

Hong Kong Green Label Scheme

Product Environmental Criteria for Fluorescent Lamps (GL-007-007)



BACKGROUND

The Hong Kong Green Label Scheme (HKGLS) is an independent and voluntary scheme, which aims to identify products that are, based on life cycle analysis consideration, more environmentally preferable than other similar products with the same function. The Scheme is organized by the Green Council (GC) with contributions from the HKGLS Advisory Committee and a number of supporting organizations.

The prime objectives of HKGLS are:

- For Consumers: assist in making purchases of products that are less harmful to the environment;
- For Industry: stimulate development and production of environmentally preferable alternatives.

This specification sets out the requirements that the fluorescent lamps will be required to meet in order to be licensed to use the HKGLS label. The requirements include environmental criteria and product characteristics. The specification also defines the testing and other means to be used to verify conformance with the environmental criteria and product characteristics.

POTENTIAL ENVIRONMENTAL IMPACTS

Energy consumption is the key environmental impact for the fluorescent lamps at all stages of the product life cycle, ranging from the production of raw materials to waste disposal. Another environmental impact is the environmentally harmful substances.

Mercury is the key environmentally harmful substance in the fluorescent lamps. Other harmful substances include mercury, copper, lead, strontium, tin and zinc, but the quantities are small in relation to those in other products.

LABEL OBJECTIVE

The aim of the environmental criteria developed for the fluorescent lamps is to:

- Reduce energy consumption and promote energy-saving lamps;
- Reduce the use of the environmentally harmful substances;
- Promote improved technical life-span of lamps; and
- Minimize waste production by reducing the amount of primary packaging and promoting its reusability and/or recyclability.

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PRODUCT DEFINITION

This document and all product environmental criteria therein apply to three types of the fluorescent lamps (namely linear, circular and compact) that are for general lighting applications (i.e. the lighting up of places for human to be at such places). Places or surfaces that are used only for very special applications are not included.

The following lamps are not included in the product group: projector lamps, photographic lighting, solarium tubes, light emitting diode (LED), reflector compact fluorescent lamps and cold cathode fluorescent lamps (CCFLs).

Ballast means a device used with an electric-discharge lamp to obtain the necessary circuit conditions (voltage, current, and wave form) for starting and operating.

Control gear means all necessary electrical elements that are required for starting and maintaining stable operation of the lamp.

Fluorescent lamp is a gas-discharge lamp that uses electricity to excite mercury vapor. The excited mercury atoms produce short-wave ultraviolet light that then causes a phosphor to fluoresce, producing visible light.

Integrated type CFLs with built-in control gear means a single integrated assembly of lamp, ballast, and lamp base or a CFL adaptor that fits into a standard incandescent lamp socket.

Non-integrated type CFLs without built-in control gear means a separate lamp that is electrically connected to a permanently-wired external ballast.

Luminous efficacy refers to the ratio of total luminous flux (in lumens, lm) to power input (in watts, W)

PRODUCT ENVIRONMENTAL CRITERIA

The table below sets out the product environmental criteria for the fluorescent lamps (GL-007-007) under the HKGLS.

For integrated type CFLs, it must comply with the Mandatory Code of Practice on Energy Labelling of Products by the Electrical and Mechanical Services Department (EMSD) of HKSAR.

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It is noteworthy that all materials and workmanship shall comply with the Electrical Products (Safety) Regulation of the HKSAR and appropriate IEC Safety Standards;

Product Environmental Criteria			Verification Method(s)*	
1. Meet the following luminous efficacy requirement.			✓ Review of laboratory test report(s) (CIE 84, IEC 60901, IEC 60969); AND ✓ Review of supporting information.	
Lamp Type	Rated Lamp Wattage (L_w)	Luminous Efficacy (lumens/W)		
Linear	< 30W	≥80		
	≥30W	≥85		
Non-integrated Type CFLs without Built-in Control Gear	≤10W 11W – 30W	50 65		
Integrated Type CFLs with Built-in Control Gear	≤10W 11W – 20W 21W-30W ≥31W	45 50 55 60		
2. Meet the Product Performance Requirements: (a) the rated average lamp life shall not be less than 8,000 hours; and (b) lumen maintenance at 2,000 hours shall not be less than 80%.				✓ Review of laboratory test report(s) (IEC 60969); AND ✓ Review of supporting information.
3. Color Rendering Index (CRI) of at least 80.				✓ Review of laboratory test report(s) (IES LM-16); AND ✓ Review of supporting information.
4. Mercury (Hg) content in the lamp shall not exceed: Linear Fluorescent Tube ≤ 3mg Non-integrated Type CLFs without Built-in Control Gear ≤ 3mg Integrated Type CFLs with Built-in Control Gear ≤ 3mg				✓ Review of laboratory test report(s); AND ✓ Review of supporting information.
5. The product shall not be manufactured with radioisotopes				✓ Review of supporting information. A certificate shall be obtained from the manufacturer that asbestos is not present in the product.

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Product Environmental Criteria	Verification Method(s)*
6. General packaging requirements (refer to criteria for packaging materials : GL-Packaging).	<ul style="list-style-type: none"> ✓ Inspection of product samples; AND ✓ Review of supporting information; AND ✓ Interview with relevant personnel.

*Analytical testing should be accredited and performed by laboratories that meet the requirement laid out in the IEC/ISO 17025 or EN45001 standards or any equivalent systems e.g. HOKLAS, CNAS. Under special situation and with the approval from GC, test can be performed by in-house method by the accredited laboratory or manufacturer.