Denver LED Lights

March 31, 2016

Greetings! 2016 is yet another year of energy efficiency and progress toward reducing energy usage for our customers. I am hoping this edition of the Spring 2016 Newsletter is educational as well as informative about modern energy management practices. LED lighting technology is poised to really increase between now and 2020 especially with rising electricity rates and companies that really need to save money. Remember that Denver LED Lights is focused on helping customers by supplying efficient LED lighting options that provide the following benefits:

- Reduction of overall energy consumption by 30 to 50% on average.
- Lumen output ranging from 100-160/watt.
- Lifetime ranging from 50,000 to 100,000 hours.
- Average ROI (return on investment) equals 8 to 10 months.
  ***Denver LED Lights has never exceeded a 3-year ROI on commercial projects.**
- Complementary efficiency standard with other forms of renewable energy such as solar and wind.

Denver LED Lights offers its own set of benefits for customers who would like to retrofit properties using high output LED light bulbs:

- Tiered pricing / Volume discounts
- Energy audits performed by Xcel Energy on commercial properties
- Installation services provided by the IBEW (International Brotherhood of Electrical Workers)
- Made-to-order business model means light bulbs are produced at the time of ordering.

Upcoming events:

Amazon.com – Migration to Amazon opens up a new fulfillment avenue for supplying the best LED products to our customers. We are under construction and testing on May 31, 2016 with an expected cutover date of June 30, 2016. Check in on our progress at - http://www.amazon.com/shops/denverledlights.

Have a Blessed Day!

Rodell Reddix
Denver LED Lights
CEO / Managing Business Partner

"North America's premier exclusive high output LED distributor"

COMPANY OVERVIEW

Denver LED Lights became the **first high output exclusive LED distributor** in North America in February, 2013. Our business encompasses the distribution of high output LED lighting, fixtures and accessories for every industry. While this may seem like a broad spectrum, the focus is specifically on providing exceptional high output lighting products and accessories to our customers.

SCOPE OF SERVICES

High Output LED Lighting

"A new standard in green energy lighting that increases lifetime and output based on a modern energy usage standard. Lumen output for high output LED ranges 100 – 160 lumens/watt and lowers energy consumption over regular fluorescent tubes, CFL (compact fluorescent lamps) or standard output LED lighting."

NOTE: Denver LED Lights emphasizes a second generation standard in LED lighting that is not widely used in the United States. The most commonly used standard is standard-output LED but many consumers are starting to understand how **high-output** LED saves 30-50% more energy while producing better lumen output.

Optional Services

Xcel Energy audit provides a dedicated Denver LED Lights representative knowledgeable in our products that will consult consumers on applicable energy rebates.

IBEW (International Brotherhood of Electrical Workers) performs ballast removal and installation of lighting fixtures and bulbs.

BENEFITS

Volume Discounts

Reduction in pricing primarily used for large commercial orders. Discounts are offered on residential orders as well to incentivize energy saving purchases.

Tiered Pricing

Specific dollar amount assigned to a product purchase that gives the consumer an additional discount based on the original manufacturers price.

Combined Billing

Receive one bill for Denver LED Lights and IBEW installation charges. We are working on future billing and financing options for both residential and commercial customers.

Savings, savings and more savings

Direct reference to lower energy bills witnessed by consumers who switch to high output LED bulbs. The efficiency standard is unprecedented by any other LED technology on the market today.

Discounts for Community/Non-Profit Organizations

Denver LED Lights will donate up to a 20% discount to any community / non-profit organizations depending on order size. By doing so, we hope to encourage these organizations to upgrade their aging light bulbs and fixtures to a modern electricity usage standard.

High output LED Lighting – a new standard in green energy lighting that increases lifetime and output based on a modern energy usage standard. Lumen output for high output LED ranges 100 – 160 lumens/watt and lowers energy consumption over regular fluorescent tubes, CFL (compact fluorescent lamps) or standard output LED lighting. High output LED lighting also encourages "delamping" or bulb reduction which saves additional energy year over year.

PRODUCTS





New products and product upgrades have dominated our manufacturer network in 2016 so far. LED lighting is expanding and offering new options to customers who wish to implement upgraded renewable energy lighting options. Review each product listed below and click on the link to review details:

Street Lights

City and State municipalities are starting to require renewable energy lighting with features like: luminous efficiency greater than 100 lm /watt and beam angle of 120 - 180°. The design of our new Cobrahead streetlights supplied with Cree chips spreads the lighting area enough to eliminate dark spots on the road.

100W Cree Panel Cobrahead Streetlight
Link: http://www.denverledlights.com/www/products/commercial/26000002/26000002.pdf

Shoebox (Pole) Lights

Large commercial building parking lots can benefit from Shoebox (Pole) Lights with the Philips LumiLEDS and MeanWell drivers. This latest LED technology is 130+ lm/watt and has a wide range of power options from 60 – 480W and various hues.

Link: 60 Watt Shoebox with 60mm mount – Pure White (5000-5500K)
http://www.denverledlights.com/www/products/commercial/25000002/25000002.pdf

T8 LED tubes

T8 Tubes are the most common bulb replacement option that span from residential to commercial properties. Updating from 32-40W 4-foot florescent tubes to 18W 4-foot T8 LED tubes is a great way to lower energy consumption. Denver LED Lights has added a lower wattage 15W 4-foot T8 LED tube and a higher wattage 20W 4-foot T8 LED tube in various lengths: 2ft, 3ft, 4ft, 6ft and 8ft. Length and hue options vary depending on the product.

Links:
15 Watt T8 4-foot Tube Style LED w/ Samsung SMD2835 5000-5500K frosted
http://www.denverledlights.com/www/products/commercial/20009416/20009416.pdf
18 Watt T8 4-foot Tube Style LED 160 lm/watt 5000K frosted
http://www.denverledlights.com/www/products/commercial/20007005/20007005.pdf
20 Watt T8 4-foot Tube Style LED 160 lm/watt 5000-5500K frosted
http://www.denverledlights.com/www/products/commercial/20007413/20007413.pdf

PRODUCTS (Continued)

Flood LED Lighting Type 2

A variety of residential and commercial buildings use flood lights on the outside as a security measure. Video surveillance requires the use of crisp and clear lighting to visually capture specific details. There are also variety of different sizes for every situation: 10W, 20W, 30W, 50W, 80W, 100W, 150W, 200W and with 4 hues – warm (3000-3500K), standard (4000-4500K), pure (5000-5500K) and cool (6000-6500K). The new "Type 2" design features a Philips 3030 chip, slimmer depth and black outer casing.

Links:

10 Watt Flood LED (Type 2 Warm) for smaller coverage areas – 1,000 lumens
http://www.denverledlights.com/www/products/commercial/23102000/23102000.pdf

100 Watt Medium Flood LED (Type 2 Warm) – 10,000 lumens
http://www.denverledlights.com/www/products/commercial/23102005/23102005.pdf

150 Watt High Output Flood LED (Type 2 Warm)– 15,000 lumens
http://www.denverledlights.com/www/products/commercial/23102007/23102007.pdf

Strip Lighting

Gaining fast in popularity and practical application is strip lighting. Residential customers will find the use of strip lighting one of the best cost saving measures in terms of price of the product combined with overall energy usage. In fact, strip lighting is cheaper than the other conventional lighting methods. Large commercial customers may also realize the cost saving method as well especially when considering the luminous efficiency at 160 lm/watt! **S-bendable is the new flexible strip lighting that can bend up to 360° without breaking.**

Links:
2835 8mm width 160 lm/w IP68 White PCB 12 watts/meter S-bendable – Warm white
http://www.denverledlights.com/www/products/specialty/30000216/30000216.pdf

Product Certifications and Manufacturers

CUSTOMER INFORMATION

Reason to upgrade using high output LED bulbs:

Standard Output LED	High Output LED
First generation LED technology	Second generation LED technology
Minimum efficiency	Maximum efficiency
Marginal lumen output	Enhanced lumen output
Not Affordable – Price of product and cost savings	Affordability – Energy savings and price
Slow Return on Investment	Quick Return on Investment
Lack of testing	Tested/compared to Standard output
Dependent LED standards	Energy Independent LED standards
Under 100 lumens/watt Under 50,000 hour lifetime rating	100 lumens/watt and above 50,000-100,000 hour lifetime rating

WARRANTIES

Residential and Commercial product warranties are offered through our manufacturers and all fully guarantee product replacement. Denver LED Lights stands behind any manufacturer defective products by offering our customers the same warranties:

Residential Products (i.e. Edison-filament, bubble, corn-style)	2-year manufacturer warranty
Commercial Products (i.e. T8 tubes, Floods, Street and shoebox)	3-7 year manufacturer warranty

Limited warranty: http://www.denverledlights.com/www/warranty/LimitedWarranty.pdf

Extended warranty: A new extended warranty plan will be released soon allowing customers to purchase replacement products after 5 years of usage. The upcoming plan will have a web link with details as soon as it is available.

FAQ

LED is LED with limited options?

One of the biggest misconceptions about LED is "LED is LED". Your average person believes that all LED has the same efficiency, which is simply not true. First generation LED which is commonly referred to as Standard Output LED averages 40-70 lumens per watt and typically has a finished product rating of 10,000-35,000 hours. This is the LED that most people are familiar with the same energy ratings as CFLs (compact florescent lamps). High Output LED averages 75-100+ lumens per watt, uses better LED's and drivers that extend the

finished product ratings to 50,000-75,000+ hours, and with some of the newer products that have come to market in the last couple of years, reaches 160+ lumens per watt with 100,000 hour finished product ratings.

Every product on the market will not achieve 160+ lumens per watt or get 100,000 hour ratings, but more and more are popping up every day with this increase in luminous efficiency.

The other main misconception of LED is that there are limited options associated with LED. Truth is with LED, there are more options available than any other light on the market. LED has color and color changing options in lights that before would have never had that option - MR16, GU10, E27, T8 just to name a few.

The development of LiFi is doing things with LED lighting that was only dreamed about before. (LiFi is wireless connectivity through LED specifically).

What are high output LED standards vs. Denver LED Lights standards?
High Output LED are LED products that are rated for 35,000+ hours and have a minimum of 75 lumens per watt. Denver LED Lights standards are a minimum of 50,000 hours and have a minimum of 100 lumens per watt.

Chip rating vs Finished product ratings?
There has been a lot of misconception on Chip ratings and Finished Product ratings. Chip ratings are the ratings for the LED Chips that are used in the product, and only the Chips ratings, not the other components in the product like Drivers. Finished Product ratings are based off the lowest rated piece of the product which is typically the drivers, not the chips. There are numerous products on the market that the chips are rated for 100,000 hours, but the drivers are only rated for 20,000-35,000 hours, but claim to offer a 100,000-hour product because that is how the chip is rated.

What is delamping?
Delamping is possible when the luminous efficiency is typically about 100 lm/watt or the required brightness is reached. The best to way "delamp" is by reducing bulbs in a 3-bay fixture to only two and rotating the bulbs slightly spreading the light beyond a 120° beam angle.

USAGE STANDARDS

Another factor in extending the lifetime of high output LED lighting are usage standards. The default standard in terms of product ratings is 24 hour / 7 days per week equals 50,000 hours (5.7 years). However, products used for only eight hours a day can dramatically extend the lifetime of the bulb. Observe the following chart that references usage standards and how the lifetime is extended:

Time	50,000 hours	60,000 hours	75,000 hours	100,000 hours
24 hours / day	5.7	6.8	8.6	11.4
12 hours / day	11.4	13.6	17.2	22.8
6 hours / day	22.8	27.2	34.4	45.6
3 hours / day	45.6	54.4	68.8	91.2
8 hours / day	17.1	20.4	25.8	34.2

*All numbers in grayscale are in years.

REASON TO USE DENVER LED LIGHTS - CALCULATION EXAMPLE

999 florescent tubes installed in a large commercial building using 3-bay fixtures. The building manager has decided to update the property to 999 LED T8 tubes. How much on average can the building manager expect to save over a 1-year? Express answer in dollar amount and percentage savings.

Original assessment of 999 florescent tubes at 36W per tube with 2 ballasts @ 4W each:

Wattage	Price / Kwh	Time	Total ($)
38, 628	**0.15**	**hour**	**5,794.20**
		day	139,060.80
		month (30 days)	4,171,824.00
		year (365.25 days)	50,791,957.20

Switch 999 – 36W florescent tubes to 18W LED tubes removing ballasts completely:

Wattage	Price / Kwh	Time	Total ($)
17,982	**0.15**	**hour**	**2697.30**
		day	64,735.20
		month (30 days)	1,942,056.00
		year (365.25 days)	23,644,531.80

Final savings total: 50,791,957.20 - 23,644,531.80 = $27,147,425.40 per year.
Percentage savings: 53.45%

This example contains results that are slightly outside the overall savings range of 30-50% because no other energy usage is considered; however, savings percentage can be much higher when delamping. Luminous efficiency at 100 lm/watt or above increases the savings on **lighting costs** percentage to 60-80%.

COMING SOON

amazon.com

Visit our Amazon storefront at:
http://www.amazon.com/shops/denverledlights

CALL US TO INQUIRE OR ORDER

1-855-864-5700

info@denverledlights.com

(Under construction)

Save Money Both Now and Later!