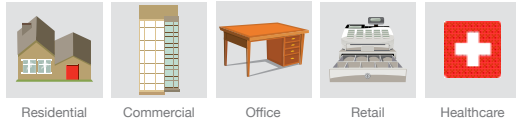
NEW!

Specifications

- UL listed for wet locations – allows for indoor or outdoor flexibility
- Acceptable for use in ICAT rated luminaires
- Dimmable to 10%
- Prismatic glass lens and silver housing offers traditional halogen PAR look and feel
- Superior efficacy - up to 80 lumens per watt
- 82 CRI for quality and consistent color rendering
- 5-Year Limited Warranty



Markets & Applications



Ordering Information

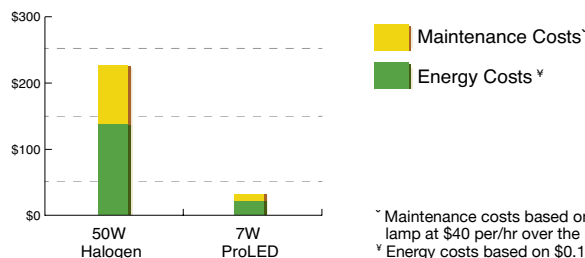


Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
7 Watt	Med.	80963	PAR20FL7/827/ECO/LED	Flood	120	2700K	82	500	25,000	1/6	40°	3.39"	50
7 Watt	Med.	80964	PAR20FL7/830/ECO/LED	Flood	120	3000K	82	500	25,000	1/6	40°	3.39"	50
10 Watt	Med.	80958	PAR30FL10L/827/ECO/LED	Flood	120	2700K	82	800	25,000	1/6	40°	4.61"	50
10 Watt	Med.	80959	PAR30FL10L/830/ECO/LED	Flood	120	3000K	82	800	25,000	1/6	40°	4.61"	50
10 Watt	Med.	80960	PAR30FL10L/840/ECO/LED	Flood	120	4000K	82	800	25,000	1/6	40°	4.61"	50
10 Watt	Med.	80961	PAR30FL10S/827/ECO/LED	Flood	120	2700K	82	800	25,000	1/6	40°	3.35"	45
10 Watt	Med.	80962	PAR30FL10S/830/ECO/LED	Flood	120	3000K	82	800	25,000	1/6	40°	3.35"	45
15 Watt	Med.	80953	PAR38FL15/827/ECO/LED	Flood	120	2700K	82	1200	25,000	1/6	40°	5.08"	90
15 Watt	Med.	80954	PAR38FL15/830/ECO/LED	Flood	120	3000K	82	1200	25,000	1/6	40°	5.08"	90
15 Watt	Med.	80955	PAR38FL15/840/ECO/LED	Flood	120	4000K	82	1200	25,000	1/6	40°	5.08"	90
15 Watt	Med.	80956	PAR38FL15/850/ECO/LED	Flood	120	5000K	82	1200	25,000	1/6	40°	5.08"	90
15 Watt	Med.	80957	PAR38NFL15/830/ECO/LED	Narrow Flood	120	3000K	82	1200	25,000	1/6	25°	5.08"	90

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDDim for dimmer compatibility information. Use on incompatible systems may shorten lamp life. Represents lamps that are ENERGY STAR® certified.

Savings Comparison

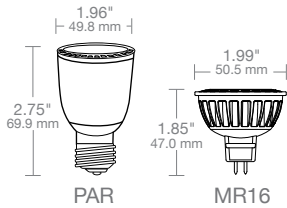
Total Lifetime Costs



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 † Energy costs based on \$0.11 kWh over 40,000 hour life.

ProLED PAR16/MR16

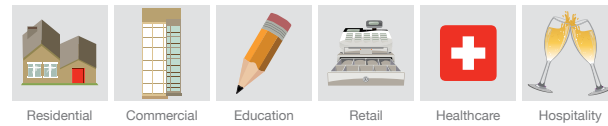
NEW!



Specifications

- Up-to 83% energy savings - 6W PAR16 versus 35W Halogen
- UL Listed for damp locations
- Dimmable to 5% for design flexibility
- 40,000 hour life, 16 times longer than traditional lamps
- Available in 2700K, 3000K, 4000K and 5000K CCT
- Up-to 82 CRI for quality and consistent color rendering
- Flood or Narrow Flood beam spreads
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
5 Watt	GU5.3	81120	MR16FL5/827/LED	Flood	12	2700K	82	360	730	35,000	1/10	40°	1.85"	35
5 Watt	GU5.3	81121	MR16FL5/830/LED	Flood	12	3000K	82	370	750	35,000	1/10	40°	1.85"	35
5 Watt	GU5.3	81122	MR16FL5/850/LED	Flood	12	5000K	82	400	780	35,000	1/10	40°	1.85"	35
6 Watt	Med.	81038	PAR16FL6/827/W/LED	Flood ∞	120	2700K	82	370	780	40,000	6/24	40°	2.75"	35
6 Watt	Med.	81127	PAR16FL6/830/W/LED	Flood ∞	120	3000K	82	380	780	25,000	6/24	40°	2.75"	35
6 Watt	Med.	81040	PAR16FL6/840/W/LED	Flood ∞	120	4000K	82	400	780	40,000	6/24	40°	2.75"	35
6 Watt	Med.	81041	PAR16FL6/850/W/LED	Flood ∞	120	5000K	82	415	780	40,000	6/24	40°	2.75"	35
7 Watt	GU5.3	81123	MR16FL7/827/LED	Flood	12	2700K	82	500	1360	25,000	1/10	40°	1.85"	50
7 Watt	GU5.3	81124	MR16FL7/830/LED	Flood	12	3000K	82	520	780	25,000	1/10	40°	1.85"	50
7 Watt	GU5.3	81125	MR16FL7/850/LED	Flood	12	5000K	82	560	780	35,000	1/10	40°	1.85"	50
7 Watt	GU5.3	81126	MR16NFL7/830/LED	Narrow Flood	12	3000K	82	520	1140	25,000	1/10	20°	1.85"	50

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to operate past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.

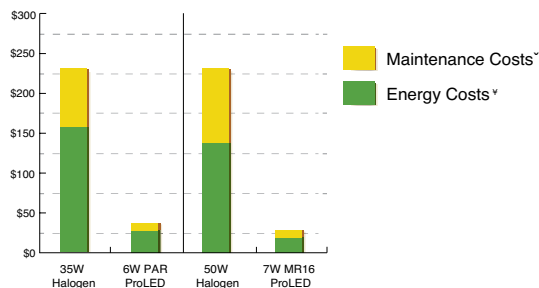
∞ Acceptable for use in sealed metal landscape luminaires when protected from the elements.

Represents lamps that are ENERGY STAR® certified.

■ ENERGY STAR® mandates that lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements. Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.

Savings Comparison

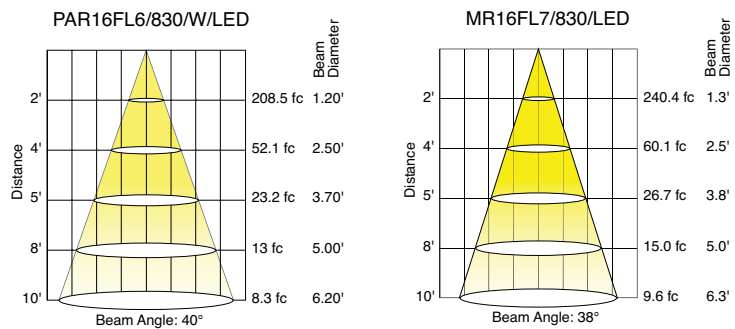
Total Lifetime Costs



~ Maintenance costs based on 15 minutes to replace the lamp at \$40 per hr over the life of the ProLED lamp.

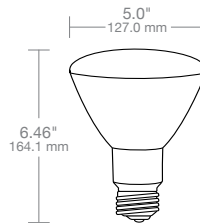
Y Energy costs based on \$0.11 kWh over 40,000 hour life.

Photometrics

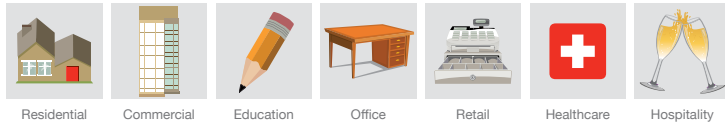


Specifications

- BR40 with Medium E26 base
- Acceptable for ICAT rated luminaires
- UL Listed for damp locations
- Dimmable to 5% for design flexibility
- Up-to 40,000 hour life
- Available in 2700K, 3000K, 4000K and 5000K CCT
- 82 CRI for quality and consistent color rendering
- Flood beam spread
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
12 Watt	Med.	80116	BR40FL13/827/LED	Reflector	120	2700K	82	900	25,000 ■	1/6	6.46"	65
12 Watt	Med.	80118	BR40FL13/830/LED	Reflector	120	3000K	82	930	25,000 ■	1/6	6.46"	65
12 Watt	Med.	80120	BR40FL13/840/LED	Reflector	120	4000K	82	970	40,000	1/6	6.46"	65
12 Watt	Med.	80122	BR40FL13/850/LED	Reflector	120	5000K	82	1000	40,000	1/6	6.46"	65
17 Watt	Med.	80124	BR40FL18/827/LED	Reflector	120	2700K	82	1200	25,000 ■	1/6	6.46"	85
17 Watt	Med.	80182	BR40FL18/830/LED	Reflector	120	3000K	82	1230	25,000 ■	1/6	6.46"	85
17 Watt	Med.	80128	BR40FL18/840/LED	Reflector	120	4000K	82	1280	25,000 ■	1/6	6.46"	85
17 Watt	Med.	80130	BR40FL18/850/LED	Reflector	120	5000K	82	1320	25,000 ■	1/6	6.46"	85
17 Watt	Med.	80134	R40FL18/POOL/LED ☼	Pool	120	6500	82	3150	40,000	6/24	6.46"	-
17 Watt	Med.	80136	R40FL18/POOL/12V/LED ☼	Pool	12	6500	82	3150	40,000	6/24	6.46"	-

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.

■ Represents lamps that are ENERGY STAR® certified.

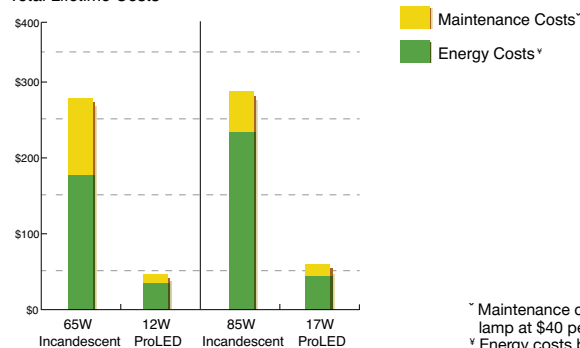
☼ ENERGY STAR® mandates that lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements.

☼ Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.

☼ ☼ Pool Bright lamp lumens are represented as scotopic lumens. Not for use in spas.

Savings Comparison

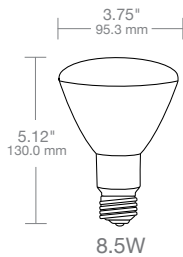
Total Lifetime Costs



~ Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.

* Energy costs based on \$0.11 kWh over 40,000 hour life.

ProLED BR30



Specifications

- BR30 with Medium E26 base
- GU24 base available for 9W BR30
- Acceptable for ICAT rated luminaires
- UL Listed for damp locations
- Dimmable to 5% for design flexibility
- Up-to 40,000 hour life
- Available in 2700K, 3000K, 4000K, 5000K CCT and Pink
- 82 CRI for quality and consistent color rendering
- 92 CRI option meets the California Quality Lamp Specifications
- Flood beam spread
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information



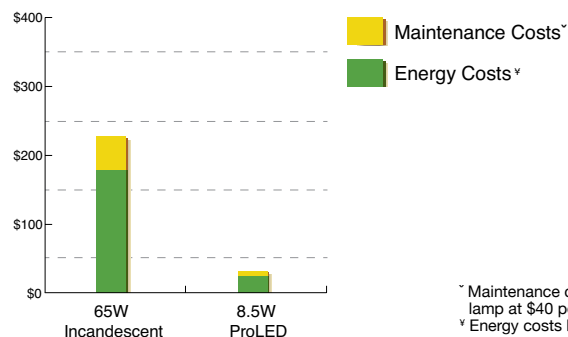
Watt	Base	Product #	Product Code	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
8.5 Watt	Med.	80876	BR30FL8/827/LED	120	2700K	82	650	25,000 ■	1/6	5.12"	65
8.5 Watt	Med.	80877	BR30FL8/830/LED	120	3000K	82	670	25,000 ■	1/6	5.12"	65
8.5 Watt	Med.	80878	BR30FL8/840/LED	120	4000K	82	700	25,000 ■	1/6	5.12"	65
8.5 Watt	Med.	80879	BR30FL8/850/LED	120	5000K	82	730	25,000 ■	1/6	5.12"	65
8.5 Watt	Med.	80166	BR30FL9/PNK/LED	120	-	-	-	40,000	1/6	5.12"	65
10 Watt	Med.	80856	BR30FL10/927/LED	120	2700K	92	670	25,000 ■	1/6	5.12"	65
10 Watt	Med.	80181	BR30FL11/827/LED	120	2700K	82	750	25,000 ■	1/6	5.12"	65
10 Watt	Med.	80088	BR30FL11/830/LED	120	3000K	82	770	25,000 ■	1/6	5.12"	65
10 Watt	Med.	80090	BR30FL11/840/LED	120	4000K	82	800	25,000 ■	1/6	5.12"	65
10 Watt	Med.	80092	BR30FL11/850/LED	120	5000K	82	830	25,000 ■	1/6	5.12"	65

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDDim for dimmer compatibility information. Use on incompatible systems may shorten lamp life. Represents lamps that are ENERGY STAR® certified.

■ ENERGY STAR® mandates that lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements. Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.

Savings Comparison

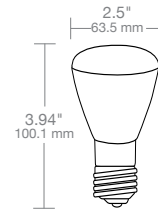
Total Lifetime Costs



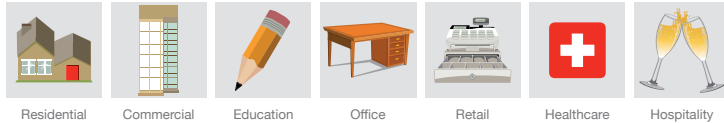
† Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 * Energy costs based on \$0.11 kWh over 40,000 hour life.

Specifications

- R20 with Medium E26 base
- Acceptable for ICAT rated luminaires
- UL Listed for damp locations
- Dimmable to 5% for design flexibility
- Up-to 40,000 hour life
- Available in 2700K, 3000K, 5000K and 6500K CCT
- 82 CRI for quality and consistent color rendering
- Flood beam spread
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



Ordering Information



Watt	Base	Product #	Product Code	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
4 Watt	Med.	80108	R20FL5/830/LED	120	3000K	82	310	40,000	1/6	3.94"	30
4 Watt	Med.	80110	R20FL5/850/LED	120	5000K	82	335	40,000	1/6	3.94"	30
7 Watt	Med.	80818	R20FL8/827/LED	120	2700K	82	525	25,000 ■	1/6	3.94"	50
7 Watt	Med.	80112	R20FL8/830/LED	120	3000K	82	520	25,000 ■	1/6	3.94"	50
7 Watt	Med.	80114	R20FL8/850/LED	120	5000K	82	580	25,000 ■	1/6	3.94"	50
7 Watt	Med.	80821	R20FL8/POOL/LED ☼	120	6500	82	1000	40,000	6/24	3.94"	-
7 Watt	Med.	80822	R20FL8/POOL/12V/LED ☼	12	6500	82	1000	40,000	6/24	3.94"	-

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.

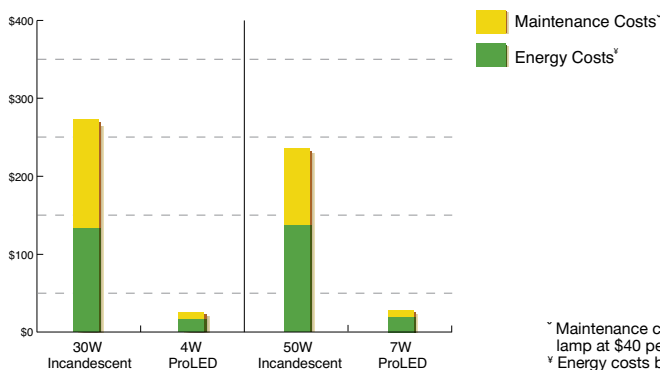
■ Represents lamps that are ENERGY STAR® certified.

☼ ENERGY STAR® mandates that lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements. Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.

☼☼ Pool Bright lamp lumens are represented as scotopic lumens. R20 pool ProLED is intended for spa applications.

Savings Comparison

Total Lifetime Costs



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.

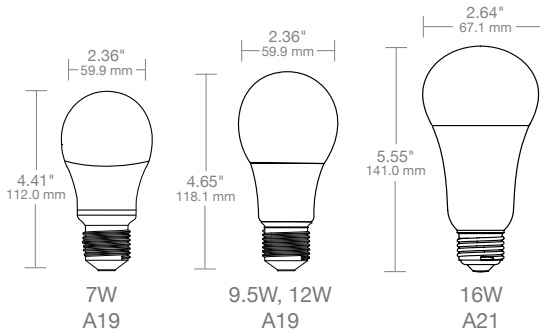
† Energy costs based on \$0.11 kWh over 40,000 hour life.

ProLED Omnidirectional A-Shape Series



Specifications

- 300° Omnidirectional
- UL Listed for damp locations and enclosed luminaires
- Dimmable to 5% for design flexibility
- Available in 2700K, 3000K, 4000K and 5000K CCT
- 82 CRI for quality and consistent color rendering
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



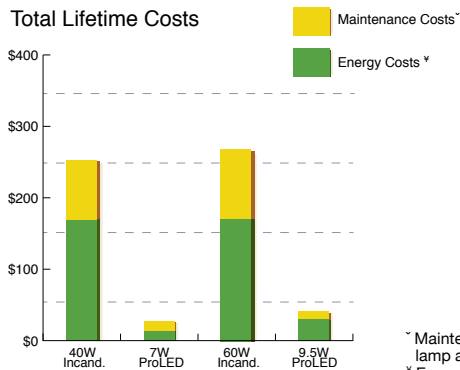
Ordering Information



Watt	Base	Product #	Product Code	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
7 Watt	Med.	80841	A19FR7/827/OMNI/LED	120	2700K	82	470	25,000	1/6	4.41"	40
7 Watt	Med.	80842	A19FR7/830/OMNI/LED	120	3000K	82	500	25,000	1/6	4.41"	40
9.5 Watt	Med.	80857	A19FR10/827/OMNI/LED	120	2700K	82	810	25,000	1/6	4.65"	60
9.5 Watt	Med.	80864	A19FR10/830/OMNI/LED	120	3000K	82	820	25,000	1/6	4.65"	60
9.5 Watt	Med.	80865	A19FR10/840/OMNI/LED	120	4000K	82	870	25,000	1/6	4.65"	60
9.5 Watt	Med.	80870	A19FR10/850/OMNI/LED	120	5000K	82	880	25,000	1/6	4.65"	60
12 Watt	Med.	80939	A19FR12/827/OMNI/LED	120	2700K	82	1100	25,000	1/6	4.65"	75
12 Watt	Med.	80940	A19FR12/830/OMNI/LED	120	3000K	82	1140	25,000	1/6	4.65"	75
16 Watt	Med.	80947	A21FR16/827/OMNI/LED	120	2700K	82	1600	25,000	1/6	5.55"	100
16 Watt	Med.	80945	A21FR16/830/OMNI/LED	120	3000K	82	1650	25,000	1/6	5.55"	100
16 Watt	Med.	80946	A21FR16/840/OMNI/LED	120	4000K	82	1720	25,000	1/6	5.55"	100
16 Watt	Med.	80948	A21FR16/850/OMNI/LED	120	5000K	82	1800	25,000	1/6	5.55"	100

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDDim for dimmer compatibility information. Use on incompatible systems may shorten lamp life. Represents lamps that are ENERGY STAR® certified. 25,000 hour useful life rating is based on a maximum ambient temperature of 45°C. Exceeding this ambient temperature rating may result in reduced life.

Savings Comparison



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 * Energy costs based on \$0.11 kWh over 25,000 hour life.

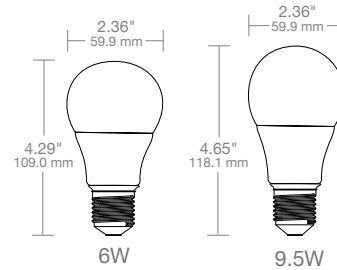
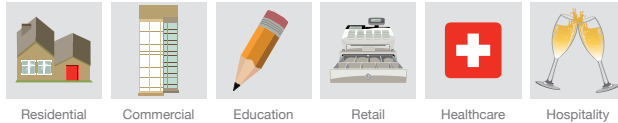
ProLED A-Shape Non-Dimmable Series

Specifications

- A19 A-Shape with Medium base
- 25,000 hour life
- Available in 2700K and 3000K CCT
- 82 CRI for quality and consistent color rendering
- Not rated for enclosed luminaires
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



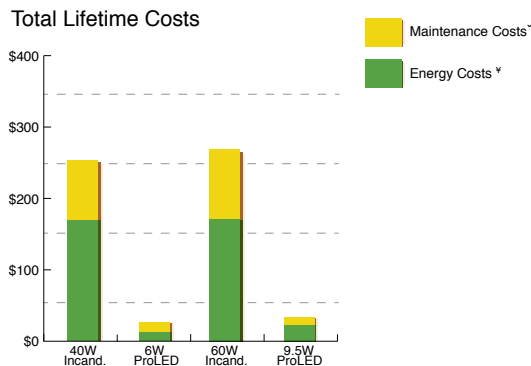
Ordering Information



Watt	Base	Product #	Product Code	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
6 Watt	Med.	80866	A19FR6/827/ND/LED	120	2700K	82	470	25,000	1/24	4.29"	40
6 Watt	Med.	80867	A19FR6/830/ND/LED	120	3000K	82	480	25,000	1/24	4.29"	40
9.5 Watt	Med.	80868	A19FR9/827/ND/LED	120	2700K	82	800	25,000	1/30	4.65"	60
9.5 Watt	Med.	80869	A19FR9/830/ND/LED	120	3000K	82	810	25,000	1/30	4.65"	60
9.5 Watt	Med.	80886	A19FR9/850/ND/LED	120	5000K	82	830	25,000	1/30	4.65"	60

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.

Savings Comparison

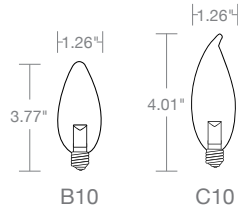


* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 † Energy costs based on \$0.11 kWh over 25,000 hour life.

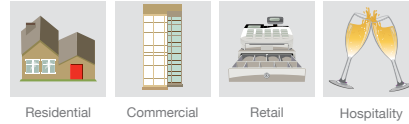
ProLED Decorative Chandelier

Specifications

- B10 Torpedo and C10 Flame tip options
- Dimmable to 5% for design flexibility
- UL Listed for wet locations
- Available in 2400K and 2700K CCT
- 72 and 82 CRI options
- Up-to 25,000 hour life, 16 times longer than traditional lamps
- Unique "Heat-to-Base" technology
- Omnidirectional distribution
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL
1 Watt	Cand.	80172	B10CL1/827/LED	Clear Torpedo	120	2700K	82	25	25,000	1/25	3.77"
1 Watt	Cand.	80173	B10CL1/724/LED	Clear Torpedo	120	2400K	72	20	25,000	1/25	3.77"
1 Watt	Cand.	80174	CA10CL1/827/LED	Clear Flame Tip	120	2700K	82	25	25,000	1/25	4.01"
1 Watt	Cand.	80175	CA10CL1/724/LED	Clear Flame Tip	120	2400K	72	20	25,000	1/25	4.01"

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. Not for use in enclosed luminaires.

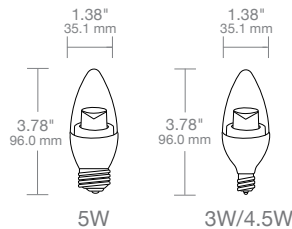
ProLED B11 Chandelier

Specifications

- Up-to 87% energy savings
- Cream, Chrome and Brass base options (3W)
- Dimmable to 5% for design flexibility (3W and 5W)
- Up-to 25,000 hour life, 16 times longer than traditional lamps
- Available in 2700K CCT
- 82 CRI for quality and consistent color rendering
- Omnidirectional distribution
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



Ordering Information

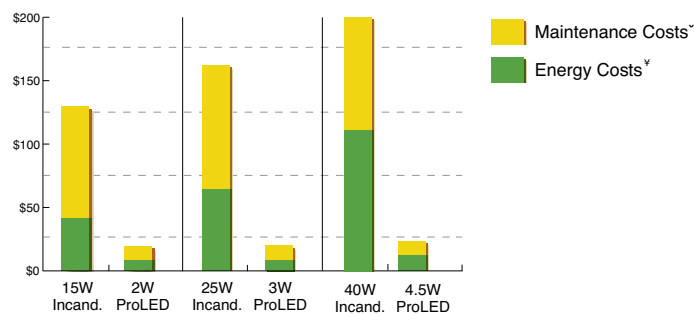


Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
3 Watt	Cand.	80094	B11CL3/827/LED	Cream Finish	120	2700K	82	180	25,000	1/10	3.78"	25
3 Watt	Cand.	80789	B11CL3/827/BR/LED	Brass Finish	120	2700K	82	180	25,000	1/10	3.78"	25
3 Watt	Cand.	80790	B11CL3/827/CHR/LED	Chrome Finish	120	2700K	82	180	25,000	1/10	3.78"	25
4.5 Watt	Cand.	80820	B11CL5/827/LED	Cream Finish	120	2700K	82	300	25,000	1/10	3.78"	40
4.5 Watt	Med.	80168	B11CL5/827/E26/LED	Cream Finish	120	2700K	82	300	25,000	1/10	3.78"	40

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life. Represents lamps that are ENERGY STAR® certified.

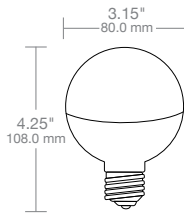
Savings Comparison

Total Lifetime Costs



† Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
* Energy costs based on \$0.11 kWh over 40,000 hour life.

ProLED Globe



Specifications

- Up-to 80% energy savings - 8W Globe versus 40W Incandescent
- UL Listed for damp locations
- Dimmable to 5% for design flexibility
- 25,000 hour life, 18 times longer than traditional lamps
- Available in 3000K CCT
- 82 CRI for quality and consistent color rendering
- Omnidirectional distribution
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information

Watt	Base	Product #	Product Code	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
6 Watt	Med.	80180	G25FR6/830/LED	120	3000K	82	470	25,000 ■	1/6	4.25"	40

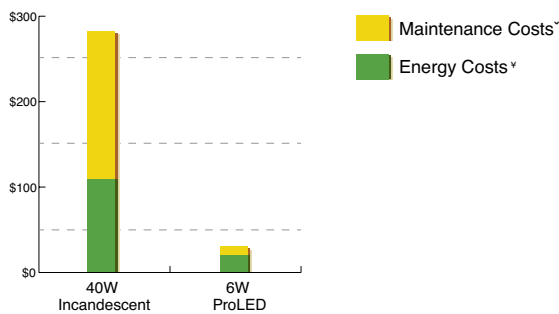
* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. Use on incompatible systems may shorten lamp life.

Represents lamps that are ENERGY STAR® certified.

■ ENERGY STAR® mandates that all directional lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements. Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.

Savings Comparison

Total Lifetime Costs



† Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.

* Energy costs based on \$0.11 kWh over 28,000 hour life.

ProLED PAR36/AR111 Indoor

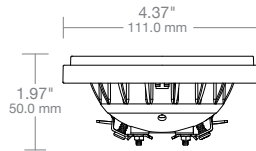
NEW!

Specifications

- High power LED for maximum efficiency
- Up-to 73% energy savings - 11.5W PAR36 versus 50W Halogen
- Multi-purpose base for slip-on or screw terminal connections
- 12V input voltage
- 40,000 hour life, 14 times longer than traditional lamps
- Available in 2700K CCT
- 82 CRI for quality and consistent color rendering
- Flood beam spread
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



Ordering Information

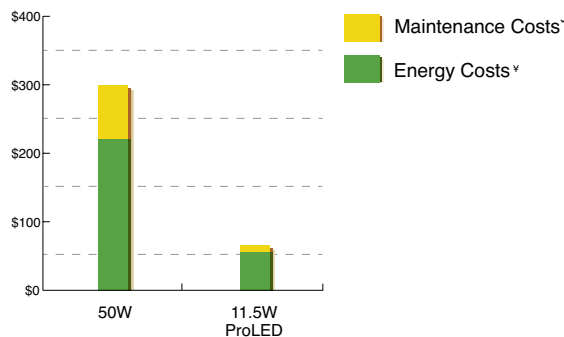


Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
11.5 Watt	MP Term	81097	PAR36FL11/827/LED	Flood ✕	12	2700K	82	870	2000	40,000	1/6	32°	1.97"	50
17 Watt	MP Term	80863	PAR36FL17/827/LED	Flood ✕	12	2700K	82	1000	2300	40,000	1/6	32°	1.97"	75

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. Not for use in enclosed luminaires. May not be compatible with all electronic transformers. Rated for indoor use only.
✕ Non-dimmable

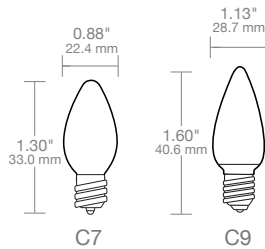
Savings Comparison

Total Lifetime Costs



† Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
* Energy costs based on \$0.11 kWh over 40,000 hour life.

ProLED C7/C9



Specifications

- Up-to 86% energy savings - 0.96W C7 or C9 lamp versus 7W Incandescent
- IP65 Rated for outdoor use
- 60,000 hour life, 20 times longer than traditional lamps
- Faceted or Smooth (C7)
- Available in 2700K and 6000K CCT, Blue, Green, Red or Yellow
- Omnidirectional distribution
- No Mercury or UV/IR emissions
- RoHS Compliant
- 2-Year Limited Warranty

Markets & Applications



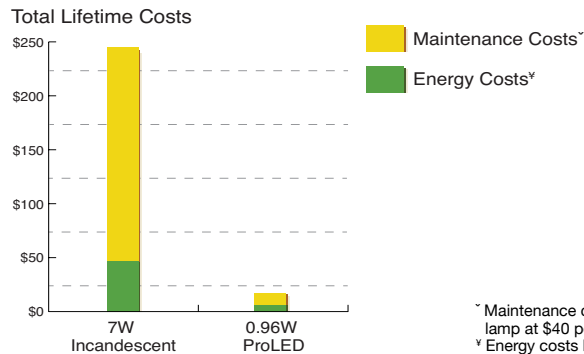
Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Useful Life*	Pkg. Qty.	MOL
0.96	Cand.	80510	C7NW/FC/LED	6000K Faceted	120	60,000	10/200	1.30"
0.96	Cand.	80516	C7WW/FC/LED	2700K Faceted	120	60,000	10/200	1.30"
0.96	Cand.	80508	C7BLU/FC/LED	Blue Faceted	120	60,000	10/200	1.30"
0.96	Cand.	80509	C7GRN/FC/LED	Green Faceted	120	60,000	10/200	1.30"
0.96	Cand.	80506	C7RED/FC/LED	Red Faceted	120	60,000	10/200	1.30"
0.96	Cand.	80507	C7YEL/FC/LED	Yellow Faceted	120	60,000	10/200	1.30"
0.96	Int.	80515	C9CL/FC/LED	Clear Faceted	120	60,000	10/200	1.60"
0.96	Int.	80513	C9BLU/FC/LED	Blue Faceted	120	60,000	10/200	1.60"
0.96	Int.	80514	C9GRN/FC/LED	Green Faceted	120	60,000	10/200	1.60"
0.96	Int.	80511	C9RED/FC/LED	Red Faceted	120	60,000	10/200	1.60"
0.96	Int.	80512	C9YEL/FC/LED	Yellow Faceted	120	60,000	10/200	1.60"

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels.

Savings Comparison



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 † Energy costs based on \$0.11 kWh over 60,000 hour life.

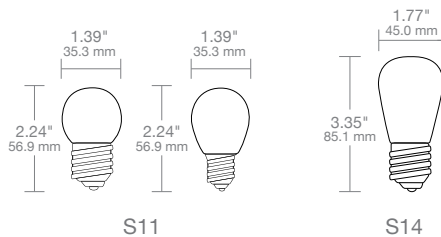
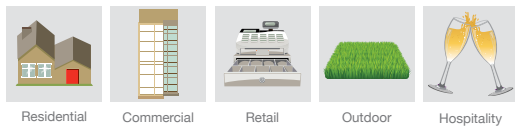
ProLED Sign Lamp Series

Specifications

- S11 Shape with Medium E26 and E17 base
- S14 with Medium E26 base
- UL Listed for wet locations and IP65 Rated
- Dimmable
- 40,000 hour useful life
- S11 Shape available in Clear and White options
- S14 Shape available in Red, Blue, Green, Yellow, Orange, White and Clear 2700K options
- Designed for rapidly flashing sign applications
- Unique "Heat-to-Base" design
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty



Markets & Applications



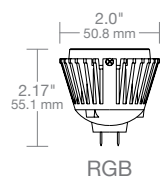
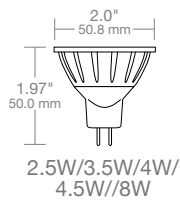
Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL
1.2 Watt	Int.	80525	S11CL1C/827/INT/LED	Clear, IP65 Rated	120	2700K	82	35	40,000	1/25	2.24"
1.2 Watt	Med.	80524	S11CL1C/827/LED	Clear, IP65 Rated	120	2700K	82	35	40,000	1/25	2.24"
1.2 Watt	Med.	80526	S11WH1C/LED	White, IP65 Rated	120	-	-	-	40,000	1/25	2.24"
1.4 Watt	Med.	80517	S14RED1C/LED	Red, IP65 Rated	120	-	-	-	40,000	1/25	3.35"
1.4 Watt	Med.	80518	S14BLU1C/LED	Blue, IP65 Rated	120	-	-	-	40,000	1/25	3.35"
1.4 Watt	Med.	80519	S14GRN1C/LED	Green, IP65 Rated	120	-	-	-	40,000	1/25	3.35"
1.4 Watt	Med.	80520	S14YEL1C/LED	Yellow, IP65 Rated	120	-	-	-	40,000	1/25	3.35"
1.4 Watt	Med.	80521	S14WH1C/LED	White, IP65 Rated	120	-	-	-	40,000	1/25	3.35"
1.4 Watt	Med.	80523	S14ORG1C/LED	Orange, IP65 Rated	120	-	-	-	40,000	1/25	3.35"
1.4 Watt	Med.	80522	S14CL1C/827/LED	Clear, IP65 Rated	120	2700K	82	35	40,000	1/25	3.35"

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. Not for use in enclosed luminaires.

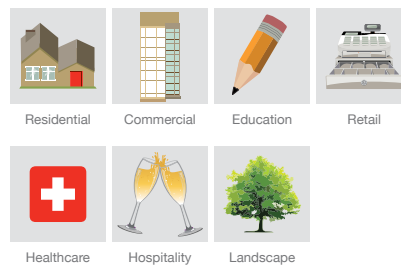
ProLED MR16



Specifications

- MR16 with GU5.3 and GU10 base options
- UL Listed for damp locations and enclosed luminaires
- 10-18V (10W, 20W and 50W equivalents)
- 10-15V (35W equivalent)
- Dimmable to 5% for design flexibility
- Available in 2700K, 3000K and 5000K in Flood beam angles
- Available in 2700K and 3000K in Narrow Flood and Wide Flood beam angles
- 82 CRI for quality and consistent color rendering
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
2.5 Watt	GU5.3	81055	MR16NFL10/827/LED	Narrow Flood ∞	10-18	2700K	82	200	800	40,000	1/10	20°	1.97"	10
2.5 Watt	GU5.3	81079	MR16NFL10/830/LED	Narrow Flood ∞	10-18	3000K	82	210	830	40,000	1/10	20°	1.97"	10
2.5 Watt	GU5.3	81056	MR16FL10/827/LED	Flood ∞	10-18	2700K	82	200	300	40,000	1/10	40°	1.97"	10
2.5 Watt	GU5.3	81077	MR16FL10/830/LED	Flood ∞	10-18	3000K	82	210	320	40,000	1/10	40°	1.97"	10
2.5 Watt	GU5.3	81058	MR16FL10/850/LED	Flood ∞	10-18	5000K	82	230	350	40,000	1/10	40°	1.97"	10
2.5 Watt	GU5.3	81057	MR16WFL10/827/LED	Wide Flood ∞	10-18	2700K	82	200	200	40,000	1/10	60°	1.97"	10
2.5 Watt	GU5.3	81080	MR16WFL10/830/LED	Wide Flood ∞	10-18	3000K	82	210	220	40,000	1/10	60°	1.97"	10
4 Watt	GU5.3	81059	MR16BBF/827/LED	Narrow Flood ∞	10-18	2700K	82	270	900	40,000	1/10	20°	1.97"	20
4 Watt	GU5.3	81081	MR16BBF/830/LED	Narrow Flood ∞	10-18	3000K	82	280	1100	40,000	1/10	20°	1.97"	20
4 Watt	GU5.3	81060	MR16BAB/827/LED	Flood ∞	10-18	2700K	82	270	440	40,000	1/10	40°	1.97"	20
4 Watt	GU5.3	81062	MR16BAB/830/LED	Flood ∞	10-18	3000K	82	280	500	40,000	1/10	40°	1.97"	20
4 Watt	GU5.3	81063	MR16BAB/850/LED	Flood ∞	10-18	5000K	82	310	530	40,000	1/10	40°	1.97"	20
4 Watt	GU5.3	81061	MR16WFL20/827/LED	Wide Flood ∞	10-18	2700K	82	270	210	40,000	1/10	60°	1.97"	20
4 Watt	GU5.3	81082	MR16WFL20/830/LED	Wide Flood ∞	10-18	3000K	82	280	230	40,000	1/10	60°	1.97"	20
4 Watt	GU5.3	80728	MR16/5RGB/FL/LED	Flood Color Changing Red, Green, Blue ∞	10-18	-	-	-	-	40,000	1/10	31°	2.17"	-
		80649	RGB/REMOTE	Remote Control for Color Changing Lamps										

Ordering Information Continued

Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
4.5 Watt	GU5.3	81064	MR16FRA/827/LED	Narrow Flood ♦∞	10-15	2700K	82	380	1700	40,000	1/10	20°	1.97"	35
4.5 Watt	GU5.3	81083	MR16FRA/830/LED	Narrow Flood ♦∞	10-15	3000K	82	390	1800	40,000	1/10	20°	1.97"	35
4.5 Watt	GU5.3	81065	MR16FMW/827/LED	Flood ♦∞	10-15	2700K	82	380	600	40,000	1/10	40°	1.97"	35
4.5 Watt	GU5.3	81067	MR16FMW/830/LED	Flood ♦∞	10-15	3000K	82	390	650	40,000	1/10	40°	1.97"	35
4.5 Watt	GU5.3	81068	MR16FMW/850/LED	Flood ♦∞	10-15	5000K	82	430	700	40,000	1/10	40°	1.97"	55
4.5 Watt	GU5.3	81066	MR16WFL35/827/LED	Wide Flood ♦∞	10-15	2700K	82	380	300	40,000	1/10	60°	1.97"	35
4.5 Watt	GU5.3	81084	MR16WFL35/830/LED	Wide Flood ♦∞	10-15	3000K	82	390	320	40,000	1/10	60°	1.97"	35
8 Watt	GU5.3	81069	MR16EXZ/827/LED	Narrow Flood ♦∞	10-18	2700K	82	590	2700	40,000	1/10	20°	1.97"	50
8 Watt	GU5.3	81085	MR16EXZ/830/LED	Narrow Flood ♦∞	10-18	3000K	82	600	2800	40,000	1/10	20°	1.97"	50
8 Watt	GU5.3	81070	MR16EXN/827/LED	Flood ♦∞	10-18	2700K	82	590	1100	40,000	1/10	40°	1.97"	50
8 Watt	GU5.3	81072	MR16EXN/830/LED	Flood ♦∞	10-18	3000K	82	600	1200	40,000	1/10	40°	1.97"	50
8 Watt	GU5.3	81073	MR16EXN/850/LED	Flood ♦∞	10-18	5000K	82	660	1400	40,000	1/10	40°	1.97"	50
8 Watt	GU5.3	81071	MR16FNV/827/LED	Wide Flood ♦∞	10-18	2700K	82	590	500	40,000	1/10	60°	1.97"	50
8 Watt	GU5.3	81086	MR16FNV/830/LED	Wide Flood ♦∞	10-18	3000K	82	600	520	40,000	1/10	60°	1.97"	50

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels.
 ♦ May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDDim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.
 ∞ Acceptable for use in sealed metal landscape luminaires when protected from the elements.

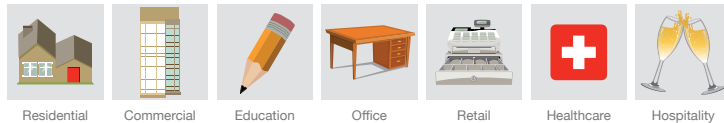
ProLED MR16 GU10

Specifications

- Halogen-style lens for familiar look and feel
- 25,000 hour life resulting in lower maintenance costs over time
- 120V input voltage
- 80 lumens per watt
- 82 CRI for quality and consistent color rendering
- Dimmable to 5%
- 5-Year Limited Warranty



Markets & Applications



Ordering Information



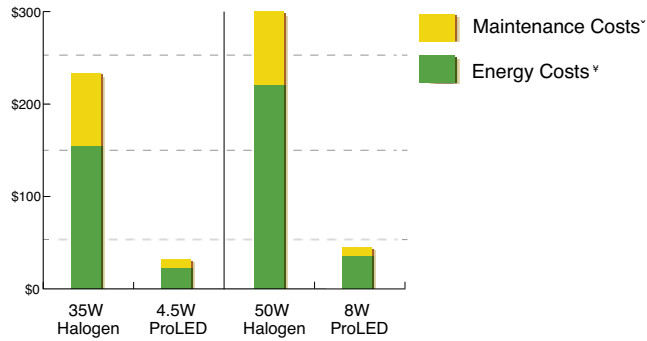
Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
4.5 Watt	GU10	80887	MR16FL4/830/GU10/LED	Flood ♦	120	3000K	82	370	525	25,000 ■	1/10	40°	2.17"	50
6.5 Watt	GU10	80888	MR16FL6/830/GU10/LED	Flood ♦	120	3000K	82	520	730	25,000 ■	1/10	40°	2.17"	50

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels.
 ♦ May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDDim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.
 ■ Represents lamps that are ENERGY STAR® certified.
 ■ ENERGY STAR® mandates that all directional lamps may only be listed at 25,000 hour life with 3,000 hour actual life test data, 6,000 hour LM80 data and in-situ temperature measurements. Upon completion of full lifetime testing, ProLED ENERGY STAR® listed lamps will be listed at their full lifetime.

ProLED MR16

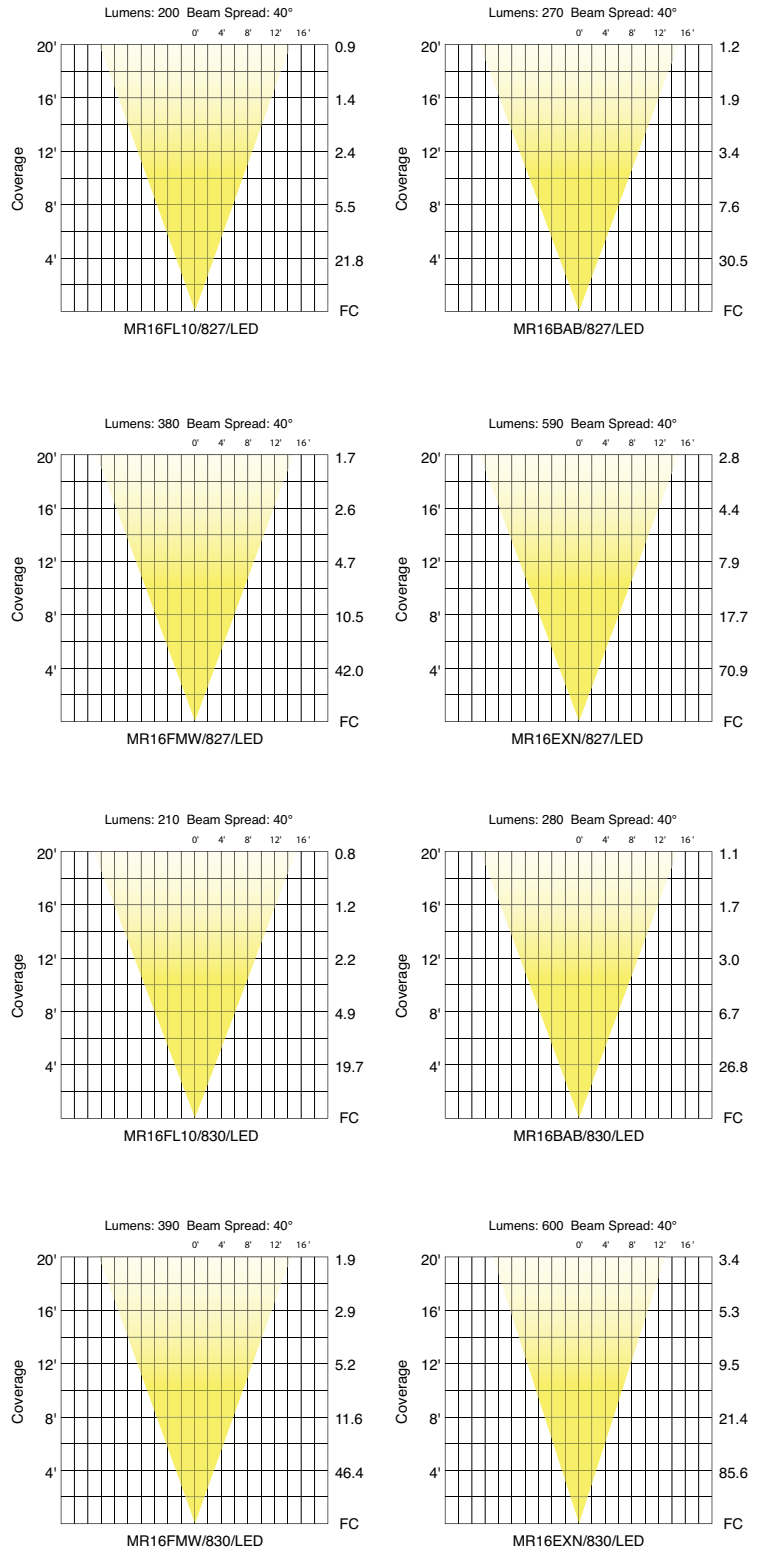
Savings Comparison

Total Lifetime Costs



* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 † Energy costs based on \$0.11 kWh over 40,000 hour life.

Photometrics



Halco's ProLED Commercial MR16 offering can be found on page 26.

ProLED Black MR16

NEW!

Specifications

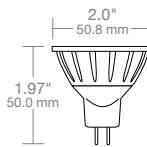
- Three distributions for application flexibility
- Environmentally friendly
- Long-Lasting for low maintenance
- 30,000+ hour life results in lower maintenance costs over time
- Improved efficiency of ProLED® MR16 series by lowering wattage consumption and increasing light output
- 82 CRI for quality and consistent color rendering
- RoHS Compliant
- 3-Year Limited Warranty



Markets & Applications



Landscape



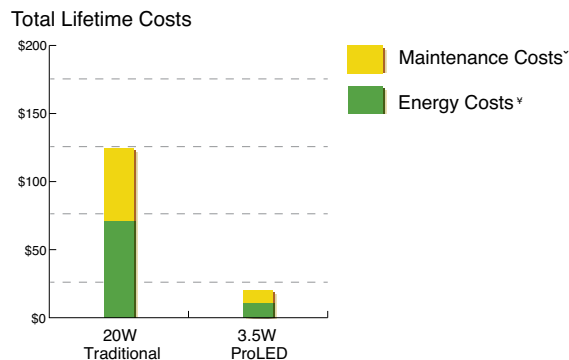
Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
3.5 Watt	GU5.3	81103	MR16NFL4/827/LED	Narrow Flood •	10-15	2700K	82	250	860	30,000	1/10	20°	1.97"	20
3.5 Watt	GU5.3	81098	MR16FL4/827/LED	Flood •	10-15	2700K	82	250	410	30,000	1/10	40°	1.97"	20
3.5 Watt	GU5.3	81099	MR16WFL4/827/LED	Wide Flood •	10-15	2700K	82	250	200	30,000	1/10	60°	1.97"	20

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels.
 • May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life.
 Acceptable for use in sealed metal landscape luminaires when protected from the elements.

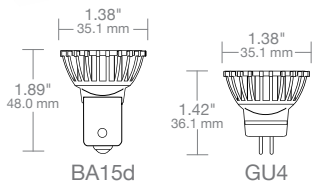
Savings Comparison



x Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 y Energy costs based on \$0.11 kWh over 40,000 hour life.

ProLED MR11

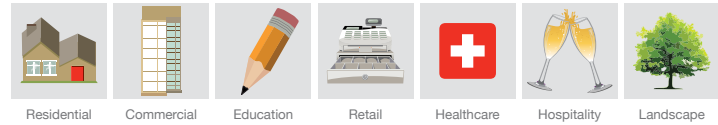
NEW!



Specifications

- Single point light source option
- High power LED
- Damp location rated available
- 10-18V options
- Dimmable to 5% for design flexibility
- 40,000 hour life
- Available in 2700K and 5000K CCT
- Up-to 82 CRI for quality and consistent color rendering
- Flood or Narrow Flood beam spreads
- UL Listed options
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information

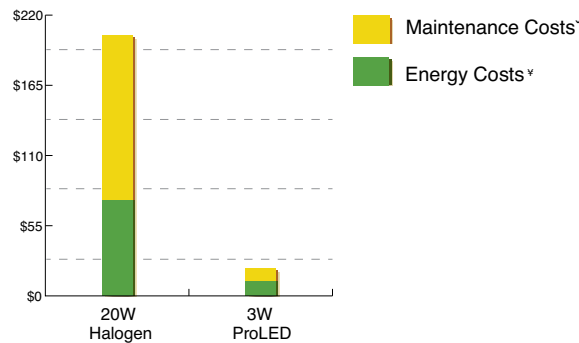


Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
3 Watt	GU4	81093	MR11FTD/827/LED	Flood	10-18	2700K	82	230	420	40,000	1/10	30°	1.42"	20
3 Watt	BA15d	81094	MR11FTD/827/BA15D/LED	Flood	10-18	2700K	82	230	420	40,000	1/10	30°	1.50"	20
3 Watt	GU4	81095	MR11FTD/850/LED	Flood	10-18	5000K	82	250	500	40,000	1/10	30°	1.42"	20
3 Watt	GU4	81096	MR11FTC/827/LED	Narrow Flood	10-15	2700K	82	230	600	40,000	1/10	22°	1.42"	20

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all dimming systems, dimming performance may vary by system, please visit www.halcolighting.com/ProLEDdim for dimmer compatibility information. Use on incompatible systems may shorten lamp life. Acceptable for use in sealed metal landscape luminaires when protected from the elements. May not be compatible with all electronic transformers. Magnetic transformers are recommended for dimming applications. Not for use in enclosed luminaires. Lamps should be tested in the application for compatibility prior to full installations on circuits using such devices.

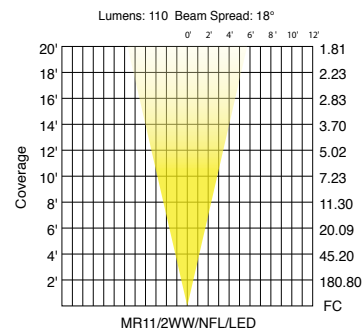
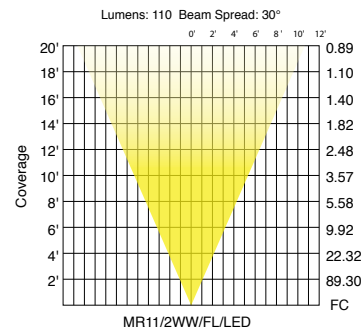
Savings Comparison

Total Lifetime Costs



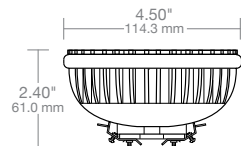
* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the of the ProLED lamp.
 * Energy costs based on \$0.11 kWh over 60,000 hour life.

Photometrics





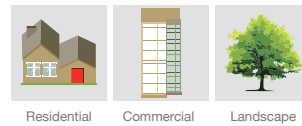
ProLED Outdoor PAR36



Specifications

- IP67 rated for waterproof installations
- Energy savings up-to 81% - 6.5W PAR36 versus 35W Halogen¹
- Multi-purpose base for slip-on or screw terminal connections
- 10-15V input voltage range
- 40,000 hour life, up-to 12 times longer than traditional sources
- Available in 2700K CCT
- 82 CRI for quality and consistent color rendering
- 32° beam spread available for light control
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Residential Commercial Landscape

Ordering Information



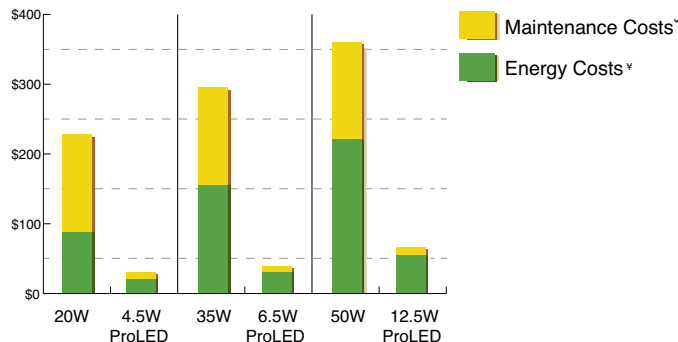
Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	CBCP	Useful Life*	Pkg. Qty.	Beam Spread	MOL	Wattage Equivalent
4.5 Watt	MP Term	81074	PAR36WFL4/827/IP67/LED	Wide Flood	10-15	2700K	82	300	700	40,000	1/6	32°	2.40"	20
6.5 Watt	MP Term	81075	PAR36WFL6/827/IP67/LED	Wide Flood	10-15	2700K	82	450	1100	40,000	1/6	32°	2.40"	35
12.5 Watt	MP Term	81076	PAR36WFL12/827/IP67/LED	Wide Flood	10-15	2700K	82	800	2000	40,000	1/6	32°	2.40"	50

¹ Energy savings based on \$0.11 kWh over 40,000 hour life.

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. Not for use in enclosed luminaires. May not be compatible with all electronic transformers. Rated for outdoor use only.

Savings Comparison

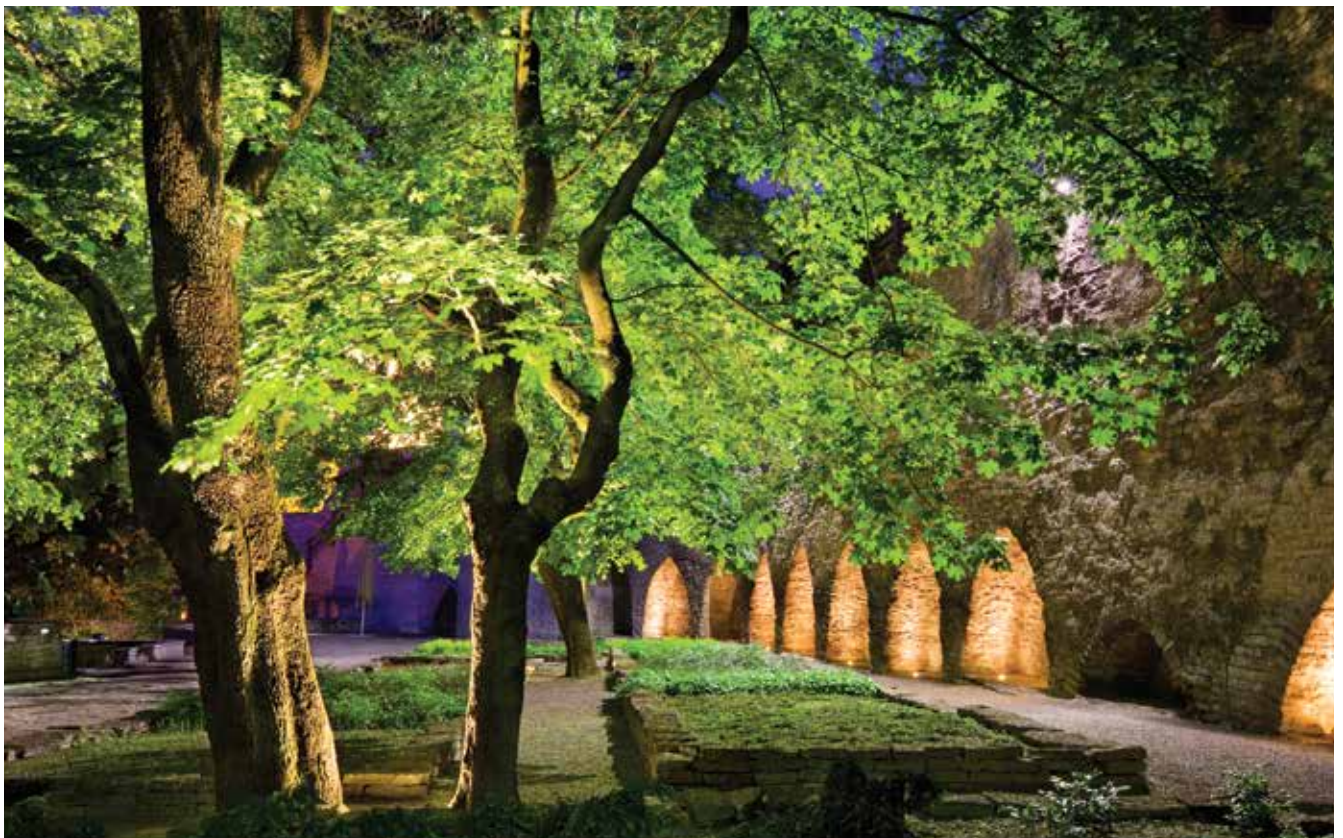
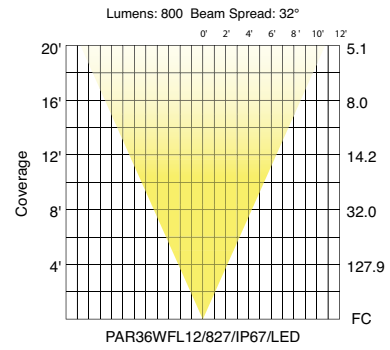
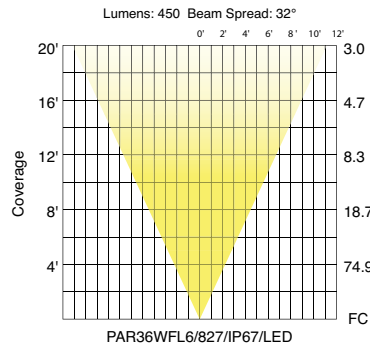
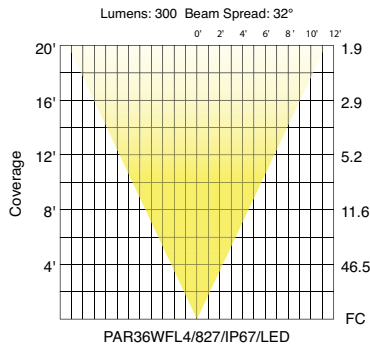
Total Lifetime Costs



[‡] Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.

[†] Energy costs based on \$0.11 kWh over 40,000 hour life.

Photometrics



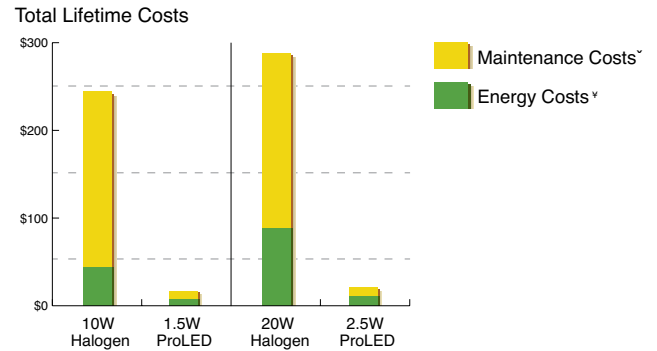
ProLED Waterproof PAR36 lamps are ideal for use in well light applications where the lamps are susceptible to the elements. The drama of the landscape is enhanced with the 2700K color.

ProLED JC

Specifications

- High power and SMD LED options
- Up-to 88% energy savings - 2.5W JC versus 20W Halogen
- IP65 Rated option for outdoor use
- 10-18V input voltage range
- Up-to 40,000 hour life, 20 times longer than traditional lamps
- Available in 2700K, 3000K and 5000K CCT
- 82 CRI for quality and consistent color rendering
- Amber, Blue, Green or Red color options
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty on IP65 Rated lamps (excluding Silicone JC) and 2-Year on standard JC lamps
- 2-Year Limited Warranty on Silicon JC lamps

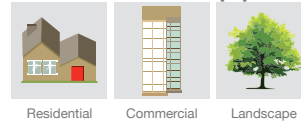
Savings Comparison



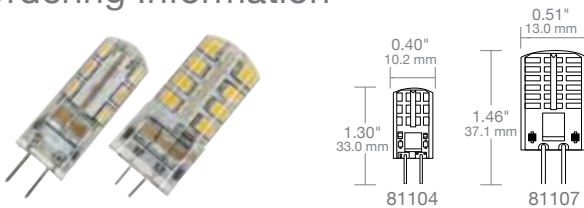
* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 † Energy costs based on \$0.11 kWh over 40,000 hour life.

NEW!

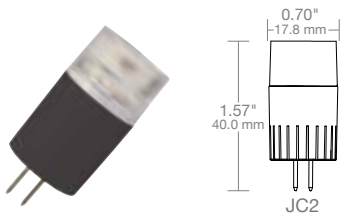
Markets & Applications



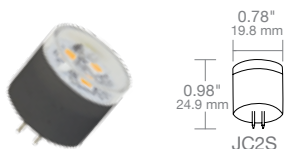
Ordering Information



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
SILICONE JC												
1.5 Watt	G4	81104	JC1/830/IP65/LED	IP65 Rated	10-18	3000K	82	110	20,000	1/10	1.30"	10
2.0 Watt	G4	81107	JC2/830/IP65/LED	IP65 Rated	10-18	3000K	82	160	20,000	1/10	1.46"	20

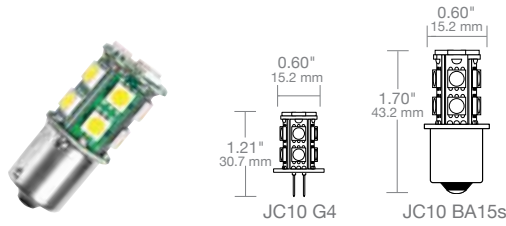


Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
JC2												
2.3 Watt	G4	81109	JC2/827/LED2	Omnidirectional, IP65 Rated	10-15	2700K	82	250	40,000	1/10	1.57"	20
2.3 Watt	G4	81108	JC20/2WW/LED2	Omnidirectional, IP65 Rated	10-15	3000K	82	250	40,000	1/10	1.57"	20

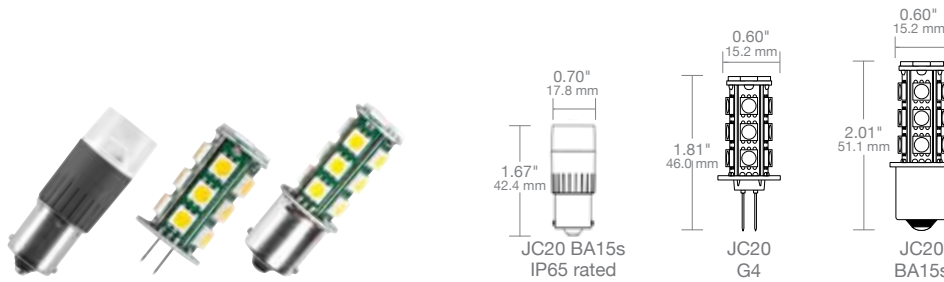


Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
JC2S												
1.4 Watt	G4	81091	JC2S/827/LED2	IP65 Rated	10-15	2700K	82	140	40,000	1/10	0.98"	20
1.4 Watt	G4	81092	JC2S/830/LED2	IP65 Rated	10-15	3000K	82	150	40,000	1/10	0.98"	20

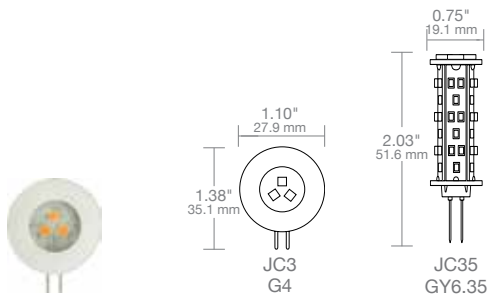
Ordering Information Continued



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
JC10												
1.5 Watt	BA15s	80692	JC10/1WW/BA15S/LED	Omnidirectional	10-18	3000K	82	150	20,000	1/40	1.70"	10
1.5 Watt	BA15s	80810	JC10/1WW/BA15S/LED2	IP65 Rated	10-18	3000K	82	100	40,000	1/10	1.93"	10
1.5 Watt	G4	80693	JC10/1WW/LED	Omnidirectional	10-18	3000K	82	150	20,000	1/40	1.21"	10



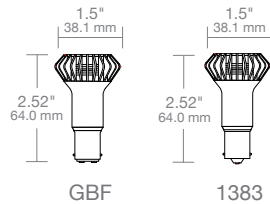
Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
JC20												
1.8 Watt	G4	80782	JC20/2AMB/LED	Omnidirectional Amber	10-18	-	-	-	20,000	1/40	1.81"	-
1.8 Watt	G4	80780	JC20/2BLU/LED	Omnidirectional Blue	10-18	-	-	-	20,000	1/40	1.81"	-
1.8 Watt	G4	80779	JC20/2GRN/LED	Omnidirectional Green	10-18	-	-	-	20,000	1/40	1.81"	-
1.8 Watt	G4	80781	JC20/2RED/LED	Omnidirectional Red	10-18	-	-	-	20,000	1/40	1.81"	-
2.3 Watt	BA15s	81100	JC20/2WW/BA15S/LED2	IP65 Rated	10-15	3000K	82	250	40,000	1/10	2.00"	20
2.4 Watt	BA15s	80691	JC20/2WW/BA15S/LED	Omnidirectional	10-18	3000K	82	250	20,000	1/40	2.01"	20
2.4 Watt	G4	80833	JC2/827/LED	Omnidirectional	10-18	2700K	82	240	20,000	1/40	1.81"	20
2.4 Watt	G4	80690	JC20/2WW/LED	Omnidirectional	10-18	3000K	82	250	20,000	1/40	1.81"	20
2.4 Watt	G4	80815	JC20/2NW/LED	Omnidirectional	10-18	5000K	82	260	20,000	1/40	1.81"	20



Watt	Base	Product #	Product Code	Description	Volts	Color Temp.	CRI	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
JC3												
3.3 Watt	G4	81078	JC3VWFL/827/LED	100° Very Wide Flood	12	2700K	82	200	25,000	1/10	1.38"	20
JC35												
4.5 Watt	GY6.35	80830	JC35/4WW/LED	Omnidirectional	10-18	3000K	82	450	20,000	1/30	2.03"	35

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all electronic transformers. Not for use in enclosed luminaires. Suitable for use in sealed metal landscape luminaires; standard JC lamps require protection from elements. IP65 rated lamps are rated for use outdoors where exposed directly to water from rain or irrigation. The lamp is not submersible nor for use in enclosed luminaires. Suitable for use in sealed metal landscape luminaires.

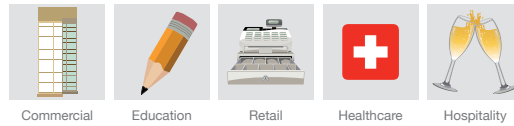
ProLED Elevator Lamps



Specifications

- High power LED for maximum efficiency
- Up-to 87% energy savings - 2.6W GBF versus 20W Incandescent
- 10-18V input voltage range
- 40,000 hour life, 20 times longer than traditional lamps
- Available in 2700K CCT
- 82 CRI for quality and consistent color rendering
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty

Markets & Applications



Ordering Information

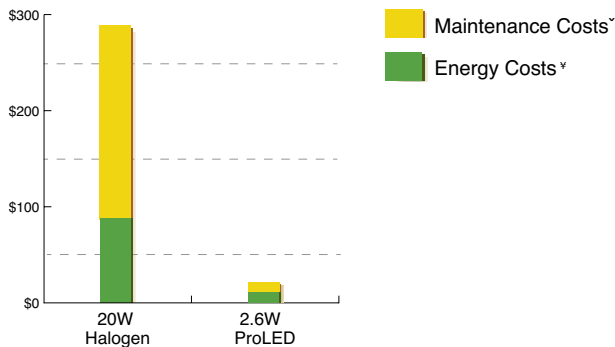


Watt	Base	Product #	Product Code	Volts	Color Temp.	CRI	CBCP	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
2.6 Watt	BA15d	80756	GBF/3WW/LED	10-18	2700K	82	410	145	40,000	1/10	2.52"	20
2.6 Watt	BA15s	80701	1383/3WW/LED	10-18	2700K	82	410	145	40,000	1/10	2.52"	20

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels.

Savings Comparison

Total Lifetime Costs

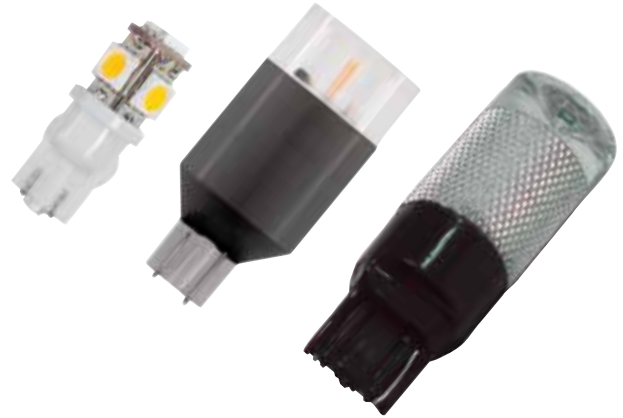


* Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.

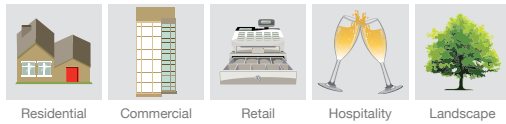
* Energy costs based on \$0.11 kWh over 40,000 hour life.

Specifications

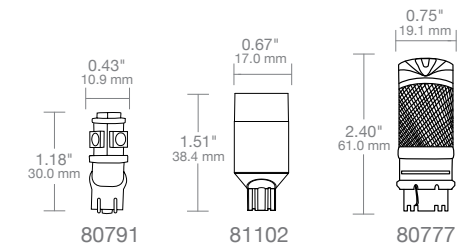
- IP65 Rated for outdoor use (81101 and 81102)
- Available in 3000K CCT
- 82 CRI for quality and consistent color rendering
- Omnidirectional distribution
- No Mercury or UV/IR emissions
- RoHS Compliant
- 5-Year Limited Warranty (80777 and 81102) and 2-Year Limited Warranty (80791)



Markets & Applications



Residential Commercial Retail Hospitality Landscape



Ordering Information

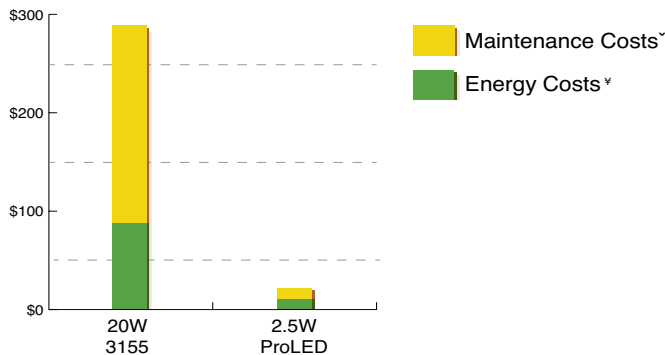


Watt	Base	Product #	Product Code	Volts	CRI	Color Temp.	Lumens	Useful Life*	Pkg. Qty.	MOL	Wattage Equivalent
1 Watt	Wedge	80791	912/1WW/LED	10-18	82	3000K	75	20,000	1/50	1.18"	10
1.2 Watt	Wedge	81102	912/1WW/LED2	10-15	82	3000K	120	40,000	1/10	1.51"	10
2.5 Watt	Wedge	80777	3155/2WW/LED	10-18	82	3000K	140	40,000	1/10	2.40"	20

* Useful Life is defined as the point in time at which the lamp will maintain at least 70% of its initial lumens. The lamp will continue to burn past this point at decreased light levels. May not be compatible with all electronic transformers.
 Not for use in enclosed luminaires. Suitable for use in sealed metal landscape luminaires.
 IP65 rated lamps are rated for use outdoors where exposed directly to water from rain or irrigation. The lamp is not submersible nor for use in enclosed luminaires. Suitable for use in sealed metal landscape luminaires.

Savings Comparison

Total Lifetime Costs



† Maintenance costs based on 15 minutes to replace the lamp at \$40 per/hr over the life of the ProLED lamp.
 * Energy costs based on \$0.11 kWh over 40,000 hour life.



Transformer and Dimmer Compatibility in Commercial and Residential Installations

While LED lamps allow for greater energy savings and longer life, they can be challenging when used in existing applications and luminaires. Compatibility with transformers and dimmers are the most common issues faced in replacement and retrofit applications. There are 3 main transformer types, each with their own advantages and disadvantages when considering an LED retrofit.

Although ProLED lamps are designed to perform well with most available transformers in these categories, ensuring transformer compatibility is crucial to the proper performance and lifetime of ProLED lamps.

Positive	Negative
Magnetic Transformers and LED Lighting	
<ul style="list-style-type: none"> – Provide a known 60Hz AC power to the LED, which is often accommodated in the design of many LED products – Robust, reliable and available in many different wattages – Relatively inexpensive, comparatively for higher wattages 	<ul style="list-style-type: none"> – Provide AC rather than DC current – Minimum load rating to provide the expected voltage, which can be difficult due to the efficient nature of LEDs – Translate voltage instability from incoming power to output power – Less efficient at power conversion in comparison to electronic transformers – Larger and heavier than the electronic equivalent
Electronic AC Transformers and LED Lighting	
<ul style="list-style-type: none"> – Can be designed in a very small package and are often integrated into a luminaire – More efficient than a magnetic transformer – At low wattages, they can have a cost advantage due to less material – Less likely to translate voltage instability from incoming power to output power 	<ul style="list-style-type: none"> – Operates at high frequencies which can interfere with or damage LED products – Minimum load rating that can be triggered by the low draw of LED lamps, causing the transformer to think there is a failed lamp and either not working or causing flickering – Less tolerant of heat than magnetic transformers. Must be designed to be dimmed
Electronic DC Transformers and LED Lighting	
<ul style="list-style-type: none"> – Ideal power supply for most LED products, as almost all LED chips are designed as DC only – Provides a very stable power source, often allowing LED products to perform better – Smaller and lighter than magnetic transformers – Provides less voltage drop on long wiring runs – Do not translate voltage instability from incoming power to output power 	<ul style="list-style-type: none"> – DC transformers are less common in existing applications – Often more expensive than the equivalent electronic AC transformer – Usually larger than electronic AC transformer – Must be designed to be dimmed for dimming applications

For a list of transformers compatible with the ProLED MR16 Series, visit the ProLED Compatibility section at <http://www.halcolighting.com/download>.

The ProLED offering features a wide variety of dimmable lamps and when used with compatible dimmers common challenges can be avoided. For a comprehensive list of line voltage ProLED and compatible dimmers, visit <http://www.halcolighting.com/pdf/ProLEDdim.pdf>.

Common Issue	Dimmable ProLED Lamps on Compatible Dimmers
Reduced dimming range	Operate down to 5% of rated lumen output
Lights dropping out	Smooth flicker-free dimming through the lamps dimming range
Lights not turning on	Illuminate at a dimmed light output
Lights turning off unexpectedly	Withstand voltage fluctuations for consistent performance



Selecting a Transformer for Low Voltage LED Landscape Lighting

True power consumed is measured in watts. It is what customers are charged for on their utility bill. A lamp's true power (wattage) is listed on the lamp's packaging. When an LED is powered, the lamp's driver converts alternating current (AC) to direct current (DC), which consumes reactive and harmonic power on top of the true power that is required to produce light. The utility must generate additional energy above and beyond the lamp's true power in order to operate the lamp.

The total amount of power that must be generated by the utility is measured in volt amperes (VA) and is referred to as apparent power. Power factor - the ratio of true power to apparent power - is the measure of how efficiently electrical power is consumed. Dividing a lamp's wattage by the lamp's power factor results in the VA drawn on the line - $\text{Wattage/Power Factor} = \text{Volt-Amperes}$.

Halogen and Incandescent lamps have a power factor of one, which means that the lamp uses 100% of the input power to produce light and heat. Consequently, filament lamps' wattage and VA are equivalent. For example, a 20W MR16 BAB draws 20VA from the line. For LED installations, apparent power (VA) must be taken into consideration, because transformer size is actually based on apparent power (VA), not true power (W). To specify the correct transformer size, the system's total load must be calculated to ensure that the total volt-ampere draw does not exceed the transformer's rating.

The ProLED installation example below shows system load (total VA), true power consumed (W) and annual energy cost calculations.

1. Calculate Load of LED System		Lamp VA	x	# Lamps	=	Total Luminaire Load
Well Light with 6.5W ProLED PAR36		10.9		8	=	87
Modern Bullet with 4.5W ProLED MR16		5		4	=	20
Total System Load						107
2. Select Transformer for the LED System Load						
3. Calculate LED Energy Consumption		Lamp Wattage	x	# Lamps	=	Power Consumption
Well Light with 6.5W ProLED PAR36		6.5		8	=	52
Modern Bullet with 4.5W ProLED MR16		4.5		4	=	18
Total System Power Consumption						70
4. Calculate the LED System's Annual Energy Cost						
Consumption	x	Utility Cost ¹	x	Annual Operating Hours ² /1000	=	Annual Energy Cost
70W		\$0.115 kWh		2190 hrs	=	\$17.63

¹ Utility cost based on national average per U.S. Energy Information Administration - <http://www.eia.gov/electricity/data.cfm#summary> at the time of printing.

² Annual operating hours based on 6 hours/day and 365 days/year.

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