



**Republic of the Philippines**  
**DEPARTMENT OF ENERGY**  
(Kagawaran ng Enerhiya)

**DOE DC2016-04-0005**  
**PPR 01: AC**  
**Edition 2016**

**Annex B.1**  
**Particular Product Requirements:**  
**Air Conditioners**

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## Foreword

This PPR shall be an integral part of the Department Circular No. DC2016-04-0005 entitled “Declaring the Compliance of Importers, Manufacturers, Distributors and Dealers of electrical Appliances and Other Energy-Consuming Products with the Philippine Energy Standards and Labeling Program (PESLP) as a Policy of the Government” and its Implementing Guidelines.

This PPR provide the detailed technical requirements for air conditioners covered by PESLP particularly requiring the attachment of an energy label as prescribed in clause B.1.10

This PPR was developed by the Technical Working Group 01: *Heating, Ventilating and Air Conditioning Equipment* and approved by the Policy Advisory Committee. Any clause in this PPR not affected by amendments made in the General Administrative Requirements and General Technical Requirements provided in the Implementing Guidelines shall remain effective.

### B.1.1 Scope

This PPR covers air conditioners with cooling capacity up to 50,000 kJ/hr or 14 kW for domestic and similar use, but not limited to, the following categories:

1. Fixed speed air conditioner (window type and split type)
2. Variable speed air conditioner (window type and split type)
3. Multi-split
4. Single ducted mobile

### B.1.2 Definition of Terms

For the purpose of this PPR, the following definitions shall apply:

1. **Make/Brand name** - refers to the proprietary name use by the manufacturer and importer.
2. **Non-Ducted Air Conditioner** - as defined in PNS ISO 5151:2014, encased assembly or assemblies, designed primarily to provide free delivery of conditioned air to an enclosed space, room or zone.
3. **Cooling Seasonal Performance Factor (CSPF)** - quotient of the Cooling Seasonal Total Load (CSTL) in (kWh) divided by the Cooling Seasonal Energy Consumption (CSEC) in (kWh).
4. **Fixed speed air conditioner** - refers to the fixed capacity unit defined in PNS ISO 16358-1:2014.
5. **Variable speed air conditioner** - refers to the variable capacity unit defined in PNS ISO 16358-1:2014.
6. **Energy efficiency** - refers to the quotient of capacity over power input or capacity over power consumption.

7. **Energy Efficiency Class (EEC)** - refers to the level of the product's class which is based on the CSPF displayed on the energy label.
8. **Energy Efficiency Classification** - refers to the tiers of EEC according to the ranges of CSPF.

NOTE: The Energy Efficiency Classification is set in national rules.

### **B.1.3 Normative Reference**

The air conditioners covered under this PPR shall be tested, as applicable, according to but not limited to the following standards and their future amendments.

- PNS ISO 5151:2014, Non-ducted air conditioners and heat pumps - Testing and rating for performance contains provisions, which through reference in this text form part of this national standard. At the time of publication of this standard, the edition indicated was valid.
- ISO 15042: 2011 *Multiple split system air conditioners and air to air heat pumps – Testing and rating for performance*
- ISO 13253 *Ducted air conditioners and air to air heat pumps – Testing and rating for performance*
- PNS ISO 16358-1:2014 *Air-cooled air conditioners and air-to-air heat pumps- Testing and calculating methods for Seasonal Performance Factors-Part 1 Cooling Seasonal Performance Factor*

### **B.1.4 Validation of Energy Label**

**B.1.4.1** The procedure specified in Clause 9 of the Guidelines- *Validation of Energy Labels* applies.

### **B.1.5 Sampling Method (Post Market Sampling)**

**B.1.5.1** Clause 12 of the Guidelines-*Verification* applies including the following:

**B.1.5.2** Three (3) units of base model or its generic shall be randomly taken from the market display.

### **B.1.6 Specific Guidelines for the Conduct of Verification Testing**

#### **B.1.6.1 Testing**

All general technical provisions in the Guidelines apply, including the following:

**B.1.6.1.1** Test methods to verify conformity to the claimed information in the label shall be as specified in PNS ISO 5151:2014 and PNS ISO 16358-1:2014.

- B.1.6.1.2** The manufacturer or importer shall be responsible for the installation of the sample (split type air conditioner).
- B.1.6.1.3** Compartment temperatures (indoor and outdoor, wet bulb and dry bulb) during stable condition and reading period shall be maintained  $\pm 0.1$  °C.
- B.1.6.1.4** Test samples shall be tested at a standard test voltage of 230V $\sim\pm 1\%$ , 60Hz  $\pm 1\%$ .
- B.1.6.1.5** All necessary special settings required for the proper conduct of test shall be provided by the manufacturer or importer.
- B.1.6.1.6** The verification testing shall be conducted by DOE recognized testing laboratory.
- B.1.6.1.7** Conformance on Requirements for Various Case Conditions

Conformance shall be evaluated according to the cases shown below:

Case Condition	1 <sup>st</sup> Sample	2 <sup>nd</sup> Sample	3 <sup>rd</sup> Sample	Conformance
Case 1	Pass	Not Required	Not Required	Pass
Case 2	Fail	Pass	Pass	Pass
Case 3	Fail	Fail	Not Required	Fail
Case 4	Fail	Pass	Fail	Fail

*Note 1:* Applies both for tolerances and MEPS.

*Note 2:* Replacement of defective units shall be allowed up to three (3) times.

### **B.1.7 Declaration of Generic Models**

The procedure in Clause 12.7 of the Guidelines - *Inspection of Generic Models* applies, including the following:

In case of doubt, DOE-EUMB shall require the inspected units be subject to performance testing.

- 1.** A model shall not be considered generic if:
  - a.** There is a difference in major components (i.e. name plate rating, compressor, evaporator plate, temperature control setting etc.)

- b. There are other differences that may affect the energy performance/CO<sub>2</sub> emissions of the unit.
- c. In case of doubt, performance testing shall be conducted on the submitted samples.

### **B.1.8 Monitoring**

**B.1.8.1** Manufacturers/importers/dealers shall allow DOE or its authorized representatives to conduct market monitoring in their local showroom to verify attachment of energy label.

**B.1.8.2** The monitoring schedule for each showroom shall be done at least once a year.

### **B.1.9 Performance Requirements**

#### **B.1.9.1 Minimum Energy Performance Standard**

**B.1.9.1.1** Fixed speed Air conditioners shall have rated CSPF not lower than:

- a) 2.90 CSPF, for rated capacity below 3.33kW, and
- b) 2.81 CSPF, for rated capacity 3.33kW and above.

**B.1.9.1.2** For Variable speed Air conditioners, the minimum CSPF shall be the lowest value in the 4-star range as classified in Table B.1.1 (Energy Efficiency Classification) and categorized according to the rated cooling capacity in clause B.1.9.1.1.

*Note:*

1. *Measured CSPF shall be rounded-off to the nearest 0.01 Wh/Wh. The rules of rounding-off shall be followed.*
2. *Verdict shall be based on the rounded-off value.*
3. *MEPS shall be subjected for review and upgrading every three (3) years or earlier as necessary.*
4. *The MEPS for Variable-Speed, Multi-Split and Single-Ducted mobile is under consideration until sufficient data will be available.*

#### **B.1.9.2 Tolerances**

The following tolerances shall apply to all covered air conditioners.

**B.1.9.2.1** The measured cooling capacity shall not be less than 90 percent of the rated cooling capacity of the test sample.

Note:

1. Measured cooling capacity shall be rounded-off to the nearest hundredth. The rules of rounding-off shall be followed.
2. The measured cooling capacity shall be rounded-off first before determining the tolerance.
3. Verdict shall be based on the rounded-off value.

**B.1.9.2.2** The measured CSPF shall not be less than 90 percent of the rated CSPF of the test sample.

Note:

1. Measured percentage value shall be rounded-off to the nearest tenth. The rules of rounding-off shall be followed.
2. Verdict shall be based on the rounded-off value.

Note: The rated CSPF shall be mathematically consistent

### **B.1.9.3 Energy Efficiency Classification of Air Conditioners**

**B.1.9.3.1** Non-Ducted Air conditioner shall be classified based on rated CSPF of the product.

**B.1.9.3.2** The classification shall be represented by stars with one star indicating the lowest range of CSPF while five stars shall represent the highest range of CSPF.

**B.1.9.3.3** There shall be two sets of energy efficiency classification regardless of variable speed or fixed speed.

a) Below 3.33 kW cooling capacity

b) 3.33 kW cooling capacity and above

**B.1.9.3.4** The rated CSPF of air conditioners shall be classified according to Table B.1.1 *Energy Efficiency Classification (window type & split type)*.

Note: The method used on the above table is normalization of distribution rated EER of air conditioner based on the latest list of certified air conditioner (April 2016)

## B.1.10 Presentation of Energy Labels

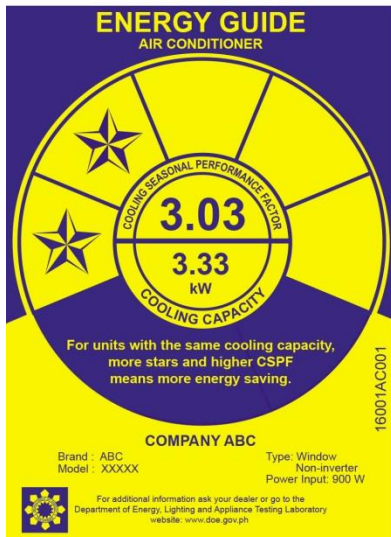
### 1- Star

#### A. AIRCON Energy Label Design (artwork)



### 2- Star

#### A. AIRCON Energy Label Design (artwork)





### 3- Star

#### A. AIRCON Energy Label Design (artwork)



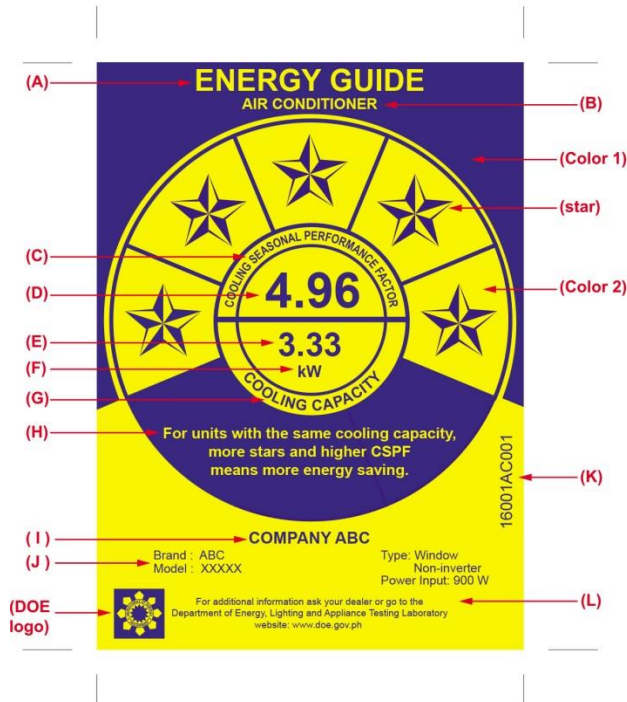
### 4 -Star

#### A. AIRCON Energy Label Design (artwork)

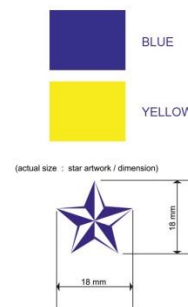


## 5 - Star

### A. AIRCON Energy Label Design (artwork)



Code	Type	Size (Pt)	Color
(A)	ARIAL (Bold)	22	Yellow
(B)	ARIAL (Bold)	11	Yellow
(C)	ARIAL (Narrow Bold)	9	Blue
(D)	ARIAL (Bold)	36	Blue
(E)	ARIAL (Bold)	24	Blue
(F)	ARIAL (Bold)	12	Blue
(G)	ARIAL (Bold)	11	Blue
(H)	ARIAL (Bold)	11	Yellow
(I)	ARIAL (Bold)	12	Blue
(J)	ARIAL (Regular)	9	Blue
(K)	ARIAL (Regular)	12	Blue
(L)	ARIAL (Bold)	7	Blue
(Others)			
	Color 1	Blue (CMYK = 100, 85, 0, 0)	
	Color 2	Yellow (CMYK = 1, 6, 92, 0)	
	Star symbol	Blue & yellow - ready artwork	
	DOE logo	Blue & yellow - ready artwork	
Overall Dimension (HxW): 150 mm x 110 mm			
Label Thickness: 120 gsm (minimum)			



### B.1.11 Specifications and dimensions of the energy guide

- B.1.11.1** The color of the label shall be yellow and blue. Letters and numerals in blue background are in yellow, while letters and numerals in yellow background are in blue.
- B.1.11.2** The label shall have a dimension of 110 mm width and 150 mm height.
- B.1.11.3** All required parameters shall be clear and conspicuous.
- B.1.11.4** The paper thickness, pantone color, font face and size shall be as follows:

*Paper Thickness:*

*Paper thickness: 120 gsm*

*Pantone Color:*

*Pantone color yellow 100*

*Pantone color blue 100*

*Font Face and Size base on Energy label design artwork:*

- "Energy Guide": Arial bold, 22 pts.*
- "Air Conditioner": Arial bold, 11 pts.*
- "Cooling Seasonal Performance Factor": Arial narrow bold, 9 pts.*
- "Rated CSPF": Arial bold, 36 pts.*

- e. "Rated Cooling Capacity": Arial bold, 24 pts.
- f. "kW": Arial bold, 12 pts.
- g. "Cooling Capacity": Arial bold, 11 pts.
- h. "For units with the same cooling capacity": Arial bold, 11 pts.
- i. "Name of company ABC": Arial bold, 12 pts.
- j. "Brand": Arial, 9 pts.  
"Model": Arial, 9 pts.
- k. "DOE Control Number": Arial, 12 pts.
- l. "Type": Arial, 9 pts.  
"Power Input": Arial, 9 pts.

**B.1.11.5** The Energy Efficiency Class pictogram is as depicted in clause B.1.10.

**B.1.11.6** Manufacturers/importers/dealers shall place the energy guide label at the front of the unit or front of the box displayed for sale. In case of split type air conditioner, the energy guide label shall be placed at the indoor (unit or box).

**B.1.12 Correction of Performance Ratings**

**B.1.12.1** Manufacturer/ importer has the option to downgrade the claimed ratings to comply with the requirements of the standard based on the result of verification test.

**B.1.12.2** New claims shall conform to the tolerances specified in Clause B.1.9.2

<b>Table B.1.1 Energy Efficiency Classification (Window Type &amp; Split Type)</b>				
EEC	Cooling Seasonal Performance Factor (CSPF)			
	Fixed Speed		Variable Speed	
	Below 3.33 kW	3.33 kW and above	Below 3.33 kW	3.33 kW and above
One Star	2.90 to 2.93	2.81 to 2.83	-	-
Two Star	2.94 to 3.03	2.84 to 2.94	-	-
Three Star	3.04 to 3.24	2.95 to 3.12	-	-
Four Star	3.25 to 3.99	3.13 to 3.76	3.25 to 3.99	3.13 to 3.76
Five Star	4.00 and above	3.77 and above	4.00 and above	3.77 and above

*Note 1: By 2020, in line with the ASEAN harmonization, the MEPS shall be the four (4) star EEC.*

*Note 2: New set of values on table B.1.1 will be based on the available data where the minimum CSPF will be 3.25 for units with capacity below 3.33 kW; and 3.13 for units with capacity above 3.33 kW.*