

Lighting Products Fair

Lighting Subcommittee
Village Green Safety Committee

October 17, 2015

Overview

- Introduction – John Howell
- About Lighting
 - Types of Light Bulbs and Costs – Karen Howell
 - How to Purchase a Light Bulb – Bill Karydes
- Lighting Solutions – “set it and forget it”
 - Photo Sensors – Jim Bouchard
 - Timers – Karen Howell
- Q & A – John Howell
- Raffle – Jim Bouchard, Karen Howell, Bill Karydes

Types of Light Bulbs and Costs:

Choose CFL or LED bulbs

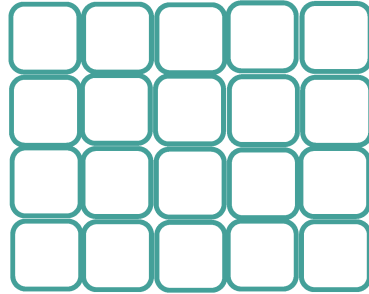
- Incandescent – **costs the most**: \$210 over 5 years
 - high electricity costs, most expensive bulb costs
- **CFL – a good value**: \$70 over 5 years
 - save 72% on electricity costs, cheaper light bulb costs
- **LED – least expensive**: \$59 over 5 years
 - save 85% on electricity costs, cheaper light bulb costs

Energy-Efficient Light Bulbs

Cost of Operation Over 5 Years



53 w



20 bulbs

Incandescent

\$ 40 = bulbs

\$ 170 = electricity

\$ 210 = total cost



18 w



3 bulbs

CFL

\$12 = bulbs

\$58 = electricity

\$70 = total cost



13.5 w 1 bulb



LED

\$16 = bulb

\$43 = electricity

\$59 = total cost

75 watt-equivalent bulbs. 1,000 hour incandescent lifetime, 10,000 CFL lifetime, 25,000 LED lifetime. Bulbs on 12 hours a night for 5 years=21,900 hours. LADWP Tier 1 Rate of \$0.14617/kWh. Electricity cost = 21,900 hours / 1000 = 21.9 kWh * # Of Watts * \$0.14617/kWh. Bulb cost = \$2/incandescent, \$4/CFL, \$16/LED.

Purchasing Porch and Patio Lights: The Lighting Facts Label

- Look at the lighting label on the back of the package
- Federal regulations require the lighting label – shows factual information about the light bulb
- Brightness - 1100 lumens or higher
 - Illuminate more of the Village Green
- Light Appearance - 2700K warm
 - Warm light contributes to the residential feel of the Village Green – white light is harsher

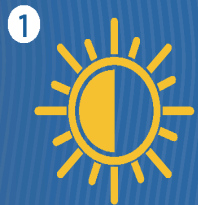
HOW TO READ A LIGHTING FACTS LABEL

What is a lighting facts label?

Lighting labels have changed to meet new Federal Trade Commission (FTC) requirements. You will find these labels on all light bulbs including incandescents, halogens and LEDs. Consumers can now compare products and base purchase decisions on brightness (lumens), cost of operation, life span, hue, and energy usage.

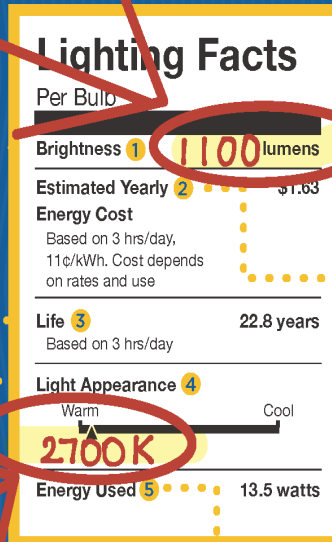
Where is it?

You'll find the Lighting Facts label on the back of all Cree LED Bulb packages.



1 Brightness

Measured in lumens not wattage – the higher the number, the brighter the light.



2 Estimated Yearly Energy Cost

Cost to light your bulb based on average usage of 3 hrs / day and 11 cents / kWh.



3 Life

The product's life, in years. This number is according to the average usage of 3 hours per day.



5 Energy Used

The energy the bulb consumes (in watts). The lower the wattage, the less energy used and the lower electricity costs.



4 Light Appearance

Indicates the hue of the color emitted. Warm / Soft White colors (at or around 2700 Kelvin) have a lower color temperature and an inviting, comfortable and relaxing atmosphere similar to the light from an incandescent bulb. Cool / Daylight bulbs (closer to the max of 6500 Kelvin) create a bright, clean and lively mood with a bluish tone.

CREE 

creebulb.com

Cool vs. warm light



Warm light vs. cool light – at dusk



Lighting Solutions

“Set it and forget it”

- Photo sensor with separate bulb
- Photo sensor integrated with bulb
- Digital timer with bulb

Photo Sensor Light Solutions



Advantage of Photo Sensors

- No electrician is needed for installation
- Energy savings
- Inexpensive

Disadvantage of Photo Sensors

- Doesn't work for everyone
- Restricted to 60 watt equivalent (900 lumens)

Two photo sensor solutions

1. Bulb with separate housing
2. Bulb with built in sensor
(Philips Dusk-to-dawn)

1. Bulb with separate housing

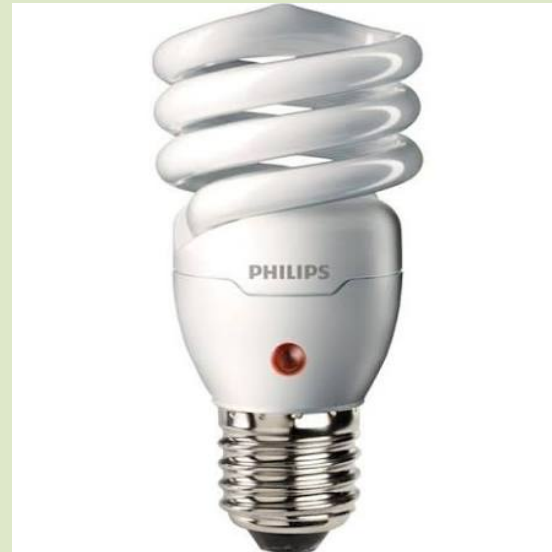
- **Fan Bulb – 300 Lumens - not as bright \$9.97**
- **Photo Sensor - Automatic Light Controller \$5.98**



2. Bulb with built in sensor

- **Philips “Dusk-Till-Dawn” CFL bulb**
– 900 lumens – brighter

\$10.98



Digital Timer Lighting Solution



Advantages of Digital Timers

- Works reliably without tinkering
- Can be programmed to turn lights on at dusk and off at dawn
- Can adjust to the seasons without reprogramming
- Can use a brighter light bulb (1100+ lumens) – brightest lighting solution

Disadvantages of Digital Timers

- Needs electrician to install and program the timer

1100 Lumens Lights Up Pathway



Recommended Solution

- **Intermatic ST01 timer with LED light bulb**
 - Timer works with Village Green wiring (doesn't require neutral wire)
 - Timer works with CFL and LED light bulbs
 - Astronomic feature automatically adjusts timer to respond to seasons
 - Sun-Life/RAMCO electrician is familiar with this timer and Village Green electrical wiring
 - LED bulb is 1100 lumens and lasts for 5 years

Digital Timer with LED Bulb

- **Intermatic ST01 timer**
\$32.86
- **Cree LED bulb – 1100 lumens – brightest**
\$15.97



Recap: Automatic Lighting Options

Separate Photocell Sensor

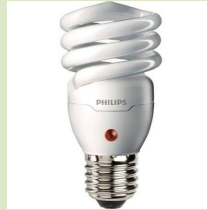


\$17.84

300 lumens

LED
Saves 82%
Last 22 times longer

Integrated Photocell Sensor



\$10.98

900 lumens

CFL
Saves 76%
Lasts 10 times longer

Digital Timer with LED bulb



\$148.83

**(includes
installation)**

1,100 lumens

LED
Saves 82%
Lasts 22 times longer

Note: All bulbs are 2700 Kelvin (Soft/warm white)

- More Information
 - Handouts
 - Information will be added to Village Green website Safety Committee page
- Q & A
- Raffle

Village Green Safety Committee Lighting Subcommittee

Three Porch and Patio Lighting Solutions

Light Bulb (with Separate Photocell Sensor) – (this solution can work in locations with unobstructed sunlight which will ensure better results; may require tinkering)

Defiant Indoor/Outdoor Automatic Dusk-to-Dawn CFL Light Control
Black, Model # S-751B – \$7.87 – (works with LED, CFL, incandescent)
With
EcoSmart 40W Equivalent Soft White (2700K) P15 Dimmable LED Fan Bulb
Model # ECS P15 W27 40WE FR 120 DG; 300 lumens, uses 5 watts – cost \$9.97

Saves 82% energy cost and lasts 22 times longer than incandescent.
Total cost: \$17.84 (includes fan bulb and separate sensor)

Light Bulb (with Integrated Photocell Sensor) – (this solution can work in locations with unobstructed sunlight which will ensure better results; may require tinkering)

Philips 60W Equivalent Soft White Spiral Dusk-Till-Dawn CFL Light Bulb
(Model # 405852 - 900 lumens, uses 14 watts)

Saves 76% energy cost and lasts 10 times longer than incandescent.
Total cost: \$10.98 (for light bulb with integrated photocell sensor)

Light Bulb (with Separate Digital Timer) – (RECOMMENDED - works reliably but requires professional installation)

Cree 75W Equivalent Soft White A19 Dimmable LED Light Bulb
(Model # BA19-11027OMF-12DE26-1U100; 1100 lumens, uses 13.5 watts) – \$15.97
with
Intermatic 15-Amp Heavy Duty Astro In-Wall Digital Timer
Model # ST01 - \$32.86

Call an electrician to install and program your timer for you. (approx. \$100)*
Saves 82% on energy cost and lasts 22 times longer than incandescent.
Total cost: \$148.83 (includes bulb, timer and electrician)

*Electrician familiar with Village Green electrical wiring and installing Intermatic timer is:
Glenn at Sun Life-Ramco Electric, (310) 821-5700, sunlife.ramcoelectric@yahoo.com CA Lic # C-10
531117

All prices list price at homedepot.com, 9/19/15

How To Choose a Light Bulb for Porch and Patio

- Choose **CFL** or **LED** bulbs for best energy efficiency – save 72-85% energy cost and last 10-25 times longer than incandescent light bulbs
- Avoid Halogen and Incandescent bulbs – more expensive to operate
- **1100 lumens (brightness)** or higher is recommended for a safe and secure home
- A warm “**light appearance**” (**2700K**) will provide an attractive light quality – “Soft White”
- **No more than 4” - 4.5” in length** – so that the bulb will fit Village Green fixtures
- Bring your old light bulb with you to check that new light bulb will fit your fixture. Consider both the bulb’s length and diameter.
- Choose a medium base bulb (usually referred to as type A19)
- For patio lighting: choose a bulb that can safely be used in an enclosure (photocell sensor performance can be affected unless enclosure is clear glass / some types of bulbs wear out more quickly without proper ventilation)
- Other Tips:
 - check that light bulb works with electronic timers and photocell sensors (check notes on rear package label)
 - if bulb is Energy Star certified, it means bulb was independently tested for claims and has potential for utility company rebates
 - make it easy on yourself in case of returns/warranty claims – write the purchase date on the base of the bulb and keep your receipts
 - when installing a light bulb, hold bulb by the base and not by the bulb
 - CFL bulbs contain mercury – please recycle rather than throw away

How to Choose Digital Timers

- Choose an electronic timer that works with CFL or LED light bulb - save 72-85% energy cost and last 10-25 times longer than incandescent light bulbs
- Choose a programmable timer – to turn lights on at dusk and off at dawn
- Optional: choose a timer with an “astronomic” feature, so that the timer automatically adjusts when lights turn on and off as the days get longer or shorter
- Make sure the timer you purchase has a faceplate that will mount properly to your wall – if not, pick one up before you leave the store.
- Many timers require you to have a neutral wire in your light box. The recommended Intermatic ST01 digital timer will work whether or not you have a neutral wire.

How to Choose Photocell Sensor (purchase CFL or LED bulb separately)

- Choose photocell sensor with a black or gray base (not white or metallic finish) - so sensor will not get false readings from light reflecting from the base onto the sensor
- Using a photocell sensor requires choosing a smaller light bulb - combined length of sensor and bulb should not exceed 4.5” - to fit Village Green fixtures
- Sensors work best with an unobstructed view of the sky (consider foliage, trees, etc.)
- Regularly clear out cobwebs from around sensor
- Do not use sensor/bulb in enclosed fixture (such as for patio light) – will cause bulb to have shorter life or to burn out, and reflective surface may give sensor false readings

How to Choose a bulb with a built-in Photocell Sensor

- Integrated bulb/sensors are only sold with CFL type bulbs - 900 lumens, 60W equivalent)
- Length of bulb should not exceed 4” - 4.5” in length
- Usually called “dusk-to-dawn” - turns on when dark and turns off when light
- For patio light: choose light bulb that can be used in an enclosure

Reading List for Light Up the Green Campaign – Lighting Products Fair
October 17, 2015

Village Green Safety Committee Lighting Subcommittee

Consumer Reports

Lightbulb Buying Guide

<http://www.consumerreports.org/cro/lightbulbs/buying-guide.htm>

How to read a lightbulb label: The terms that really matter when you're buying LEDs and CFLs

<http://www.consumerreports.org/cro/news/2015/08/how-to-read-a-lightbulb-label/index.htm>

Best and brightest energy-saving lightbulbs: The newest CFLs, halogens, and LEDs last longer and cost less to operate

<http://www.consumerreports.org/cro/magazine/2015/08/best-energy-saving-lightbulbs/index.htm>

6 cheap and easy ways to boost curb appeal: Make your entrance more welcoming for \$50 or less

<http://www.consumerreports.org/cro/news/2015/07/6-cheap-and-easy-ways-to-boost-curb-appeal/index.htm>

A room-by-room guide to the right lightbulbs: Use LEDs to create layers of light but avoid glare

<http://www.consumerreports.org/cro/news/2015/08/a-room-by-room-guide-to-the-right-lightbulbs/index.htm>

How to find an LED lightbulb that fits your fixture: 5 tips to demystify the process of buying energy-saving lightbulbs

<http://www.consumerreports.org/cro/news/2015/01/how-to-find-an-led-lightbulb-that-fits-your-fixture/index.htm>

Energy Star

Energy Star Purchasing Guide – Lighting Made Easy

http://www.energystar.gov/ia/products/fap/purchasing_checklist_revised.pdf

Light Bulb Savings Calculator - Energy Star

https://www.energystar.gov/index.cfm?c=cfls.pr_cfls_savings - overview of energy savings

http://www.energystar.gov/ia/partners/promotions/change_light/downloads/bulb.html - online calculator

https://www.energystar.gov/buildings/sites/default/uploads/files/light_bulb_calculator.xlsx - Excel spreadsheet

Earth Easy

Energy Efficient Lighting

http://eartheasy.com/live_energysave_lighting.htm

National Resources Defense Council

"Fall Back" into Energy-Saving Light Bulbs

http://switchboard.nrdc.org/blogs/nhorowitz/fall_back_into_energy-saving_1.html

Your Guide to More Efficient and Money-Saving Light Bulbs

<http://www.nrdc.org/energy/lightbulbs/files/lightbulbguide.pdf>

Where to Discard Used CFL Light Bulbs

Home Depot stores take back used unbroken CFL bulbs

<http://www.homedepot.com/StoreFinder/index.jsp>

S.A.F.E. Collection Centers – For Residents of City and County of Los Angeles

http://www.lacitysan.org/solid_resources/pdfs/special/SAFE_Collection_Centers.pdf

Free service. Drop off CFL light bulbs, batteries, and other household hazardous waste and electronic waste.

CFL Recycling Kit - \$19.95 for a kit to mail in your discarded CFL light bulbs

<http://www.thinkgreenfromhome.com/SafeConvenient.cfm>

Troubleshooting Photocell Sensor Light Bulbs

Security Light Photocell Problems

http://www.ehow.com/info_12180013_security-light-photocell-problems.html

Electric Time - read the Common Problems section for how to position the photocell

<http://www.electrictime.com/s/i/p/CTRL-ELEC-PHOTO-T15/CTRL-ELEC-PHOTO-T15@DS-473%20Photocell%20Instruction.pdf>

Solar Illuminations General Troubleshooting Guide – read the section “Testing the Photocell” for how to partially tape a photocell to deal with nearby light sources or the bulb's reflected light setting off the sensor

http://www.solarilluminations.com/pdf_US/FLseriesTROUBLESHOOTINGguide.pdf

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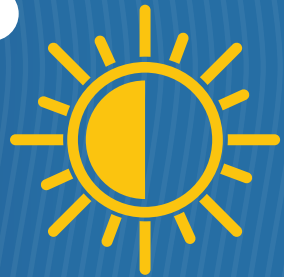
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Where is it?

You'll find the Lighting Facts label on the back of all Cree LED Bulb packages.



1



Brightness

Measured in lumens not wattage – the higher the number, the brighter the light.

Lighting Facts

Per Bulb

Brightness 1 **1100 lumens**

Estimated Yearly 2 **\$1.63**

Energy Cost

Based on 3 hrs/day,
11¢/kWh. Cost depends
on rates and use

Life 3 **22.8 years**

Based on 3 hrs/day

Light Appearance 4

Warm Cool

2700 K

Energy Used 5 **13.5 watts**

2



Estimated Yearly Energy Cost

Cost to light your bulb based on average usage of 3 hrs / day and 11 cents / kWh.

3



Life

The product's life, in years. This number is according to the average usage of 3 hours per day.

5



Energy Used

The energy the bulb consumes (in watts). The lower the wattage, the less energy used and the lower electricity costs.

4



Light Appearance

Indicates the hue of the color emitted. Warm / Soft White colors (at or around 2700 Kelvin) have a lower color temperature and an inviting, comfortable and relaxing atmosphere similar to the light from an incandescent bulb. Cool / Daylight bulbs (closer to the max of 6500 Kelvin) create a bright, clean and lively mood with a bluish tone.

CREE

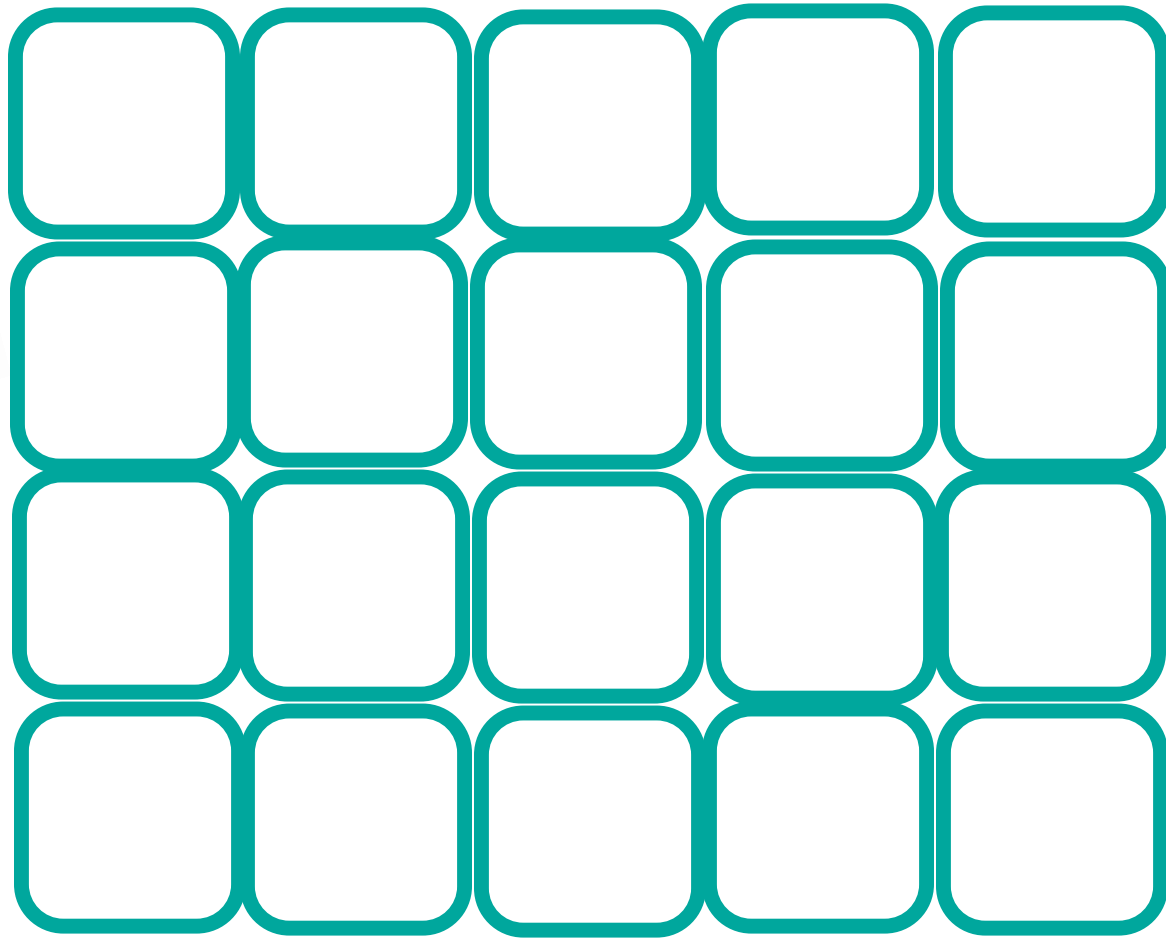
creebulb.com

Energy-Efficient Light Bulbs

Cost of Operation Over 5 Years



53 w



20 bulbs

Incandescent

\$ 40 = bulbs

\$ 170 = electricity

\$ 210 = total cost



18 w



3 bulbs

CFL

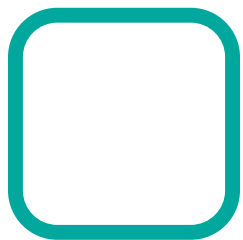
\$12 = bulbs

\$58 = electricity

\$70 = total cost



13.5 w 1 bulb



LED

\$16 = bulb

\$43 = electricity

\$59 = total cost

75 watt-equivalent bulbs. 1,000 hour incandescent lifetime, 10,000 CFL lifetime, 25,000 LED lifetime. Bulbs on 12 hours a night for 5 years=21,900 hours. LADWP Tier 1 Rate of \$0.14617/kWh. Electricity cost = 21,900 hours / 1000 = 21.9 kWh * # Of Watts * \$0.14617/kWh. Bulb cost = \$2/incandescent, \$4/CFL, \$16/LED.

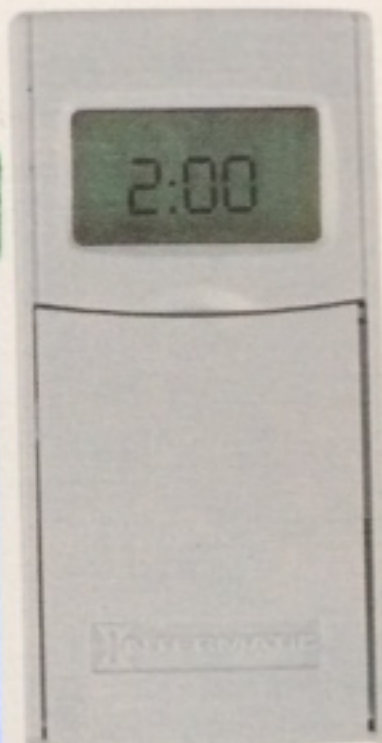


In-Wall Timer with Astro Feature

Controls Lighting & Motor Loads

- Simple to install and program
- Automatically changes sunrise & sunset times
- Optional random programming and individual programs give your home a lived-in look
- Memory guard protects against power failure
- Battery included


TITLE
CA 20
LISTED



White

ST01



CREE 



soft white

LED

75w

replacement

uses only 13.5 Watts

Brightness

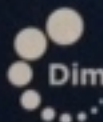
1100

lumens

Estimated
Energy Cost

\$1.63

per year



Dimmable



Omnidirectional



Save
\$50
IN ENERGY
COSTS**



PHILIPS

**Dusk to Dawn
EnergySaver**

MINI TWISTER

14w
replaces **60w***

SECURITY LIGHT

non-dimmable

* See local utility for details



MEDIUM BASE CFL

Brightness

900
lumens

Estimated
Energy Cost

\$1.69
per year

To save energy and costs, find the bulbs with the light output you need, then choose the one with the lowest watts.

