

**ENERGY EFFICIENCY STANDARDS AND LABELLING
(NON-DUCTED AIR CONDITIONERS AND SELF-BALLASTED
FLUORESCENT LAMPS) REGULATIONS, 2005**

IN exercise of the powers conferred on the Minister responsible for Energy by section 56 of the Energy Commission Act, 1997 (Act 541) these Regulations are made this 2nd day of June 2005.

Application of Regulations

1. These Regulations apply to non-ducted air conditioners or self-ballasted fluorescent lamps manufactured in Ghana or imported for use in Ghana.

Requirement to comply with Regulations

2. (1) A person who manufactures or imports non-ducted air conditioners or self-ballasted fluorescent lamps for use in Ghana shall ensure that,

- (a) the air conditioners comply with the standard specification for non-ducted air conditioners stipulated in Ghana Standard 362:2001 published in the *Ghana Gazette* of 8th February, 2002;
- (b) the lamps comply with the standard specification on self-ballasted fluorescent lamps stipulated in Ghana Standard GS324:2003 published in the *Ghana Gazette* of 30th August, 2003; and
- (c) the non-ducted air conditioners and self-ballasted fluorescent lamps comply with the minimum performance and labelling requirements prescribed by these regulations.

(2) A person who manufactures in Ghana or imports

- (a) non-ducted air conditioners for use in Ghana in contravention of regulation 2(1) (a), or
- (b) self-ballasted fluorescent lamps for use in Ghana in contravention of regulation 2(1) (b);

commits an offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units or imprisonment for a term not exceeding twelve months or both.

Minimum performance requirements

3. (1) A non-ducted air conditioner manufactured or imported for use in Ghana shall in accordance with Ghana Standard 362:2001 have a minimum energy efficiency ratio of 2.8.

(2) A self-ballasted fluorescent lamp manufactured or imported for use in Ghana shall in accordance with Ghana Standard GS 324:2003 have;

- (a) a minimum rated life of six thousand hours; and

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- (b) a minimum efficacy measured in lumens per watt matching the lamp configuration (bare or covered with or without reflector) and lamp power (LP) rating as provided for in Schedule I.

Information on package and labelling requirements for non-ducted airconditioners

4. (1) A person shall not store, offer for sale, sell, distribute, import or otherwise dispose of a non-ducted air conditioner unless the air conditioner bears a label that indicates the minimum performance.

(2) The Label on a non-ducted air conditioner shall be in the form provided in Schedule II and shall

- (a) where the label is not printed on the packaging but placed or attached to the packaging, be in full colour, and
- (b) where the label is printed on the packaging and in “black on white” be in colours that preserve the legibility of the label.

(3) The label shall be in the English language and shall be pasted conspicuously on the packaging of the air conditioner.

(4) A label on an air conditioner shall also provide the following information:

- (a) the manufacturer’s name or trade mark;
- (b) the manufacturer’s model identifier and for split and multi-split units, the model identifier of the indoor and of the outdoor elements of the combination to which the figures quoted in the table in Schedule III apply;
- (c) the indicative annual energy consumption calculated with the total input power as defined in GS 362:2001 multiplied by an average of 2000 hours per year in cooling mode at full load, determined in accordance with the test procedures of GS 362:2001;
- (d) the energy efficiency ratio star rating of the model, determined in accordance with GS 362:2001;
- (e) the cooling output defined as the cooling capacity in kW of the appliance in cooling mode at full load, determined in accordance with the test procedures of GS 362:2001;
- (f) the Energy Efficiency Ratio (EER) of the appliance in cooling mode at full load determined in accordance with the test procedures of GS 362:2001;
- (g) the type of refrigerant; and

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(h) a one-star to five-star energy efficiency ratio rating in which the ascending number of stars represents a higher energy efficiency ratio determined in accordance with the table in Schedule III where EER is determined in accordance with the test procedures of GS 362:2001.

(5) The label shall be printed in colour on a water proof material and pasted conspicuously on the appliance.

(6) The background of a label pasted on an appliance shall be gold and all stars on the label shall be black and the text shall be in black, whilst the box enclosing the label shall be in green or red.

(7) A person who contravenes any of the requirements on labelling in this regulation commits an offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units, or a term of imprisonment not exceeding twelve months or to both.

Information on package and labelling requirements for self-ballasted fluorescent lamp

5. (1) A person shall not store, offer for sale, sell, distribute, import or otherwise dispose of a self-ballasted lamp unless the lamp bears a label that indicates the minimum performance.

(2) The label on a self- ballasted fluorescent lamp shall be in the form provided in Schedule IV and shall

- (a) where the label is not printed on the packaging but placed or attached to the package, be in full colour;
- (b) where the label is printed on the packaging, be in “black on white” with the print and background in colours that preserve the legibility of the label;
- (c) be in the English language; and
- (d) be pasted conspicuously on the package of the self-ballasted fluorescent lamp.

(3) The label shall include the following information

- (a) the energy efficiency star rating of the lamp, determined in accordance with the test procedures of GS 323:2003 and as shown in Schedule V;
- (b) the luminous flux of the lamp in lumens, measured in accordance with the test procedures of GS 323:2003;

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- (c) efficacy performance measured in lumens per watt (lm/W) and in accordance with GS 323:2003;
- (d) the input power (wattage) of the lamp, measured in accordance with test procedures of GS 323:2003;
- (e) the average rated life of the lamp in hours measured in accordance with the test procedures of GS 323:2003;
- (f) luminous flux comparison data (Self -ballasted fluorescent lamp versus filament lamp); and
- (g) the number of stars corresponding to the star rating class relevant to the information referred to in sub regulation (2) (b), shaded black.

(4) Where no side of the packaging is large enough to contain the label and the blank border, or where the label would cover more than fifty per cent of the surface area of the largest side, the label and the border together with the border shall be reduced to not less than forty per cent (by length) of the side of the box where it is printed or pasted.

(5) The background of a label pasted on an appliance shall be gold and all stars on the label shall be in black and the text shall be in black whilst the box enclosing the label shall be in green or red.

(6) A person who contravenes any provision of this regulation commits an offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units or a term of imprisonment not exceeding twelve months or to both.

Offences in relation to removal of label

6. (1) A person shall not remove the label on an air conditioner or a lamp package before the first retail purchase of the item.

(2) A person who contravenes sub-regulation (1) commits an offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units or a term of imprisonment not exceeding twelve months or to both.

Powers of an inspector

7. (1) An inspector appointed under section 52 of the Act may at any reasonable time

- (a) enter any premises or place where the inspector has reason to believe that non-ducted air conditioners or self-ballasted fluorescent lamps are being manufactured, imported, offered for sale or otherwise being disposed of; and

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- (b) examine or if necessary test non-ducted air conditioners or self-ballasted fluorescent lamps,
- (i) displayed for sale;
 - (ii) at the point of import; or
 - (iii) at a warehouse

to ascertain whether the items comply with the provisions of these Regulations.

(2) An inspector or a Customs officer may without prejudice to regulation 10 seize any imported non-ducted air conditioners or self-ballasted fluorescent lamps which contravene any provision of these Regulations or which are improperly labelled or labelled in such a way as to be deceptive, misleading or false.

(3) An inspector or a Customs Officer shall refuse to release to the importer a non-ducted air conditioner or self-ballasted fluorescent lamp imported for use in Ghana which is not labelled in the manner provided for under these Regulations.

(4) Where an inspector or Customs Officer refuses to release a non-ducted air conditioner or self-ballasted fluorescent lamp to the importer under sub-regulation (3), the inspector or Customs Officer shall within forty-eight hours of detention of these goods give notice to the importer to properly label the goods, and the notice shall state that within twenty-eight days after the date of the notice the goods must be relabelled in the required manner or be re-exported out of the country.

(5) Where an importer is required under sub-regulation (4) to relabel the imported goods the relabelling of the goods shall be done under the supervision of an officer authorized for the purpose by the Energy Commission and the Ghana Standards Board.

(6) Where an importer fails to re-label goods as required under sub-regulation (4), an inspector or a Customs officer shall after the expiration of the period specified, seize the goods.

(7) An inspector or Customs officer who assists a person to contravene these Regulations commits an offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units or imprisonment for a term not exceeding twelve months and shall be liable to dismissal.

Petition against detention or seizure

8. (1) Any person whose air conditioner or self-ballasted fluorescent lamp is detained or seized under regulation 7 may within seven days after the detention or seizure petition the Commission for the release of the seized or detained item.

(2) The Commission shall within seven days of receiving the petition either confirm the seizure or order the seized items to be released to the petitioner.

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Forfeiture of air conditioners or self-ballasted fluorescent lamps

9. (1) Subject to regulation 8, an air conditioner or self-ballasted fluorescent lamp found in the country and which does not conform to these Regulations is liable for seizure and forfeiture.

(2) The Minister shall acting on the recommendation of the Commission given in collaboration with the Ghana Standards Board, dispose off or re-export any forfeited air conditioner or self-ballasted fluorescent lamp.

Offences and penalties

10. A person who obstructs or interferes with an inspector in the performance of the inspector's functions commits an offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units or imprisonment for a term not exceeding twelve months or both.

Offence by corporate bodies

11. (1) Where an offence under these Regulations is committed by a body corporate or by a member of a partnership or other firm, every member, director or officer concerned with the management of the firm shall also be guilty of the offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units or a term of imprisonment not exceeding twelve months or to both unless that member, director or officer proves to the court that:

- (a) the member, director or officer exercised due diligence to secure compliance with the provisions of these Regulations; and
- (b) the offence was committed without that member, director or officer's knowledge, consent or connivance.

Interpretation

- 12.** In these Regulations unless the context otherwise requires,
- “Act” means the Energy Commission Act, 1997 (Act 541);
 - “air conditioner” means non-ducted room air conditioners;
 - “Commission” means Energy Commission;
 - “energy efficiency ratio (EER) means ratio of the total cooling capacity to the effective power input in any given set of rating conditions;
 - “GS” means Ghana Standards;
 - “label” means a label relating to a CFL or air conditioner which contains information on its consumption of energy (whether or not it also contains other information);

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“lamp efficacy” means average of the lesser of the lumens per watt measured in the base up or other specified position;

“Minister” means Minister responsible for Energy;

“Non-ducted air conditioner” means an assembly or assemblies designed as a unit primarily for mounting in a window, through a wall or as a console designed primarily to provide free delivery of conditioned air to an enclosed space, room or zone and includes a prime source of refrigeration for cooling;

“self-ballasted fluorescent lamp” means a unit which cannot be dismantled without being permanently damaged, provided with a lamp cap and in incorporating a light source and any additional elements necessary for starting and for stable operation of the light source.

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SCHEDULE I

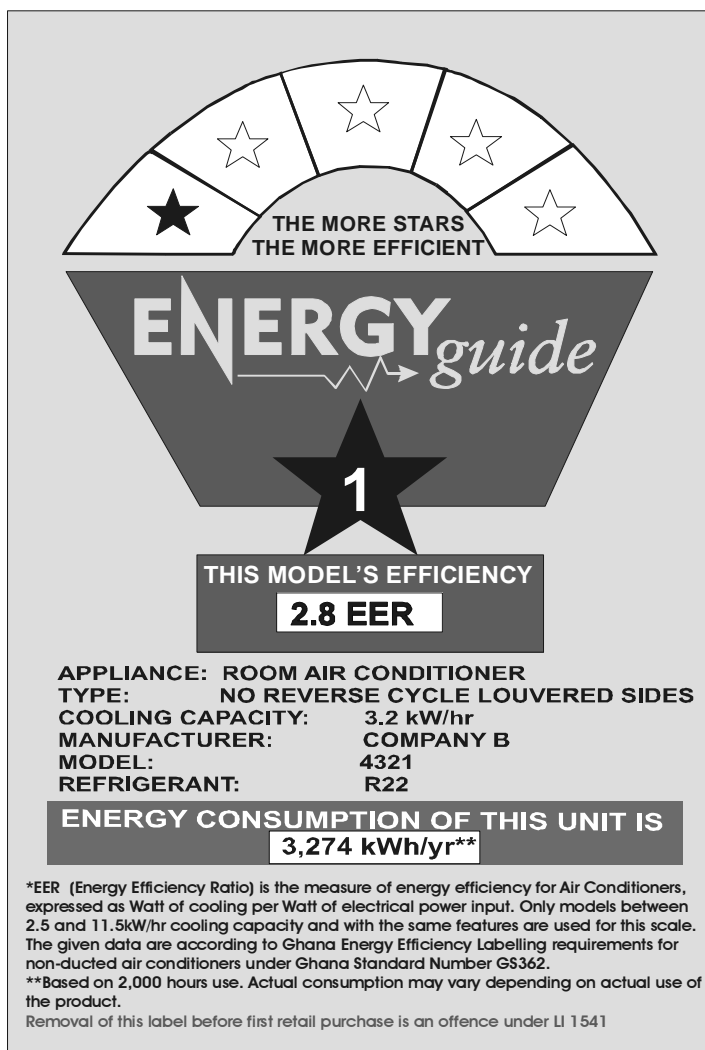
Regulation 3 (2)(b)

Lamp Configuration	Lamp Power Rating (LP, Watts)	Minimum Efficacy (Lumen/W)
Bare Lamp	Less than 15; More than or equal to 15;	More than or equal to 45 More than or equal to 60
Covered Lamp <u>Without</u> Reflector	Less than 15; More than or equal to 15 but less than 19;	More than or equal to 40 More than or equal to 48
	More than or equal to 19 but less than 25; More than or equal to 25;	More than or equal to 50 More than or equal to 55
Lamp <u>with</u> Reflector	Less than 20; More than or equal to 20;	More than or equal to 33 More than or equal to 40

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SCHEDULE II

Regulation 4 (2)



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SCHEDULE III

Regulation 4 (4)(b)& (h)

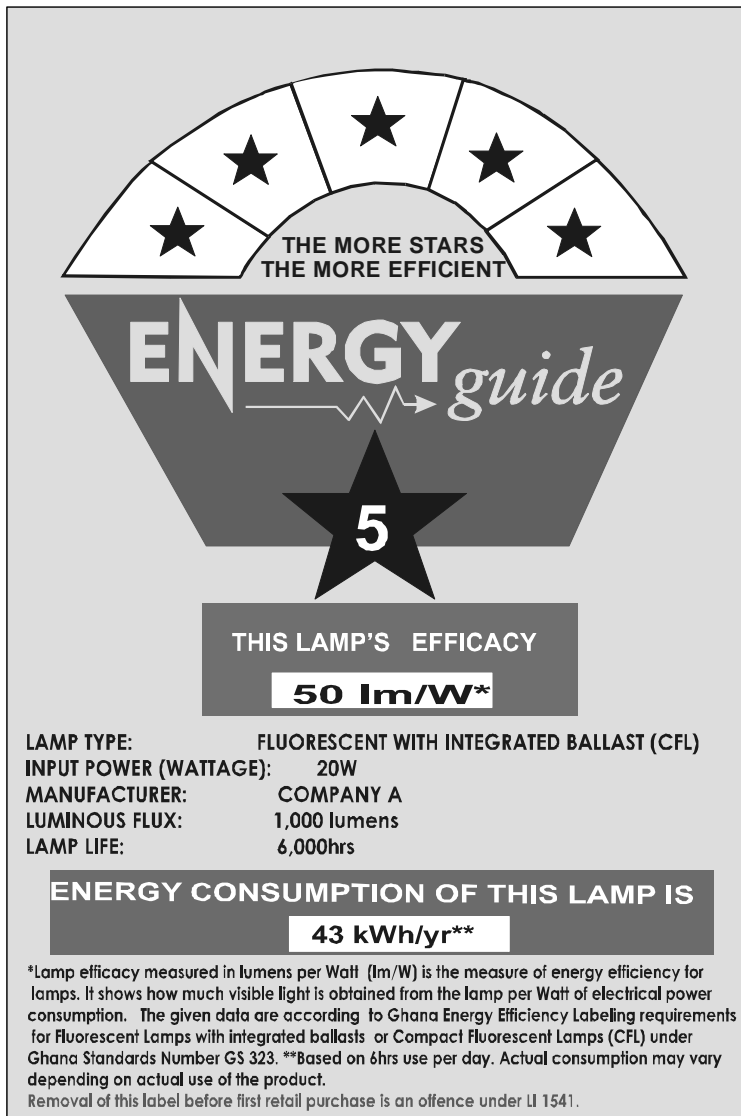
Energy Efficiency Rating for Non Ducted air-conditioners

Energy Efficiency Star Rating	Non-ducted air cooled air conditioners
5 - star	$4.00 < \text{EER}$
4 - star	$4.00 \geq \text{EER} > 3.75$
3 - star	$3.75 \geq \text{EER} > 3.45$
2 - star	$3.45 \geq \text{EER} > 3.15$
1 - star	$3.15 \geq \text{EER} \geq 2.80$

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SCHEDULE IV

Regulation 5 (2)



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SCHEDULE V

Regulation 5 (3)(a)

**ENERGY EFFICIENCY RATING OF SELF-BALLASTING
FLUORESCENT LAMPS**

1. Lamps shall be classified as 5-star if:

$$W \leq 0.24 \sqrt{\Phi} + 0.0103 \Phi$$

where

Φ is the lumen output of the lamp
and W is the power input into the lamp in watts.

2. If a lamp is not classified as 5-star, a reference wattage W_R ; shall be calculated as follows:

$$W_R = \begin{cases} 0.88 \sqrt{\Phi} + 0.049 & \text{when } \Phi > 34 \text{ lumens} \\ 0.2 \Phi & \text{when } \Phi \leq 34 \text{ lumens} \end{cases}$$

where

Φ is the lumen output of the lamp.

An energy efficiency index EI is then set as

$$E_1 = \frac{W}{W_R}$$

where,

W is the power input into the lamp in watts.

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The energy efficiency star ratings are then set in accordance with the following table:

Energy Efficiency Star rating

Energy efficiency class	Energy efficiency index E_1
4-star	$E_1 < 60\%$
3-star	$60\% \leq E_1 < 80\%$
2-star	$80\% \leq E_1 < 110\%$
1-star	$110\% \leq E_1$

PROF. MIKE OQUAYE
Minister responsible for Energy

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