

Approved by the Interagency Committee, May 4, 2010

Compact Fluorescent Lamps

This specification applies to bids solicited after the effective date. Guidance is also provided for purchases made from existing contracts that include products that may not meet EO4 specs or may not be available from contract. The guidance section should be used by purchasers to make decisions about lamp/fixture replacement prior to making purchases through OGS contract.

Guidance:

About 85 percent of residential lighting energy is used by incandescent light sources. Depending on the efficiency of the fixture, replacing incandescent bulbs with screw-based or pin-based compact fluorescent lamps (CFLs) can yield annual savings up to 110 kWh per light source. In cases where it is not feasible to replace every inefficient light source, even a fractional increase in the use of CFL light sources will result in significant energy savings. For more information, refer to: www.energystar.gov/index.cfm?c=cfls.pr_cfls_about

Pin-based applications – All pin-based fixtures requiring replacement lamps are highly encouraged to be upgraded with the GU24. The GU24 is the universal lamp for all ENERGY STAR qualified fixtures. Manufacturers who adhere to ENERGY STAR standards produce lamps that will fit in any ENERGY STAR fixture regardless if it was manufactured by them. The GU24 adheres to the same performance standards as ENERGY STAR CFLs.

Specialty CFLs – CFLs are available for specialty applications such as outdoor, candelabra, flood, three-way, dimmable, and A-lamp. It is important to purchase the correct CFL for each application. If you use a standard CFL in a specialty application, the CFL will not operate as expected.

Three common scenarios for CFL installation –

1. *Screw-based CFL* –used for common replacements in screw-based lamps. This is the most common form of CFLs and should be used for standard replacements in portable fixtures and other common applications.
2. *Pin-based Retrofit CFL* –used to retrofit an existing screw-based fixture to pin-based CFL fixture by means of replacing ballast.
3. *Pin-based Conversion CFL* –used to convert an existing screw-based fixture to pin-based fixture by means of fastening a pin-based converter.

Covered Products:

For the purposes of this category, Compact Fluorescent Lamps (CFLs) include all self ballasted screw-in, and pin-based, fluorescent lamps. This specification should be considered for replacing line voltage incandescent, halogen or self-ballasted screw in CFLs.

Definitions:

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Compact Fluorescent Lamp (CFL): An (1) integrally ballasted fluorescent lamp with a medium screw base, (2) pin based (GU24) line voltage retrofit lamp or (3) pin based (GU24) line voltage conversion lamp, with a rated range of 115 to 130 volts designed as a direct replacement for a general service incandescent lamp.

Useful life: The amount of time a lamp is able to operate, but is not damaged or broken.

Color Rendering Index (CRI): The effect the spectral characteristic of the light emitted by the lamp has on the color appearance of the objects illuminated.

Correlated Color Temperature (CCT): The color appearance, or actual color of the lamp. The correlated color temperature is measured in Kelvin (K).

GU 24 Integrated Pin-Based Lamps (GU24): The standardized pin-based line voltage socket that allows ballast replacement with a “twist and lock.” The GU24 is the pin-based alternative for medium base self-ballasted CFLs.

GU 24 Integrated Pin-Based Retrofit Lamps: The standardized pin-based line voltage socket that replaces the existing ballast and needs to be hardwired to the fixture.

GU 24 Integrated Pin-Based Conversion Lamps: The standardized screw-based socket that will convert the existing fixture to a pin-based line voltage socket allowing for ballast replacement with a “twist and lock.”

Standard Setting and Certification Programs:

ENERGY STAR® - A voluntary energy efficiency program co-sponsored by the U.S. Environmental Protection Agency and U.S. Department of Energy. The ENERGY STAR® program makes identification of energy-efficient products, such as CFLs, easy by labeling products that deliver the same or better performance as comparable models while using less energy and saving money in the process. For additional information on the ENERGY STAR® program and for a list of qualifying products, visit <http://www.energystar.gov> .

CFLs that meet ENERGY STAR® standards exceed minimum efficiency standards set forth in Article 5 Section 5-108A of the New York State Law. For more information on the New York State Equipment Standard Law for CFLs, visit <http://www.nyserda.org/programs/EquipmentStandards/cfls.asp>.

Questions on product quality, performance, and longevity can be posed to the national ENERGY STAR® program through liaisons at the New York State Energy Research & Development Authority (NYSERDA) <http://www.nyserda.org> – an active participant in the ENERGY STAR® Program.

Sample specifications for qualified ENERGY STAR® CFLs include, but are not limited to:

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- Minimum lamp life of 6,000 hours
- CRI greater than 80
- CCT between 2700K and 6500K
- Power factor greater than 0.5
- Starting time less than 1.00 second

Restriction of Hazardous Substances (RoHS) Directive – A European Parliament and Council Directive that restricts the use of certain hazardous substances in electrical and electronic equipment. It bans the placing for sale on the European Union (EU) market of new electrical and electronics equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB), and polybrominated biphenyl ether (PBDE) flame retardants. For additional information on RoHS, visit <http://www.rohs.gov.uk/>.

Specifications:

Mercury content:

All CFLs shall contain 5 mg or less of mercury.

Affected entities are encouraged to purchase CFLs with the lowest amount of mercury available. CFLs containing 3 mg or less of mercury are currently available and should be considered where possible.

ENERGY STAR:

All lamps shall adhere to the national ENERGY STAR[®] Program's guidelines.

Note: The ENERGY STAR[®] specifications allow CFLs that are 23 watts or greater to contain up to 6 mg of mercury. *However, CFLs purchased in accordance with this spec shall meet the EO4 mercury requirement of 5 mg or less of mercury.*

New York State Equipment Standards (NYS Law):

All CFLs shall comply with these standards. CFLs that adhere to Energy Star Standards exceed NYS Equipment Standards.

Restriction of Hazardous Substances (RoHS) Directive:

All CFLs shall comply with the RoHS directive.

Take-Back and Recycling:

Contractors are required to offer recycling programs for mercury containing lamps and ballasts. Each contractor shall describe their recycling program and explain how it will provide certification of mercury recovery. Documentation shall be provided upon request to the affected entity demonstrating that these products have been managed of in an environmentally sound manner in compliance with applicable local, state and federal laws.

Disclosure of Mercury in Lamps:

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Contractors shall maintain an online listing of all lamps they offer under state contract, including a clear designation of the amount of mercury or range of mercury in milligrams for each type of mercury-added lamp sold. Mercury-added lamps shall be defined as any device to which elemental mercury or mercury compounds are intentionally added.

Packaging:

In accordance with Environmental Conservation Law section 37-0205, packaging shall not contain inks, dyes, pigments, adhesives, stabilizers, or any other additives to which any lead, cadmium, mercury or hexavalent chromium exceed the following concentration level: 100 parts per million by weight (0.01%).