

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.

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

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Criteria			Verification Method
1. Meet the following luminous efficacy requirement.			A (CIE 84, IEC 60901, IEC 60969), C
Lamp Type	Rated Lamp Wattage (L_w)	Luminous Efficacy (lumens/W)	
Linear	< 30W	≥80	
	≥30W	≥85	
Non-integrated Type	≤10W	50	
CFLs without Built-in Control Gear	11W – 30W	65	
	≥31W	75	
Integrated Type CFLs with Built-in Control Gear	≤10W	45	
	11W – 20W	50	
	21W-30W	55	
	≥31W	60	
2. Meet the Product Performance Requirements:			A (IEC 60969), C
(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%.			
3. Color Rendering Index (CRI) of at least 80.			A (IES LM-16), C
4. Mercury (Hg) content in the lamp shall not exceed:			A,C
Linear Fluorescent Tube ≤ 3mg			
Non-integrated Type CLFs without Built-in Control Gear ≤ 3mg			
Integrated Type CFLs with Built-in Control Gear ≤ 3mg			
5. The product shall not be manufactured with radioisotopes			C
6. General packaging requirements (refer to criteria for packaging materials : GL-Packaging).			B,C,D

Legend :

A – Analytical testing shall be performed by laboratories that meet the requirement laid out in the EN45001 standards or any equivalent systems (e.g. HOKLAS, IEC/ISO 17025).

B - Inspection of product samples

C – Review of supporting information as required by the GC

D – Interviews with relevant personnel and/or site visits to relevant facilities