



# Bright lighting alternatives

---

Understanding the new Federal  
Energy Efficiency Legislation

**PHILIPS**  
sense and simplicity

**FASTENAL®**

# Understanding lamp efficiency standards

## How will the Federal Energy Efficient Legislation affect lighting choices?

New minimum energy efficiency standards for lighting are being phased-in. This will impact many incandescent reflector, and linear fluorescent lamps. Over the course of the next few years, some of these lamps will be discontinued and will be replaced by more efficient versions.

### When does this legislation take effect?

It will be phased-in 2012 through 2014 (California has begun one year earlier, starting January, 2011).

### What lamps will be affected?

- General Service Incandescent and Halogen Lamps
- Incandescent and Halogen Reflectors
- General Service Linear Fluorescents

## Federal DOE Legislation

The Department of Energy (DOE) issued new energy efficiency standards for fluorescent and incandescent lamps. In 2007, the Energy Independence and Security Act (EISA) was signed into law. It is intended to reduce energy usage and greenhouse gas emissions, and establish new energy efficiency standards for buildings, vehicles, and products—including lamps. This Federal legislation requires manufacturers to produce certain reflector lamps and other incandescent lamps that meet or exceed the new energy efficiency standards as stated in EISA.

The new standards are based on efficacy, and lamps must meet new minimum Lumen per Watt (LPW) requirements.

1/1/2011

**EISA (CA ONLY):**  
Affects 100W A-Shape Lamps

1/1/2012

**EISA (All States):**  
Affects 100W A-Shape Lamps, Medium Base Globes and Decorative Lamps  
Decorative Lamps with Candelabra Bases Rated Greater than 60W  
Decorative Lamps with Intermediate Bases Rated Greater than 40W

7/14/2012

**EISA:**  
Affects Reflector Flood/Spot PAR38, BR30, BR40 and R20 Ranging from 40W to 205W  
**DOE General Service Fluorescent Lamp (GSFL):**  
Affects some 4' and 8' T5, T8 and T12 Linear Fluorescents, and 2' U-Shape Fluorescents

12/1/2012

**EISA:**  
Affects 130 Volt Reflector Flood/Spot

1/1/2013

**EISA:**  
Affects 75W A-Shape Lamps, Medium Base Globes and Decorative Lamps

1/1/2014

**EISA:**  
Affects 40W and 60W A-Shape Lamps  
Globes and Decorative Lamps with Medium Bases Rated Greater than 40W

# Lumens, a new way of looking at light

## More lumens equals more light






Lumens per Watt (LPW) is an expression of how many lumens each lamp produces compared to how much energy (wattage) is put in. The lamp that produces the most lumens using one watt is the most efficient.

Lumen output and wattages are based on the most common products available for each medium base lamp. Actual lumen output and wattage may vary by product. This information only applies to general service, medium base lamps, as listed in section 321 of the Energy Independence and Security Act of 2007 (EISA). Other lamp types such as reflector, 3-Way and candelabra are not included.\*

\*Source: US Department of Energy

<http://www.nema.org/gov/energy/upload/NEMA-Summary-and-Analysis-of-the-Energy-Independence-and-Security-Act-of-2007.pdf>

A lumen is the true measurement of light output and brightness.

				
Incandescent	Lumens	LED Most efficient	CFL More efficient	Halogen/Incandescent Efficient
100W	1600	unavailable	up to 26W	up to 72W
75W	1100	unavailable	up to 23W	up to 53W
60W	800	up to 12W	up to 15W	up to 43W
40W	450	up to 9W	up to 11W	up to 29W

Can replacing a lamp really make a difference?

Lighting uses 19% of worldwide energy consumption.\* But that figure can shrink dramatically when customers switch to more energy efficient solutions.

\* Environmental News Network "Let There be Light—for the Next 35 Years: the Green Gift That Keeps on Giving," Page 1, Dec. 4, 2007 (<http://www.enn.com/energy/article/26500/print>).

# Incandescent lamps

Starting in 2012, phased-out lamps will need to be replaced with more energy efficient ones. Use this comparison guide to see the products affected by the Energy Independence and Security Act and to see the Philips energy efficient replacement options.



## Effective date:

January 2012 to January 2014

## Affected lamps:

- A-Shape
- Decorative Candles
- Globes
- Post Lights

## But there are a few exceptions to this rule:

- Appliance
- Outdoor
- Specialty

See the complete listing of exempt lamps in the *Lamp Exemptions* Section (page 20–21).

2012

100W A-Shapes,  
Medium Base Candles,  
Globes, and Post Lights  
>60W Candelabra Base  
Candles and Globes  
>40W Intermediate Base  
Candles and Globes

2013

75W A-Shapes,  
Medium Base  
Candles and Globes

2014

40W and 60W A-Shapes  
>40W Medium Base  
Candles and Globes

## What does this mean?

Customers will be able to continue to purchase the same type of lamps they are accustomed to, but with lower wattages and without compromising brightness.



# Incandescent lamps

Lamp Shape		Current Wattage	Effective Date <sup>2</sup>	Replacement		Better Option		Best Option	
A-Shape									
	A19 Medium Base	100W	Jan. 2012		EcoVantage 72W A19		Halogená Energy Advantage 70W T60		Energy Saver 23W Twister
	A19 Medium Base	75W	Jan. 2013		EcoVantage 53W A19 <sup>1</sup>		Halogená Energy Advantage 50W T60		Energy Saver 20W Covered/ Energy Saver 18W Twister
	A19 Medium Base	60W	Jan. 2014		EcoVantage 43W A19		Energy Saver 14W Covered/ Energy Saver 13W Twister		EnduraLED 12.5W A19 800 Series
	A19 Medium Base	40W	Jan. 2014		EcoVantage 29W A19		Energy Saver 9W Covered/ Energy Saver 9W Twister		EnduraLED 8W A19
Decorative Candles									
	Shape: B, F, BA Base: Medium	60W	Jan. 2012		EcoVantage 40W Decorative Candle <sup>3</sup>		Halogená Energy Advantage 40W Decorative Candle		Energy Saver 5W Candle
	Shape: B, F, BA Base: Candelabra	>60W	Jan. 2012		EcoVantage 40W Decorative Candle <sup>3</sup>		Halogená Energy Advantage 40W Decorative Candle		Energy Saver 9W Candle

1) Natural Light only.

2) California will prohibit sale of these products 1 year earlier.

3) Product available Fall, 2011.

# Incandescent reflector lamps

In 2012, phased-out reflector lamps will need to be replaced with energy efficient lamps. Use this comparison guide to see the products affected by the Energy Independence and Security Act and to see the Philips energy efficient replacement options.



## Effective date:

July 2012

## Affected lamps:

- Reflector Flood lamps BR30, BR40, PAR30 and PAR38
- Reflector Flood lamps R20 and PAR20

## But there are a few exceptions to this rule:

- BR30, BR40 Reflector Flood lamps rated 50 watts or less
- R20 Reflector Flood lamps rated 45 watts or less
- BR30, BR40 Reflector Flood lamps rated exactly 65 watts

See the complete listing of exempt lamps in the *Lamp Exemptions Section* (page 20–21).

2012

40W—205W Reflector Floods  
Higher Efficiency Standards Required














2014

65W BR30 and BR40

## What does this mean?

Customers will be able to continue to purchase the same reflector flood lamps they are accustomed to, but with lower wattages, and without compromising brightness or functionality.

# Incandescent reflector lamps

Lamp Shape		Current Wattage	Effective Date	Replacement		Better Option		Best Option	
R20/PAR20									
	R20	45W	Dec. 2014*		Halogená Energy Advantage 40W R20 Flood		Energy Saver 14W R20 Flood		EnduraLED 6W R20
	PAR20	50W	July 2012*		20W PAR20 Electronic Lamp				EnduraLED 7W PAR20
BR30									
	BR30	65W	Dec. 2014*		Halogená Energy Advantage 40W BR30		Energy Saver 15W R30		EnduraLED 13W BR30
BR40									
	BR40	65W	Dec. 2014*		Halogená Energy Advantage 40W BR40		Energy Saver 23W R40		Currently no equivalent option is available
PAR30									
	PAR30S (Short)	50W	July 2012		Energy Advantage 40W PAR30S IRC		Energy Saver 16W PAR30		EnduraLED 11W PAR30S
	PAR30L (Long)	75W	July 2012		Energy Advantage 50W PAR30L IRC				EnduraLED 11W PAR30L
PAR38									
	PAR38	60W	July 2012		Energy Advantage 50W PAR38 IRC		Currently no equivalent option is available		EnduraLED 17W PAR38 800 Series
	PAR38	90W	July 2012		Energy Advantage 60W PAR38 IRC		Energy Saver 23W PAR38		MasterColor 25W Integrated PAR38

\* All exceptions are expected to expire, dependent on future legislation.

# General service linear fluorescents

In 2012 many fluorescent lamps must meet minimum Lumen per Watt (LPW) requirements. These new standards apply to linear T5, T8 and T12 fluorescent lamps in 4' and 8' as well as 2' U-Shape sizes. Use this comparison guide to see the products affected by the Energy Independence and Security Act and to see Philips energy efficient replacement options.



## Effective date:

July 2012

## Affected lamps:

- 8 foot: T8,T12 Single-Pin Base  
T8,T12 High Output (HO)
- 4 foot: T8,T12 Medium Bi-Pin Base  
T5 Miniature Bi-Pin Base  
T5 High Output (HO)
- 2 foot: T8,T12 U-Shape Medium  
Bi-Pin Base

## But there are a few exceptions to this rule:

See the complete listing of exempted lamps in the *Lamp Exemptions Section* (page 20–21).

2012


Single-Pin,  
High Output,  
Medium Bi-Pin,  
Miniature Bi-Pin,  
U-Shape  
Higher Lumens per Watt Required

## What does this mean?

Customers will be able to continue to purchase similar lamps that they are accustomed to, but with better efficiency.



# General service linear fluorescents<sup>1</sup>

Lamp Shape	Color Temp. (Kelvin)	Minimum Lumens per Watt (LPW) Requirement	Replacement <sup>2</sup>	Energy Saver Upgrade <sup>2</sup>	Energy and Maintenance Saving Upgrade <sup>2</sup>
4' Linear					
	≤4500K	89 LPW	<b>T12:</b> Exempt Products	<b>T12:</b> No Current Philips Option	<b>T12:</b> No Current Philips Option
	4500K–7000K	88 LPW	<b>T8:</b> 800 Series T8 Fluorescent Lamps	<b>T8:</b> Energy Advantage T8 28W Fluorescent Lamps	<b>T8:</b> Energy Advantage T8 25W Lamps Extra Long Life Energy Advantage 25W Lamps EnduraLED T8 Tube Specifier Lamps
8' Linear					
	≤4500K	97 LPW	<b>T12:</b> 800 Series Energy Advantage Lamps	<b>T12:</b> No Current Philips Option	<b>T12:</b> No Current Philips Option
	4500K–7000K	93 LPW	<b>T8:</b> 800 Series Energy Advantage Lamps	<b>T8:</b> No Current Philips Option	<b>T8:</b> 800 Series PLUS Lamps
	≤4500K	92 LPW	<b>T12:</b> Exempt Products	<b>T12:</b> No Current Philips Option	<b>T12:</b> No Current Philips Option
	4500K–7000K	88 LPW	<b>T8:</b> 800 Series PLUS Lamps	<b>T8:</b> No Current Philips Option	<b>T8:</b> No Current Philips Option
2' U-Shape					
	≤4500K	84 LPW	<b>T12:</b> Exempt Products	<b>T12:</b> No Current Philips Option	<b>T12:</b> No Current Philips Option
	4500K–7000K	81 LPW	<b>T8:</b> FB32T8 800 Series	<b>T8:</b> FB32T8 800 Series Extra Energy Advantage Lamps	<b>T8:</b> No Current Philips Option

1) All replacement options reflect current Philips product offerings. Other options will be available but have not been noted above.

2) Any T12 to T8 conversion requires ballast change. Check with your Philips or Distributor Sales Representative for more information.

# Labeling laws for lighting

To help customers understand lamp efficiency, the EISA legislation directed the Federal Trade Commission (FTC) to change its current labeling requirements for all medium based general service incandescent, halogen, LED and compact fluorescent lamps. Manufacturers are required to provide brightness (lumens) and energy-cost information on packaging within a detailed “Lighting Facts” label.

This new label will help customers base their purchase decision on the brightness (lumens) of the lamp and cost of operation, instead of wattage.\* As more energy efficient lamps become available and less efficient, higher wattage lamps are phased-out, customers will have this new source of information to help make their purchase decisions.

## Effective date:

2011 (Exact date pending FTC final ruling)

## Affected lamps:

- General Service Incandescent and Halogen Household lamps
- Incandescent and Halogen Reflectors
- Compact Fluorescent Household lamps
- General Service LED lamps

## But there are a few exceptions to this rule:

- Shatter-Resistant lamps
- Vibration-Resistant lamps
- 3-Way lamps
- Globes and Candles
- Intermediate, Candelabra and Non-Screw Base lamps

See the complete listing of exempted lamps in the *Lamp Exemptions Section* (page 20–21).

\*<http://www.ftc.gov/opa/2010/06/lightbulbs.shtm>

# Understanding the new FTC label



## How will the Federal Trade Commission (FTC) Labeling Laws affect customers?

A new, energy usage label will be required on most lamp packages. These new labels will help your customer choose the right energy-efficient lamps for your needs.

### Package Front

**Brightness:** Measured in lumens.

**Estimated Yearly Energy Cost:** Based on 3 hrs/day. 11¢ per kWh (kilowatt hour). Cost depends on rates and use.

Brightness/Brillo	Estimated Energy Cost/ Costo Estimado de Energía
535 lumens/lúmenes	\$5.42 per year/por año

### Package Back

**Brightness:** Measured in lumens. . . . .

**Estimated Yearly Energy Cost:** Based on 3 hrs/day. 11¢ per kWh (kilowatt hour). . . . . Cost depends on rates and use.

**Life:** Based on 3 hours per day. . . . .

**Light Appearance:** Example, whether the lamp provides warm or cool light. . . . .

**Energy Used:** Watts—the amount of energy the lamp uses. . . . .

Lighting Facts/Datos de Iluminación Per Bulb/Por Bombilla	
<b>Brightness/Brillo</b>	535 lumens/lúmenes
<b>Estimated Yearly Energy Cost/ Costo Estimado Anual de Energía</b>	\$5.42
Based on 3 hrs/day, 11¢/kWh. Cost depends on rates and use./Basado en 3 hrs/día, 11¢/kWh. Costo depende de la tarifa y el uso.	
<b>Life/Duración</b>	2.7 years/años
Based on 3 hrs/day/Basado en 3 hrs/día	
<b>Light Appearance/Apariencia de Iluminación</b>	
Warm/Cálida ————— Cool/Fría	
2780 K	
<b>Energy Used/Usó de Energía</b>	45 watts/vatios

# Lamp exemptions

The following lamp types are exempt from Legislation.

## INCANDESCENT HOUSEHOLD LAMPS—EISA 2007:

- 3-Way, Appliance (Maximum 40W), Colored Party, Black Light, Infrared, Plant Light, Sign Service, Silver Bowl, Bug-A-Way, and Rough Service lamps
- Post Lights (below 100W) and Nightlights
- Specialty Incandescent, Marine, Marine Signal Service, Mine Service, and Traffic Signal lamps
- Decorative Globes G40 lamps (all wattages)

The following lamps, if less than or equal to 60 Watts, are exempt:

- Decorative Candles (B, BA, CA) with Candelabra base
- Decorative Globes (G16½, G25, G30) with Candelabra base
- Vibration Service lamps

### The following lamps if less than or equal to 40 Watts are exempt:

- Specialty Tubular (T-8)
- Decorative Candles (B, BA, CA) with medium and intermediate bases
- Decorative Globes (G16½, G25, G30) with medium and intermediate bases
- M14

## INCANDESCENT REFLECTOR LAMPS—EISA 2007:

- Colored PARs, Rough Service, and Vibration Service lamps

### Exemptions are expected to expire in 2014 for the following:

- 45W or Less: R20 and BR19
- 50W or Less: BR30, ER30, BR40, and ER40
- 65W BR30, BR40, and ER40

## GENERAL SERVICE FLUORESCENT LAMPS (GSFL)—DOE 2009 RULEMAKING:

- All lamps with a CRI greater than or equal to 87 such as: CoolWhite Deluxe/Daylight Deluxe; ColorTone50
- Outdoor use: Cool White High Output (F96T12/CW/HO-O) and Daylight/High Output (D/HO-O)
- Shatter Resistant lamps: TuffGuard
- Other length lamps not specifically mentioned (such as 2', 3', 5', 6' and 7' lamps)
- Lamps greater than 7000 Kelvin, Plant Growth, Cold Temperature, Colored, Reflector, Aperture, Reprographic, and UV lamps

# Lamp exemptions

The following lamp types are exempt from FTC labeling requirements:

## ALL NON-GENERAL SERVICE LAMPS:

- Party lamps
- Rough Service lamps
- Appliance lamps
- Black Light lamps
- Bug-A-Way lamps
- Colored Party lamps
- Infrared lamps
- Left-Hand Thread lamps
- Marine lamps
- Marine Signal Service lamps
- Mine Service lamps
- Plant Light lamps
- Certain Reflector lamps
- Shatter-Resistant lamps (including a Shatter-Proof lamp and a Shatter-Protected lamp)
- Sign Service lamps
- Silver Bowl lamps
- Showcase lamps
- 3-Way Incandescent lamps
- Traffic Signal lamps
- Vibration Service lamps

### Notes:

Lamps greater than or equal to 125V (including those rated at 130V) are subject to 15% higher LPW efficacy standards than products rated at <125V. 130V incandescent lamps will no longer be available after July 2012.

California will make A-Shape (EISA Section 321) laws effective one year before all other states.

# References

## EISA (ENERGY INDEPENDENCE AND SECURITY ACT OF 2007)

### Incandescent: Household, Decorative and Post Lamps (Section 321)

<http://www1.eere.energy.gov/femp/regulations/eisa.html>

### IRL Rulemaking (Section 322)

[http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/incandescent\\_lamps.html](http://www1.eere.energy.gov/buildings/appliance_standards/residential/incandescent_lamps.html)

[http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/incandescent\\_lamps\\_standards\\_final\\_rule.html](http://www1.eere.energy.gov/buildings/appliance_standards/residential/incandescent_lamps_standards_final_rule.html)

## CALIFORNIA A-LINE RULEMAKING

<http://www.energy.ca.gov/siting/title20/index.html>

<http://www.energy.ca.gov/lightbulbs/lightbulbfaqs.html>

## DOE RULEMAKING 2009 (DEPARTMENT OF ENERGY RULEMAKING)

[http://www1.eere.energy.gov/buildings/appliance\\_standards/printable\\_versions/eisa2007.html](http://www1.eere.energy.gov/buildings/appliance_standards/printable_versions/eisa2007.html)

## FLUORESCENT: NEW 2012 STANDARDS FOR GENERAL SERVICE

### FLUORESCENT LAMPS (GSFL)

[http://www1.eere.energy.gov/buildings/appliance\\_standards/residential/incandescent\\_lamps\\_standards\\_final\\_rule.html](http://www1.eere.energy.gov/buildings/appliance_standards/residential/incandescent_lamps_standards_final_rule.html)

## FTC (FEDERAL TRADE COMMISSION GUIDELINES) LABELING (2010)

<http://www.ftc.gov/opa/2010/06/lightbulbs.shtm>

PDF Link: <http://www.ftc.gov/os/2010/06/P084206lamplabeling.pdf>

# Technical terms

**GENERAL SERVICE INCANDESCENT LAMPS** are defined as standard incandescent or halogen type lamps that:

- Are intended for general service applications
- Have a medium base
- Have a lumen range of 310–2600 (40–100 Watts in today's wattages)
- Are capable of operating at least partially in the range of 110–130 Volts

**CANDELA** is the measurement of light intensity emitted by a light source in a specific direction.

**LUMENS** is the true measurement of light output and brightness.


**LUMENS PER WATT (LPW)** is an expression of how many lumens we get from a lamp compared to how much energy (wattage) we put in. The lamp that produces the greatest number of lumens per one watt of energy is the most efficient lamp.

**COLOR RENDERING INDEX (CRI)** is the ability of a lamp to show the colors of objects accurately on a scale of 0 to 100.

- As a general rule "the higher the better"—lamps with high CRI (80–100 CRI) tend to make people and objects look better than lamps with lower CRIs
- Light sources with a 100 CRI are incandescent lamps, halogen lamps, and outdoor sunlight
- Good = 60–79 CRI, Better = 80–89 CRI, Best = 90–100 CRI

**KELVIN** is the unit of measure for color temperature.

**COLOR TEMPERATURE** is a measure of the lamp's color when illuminated, and is measured in degrees Kelvin. The higher the number, the whiter, and then bluer, or cooler. The lower the number, the more yellow, or warmer the color. The whiteness of the light itself creates a mood in the lighted space.



Kelvin	2700	3000	3500	4100	6500
Atmosphere	Warm		Neutral	Cool	Daylight
Mood Created	Inviting, Comfortable, Relaxing		Efficient, Balanced	Bright, Clean, Lively	Crisp, Refreshing, Energetic



© 2011 Philips Lighting Company, A Division of  
Philips Electronics North America Corporation.  
All rights reserved.  
Printed in USA 8/11  
[www.philips.com](http://www.philips.com)

Philips Lighting Company  
200 Franklin Square Drive  
Somerset, NJ 08873  
1-800-555-0050

**HOW DO YOU PREFER TO BUY?**

**LOCAL STORE / PERSONAL SERVICE / INVENTORY SOLUTIONS / FASTENAL.COM**