



## ENERGY STAR® Program Requirements for CFLs Partner Commitments

3rd DRAFT: 8/26/03

### Eligible Organizations: Manufacturers and Distributors of Compact Fluorescent Lamps (CFLs)

#### Commitment

The following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacturing and/or distributing of ENERGY STAR qualified CFLs. The ENERGY STAR PARTNER must adhere to the following program requirements:

- Comply with current ENERGY STAR Eligibility Criteria, defining the performance criteria that must be met for use of the ENERGY STAR certification mark on CFLs and the testing criteria for CFLs. DOE may, at its discretion, conduct tests on products that are referred to as ENERGY STAR qualified. These products may be obtained on the open market, or voluntarily supplied by PARTNER at DOE's request;
- Comply with current ENERGY STAR Logo-IdentityUse Guidelines, describing how the ENERGY STAR marks/logos and name must may be used. PARTNER is responsible for adhering to these guidelines and for ensuring that all its authorized representatives, such as advertising agencies, dealers, and distributors, are also in compliance;
- Qualify, or private label at least one ENERGY STAR qualified CFL model within one year of activating the CFL portion of the agreement. When PARTNER qualifies the product, it must meet the criteria in effect at that time;
- Once the PARTNER submits its first qualified model to ENERGY STAR, the PARTNER's company organization name will be listed as an ENERGY STAR PARTNER (<http://www.energystar.gov>);
- Provide clear and consistent labeling of ENERGY STAR qualified CFLs. The ENERGY STAR certification mark/label must be clearly displayed on qualified product packaging, on the PARTNER's Internet web site where information about their ENERGY STAR qualified models is displayed, and in qualified product literature (i.e., catalogs, user manuals, spec sheets, etc.). It is also required that the ENERGY STAR certification mark/logo appear on the front of the qualified product's packaging;
- Provide to DOE quarterly, an-quarterly updated list of their ENERGY STAR qualifying CFL models. Partners must inform DOE in these updates if any existing qualified CFL models have updated test data or reports, revised model numbers and/or product numbers, or will be discontinued or phased out and the timing of such. PARTNER will provide these quarterly updates in order to remain on the list of participating ENERGY STAR CFL partners/product manufacturers;
- Notify DOE, within 30 days, if the designated supplier of any qualified private labeled CFLs changes to a new supplier. The PARTNER is required to submit, in writing, an updated Private Labeler Qualification Form that identifies the new original equipment manufacturer, specific model, and other packaging information.
- For each qualifying CFL model, provide to DOE, third-party, accredited test data reports for the specific model(s) to certify that the lamp(s) have met the required safety and performance tests criteria;
- For each qualifying CFL model, provide to DOE product packaging samples (either electronic or hard copy for the specific model(s)) to certify that the lamps meet the required packaging requirements. DOE will only add models/CFLs to its Qualified Product List after review and approval of the product test results and product packaging;

- Financially contribute to an ENERGY STAR-approved independent third-party verification and testing program. ENERGY STAR requires verification of partners' participation and will remove partners from the program who do not participate in an approved verification and testing program.
- Provide to DOE (~~or an identified contractor to DOE~~), on a bi-annual basis, unit shipment data ~~or other market indicators to assist in determining the market penetration of ENERGY STAR CFLs~~. Specifically, PARTNER must submit the total number of ENERGY STAR qualified CFLs shipped (in units by model) ~~or an equivalent measurement as agreed to in advance by DOE and PARTNER~~. PARTNER is also encouraged to provide ENERGY STAR qualified unit shipment data segmented by meaningful product characteristics (e.g. bulb type/style), total unit shipments for each model in its product line, and percent of total unit shipments that qualify as ENERGY STAR. The data for each half of the calendar year should be submitted to the ENERGY STAR CFL program contractor DOE, preferably in electronic format, no later than February 15<sup>th</sup> - March 31<sup>st</sup> (for July-December) for second half of the year and August 15<sup>th</sup> - July 31<sup>st</sup> (for January-June) for first half of the year, and may be provided directly from the PARTNER or through a third party that works directly with the PARTNER. ~~The data will be used by DOE only for program evaluation purposes and will be closely controlled. If requested under the Freedom of Information Act (FOIA), DOE will argue that the data is exempt. Any information used will be masked by DOE so as to protect the confidentiality of the PARTNER;~~
- Notify DOE of a change in the designated responsible party or contacts for CFLs within 30 days.

#### Performance for Special Distinction

In order to receive additional recognition and/or support from DOE for its efforts within the Partnership, the PARTNER may consider the following voluntary measures and should keep DOE informed on the progress of these efforts:

- Consider energy efficiency improvements in company facilities and pursue the to benchmark their buildings through the ENERGY STAR label for Buildings program;
- Purchase ENERGY STAR qualified labeled products. Revise the company purchasing or procurement criteria to include ENERGY STAR. Provide procurement officials' contact information to DOE for periodic updates and coordination. Circulate general ENERGY STAR qualified labeled product information to employees for use when purchasing products for their homes;
- Ensure the power management feature is enabled on all ENERGY STAR qualified monitors in use in company facilities, particularly upon installation and after service is performed;
- Provide general information about the ENERGY STAR program to employees whose jobs are relevant to the development, marketing, sales, and service of current ENERGY STAR qualified labeled product models;
- Feature the ENERGY STAR mark label(s) on PARTNER web site and in other promotional materials. If information concerning ENERGY STAR is provided on the PARTNER web site, DOE may provide links where appropriate to the PARTNER web site;
- Provide a simple plan to DOE outlining specific measures PARTNER plans to undertake beyond the program requirements listed above. By doing so, DOE may be able to coordinate, communicate, and/or promote PARTNER's activities, provide a DOE representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR web pages, etc. The plan may be as simple as providing a list of planned activities or planned milestones that PARTNER would like DOE to be aware of. For example, activities may include: (1) increase the availability of ENERGY STAR qualified labeled products by converting the entire product line within two years to meet ENERGY STAR guidelines; (2) demonstrate the economic and environmental benefits of energy efficiency through special in-store displays twice a year; (3) provide information to users (via the web site and user's manual) about energy-saving features and operating characteristics of ENERGY STAR qualified products, and (4) build awareness of the ENERGY STAR Partnership and brand identity by collaborating with DOE on one print

advertorial and one live press event;

- Provide quarterly, written updates to DOE as to the efforts undertaken by PARTNER to increase availability of ENERGY STAR qualified products, and to promote awareness of ENERGY STAR and its message.



**ENERGY STAR® Program Requirements for CFLs**  
**ENERGY STAR Eligibility Criteria**  
**Energy-Efficiency Criteria – Version 3.0**

Below are the product criteria for ENERGY STAR qualified Compact Fluorescent Lamps (CFLs) - Version 3.0. A product must meet all of the criteria in order to be qualified as ENERGY STAR by its manufacturer or distributor.

- 1) Scope: This ENERGY STAR CFL criteria covers the requirements for self-ballasted, screw-based CFLs and lamp systems, including:
- A. Medium-based, compact fluorescent lamps with integral electronic ballasts;
  - B. Circline lamps with a maximum diameter of 9 inches and square lamps, with a maximum side length of 8 inches with medium base electronic ballasts that are tested and packaged with the lamp.
  - C. Medium-based compact fluorescent lamps with integral electronic ballasts, which have a translucent cover over the bare fluorescent tube. The cover may be globe, bullet, pear, torpedo, or any other shape.
  - D. Medium-based compact fluorescent lamps with integral electronic ballasts, which have a reflector that may be open or enclosed. The lamp shall be primarily intended to replace wide beam incandescent reflector lamps.

The intent of this ENERGY STAR program is to move consumers from incandescent to energy-efficient compact fluorescent lighting.

The ENERGY STAR qualified compact fluorescent lamps program is primarily intended to qualify products for residential applications.

- 2) Definitions:
- A. Self-ballasted compact fluorescent lamp – A compact fluorescent lamp unit that incorporates, permanently enclosed, all elements that are necessary for the starting and stable operation of the lamp, and which does not include any replaceable or interchangeable parts.
  - B. Rated voltage – The voltage marked on the lamp.
  - C. Rated wattage – The wattage marked on the lamp.
  - D. Rated supply frequency – The frequency marked on the lamp.
  - E. Initial performance values – The photometric and electrical characteristics at the end of the 100-hour aging period.
  - F. Rated luminous flux or lumen output – Initial lumen rating (100-hour) declared by the manufacturer.
  - G. Lumen maintenance – The luminous flux or lumen output at a given time in the life of the lamp and expressed as a percentage of the initial luminous flux. The mean lumens are the value at 40% of rated life.
  - H. Average rated lamp life – The length of time declared by the manufacturer at which 50% of any large number of lamps reaches the end of their individual lives.
  - I. Lamp color – The color characteristics of a lamp as defined by the color appearance and the color rendition.
  - J. Color appearance – The actual color of the lamp is called the color appearance and is defined in terms of the spectral tri-stimulus values (color coordinates) according to the recommendations of the CIE Publication No. 13.3 – 1995. For color coordinates near the black body loci, the correlated color temperature (Kelvin) can be used to define color appearance.
  - K. Color rendition – The effect the spectral characteristic of the light emitted by the lamp has on the color appearance of the objects illuminated by it is called color rendition. The color-rendering index is defined in terms of a comparison of the spectral tri-stimulus values of the objects under test illumination and standard illumination according to the recommendations of CIE Publication No.13.3-1995
  - L. Starting time – The time needed after switching on for the lamp to start fully and remain lighted.
  - M. Run-up time – The time needed after switching on the supply for the lamp to reach 80.0% of its

stabilized luminous flux.

N. Starting temperature – The minimum and maximum temperatures at which the lamp will reliably start.

O. Power factor – The active power divided by the apparent power (i.e. product of the rms input voltage and rms input current of a ballast).

P. Private Labeled CFL – ENERGY STAR partner who purchases an ENERGY STAR qualified CFL and markets the model under its own brand name as an ENERGY STAR qualified CFL.

Q. Retired Product – A product that was properly qualified as ENERGY STAR, but is no longer manufactured (as of the date on the list), but may still be available in the market.

3) Reference Standards: ENERGY STAR qualified compact fluorescent lamps and lamp systems shall comply with the relevant clauses of the following standards, unless the requirements of the ENERGY STAR Criteria are more restrictive:

ANSI C78.901-2001	<i>American National Standard for Electric Lamps – Single Base Fluorescent Lamps – Dimensional and Electrical Characteristics</i>
ANSI C78.5 – 1997	<i>Specifications for Performance of Self-Ballasted Compact Fluorescent Lamps</i>
ANSI C78.375 – 1997	<i>Guide for Electrical Measurements of Fluorescent Lamps</i>
ANSI/IEEE C62.41 – 1991 <u>(01-May 1991)</u>	<i>Surge Voltages in Low-Voltage AC Power Circuits, Recommended Practice for</i>
CIE Publication No. 13.3 – 1995	<i>Method of Measuring and Specifying Color Rendering of Light Sources</i>
IESNA LM-9 – 1999	<i>Electric &amp; Photometric Measurement of Fluorescent Lamps</i>
IESNA LM-40 – 2001	<i>Approved Method for Life Performance Testing of Fluorescent Lamps</i>
IESNA LM-65 – 2001	<i>Life Testing of Single-ended Compact Fluorescent Lamps</i>
IESNA LM-66-00 – 2000	<i>Electrical and Photometric Measurements of Single Ended Compact Fluorescent Lamps</i>
UL 1993 – 1993	<i>Standard for Self-Ballasted Lamps and Lamp Adapters</i>

ENERGY STAR qualified compact fluorescent lamps and lamp systems must comply as applicable with the labeling requirements of the U.S. Federal Trade Commission (16 CFR Part 305.1-.19; more information can be found on this web site: <http://www.ftc.gov/bcp/online/pubs/buspubs/appliance.htm#howcomply> or [http://www.access.gpo.gov/nara/cfr/cfrhtml\\_00/Title\\_16/16cfr305\\_00.html](http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_16/16cfr305_00.html) and the EMI requirements of the U.S. Federal Communications Commission located under 47 CFR [including Part 2 \(Equipment Authorization\)](#) and Part 18 [\(Technical Standards and Emission Limits\) for consumer RF Lighting Equipment](#):-

#### 4. CFL Requirements for testing

Photometric Performance Requirements				
Criteria Item	ENERGY STAR Requirements	Sample Size	Laboratory Requirement	Submittal Time
Lamp Power (Watts) & Configuration <sup>1</sup>	<b>Minimum Efficacy:</b> Lumens/watt (Based upon initial lumen data <sup>2</sup> )	10 units per model – 5 base-up/5 base-down unless specific use or position restricted by the manufacturer. If position restricted, manufacturer must test all 10 samples in restricted position (i.e. – reflector lamp used in recessed cans – must test all 10 samples in base up position)	Must use a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) <sup>3</sup> .	Initial Qualification
<u>Bare lamp:</u> Lamp power < 15 Lamp power ≥ 15	45.0 60.0			
<u>Covered lamp (no reflector)</u> Lamp power < 15 15 ≥ lamp power < 19 19 ≥ lamp power < 25 Lamp power ≥ 25	40.0 48.0 50.0 55.0			
<u>W/Reflector:</u> Lamp power < 20 Lamp power ≥ 20	33.0 40.0			
1,000-hour Lumen Maintenance	Average <u>lumen output measurement</u> of 10 lamps <u>tested</u> must be greater than 90.0% of initial (100-hour) lumen output @ 1,000 hours of rated life.			
Color Rendering (CRI)	Average of <u>the</u> 10 samples tested must be greater than 80.0	10 units per model – 5 base-up/5 base-down unless specific use or position restricted by the manufacturer. If position restricted, manufacturer must test all 10 samples in restricted position (i.e. – reflector lamp used in recessed cans – must test all 10 samples in base up position)	NVLAP only	Initial Qualification
Correlated Color Temperature (CCT)	Average of 10 samples ( <u>rounded to the nearest 50 K</u> ) <u>tested</u> must <u>be one – fall into one</u> of the following discreet temperature <u>ranges</u> :  <u>2500 - 269900K: Warm White</u> <u>2700 – 309900K: Soft White</u> <u>3100 - 4199K: White</u> <u>4200 - 5000K: Cool White</u> <u>6500K (or greater): Daylight</u>  <u>The exact temperature and temperature terminology</u> must be displayed on the packaging <u>to aid in consumer education.</u> <u>CFL models that are available in multiple correlated color temperatures must be individually tested for ENERGY STAR qualification.</u>			
Lumen Maintenance	Average of 10 samples <u>tested</u> must be greater than 80.0% of initial (100-hour) rating at 40% of model's rated life (Per ANSI C78.5, Clause 4.10)			

<sup>1</sup>Take performance and electrical requirements at the end of the 100-hour aging period according to ANSI C78.5. The lamp efficacy shall be the average of the lesser of the lumens per watt measured in the base up -and base-down positions an/or other specified positions. Use wattages placed on packaging to select proper specification efficacy in this table, not measured wattage.

<sup>2</sup> Efficacies are based on measured values for lumens and wattages from pertinent test data. Wattages and lumens placed on packages may not be used in calculation and are not governed by this criterion. For multi-level, such as 3-way, or dimmable systems, measurement must be at the highest wattage setting listed for model. Acceptable efficacy and 1,000-hour and lumen maintenance at 40% of rated life average lumen output measurement error is - 3%.

<sup>3</sup> For a list of NVLAP accredited labs, visit <http://ts.nist.gov/ts/htdocs/210/214/scopes/eelit.htm>

Self-certification is a declaration of conformance by the manufacturer to the requirement. For self certification where data are required (sample size is specified in the requirement), the manufacturer may use data obtained directly from the manufacturer's own facilities that are neither NVLAP nor A2LA accredited.

Electrical Performance Requirements <sup>5</sup>				
Criteria Item	ENERGY STAR Requirements	Sample Size	Laboratory Requirement	Submittal Time
Power Factor	<u>Average of 10 samples tested must be greater than</u> -0.50	10 units per model – 5 base-up/5 base-down unless specific use or position restricted by the manufacturer. If position restricted, manufacturer must test all 10 samples in restricted position.	Use NVLAP or A2LA <sup>4</sup> accredited labs	Initial Qualification
Run-up Time	<u>Average of 10 samples tested must be less than</u> 3.0 minutes per ANSI C78.5, clause 3.11 and 4.8			
Starting Time	Time after switching on until full start (and remain lighted) shall be an average of <u>less than</u> < 1.00 second			
Transient Protection	Per ANSI/IEEE C62.41, Category A, 7 strikes <u>Note:</u> One failure to meet 7 strikes will result in test failure and therefore, failure to meet the criteria.	A minimum of five (5) lamps tested in the <u>base up</u> position unless the product is labeled as a position-restricted by the manufacturer. If position restricted, test lamps in specified position <i>Must be unique sample for this test only</i> .	<u>Use NVLAP or A2LA<sup>4</sup> accredited labs</u> <u>Self-certification<sup>7</sup></u>	
Operating Frequency	≥ 40,0 kHz	Determined by Test Lab	FCC laboratory or manufacturer's laboratory <sup>6</sup>	
Electromagnetic Interference	Compliance with FCC 47 CFR <u>including Part 2 (Equipment Authorization) and Part 18 (Technical Standards and Emission Limits) for consumer RF Lighting Equipment</u> requirements for consumer limits			
Base	Medium screw base - E26/24	Self-certification <sup>7</sup>		
Starting Temperature	<u>Package must state the minimum starting temperatures or geographical zone of use and any other conditions for reliable starting to meet the starting time requirements of ANSI C78.5, Clause 4.7</u>			
Compatibility with Controls	<u>Lamp package must clearly state any known incompatibility with photo controls, dimmers or timing devices.</u>			

<sup>4</sup>For a list of American Association for Laboratory Accreditation (A2LA), visit [www.a2la.org](http://www.a2la.org)

<sup>5</sup> Input voltage must be 120 V and frequency must be 60 Hz

<sup>6</sup>Laboratory must be listed on FCC Office of Engineering & Technology web site, and with either NVLAP or A2LA accreditation.

<sup>7</sup>Self-certification is a declaration of conformance by the manufacturer to the requirement. For self-certification where data are required (sample size is specified in the requirement), the manufacturer may use data obtained directly from the manufacturer's own facilities that are neither NVLAP nor A2LA accredited.

**Lifetime Performance and Packaging Requirements**

Criteria Item	ENERGY STAR Requirements	Sample Size/Specific Requirements	Laboratory Requirement	Submittal Time
Rapid Cycle Stress Test	Per ANSI C78.5 and IESNA LM-65 (clauses 2,3,5, and 6) <u>Exception:</u> Cycle times must be 5 minutes on, 5 minutes off. Lamp will be cycled once for every two hours of rated <u>lamp life</u> . At least <u>5 out of the 6 sample lamps must meet or exceed</u> the minimum number of cycles.	6 units, base up or down as stated by manufacturer, <i>Must be unique sample for this test only</i>	NVLAP, A2LA, or ISO9000 certified laboratories or facilities	Initial Qualification
Interim Life Test	@ 40% of rated life report on lamp life:  <ul style="list-style-type: none"> <li>○ <u>One sample failure, acceptable:</u></li> <li>○ <u>Two sample failures, requires submission of a product failure report from accredited testing laboratory to describe reasons for failures:</u></li> <li>○ <u>Three sample failures, immediate unqualification/disqualification</u></li> </ul>	10 units per model, 5 base-up/ 5 base-down, unless specific use or position appears on packaging. <i>Interim and final average rated lifetime tests must use the same samples.</i>		Initial Qualification
Average Rated Lamp Life	≥ 6,000 hours as declared by the manufacturer on packaging and qualification form. Partner must complete lifetime test to stated <u>rated</u> lamp life on packaging (i.e. – if CFL is marketed as a 10,000 hour CFL, it must complete the life time test to 10,000 hours).			Full Qualification
Warranty <i>(Applicable to normal residential use)</i>	<ul style="list-style-type: none"> <li>□ Product packaging must state “Warranty” or “Limited Warranty”.</li> <li>• An “800” number, <u>r-and-mailing address, and web site (if applicable)s (or e-mail address)</u> for consumer complaint resolution.</li> <li>□ <u>For Residential Applications: Warranty or limited warranty statement</u> must cover at least <u>a minimum of 24 months (2 years)</u> from date of purchase <u>based on 4 hour per day of use</u>.</li> <li><u>For Commercial Applications: Warranty or limited warranty statement</u> must cover at least <u>a minimum of 12 months, or 1 year, from date of purchase.</u></li> </ul>	Must submit electronic draft or hard-copy draft of specific CFL model. Packaging must include the following information to be reviewed for qualification requirements: <ul style="list-style-type: none"> <li>○ <u>model number</u></li> <li>○ <u>Wattage</u></li> <li>○ <u>lumen output (must be 100 hour average)</u></li> <li>○ <u>Average rated lifetime</u></li> <li>○ <u>Correlated color temperature + terminology</u></li> <li>○ <u>Warranty (based on application type and average hours/day)</u></li> <li>○ <u>800 number and/or address</u></li> <li>○ <u>Required Standard Disclaimer for CFL Lifetime Claim (for residential use)</u></li> <li>○ <u>Equivalency to incandescent (if applicable)</u></li> <li>○ <u>Starting temperature</u></li> <li>○ <u>Electromagnetic interference</u></li> <li>○ <u>Incompatibility with controls</u></li> <li>○ <u>Mercury Statement</u></li> </ul>	Self-certification	Initial Qualification
Product Packaging Language	In English, or English with additional languages. <u>For products that will be sold in Canada, packaging must include both English and French.</u>			
FTC Labeling Requirements	ENERGY STAR qualified compact fluorescent lamps and lamp systems must comply with the labeling requirements of the U.S. Federal Trade Commission Packaging Laws - FTC 16CFR Part 305.1-19 <sup>8</sup>			
Required Disclaimer for CFL Guarantee/ Lifetime Claims for Residential Use	<u>For residential use CFLs, partners must adhere to the chart below to reference how long the CFL will last- (i.e. “guaranteed to last 4 years” )and must include footnote to reference the 4 hours of use per day.</u>			
Starting Temperature	<u>Package must state the minimum starting temperatures or geographical zone of use and any other conditions for reliable starting to meet the starting time requirements of ANSI C78.5, Clause 4.7</u>			

<u>Incompatibility with Controls and Application Exceptions</u>	<u>Lamp package must clearly state any known incompatibility with photo controls, dimmers or timing devices. In addition, packaging should state specific applications exceptions. (i.e. - applications that the CFL should not be used in)</u>		
<u>Mercury Statement</u>	<u>Package must state "Lamp Contains Mercury" and include Mercury symbol.</u>  <u>It is recommended (not required) that partners also provide a web site and an 800 number to direct consumers to access specific information on proper CFL disposal.</u>		
<u>CFL/Incandescent Equivalency<sup>9</sup></u>	Partner must use the chart below to declare an incandescent equivalency based on the initial average 100-hour lumen output measurement. If the luminous flux falls outside of the specified range, either do not display an incandescent equivalent or display the lower incandescent wattage equivalence.	Average of data used from 100-hour lumen output measurement	NVLAP only

<sup>9</sup>For information on how CFLs must comply with the FTC's Appliance labeling act, visit <http://www.ftc.gov/bcp/online/pubs/buspubs/appliance.htm#howcomply>.

<sup>9a</sup>If displaying an incandescent equivalence for commonly used A-shaped bulbs, the CFL's initial 100-hour-luminous flux or lumen output must meet the following levels. The table shows typical luminous flux for A-shaped, soft white, incandescent bulbs. Based on research conducted by NLRPIIP ([www.lrc.rpi.edu/NLRPIIP/Online/index.html](http://www.lrc.rpi.edu/NLRPIIP/Online/index.html)), luminous flux varies considerably among bulbs. The table below is intended to aid in consumer choice and in no way supercedes or replaces any requirement for product performance contained in this specification. If the luminous flux falls outside of the range, either do not display an incandescent equivalence or display the lower incandescent wattage equivalence. If displaying an incandescent equivalent for Globe, Reflector, or Decorative type bulbs, the initial luminous flux for both the CFL and the appropriate Globe, Reflector, or Decorative incandescent bulb must be displayed side by side in a comparison panel, along with the wattage ratings for both the CFL and incandescent bulb.

### Required Disclaimer for CFL Lifetime Claims

<u>ENERGY STAR Qualified CFL Rated Lifetime</u>	<u>Residential Use – Number of Years Claims (based on 4 hours/day)</u>
<u>6,000 hours</u>	<u>4 years</u>
<u>8,000 hours</u>	<u>5 years</u>
<u>10,000 hours</u>	<u>7 years</u>
<u>12,000 hours</u>	<u>8 years</u>
<u>15,000 hours</u>	<u>10 years</u>

### CFL/Incandescent Equivalency Chart

<u>A-Shaped Incandescent bulb (Watts)</u>	<u>Typical Luminous Flux (Lumens)<sup>†</sup></u> <small><sup>†</sup> Lumens must be 100 hr, initial values for CFLs</small>
40	Minimum of 450
60	Minimum of 800
75	Minimum of 1,100
100	Minimum of 1,600
150	Minimum of 2,600

Referenced Standards/Procedures		
Performance Characteristics	Test Procedure	
	Compact Fluorescent ( <i>see note below</i> )	Circle design
Lumen Output and Efficacy	IESNA – LM66-00	IESNA – LM9
Lumen Depreciation and Life	IESNA – LM65 & ANSI – C78.5	IESNA – LM40
Color Rendering Index	CIE Publication 13.3	
Transient Protection	ANSI/IEEE C62.41 (01-May-1991), Category A, 7 strikes	
Electromagnetic Interference	FCC 47 CFR including Part 2 (Equipment Authorization) and Part 18 (Technical Standards and Emission Limits) for consumer RF Lighting Equipment <a href="#">FCC 47 CFR Part 18 for consumer limits</a>	

*Note: Testing with a reference ballast shall not apply to integrally ballasted compact fluorescent lamps. These lamps shall be measured with their integral ballasts at 120 volts and 60 Hz.*

**5) Certification:** Manufacturers shall certify that ENERGY STAR qualified compact fluorescent lamps sold using the ENERGY STAR label have:

- 1) Been tested and third party listed to UL Standard 1993 for Self-Ballasted Lamps and Lamp Adapters by a Nationally Recognized Testing Laboratory (NRTL) accredited by Occupational, Safety, and Health Administration (OSHA),
- 2) Meet the manufacturers' declared performance and use criteria that are found on the packaging,
- 3) Meet or exceed the minimum performance criteria contained in this ENERGY STAR Specification for the characteristics shown above.

**6) Qualification:** Manufacturers can submit their CFL for ENERGY STAR qualification by the following 2-step procedure:

#### **STEP 1: Initial Qualification**

Partners must submit a report that includes the following **completed** tests (see below) from either their properly accredited laboratories or properly accredited third-party testing facilities, which must certify to the authenticity and integrity of the test data. In addition, partners must complete PAGE 1 and the accredited laboratories must complete PAGE 2 of the ENERGY STAR CFL Qualification Form and submit it with the packaging **proofs**. The test reports must indicate that the model meets all initial requirements. Incomplete test reports, product packaging, or qualification forms will not be accepted or processed for ENERGY STAR qualification. Partners must complete the following tests before they will be considered for INITIAL ENERGY STAR qualification:

- Efficacy (which includes 100-hour lumen output)
- Rapid Cycle Stress Test
- 1,000-hour lumen maintenance
- Color Rendering (CRI)
- Correlated Color Temperature (CCT)
- Power Factor
- Run-up Time
- Starting-up Time
- Transient Protection
- Operating Frequency
- Electromagnetic Interference
- Lumen maintenance at 40% of rated life
- Interim Life Time Test at 40% of rated life
- Submission of product packaging

A model that meets the above requirements will be considered initially qualified for ENERGY STAR and will receive a letter stating they have met all necessary **initial** requirements and can begin to market this CFL model as ENERGY STAR by using the certification mark on the product packaging, and identifying the product in marketing materials, and web site.

## **STEP 2: Full Qualification**

Manufacturers will be given a due date in their initial qualification letter to submit the **final average rated life time** test report to complete their ENERGY STAR CFL qualification process and fulfill the Full Qualification requirements. This due date will be based on the date the exact date the average rated lifetime test began and the rated lifetime of the CFL. Failure to submit this final test report within 30 days of completion of the test will result in an immediate unqualification-disqualification of the model.

**7) Private Labeling Products:** Manufacturers, distributors, retailers, and other ENERGY STAR partners may purchase existing qualified CFL products and submit them for listing on the qualified product list by completing and submitting a Private Labeler qualification form (*available from your account manager*) and submitting a product packaging draft for review and approval. Once the private labeler form and product packaging have been reviewed and accepted, the private labeling partner will receive a letter from ENERGY STAR stating that this model will be added to the CFL qualified product list and can begin to use the ENERGY STAR certification mark on its packaging and marketed as an ENERGY STAR product.

**Packaging for Private Labeled CFLs:** Partners must submit packaging proofs for each of their privately labeled CFLs with the exact information (wattage, lumen output, rated lifetime, equivalency, etc.) their supplier has submitted to ENERGY STAR, since the products are exactly the same. If packaging is submitted with incorrect information, the model will not be qualified as ENERGY STAR until the correct packaging has been submitted.

**Changing of Qualified CFL Supplier:** Partners are required to inform ENERGY STAR within 30 days of changing their supplier of one or more of their privately labeled CFLs. Partners must submit a new Private Labeler Forms and new product packaging for each product to reflect the updated information.

**NOTE:** The private labeled products, or products with different model or product numbers, fall under the same quality assurance and de-listing protocol as the originally tested model. Therefore, if the original qualified model is removed from the ENERGY STAR qualified list by the manufacturer or by DOE, the corresponding privately labeled model(s) will be disqualified immediately on the ENERGY STAR CFL qualified product list.

**8) Labeling and Product Packaging Review:** All partners who are qualifying a CFL must submit electronic or hard-copy labeling and packaging samples for the specific CFL model. Packaging must meet include the following all of the requirements information that are identified under the Lifetime Performance and Packaging Requirements (on page 8-9) to be reviewed for qualification requirements: model number, wattage, lumen output, average rated lifetime, warranty/800 number or address, equivalency to incandescents, starting temperature, electromagnetic interference, compatibility with controls Failure to meet the packaging requirements of the criteria will delay the qualification process; and No new the CFL models in question will not be qualified until all packaging requirements are met. The specific qualified model must be distributed within this approved product packaging. If products are found being sold or distributed in alternative non-approved packaging, that model will be immediately unqualified from the ENERGY STAR for failure to meet the Criteria. If a partner has multiple cases where products are being sold in unapproved packaging, then it may result in their ENERGY STAR Partnership Agreement to be terminated.

**Commercial packaging of products** - Qualified CFL products that will be bulk packaged for commercial sales must submit a package proof for the container that the qualified products will be shipped in and that clearly displays all of the required criteria to fulfill the packaging requirements for ENERGY STAR.

**NOTE:** Those partners found distributing qualified CFL products in unidentified packaging or white boxes will be contacted immediately and may immediately have that specific model unqualified from the program.

Once all requirements have been met for packaging, ENERGY STAR will list the new qualified model on the [www.energystar.gov](http://www.energystar.gov) web site. All labeling must be in accordance with ENERGY STAR identity/logo use guidelines found in the Partnership Agreement/Program Requirements and FTC's Appliance Labeling Act regulations. Packaging and promotional materials using the certification mark label should be submitted to your ENERGY STAR account manager for final review and approval.

**9) Quality Assurance/Retirement and/or Unqualification/Disqualification of CFL Products:** Manufacturers, distributors, and retailer partners who are active members of the ENERGY STAR CFL program are encouraged to participate in on-going, independent, third-party quality control verification and testing program, which is traceable use to 3<sup>rd</sup> party, NVLAP or A2LA accredited facilities. This third-party quality control program is necessary to provide an active system to verify quality of CFL products that are out in the marketplace as ENERGY STAR qualified. This program will conduct random off-the-shelf testing of ENERGY STAR qualified CFLs and provide the results to the partner.

Additional and/or separate off-the-shelf testing may be conducted on behalf of DOE by a NVLAP accredited facility based on complaints or other suspicion of non-compliance, or as part of additional random testing procedures. If a model fails a requirement in the independent, third party quality control verification and tests or off-the-shelf testing, ENERGY STAR may request further testing by the partner to demonstrate why the product should keep its qualification status. Or if the quality control, or 3<sup>rd</sup> party data, shows clear proof that the product in question has overwhelmed failed to meet the criteria, ENERGY STAR will immediately disqualify and remove the CFL model from the qualified product list. Disqualification, or de-listing, of a model may also result from evidence of non-compliance with the ENERGY STAR partnership agreement and/or criteria.

If a product is disqualified, the manufacturer must retest that specific model and complete ALL criteria requirements before it will be reviewed for ENERGY STAR qualification status again. If a partner submits a new CFL product under a previously qualified model number and has not completed the full qualification set of tests, the program will not accept the test information. In addition, a pattern of de-listings may result in termination of the partnership agreement.

**Product De-listing/Disqualification Procedure:** Should a CFL model product be disqualified, or de-listed, the manufacturer, distributor, or retailer must immediately stop shipment on the specific model (and corresponding product or packaging configurations) so it inhibits the product from entering into the retail or distribution markets further. Retailers, distributors, or other consumer channels have 30 days to remove or sell off existing inventory or cover up the ENERGY STAR certification mark on the product packaging so that it is not identified as an ENERGY STAR qualified product. In addition, the partner must cease use of the ENERGY STAR certification mark logo on the disqualified model's packaging design, product's web page, and other marketing materials. Partners found with unqualified product out in the market still identified as ENERGY STAR will receive a logo use violation letter and may face the possible termination of the partner's Partnership Agreement.

ENERGY STAR will alert utilities, REPS, and retailers to this specific product's change in qualification by using the following communication avenues:

- o E-mail announcement will be distributed on an "as needed" basis to alert partners to changes in CFL model's ENERGY STAR qualification status
- o Posting as "unqualified" on the ENERGY STAR CFL qualified product list

**Retirement/Discontinuation of Products:** Partners who are discontinuing or retiring a model need to submit to their ENERGY STAR account representative a formal letter stating the specific date this model will be out of the marketplace so it can be identified on the qualified product list as "retired/discontinued unqualified", since it will no longer be available.

**10) Effective Date:** The effective date for the ENERGY STAR Program Requirements and Criteria for CFLs – Version 3.0 will be **January 1, 2004** determined at a later date and replaces all previous versions. Partners who wish to qualify new products per the existing criteria (dated 8/9/01) must submit the initial test reports by **October 31, 2003**. No new product submissions will be accepted after this date to qualify against the 8/9/01 criteria. On January 1, 2004, TBD, those partners who wish to submit new products for qualification can do so and those partners who have qualified products based on the 8/9/01 older version of the CFL criteria and have outstanding test data still due will be required to continue testing based on issued due dates they received in their initial qualification letter. Any partner who fails to submit test data according to their due dates for specific model(s) will have their products immediately removed from the qualified product list for failure to complete the full qualification process. At this time, partners who have products that have met full qualification under the former criteria and received a full qualification from ENERGY STAR will remain qualified.

**11) Future Criteria Revisions:** ENERGY STAR reserves the right to change the criteria should technological and/or market changes affect its usefulness to consumers, industry, or the environment. Within one year of the effective date of this version of the criteria, ENERGY STAR will review comments and suggestions for increasing efficacy and the scope of the CFL criteria.