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No. S 557

ENERGY CONSERVATION ACT 2012
(ACT 11 OF 2012)

ENERGY CONSERVATION (ENERGY LABELLING AND MINIMUM PERFORMANCE STANDARDS FOR REGISTRABLE GOODS) REGULATIONS 2013

ARRANGEMENT OF REGULATIONS

Regulation

1. Citation and commencement
2. Definitions
3. Form and manner of registration
4. Registered supplier to notify Director-General of change in particulars
5. Modification of registered goods
6. Maintenance of records
7. Minimum energy efficiency standards
8. Display and affixing of Energy Label
9. Misuse of Energy Label, etc.

The Schedules

In exercise of the powers conferred by section 78 of the Energy Conservation Act 2012, the Minister for the Environment and Water Resources hereby makes the following Regulations:

Citation and commencement

1. These Regulations may be cited as the Energy Conservation (Energy Labelling and Minimum Performance Standards for Registrable Goods) Regulations 2013 and shall come into operation on 1st September 2013.

Definitions

2. In these Regulations, unless the context otherwise requires —

"air-conditioner" means a single-phase non-ducted room air-conditioner as specified in the Schedule to the Energy Conservation (Registrable Goods) Order 2013 (G.N. No. S 556/2013);

"casement or window type air-conditioner" has the same meaning as in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

"clothes dryer" means a single-phase clothes dryer as specified in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

"compact fluorescent lamp with integrated ballast" or "CFLi" has the same meaning as in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

[S 398/2015 wef 01/07/2015]

"covered CFLi" means a CFLi with an outer lamp envelope;

[S 398/2015 wef 01/07/2015]

"energy efficiency" —

(*a*) in relation to an air-conditioner, means the Coefficient of Performance as defined in the First Schedule;

(*b*) in relation to a clothes dryer, means the Energy Consumption as defined in the First Schedule;

[S 234/2014 wef 01/04/2014]

(*c*) in relation to a refrigerator, means the Annual Energy Consumption as defined in the First Schedule;

[S 234/2014 wef 01/04/2014]

[S 398/2015 wef 01/07/2015]

(*d*) in relation to a television, means the On-Mode Power Consumption as defined in the First Schedule; and

[S 234/2014 wef 01/04/2014]

[S 398/2015 wef 01/07/2015]

(*e*) in relation to a lamp, means the Lamp Power Consumption as defined in the First Schedule;

[S 398/2015 wef 01/07/2015]

"Energy Label" means an energy label that is in accordance with the requirements specified in the First Schedule;

"incandescent lamp" has the same meaning as in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

[S 398/2015 wef 01/07/2015]

"lamp" means a single-phase lamp as specified in paragraph 1 of Part III of the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

[S 398/2015 wef 01/07/2015]

"LED lamp" has the same meaning as in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

[S 398/2015 wef 01/07/2015]

"refrigerator" means a single-phase refrigerator as specified in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

"split type (inverter) air-conditioner" has the same meaning as in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

"split type (non-inverter) air-conditioner" has the same meaning as in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

"technical file", in relation to any registered goods, means the file on the registered goods kept and maintained under regulation 6(1);

"television" means a single-phase television as specified in the Schedule to the Energy Conservation (Registrable Goods) Order 2013;

[S 234/2014 wef 01/04/2014]

"test report", in relation to any registrable goods or registered goods, means —

(*a*) the report of the test carried out for the registrable goods or registered goods (as the case may be) in accordance with the prevailing test standard or method specified in the Second Schedule; and

(*b*) where there is more than one such test report in respect of the registrable goods or registered goods (as the case may be), the test report that is the most recent;

[S 398/2015 wef 01/07/2015]

"tungsten filament lamp" means an incandescent lamp that has a filament made of tungsten and is operated in an evacuated bulb or surrounded by inert gas;

[S 398/2015 wef 01/07/2015]

"tungsten halogen lamp" means an incandescent lamp that has a filament made of tungsten and is surrounded by gas containing halogens or halogen compounds.

[S 398/2015 wef 01/07/2015]

Form and manner of registration

3.—(1) An application to be registered as a registered supplier shall be made —

(*a*) using the relevant form provided at the Agency's Internet website at http://www.nea.gov.sg; and

(*b*) in the manner specified by the Director-General.

(2) Every application referred to in paragraph (1) shall be accompanied by —

(*a*) such documents and information as may be required in the relevant form; and

(*b*) a fee specified in the Third Schedule, which shall not be refundable.

(3) An application to register any registrable goods, or to renew the registration of any registered goods, shall be made using the electronic application service provided at the Agency's Internet website at http://www.nea.gov.sg.

(4) Every application referred to in paragraph (3) shall be accompanied by —

(*a*) a test report issued in respect of the registrable goods or the registered goods (as the case may be), showing the energy efficiency of such goods and such other information as the Director-General may require;

(*b*) such other documents and information as the Director-General may require; and

(*c*) a fee specified in the Third Schedule, which shall not be refundable.

(5) Notwithstanding paragraphs (1) and (3), in the event of a malfunction or failure, or an imminent malfunction or failure, of the website referred to in paragraph (1) or the electronic application service referred to in paragraph (3), the application shall be made in such written form as the Director-General may require.

(6) Upon the registration of any person as a registered supplier, the Director-General shall issue an identification number to the registered supplier in such form as the Director-General may determine.

(7) Upon the registration of any registrable goods or the renewal of the registration of any registered goods, the Director-General shall issue a certificate of registration to the registered supplier of those goods in such form as the Director-General may determine.

Registered supplier to notify Director-General of change in particulars

4.—(1) A registered supplier shall notify the Director-General of any change to any of the particulars provided to the Director-General when making an application under regulation 3(1) not less than 14 days before the change.

(2) Any person who, without reasonable excuse, contravenes paragraph (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $2,000.

Modification of registered goods

5.—(1) Where any registered goods are modified in any way by the manufacturer of those registered goods, the registered supplier concerned shall do the following before the modified registered goods are supplied in Singapore:

(*a*) notify the Director-General in writing of the modification to the registered goods;

(*b*) where the modification alters the energy efficiency of the registered goods, submit to the Director-General a test report showing the energy efficiency of such goods, as modified, and such other information as the Director-General may require; and

(*c*) update the technical file on the registered goods with details of the modification, including the test report referred to in sub-paragraph (*b*).

(2) Any person who contravenes paragraph (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $2,000.

Maintenance of records

6.—(1) For the purposes of section 18 of the Act, a registered supplier shall keep and maintain a technical file on each of the registered goods for the period of the registration of the registered goods.

(2) The technical file shall include —

(*a*) the certificate of registration issued by the Director-General under regulation 3(7) in respect of the registered goods;

(*b*) the test report referred to in regulation 3(4)(*a*);

(*c*) detailed records of any modification to the registered goods, including the test report referred to in regulation 5(1)(*b*), where applicable; and

(*d*) such other documents and information as the Director-General may, from time to time, require by notice in writing.

Minimum energy efficiency standards

7. The minimum energy efficiency standards specified in the Fourth Schedule for the following registrable goods are prescribed minimum energy efficiency standards for the purposes of section 12(1)(*c*) of the Act:

(*a*) air-conditioners;

(*b*) clothes dryers;

[S 234/2014 wef 01/04/2014]

(*c*) refrigerators;

[S 234/2014 wef 01/04/2014]

[S 398/2015 wef 01/07/2015]

(*d*) lamps.

[S 398/2015 wef 01/07/2015]

Display and affixing of Energy Label

8.—(1) Every registered supplier of any registrable goods shall affix an Energy Label in the manner specified in paragraph (2), or permitted or directed by the Director-General under paragraph (3) —

(*a*) after the certificate of registration has been issued by the Director-General in respect of such goods; and

(*b*) before supplying such goods in Singapore.

(2) Every Energy Label shall be affixed securely in a prominent position on the registered goods, conspicuous and unobstructed.

(3) Where the Director-General is of the opinion that —

(*a*) any registered goods are of such a nature as to prevent such goods from being affixed with the Energy Label in the manner specified in paragraph (2); or

(*b*) any registered goods are to be supplied in circumstances which do not require the Energy Label to be displayed to an intending purchaser or user,

the Director-General may, subject to such terms and conditions as he may impose, permit the Energy Label to be affixed —

(i) to anything in or on the registered goods or with which the registered goods are supplied; or

(ii) in such other manner as the Director-General may direct so as to be easily read by an intending purchaser or user.

(4) Any person who contravenes paragraph (1) shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $2,000.

Misuse of Energy Label, etc.

9.—(1) Any person who, without reasonable excuse, affixes an Energy Label to any thing or matter other than as required or permitted by regulation 8 shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $2,000.

(2) Where an Energy Label is affixed to any registered goods or anything with which those goods are supplied as required or permitted by regulation 8, any person who, without reasonable excuse —

(*a*) obscures the display of the Energy Label; or

(*b*) defaces or removes the Energy Label,

shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $2,000.

(3) Any person who forges or alters to make false any Energy Label shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $2,000 or to imprisonment for a term not exceeding 3 months or to both.

FIRST SCHEDULE

Regulation 2

ENERGY LABEL REQUIREMENTS

1. Subject to these Regulations, every Energy Label —

(*a*) shall be of the dimensions as shown in paragraph 2 of this Schedule or be proportionately larger;

(*b*) shall be of the shape, colour and contain text that is of the typeface Arial as shown in paragraph 2 of this Schedule, legible and in the English language only;

(*c*) shall contain information that is consistent with or drawn from the relevant test report;

FIRST SCHEDULE — *continued*

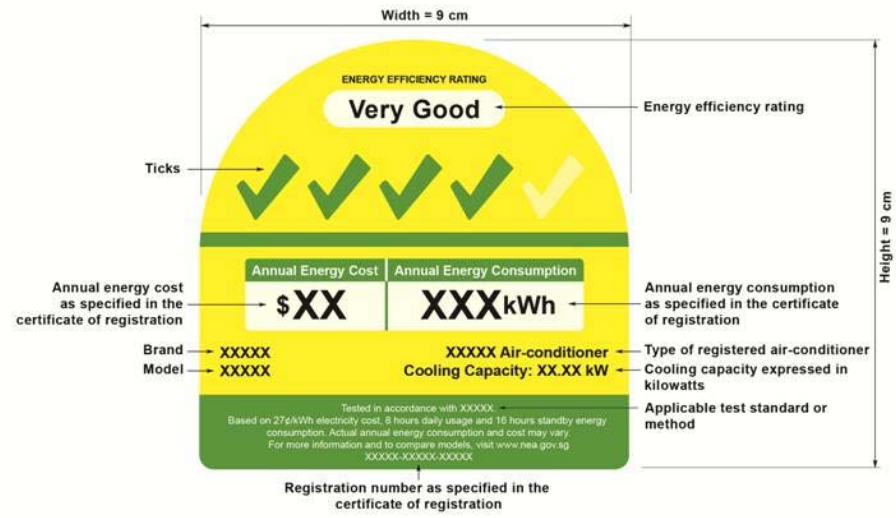
(*d*) shall be printed in an indelible manner and with a minimum resolution of 300 pixels per inch; and

(*e*) shall be made of such material as the Director-General may approve.

2. The dimensions, shape, colour and text of the Energy Labels required by these Regulations shall be as follows:

Label 1

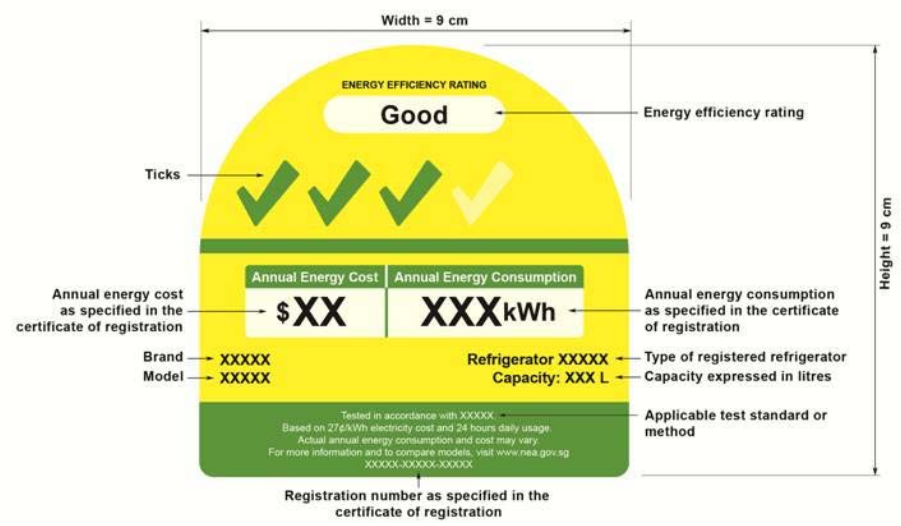
ENERGY LABEL FOR AIR-CONDITIONERS



Label 2

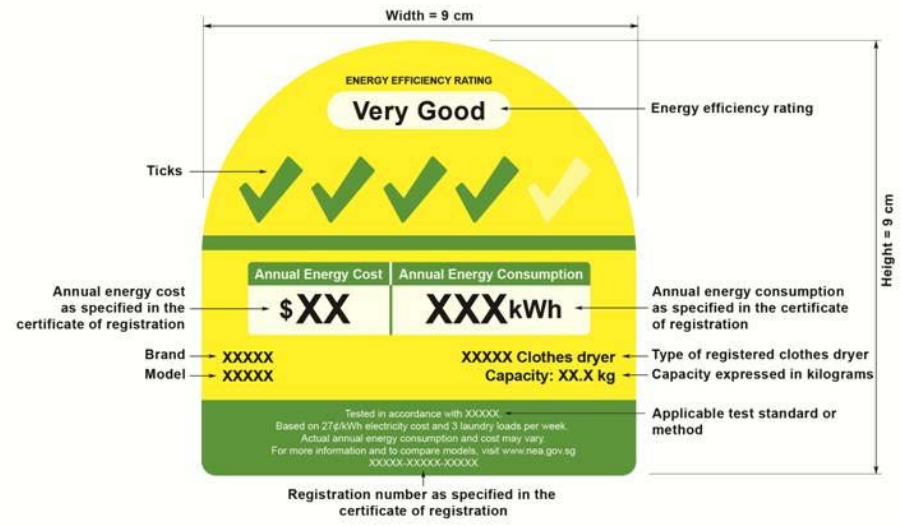
ENERGY LABEL FOR REFRIGERATORS

FIRST SCHEDULE — *continued*



Label 3

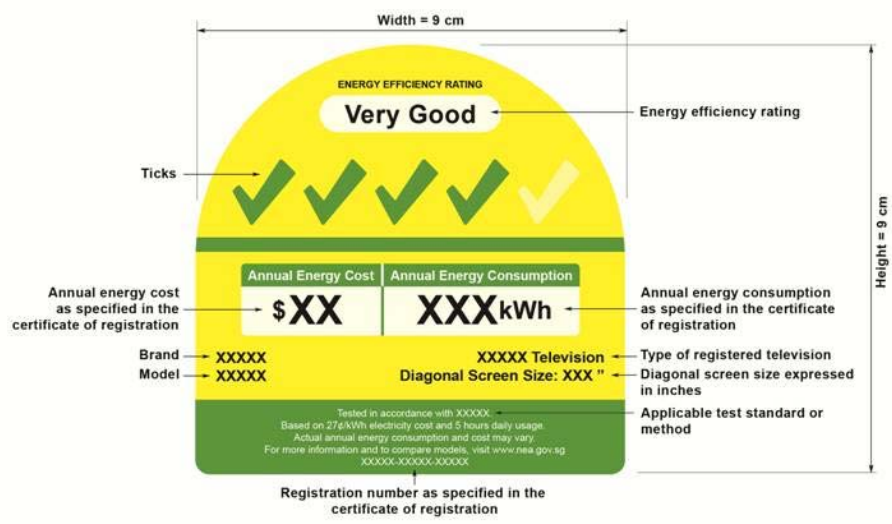
ENERGY LABEL FOR CLOTHES DRYERS



Label 4

ENERGY LABEL FOR TELEVISIONS

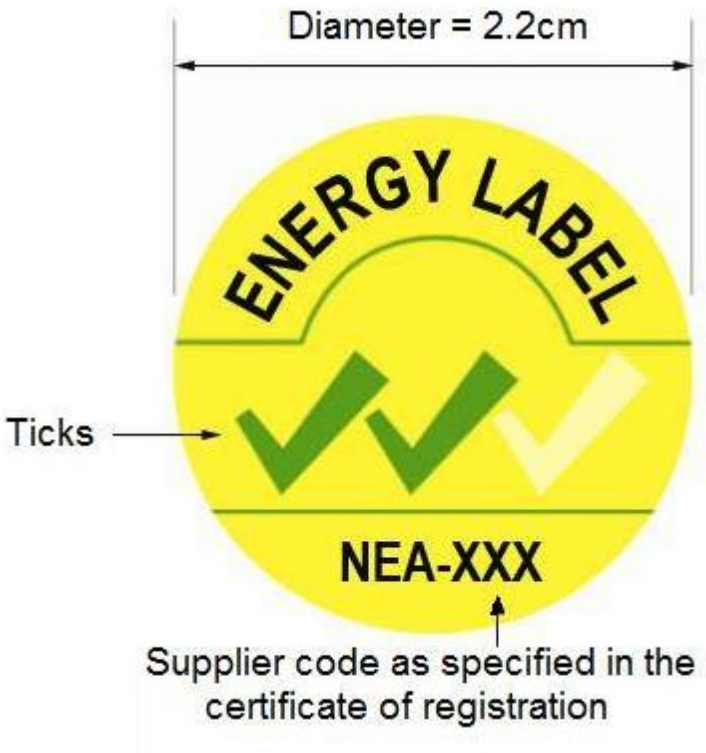
FIRST SCHEDULE — *continued*



Label 5

ENERGY LABEL FOR LAMPS

FIRST SCHEDULE — *continued*



[S 398/2015 wef 01/07/2015]

[S 559/2014 wef 01/09/2014]

3. The number of ticks and energy efficiency rating to be shown on the Energy Label for air-conditioners, refrigerators, clothes dryers, televisions and lamps shall be determined as follows:

(*a*) for casement and window type air-conditioners —

Ticks	*Energy efficiency rating*	*Coefficient of Performance (COP) and standby power range*
1	Low	$2.90 \leq COP < 3.78$
2	Fair	$3.78 \leq COP < 4.29$
3	Good	$4.29 \leq COP < 4.86$
4	Very Good	$COP \geq 4.86$

FIRST SCHEDULE — *continued*

5	Excellent	COP ≥ 5.50 and standby power ≤ 4

(*b*) for split type (non-inverter) air-conditioners with one indoor unit —

Ticks	*Energy efficiency rating*	*Coefficient of Performance (COP) and standby power range*
2	Fair	3.78 ≤ COP < 4.29
3	Good	4.29 ≤ COP < 4.86
4	Very Good	COP ≥ 4.86
5	Excellent	COP ≥ 5.50 and standby power ≤ 4

[S 406/2016 wef 01/09/2016]

(*c*) for split type (non-inverter) air-conditioners with more than one indoor unit —

Ticks	*Energy efficiency rating*	*Coefficient of Performance (COP) and standby power range*
2	Fair	3.78 ≤ COP < 4.29
3	Good	4.29 ≤ COP < 4.86
4	Very Good	COP ≥ 4.86
5	Excellent	COP ≥ 5.50 and standby power ≤ 9 × N

[S 406/2016 wef 01/09/2016]

(*d*) for split type (inverter) air-conditioners with one indoor unit —

Ticks	*Energy efficiency rating*	*Coefficient of Performance (COP) and standby power range*
2	Fair	Weighted COP ≥ 3.78 and COP ≥ 3.34
3	Good	Weighted COP ≥ 4.29 and COP ≥ 3.78
4	Very Good	Weighted COP ≥ 4.86 and COP ≥ 4.29
5	Excellent	Weighted COP ≥ 5.50, COP ≥ 4.86 and

FIRST SCHEDULE — *continued*

		standby power ≤ 4

[S 406/2016 wef 01/09/2016]

(*e*) for split type (inverter) air-conditioners with more than one indoor unit

Ticks	*Energy efficiency rating*	*Coefficient of Performance (COP) and standby power range*
2	Fair	Weighted COP ≥ 3.78 and COP ≥ 3.34
3	Good	Weighted COP ≥ 4.29 and COP ≥ 3.78
4	Very Good	Weighted COP ≥ 4.86 and COP ≥ 4.29
5	Excellent	Weighted COP ≥ 5.50, COP ≥ 4.86 and standby power ≤ 9 × N

[S 406/2016 wef 01/09/2016]

(*f*) for refrigerators —

(i) without freezer:

Ticks	*Energy efficiency rating*	*Annual Energy Consumption (AEC) in kWh*
1	Low	$(368 + 0.892 \times V_{adj}) \times 0.551 \geq AEC > (368 + 0.892 \times V_{adj}) \times 0.461$
2	Fair	$(368 + 0.892 \times V_{adj}) \times 0.461 \geq AEC > (368 + 0.892 \times V_{adj}) \times 0.332$
3	Good	$(368 + 0.892 \times V_{adj}) \times 0.332 \geq AEC > (368 + 0.892 \times V_{adj}) \times 0.239$
4	Very Good	$(368 + 0.892 \times V_{adj}) \times 0.239 \geq AEC$

(ii) with freezer and an adjusted volume (V_{adj}) of up to 300 litres:

Ticks	*Energy efficiency rating*	*Annual Energy Consumption (AEC) in kWh*
1	Low	$(465 + 1.378 \times V_{adj}) \times 0.553 \geq AEC > (465 + 1.378 \times V_{adj}) \times 0.427$
2	Fair	$(465 + 1.378 \times V_{adj}) \times 0.427 \geq AEC > (465 + 1.378 \times V_{adj}) \times 0.312$

FIRST SCHEDULE — *continued*

Ticks	*Energy efficiency rating*	*Annual Energy Consumption (AEC) in kWh*
3	Good	$(465 + 1.378 \times V_{adj}) \times 0.312 \geq AEC > (465 + 1.378 \times V_{adj}) \times 0.228$
4	Very Good	$(465 + 1.378 \times V_{adj}) \times 0.228 \geq AEC$

(iii) with freezer and an adjusted volume (V_{adj}) of more than 300 litres:

Ticks	*Energy efficiency rating*	*Annual Energy Consumption (AEC) in kWh*
1	Low	$(465 + 1.378 \times V_{adj}) \times 0.506 \geq AEC > (465 + 1.378 \times V_{adj}) \times 0.427$
2	Fair	$(465 + 1.378 \times V_{adj}) \times 0.427 \geq AEC > (465 + 1.378 \times V_{adj}) \times 0.312$
3	Good	$(465 + 1.378 \times V_{adj}) \times 0.312 \geq AEC > (465 + 1.378 \times V_{adj}) \times 0.228$
4	Very Good	$(465 + 1.378 \times V_{adj}) \times 0.228 \geq AEC$

(iv) with freezer and through-the-door ice dispenser:

Ticks	*Energy efficiency rating*	*Annual Energy Consumption (AEC) in kWh*
1	Low	$(585 + 1.378 \times V_{adj}) \times 0.485 \geq AEC > (585 + 1.378 \times V_{adj}) \times 0.409$
2	Fair	$(585 + 1.378 \times V_{adj}) \times 0.409 \geq AEC > (585 + 1.378 \times V_{adj}) \times 0.298$
3	Good	$(585 + 1.378 \times V_{adj}) \times 0.298 \geq AEC > (585 + 1.378 \times V_{adj}) \times 0.218$
4	Very Good	$(585 + 1.378 \times V_{adj}) \times 0.218 \geq AEC$

[S 646/2017 wef 01/12/2017]

(*g*) for clothes dryers —

Ticks	*Energy efficiency rating*	*Energy Consumption (EC) per Wash in kWh*

FIRST SCHEDULE — *continued*

1	Low	Rated Capacity × 0.67 ≥ EC > Rated Capacity × 0.55
2	Fair	Rated Capacity × 0.55 ≥ EC > Rated Capacity × 0.45
3	Good	Rated Capacity × 0.45 ≥ EC > Rated Capacity × 0.37
4	Very Good	Rated Capacity × 0.37 ≥ EC > Rated Capacity × 0.30
5	Excellent	Rated Capacity × 0.30 ≥ EC

(*h*) for televisions —

Ticks	*Energy efficiency rating*	*On-Mode Power Consumption (P) in Watts*
1	Low	P > 0.60 × (20 + 4.3224 × screen area)
2	Fair	0.60 × (20 + 4.3224 × screen area) ≥ P > 0.42 × (20 + 4.3224 × screen area)
3	Good	0.42 × (20 + 4.3224 × screen area) ≥ P > 0.30 × (20 + 4.3224 × screen area)
4	Very Good	0.30 × (20 + 4.3224 × screen area) ≥ P > 0.16 × (20 + 4.3224 × screen area)
5	Excellent	P ≤ 0.16 × (20 + 4.3224 × screen area)

[S 559/2014 wef 01/09/2014]

(*i*) for lamps —

Ticks	*Lamp Power Consumption (P_{lamp}) in Watts*
1	$0.8 \times (0.88\sqrt{\phi}+0.049\phi) \geq P_{lamp} > 0.24\sqrt{\phi} +0.0103\phi$
2	$0.24\sqrt{\phi} +0.0103\phi \geq P_{lamp} > 0.17 \times (0.88\sqrt{\phi} +0.049\phi)$
3	$P_{lamp} \leq 0.17 \times (0.88\sqrt{\phi}+0.049\ \phi)$

[S 398/2015 wef 01/07/2015]

[S 398/2015 wef 01/07/2015]

FIRST SCHEDULE — *continued*

4. In this Schedule, unless the context otherwise requires —

"adjusted volume" or "V_{adj}", in relation to a single-phase refrigerator, means the sum of the adjusted volumes of the compartments or sections of the refrigerator, where the adjusted volume of a compartment or section is the product of the rated volume of that compartment or section and the corresponding volume correction factor (K) as specified in paragraph 4 of Part I of the Schedule to the Energy Conservation (Registrable Goods) Order 2013 (G.N. No. S 556/2013);

[S 646/2017 wef 01/12/2017]

"Annual Energy Consumption" or "AEC" means the amount of energy consumed over 8,760 hours expressed in kilowatt-hour as specified in the test report;

"Coefficient of Performance" or "COP" means the ratio of the total cooling capacity expressed in Watts to the total effective input power expressed in Watts, as specified in the test report;

[S 234/2014 wef 01/04/2014]

"Energy Consumption" or "EC", in relation to clothes dryers, means the amount of energy consumed per cycle expressed in kilowatt-hour as specified in the test report;

[S 234/2014 wef 01/04/2014]

"Lamp Power Consumption" or "P_{lamp}" means —

(*a*) for a covered CFLi, $P_{covered\ CFLi} \times 0.95$;

(*b*) for any other lamp, the rated power consumed by the lamp, excluding power dissipated by non-integrated auxiliary equipment, such as ballasts, transformers or power supplies, expressed in Watts, as specified in the test report;

[S 398/2015 wef 01/07/2015]

"ϕ" means the rated luminous flux of a lamp expressed in lumens, as specified in the test report;

[S 398/2015 wef 01/07/2015]

"N", in relation to split type air-conditioners, means the total number of mountings which are assembled to form a matched functional unit;

[S 559/2014 wef 01/09/2014]

"On-Mode Power Consumption" or "P", in relation to televisions, means the power consumed when the television produces sound and picture, expressed in Watts, as specified in the test report;

[S 234/2014 wef 01/04/2014]

FIRST SCHEDULE — *continued*

"$P_{covered\ CFLi}$" means rated power consumed by a covered CFLi, excluding power dissipated by non-integrated auxiliary equipment, such as ballasts, transformers or power supplies, expressed in Watts, as specified in the test report;

[S 398/2015 wef 01/07/2015]

"screen area", in relation to a television, means the area of the television screen expressed in square decimetres as specified in the test report;

[S 234/2014 wef 01/04/2014]

"standby mode" means a condition where the good is connected to the mains power source and consumes energy to do the following only:

(*a*) allowing the activation of any other mode;

(*b*) displaying information, including time;

(*c*) indicating the status of the good;

(*d*) continuously regulating or monitoring internal components of the good, based on information collected by sensors; or

(*e*) heating the crankcase;

[S 559/2014 wef 01/09/2014]

"standby power" means the power consumed when the good is in standby mode, expressed in Watts, as specified in the test report;

[S 559/2014 wef 01/09/2014]

"Weighted COP" means the sum of 0.4 × COP at full-load cooling capacity and 0.6 × COP at part-load cooling capacity.

SECOND SCHEDULE

Regulation 2

TEST STANDARD OR METHOD

1. The test report shall contain the results of tests carried out for the registrable goods in accordance with the applicable test standard or method, as follows:

Registrable goods	*Type*	*Applicable test standard or method*
Air-conditioner	Casement/ Window type	ISO 5151 (2010)

SECOND SCHEDULE — *continued*

	Split type (inverter) with more than one indoor unit	ISO 15042 (2011) The cooling tests shall be conducted at 2 points, namely, the full-load cooling capacity and the part-load cooling capacity
	Split type (inverter) with one indoor unit	ISO 5151 (2010) The cooling tests shall be conducted at 2 points, namely, the full-load cooling capacity and the part-load cooling capacity
	Split type (non-inverter) with more than one indoor unit	ISO 15042 (2011)
	Split type (non-inverter) with one indoor unit	ISO 5151 (2010)
	All (for standby power)	IEC 62301 (2005) or IEC 62301 (2011)
Clothes Dryer	All	IEC 61121 (2005) The test shall be conducted on cotton textiles using the dry cotton drying programme
Lamp	Incandescent lamp	The luminous flux measurement test shall be conducted in accordance with CIE 84 (1989) The test conditions for the luminous flux measurement test are as specified in —

SECOND SCHEDULE — *continued*

		(*a*) for tungsten filament lamps, IEC 60064 (2005); and (*b*) for tungsten halogen lamps, IEC 60064 (2005) or IEC 60357 (2003).
	CFLi	IEC 60969 (2001-03)
	LED lamp	IEC 62612 (2013)
Refrigerator	All	ISO 15502 (2005) or IEC 62552 (2007)
Television	All	IEC 62087 (2008) or IEC 62087 (2011) The test shall be conducted using dynamic broadcast-content video signal

[S 398/2015 wef 01/07/2015]

[S 559/2014 wef 01/09/2014]

[S 234/2014 wef 01/04/2014]

2. In this Schedule, unless the context otherwise requires —

"CIE" means the International Commission on Illumination;

[S 398/2015 wef 01/07/2015]

"IEC" means the International Electrotechnical Commission;

"ISO" means the International Organization for Standardization.

THIRD SCHEDULE

Regulation 3(2)(*b*) and (4)(*c*)

FEES

	First column	*Second column*
1.	Application for registration as a registered supplier	No charge
2.	Application for registration for each registrable good —	
	(*a*) air-conditioner	$34

THIRD SCHEDULE — *continued*

(*b*) clothes dryer	$34
(*c*) refrigerator	$34
(*d*) television	$34
(*e*) lamp	$34

3. Application for renewal of registration for each registrable good —

(*a*) air-conditioner	$18
(*b*) clothes dryer	$18
(*c*) refrigerator	$18
(*d*) television	$18
(*e*) lamp	$18

[S 398/2015 wef 01/07/2015]

[S 234/2014 wef 01/04/2014]

FOURTH SCHEDULE

Regulation 7

MINIMUM ENERGY EFFICIENCY STANDARDS

Registrable Goods	*Minimum Energy Efficiency Standards*
1. Casement or window type air-conditioner	COP ≥ 2.90
2. Split type (non-inverter) air-conditioner with one indoor unit	COP ≥ 3.78
3. Split type (non-inverter) air-conditioner with more than one indoor unit	COP ≥ 3.78
4. Split type (inverter) air-conditioner with one indoor unit	Weighted COP ≥ 3.78 and COP ≥ 3.34
5. Split type (inverter) air-conditioner with more than one indoor unit	Weighted COP ≥ 3.78 and COP ≥ 3.34
6. [*Deleted by S 406/2016 wef 01/09/2016*]	
7. [*Deleted by S 406/2016 wef 01/09/2016*]	

FOURTH SCHEDULE — *continued*

8.	[*Deleted by S 406/2016 wef 01/09/2016*]	
9.	[*Deleted by S 406/2016 wef 01/09/2016*]	
10.	Refrigerator without freezer	$AEC \leq (368 + 0.892 \times V_{adj}) \times 0.551$
11.	Refrigerator with freezer —	
	(*a*) with adjusted volume of up to 300 litres	$AEC \leq (465 + 1.378 \times V_{adj}) \times 0.553$
	(*b*) with adjusted volume of more than 300 litres	$AEC \leq (465 + 1.378 \times V_{adj}) \times 0.506$
12.	Refrigerator with freezer and through-the-door ice dispenser	$AEC \leq (585 + 1.378 \times V_{adj}) \times 0.485$
13.	Clothes dryer	EC per Wash ≤ Rated Capacity × 0.67
14.	Incandescent lamp	$P_{lamp} \leq 0.8 \times (0.88\sqrt{\phi} + 0.049\phi)$
15.	CFLi (other than covered CFLi)	(*a*) $P_{lamp} \leq 0.24\sqrt{\phi} + 0.0103\phi$; (*b*) the ratio of luminous flux emitted by the lamp at 2,000 hours to its initial luminous flux is ≥ 0.85; and (*c*) the fraction of the total number of lamps that continue to operate (light output must be at least 50% of its initial luminous flux) at 6,000 hours is ≥ 0.5
16.	Covered CFLi	(*a*) $P_{lamp} \leq 0.24\sqrt{\phi} + 0.0103\phi$; (*b*) the ratio of luminous flux emitted by the lamp at 2,000 hours to its initial luminous flux is ≥ 0.80; and (*c*) the fraction of the total number of lamps that

FOURTH SCHEDULE — *continued*

	continue to operate (light output must be at least 50% of its initial luminous flux) at 6,000 hours is ≥ 0.5
17. LED lamp	(*a*) $P_{lamp} \leq 0.24\sqrt{\phi} + 0.0103\phi$;
	(*b*) the ratio of luminous flux emitted by the lamp at 6,000 hours to its initial luminous flux is ≥ 0.80; and
	(*c*) the fraction of the total number of lamps that continue to operate (light output must be at least 70% of its initial luminous flux) at 6,000 hours is ≥ 0.9

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