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PART II

Statutory Notifications (S. R. O.)

GOVERNMENT OF PAKISTAN  
MINISTRY OF ENERGY  
(Power Division)  
[NATIONAL ENERGY EFFICIENCY AND  
CONSERVATION AUTHORITY]

NOTIFICATION

*Islamabad, the 14th March, 2024*

S. R. O. 413(I)/2024.—In exercise of the powers conferred by section 21 read with sub-section (3) of section 4 and clause (u) of section 7 of the National Energy Efficiency and Conservation Act, 2016 (XXX of 2016), the National Energy Efficiency and Conservation Board, in consultation with the National Energy Efficiency and Conservation Authority, makes the following regulations, namely:—

PART-I

DEFINITIONS

1. Short title and commencement.—(1) These regulations shall be called the National Energy Efficiency and Conservation (Pakistan Energy Labels for Room Air Conditioners) Regulations, 2023.

1011 (1—18)

Price : Rs. 40.00

[7376 (2024)/Ex. Gaz.]

(2) These regulations shall come into force at once.

2. Definitions.—(1) In these regulations, unless there is anything repugnant in the subject or context,—

- (i) "Act" means the National Energy Efficiency and Conservation Act, 2016 (XXX of 2016);
- (ii) "applicant" means any local manufacturer, assembler, or importer of room air conditioners;
- (iii) "application" means an application made by an applicant, in hard or electronic form, in accordance with the provisions of these regulations and shall, where the context so permits, include the documents in support of such application;
- (iv) "authorization" means an authorization granted by the Authority for the use of Pakistan energy labels for room air conditioners;
- (v) "cooling seasonal performance factor (CSPF)" mean the ratio of the total annual amount of heat that the equipment can remove from the indoor air when operated for cooling in active mode to the total annual amount of energy consumed by the equipment during the same period. The unit is Wh/Wh;
- (vi) "designated officer" means any officer of the Authority as such by the Managing Director of the Authority from time to time to perform certain functions as per these regulations;
- (vii) "energy efficiency ratio" or "EER" means the ratio of total cooling capacity to effective power input at any given set of rating conditions. The unit is kW/kW;
- (viii) "energy efficient" means product is compliant to minimum energy performance standards and bearing Pakistan energy label;
- (ix) "importer" means any person who is authorized to make import of room air conditioners; ...
- (x) "manufacturer" means any person who is involved in manufacturing or assembling of room air conditioners;
- (xi) "minimum energy performance standards (MEPS)" means the minimum energy performance standards as approved by the Authority and endorsed and adopted by PSQCA;

- (xii) "model" means the model or range of one model for the product of one particular brand, to which a single set of test report is applicable and where each of the models has the same physical characteristics, energy consumption or efficiency and performance characteristics;
- (xiii) "model energy efficiency ratio (MODEL EER)" means the model or range of one particular brand, to which a single set of test report is applicable and where each of the models have the same physical characteristics, energy efficiency ratio, energy efficiency level and performance characteristics. The term 'model' is synonymous with 'family of models';
- (xiv) "NEECA" means National Energy Efficiency and Conservation Authority established under the National Energy Efficiency and Conservation Act, 2016 (XXX of 2016);
- (xv) "Pakistan energy label" means a sticker as defined and approved by the Authority as per Schedule-IV and generated through the product registration system or issued by the Authority on the basis of the star rating commonly known as energy star rating. The star rating is calculated from the star rating band as per the Schedule-III;
- (xvi) "product" means the room air conditioner to be registered under these regulations;
- (xvii) "PSQCA" means the Pakistan Standards and Quality Control Authority established under the Pakistan Standards and Quality Control Authority Act, 1996 (VI of 1996);
- (xviii) "room air conditioner" means non-ducted wall mounted split room air conditioners with cooling capacity up to 10.5 kW that can be connected to main power and which are within the scope of PS: ISO5151/2013 and it includes:-
  - (a) "non-inverter room air conditioner" means room air conditioner that employs technologies that control the output of the compressor by start-stop operation;
  - (b) "inverter room air conditioner" means the air conditioner that employs technologies that vary the output of the compressor, by means other than start-stop operation;
  - (c) "wall mounted split room air conditioner" means an air conditioner whose indoor unit is encased, consists of

evaporator assembly, fan motor assembly and electrical assembly and mounted on a wall primarily designed to provide free delivery of conditioned air to an enclosed space, room or zone;

(xix) "schedule" means schedule to these regulations;

(xx) "seller" means a person who sells the product to any person within Pakistan whether directly or through some online process; and

(xxi) "ton of refrigeration" or "TR" means a ton of refrigeration (abbreviated as TR) is a unit of refrigeration capacity. Originally 1 TR was defined as the rate of heat transfer required to make 1 short ton (2000 lbs.) of 3 ice per day from water at 0° C. American Society of Heating, Refrigerating and Air conditioning Engineers (ASHRAE) defines 1 TR as equivalent to a refrigeration capacity of 3516.85 W or 3023.95 kcal/h. 1 TR air conditioner has a refrigeration capacity of 3516.85 W at the prescribed temperatures.

(2) All other terms, words and expressions used, but not defined in these regulations, shall have the same meanings as assigned to them in the Act or any other enabling rules and regulations.

## PART-II

### GRANT OF AUTHORIZATION OR REGISTRATION

3. (1) No person, manufacturer or importer shall sell or purchase any room air conditioner which is not energy efficient and not compliant to MEPS.

(2) In order to ensure that only energy efficient room air conditioners are sold in the market, these air conditioners shall bear Pakistan energy label for room air conditioners.

4. Application for grant of registration or authorization.—(1) An applicant desiring registration shall make application to the Authority for registration or authorization to use or affix the Pakistan energy labels on the product.

(2) The applicant shall sign-up and login through the product registration system, link to which has been given on the Authority's website or an applicant can submit an application as per format provided in the Schedule-I. The contents and format of application form provided in the Schedule-I may be updated by the Authority on as and when required basis.

(3) The application with one time company registration fee, product registration fee, product model registration or renewal and label fee shall be submitted in the form of a non-refundable payee account demand draft in favor of the Authority or online payment channels as prescribe in the Schedule-II.

(4) For registration, the product shall meet the MEPS as prescribed by the Authority.

(5) The online or downloaded application form shall be duly filled in, by giving correct and appropriate information, list of retailers or dealers with their contact details and addresses for the labelled products in different cities and required supporting documents as mentioned in the application form as provided in Schedule-I.

(6) The contents of the application with the required set of information as set out in Schedule-I, submitted by the applicant, shall be reviewed by the Authority's technical evaluation committee and thereafter as per the recommendation of the said committee, the decision as to the registration or otherwise of the product shall be given by the Authority.

(7) The applicant shall be solely responsible for ensuring the accuracy of the information displayed on the label or any public claim for label level and quality of product and use of label only for approved product's models.

(8) The room air conditioners bought to be registered shall conform to the testing conditions and parameters as set out in Schedule-VI.

(9) PSQCA shall provide test report issued by an accredited laboratory or lab enlisted by the Authority for the particular models of the product for which grant of Pakistan energy label is required.

(10) The test reports shall be reviewed by the technical section or officials nominated by the Authority to ensure its compliance with the energy performance or star rating classification specified in the Schedule-III and accordingly star rating for the particular model of the product would be endorsed and registered manually or through the product registration system.

(11) In case there are changes in the energy efficiency parameters of the product or any other information on the label, then a fresh application shall be submitted and it will be processed accordingly.

(12) The liability of applicant for the authenticity of label will continue till those labeled products are available in the market.

(13) The result of evaluation shall be communicated to the applicant within fifteen working days after the approval or rejection by the Authority's

technical evaluation committee and an authorization certificate to use the Pakistan energy label stickers shall be issued accordingly for the respective models through the product registration system or manual mode. In case of rejection, reasons for such rejection shall also be communicated to the applicant.

(14) The validity of the registration of model shall be for two years (from the date of registration) and thereafter, the applicant shall be required to get the registration re-issued in the manner provided herein for new registration.

5. Design and specifications of Pakistan energy label.—(1) The design and related information regarding Pakistan energy labels for the product shall be as per Schedule-IV. The design of the label as provided in the Schedule-IV may be updated from time to time as and when required by the Authority.

(2) The Authority shall embed security features in the label to enable verification of the authenticity of the labelled product. The security features shall be verifiable through modern technologies such as QR Code scanning.

### PART-III

#### MONITORING

6. (1) For the purposes of monitoring, the Authority may seek information regarding all the registered products including the details of production, import and sales of the registered product.

(2) The Authority may, from time to time, either through its designated officers or third party firm or any designated agency shall carry out random monitoring to verify the compliance in using the Pakistan energy labels for the registered products by the manufacturers, assemblers, or importers.

(3) The following may be the considerations for the verification or monitoring of the registered products, namely:—

- (i) pattern or design of label;
- (ii) validity of authorization of label users;
- (iii) label contents; and
- (iv) manner of display of label.

(4) In case, during the course of monitoring, any contravention of the provisions of the Act or other rules and regulations is observed, further action into the matter shall be taken in accordance with the provisions of Part IV of these regulations.

PART-IV

CANCELLATION OF REGISTRATION OR PENALTIES

7. **Non-conformance of Pakistan energy label use.**—(1) If Pakistan energy label used or affixed on the product is found to be not conforming to the pattern or design, the way of use as approved by the Authority or the label is found misleading to the consumers or retailers or violation of energy consumption against notified standards, the Authority shall within fifteen days of coming to know of the violation, cause the designated officer to seek an explanation from such person herein (after referred to as the said person).

(2) The designated officer shall issue an explanation to the said person to explain the occurrence of the violation within a period of fifteen days from the receipt of the explanation.

(3) Where the said person admits the violation without offering an excuse, the registration of the product in question shall be cancelled and the said product shall be prohibited from sale in the market.

(4) Where the said person admits the violation but maintains that there were valid reasons for such violation, he shall submit a written and reasonably detailed explanation of the reasons for such violation within a period of fifteen days.

(5) The Authority shall examine the explanation referred to in sub-regulation (4) within fifteen days of receipt thereof and shall, if so requested, allow the said person an opportunity of being heard in person or through his authorised representative.

(6) If the Authority accepts the explanation, it shall record the reasons for acceptance and shall order the matter closed.

(7) If the Authority rejects the explanation, it shall record the reasons for rejection of the response and shall pass an order regarding cancellation of the registration of the product. Beside the cancellation of registration, the Authority may also direct for withdrawal of all the stocks from the market immediately and it may also recommend imposition of fine as determined by the Board as per Schedule-V.

(8) The decision of the Authority under sub-regulation (7) shall forthwith be communicated to the said person.

(9) The Authority may also communicate its decision as to cancellation of registration of the product to the relevant offices of Customs for prohibiting the import of such products which are in non-conformance of Pakistan energy label use in accordance with these regulations.

8. **Complaints related to performance testing or test reports.—**(1) The testing required for verification shall be got conducted through an accredited lab or labs enlisted by the Authority for this purpose at the expense of the manufacturer or importer.

(2) For any random verification, the Authority shall carry out risk based sampling in the market and shall buy models from the market for verification test. At least one sample of the registered product shall be picked from the distributors or retailers by the monitoring team. If the registered product's model fails to pass the verification test, the registered company or firm of the model shall be issued a show cause notice. However, on request of such registered company or firm, the Authority may get the second check testing of the model conducted at the registered company's or firm expense.

(3) In case of the second verification test, the Authority shall pick three samples of the same model from the market and test the samples. The cost of these three samples shall be borne by the manufacturer, assembler, importer, or retailer, as the case maybe, as per nature of complaint. The Authority shall inform the registered company or firm of the model about the date of second check testing.

(4) The manufacturer, seller or importer shall be responsible for providing due assistance to the Authority's monitoring team.

(5) In case of failure of performance test results as compared to the results of test conducted at the time of model registration under these regulations, the Authority shall pass an order regarding cancellation of the registration of the product. Beside the cancellation of registration, the Authority may also direct for withdrawal of all the stocks from the market immediately and it may also recommend imposition of fine as determined by the Board as per Schedule-V.

(6) The Authority may also communicate its decision as to cancellation of registration of the product to the relevant offices of Customs for prohibiting the import of such products which fail performance testing in accordance with these regulations.



PART-V

COMPLAINTS

9. (1) Any consumer of a registered product may lodge a complaint before the Authority, if the product is not in conformity with the approved specifications or standards or it does not bear the requisite label thereon.

(2) Upon receipt of the complaint, the Authority may cause the designated officer for issuing an explanation to the seller or manufacturer or importer of the product to show cause within fifteen days as to why further action in terms of the provisions of Part IV of these regulations may not be taken against him. If considered necessary, the designated officer may make site inspections or get the product tested through the accredited laboratory at the expense of the seller, or manufacturer or importer against whom the complaint was lodged.

(3) An opportunity of hearing may also be provided by the designated officer to the parties.

(4) Upon receipt of the response to the explanation issued under sub-regulation (2) or after making site inspection or testing of the product, the designated officer may make recommendations as to the decision of the complaint and may recommend to the Authority either for dismissal of the complaint or for taking further action in terms of Part IV of these regulations.

(5) The decision upon such complaint shall be given by the Authority within sixty days of the lodging of the complaint.

(6) Any person aggrieved by the decision of Authority may file an appeal before the Energy Conservation Tribunal in accordance with the provisions of the Act.



**SCHEDULE-I**  
[See regulations 4(2), 4(5) and 4(6)]



**Pakistan Energy Labeling Scheme Registration Form**

for Grant of Authorization to use "Pakistan Energy Label for ACs"

To be filled in by the applicant

**1. Applicant information**

a. Name of Company/Firm: \_\_\_\_\_

b. Address: \_\_\_\_\_

c. Location of Factory/Plant: \_\_\_\_\_

d. Telephone: \_\_\_\_\_

Factory: \_\_\_\_\_

Office: \_\_\_\_\_

e. Name of Company Managing Director/Director of the factory/firm: \_\_\_\_\_

f. Name of Contact Person: \_\_\_\_\_

Phone #: \_\_\_\_\_

Mobile#: \_\_\_\_\_

E-mail: \_\_\_\_\_

2. Company/Firm Sale Tax Number: \_\_\_\_\_

3. Company/Firm National Taxpayer Number: \_\_\_\_\_

4. Whether the Company/firm is registered with the local Chamber of Commerce and Industry? If YES then fill the following;

Registration #: \_\_\_\_\_

Year: \_\_\_\_\_

5. Whether a member of any Association? YES ☐ NO ☐ If YES:

Name: \_\_\_\_\_

Membership No: \_\_\_\_\_

Year: \_\_\_\_\_

6. Whether you have sales/distributors/retailers' network for the specific product? (Tick the applicable box)

- Throughout Pakistan ☐
- Khyber Pakhtun Khwa ☐
- Punjab ☐
- Sindh ☐
- Azad Jammu & Kashmir ☐
- Baluchistan ☐
- Gilgit Baltistan ☐

7. Detailed information of the product for which labeling is required:

- a. Brand Name: \_\_\_\_\_
- b. Model Name: \_\_\_\_\_
- c. Date of Manufacturer or Imported year: \_\_\_\_\_
- d. If Imported, Origin of the Country of the product:  
\_\_\_\_\_
- e. Rating of Product/Appliance in kW:  
\_\_\_\_\_
- f. Rated Annual Energy Consumption: \_\_\_\_\_
- g. Cooling capacity/Compressor Type: \_\_\_\_\_
- h. Type of Refrigerant: \_\_\_\_\_
- i. Color (specify all the available colors):  
\_\_\_\_\_
- j. Is the product granted PS Mark by Pakistan Standards & Quality Control Authority (PSQCA)  
YES ☐ NO ☐ If YES: Specify the  
No. \_\_\_\_\_
- k. Any other salient feature of the product regarding energy consumption/ efficiency:  
\_\_\_\_\_

8. Read and understand the National Energy Efficiency and Conservation (Pakistan Energy Labels for Room Air Conditioners) Regulations, 2023. Do you agree with the requirement, criteria and conditions for grant of Pakistan Energy Label given in these Regulations?

YES ☐ NO ☐

9. Specify the information about deposited non-refundable Fees payable to NEECA

☐ Company Registration Fees:

Demand Draft/ Pay Order No: \_\_\_\_\_

Dated: \_\_\_\_\_

for Amount Rs.: \_\_\_\_\_

☐ Product/Appliance Registration Fee:

Demand Draft/ Pay Order No: \_\_\_\_\_

Dated: \_\_\_\_\_

for Amount Rs.: \_\_\_\_\_

☐ Model Registration Fee:

Demand Draft/ Pay Order No: \_\_\_\_\_

Dated: \_\_\_\_\_

for Amount Rs.: \_\_\_\_\_

☐ Renewal Fee:

Demand Draft/ Pay Order No: \_\_\_\_\_

Dated: \_\_\_\_\_

for Amount Rs.: \_\_\_\_\_

10. Estimated production per annum of product/appliance of Model for which the application is submitted?

\_\_\_\_\_

11. The following documents should be attached with the application

- a. Company Brochure
- b. Product Brochure/catalogue
- c. Product Test Report issued by an Accredited Lab
- d. Original Demand Draft(s)/ Pay Order(s)

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Date: \_\_\_\_\_

(Stamp of the firm/company)

## Data of the registered room air conditioner

Data	Remarks
Product registration number	
Date of the product registration	
Brand name	
Model name and manufactured or imported year	Model name/year
Origin of the country of the product	
Voltage in volt	
Phase	
Rated cooling capacity in kW	
Compressor type	
Rated cooling seasonal performance factor (CSPF)	
Rating of the label standard (No. of Stars)	
Refrigerant type	
Label period	
Rated annual energy consumption in kWh/year	
No. of Manufactured, imported and sold biannually in unit	
Example: 1-Jan-2022 to 31-Mar-2022 manufactured	XXXX units

## Required Data in the test report of registered room air conditioner

Data	Remarks
1. Testing laboratory	
1.1 Name of the testing laboratory	
1.2 Laboratory address where testing was conducted	
1.3 Contact details (name of contact, phone number and e-mail address)	
1.4 Date of specific tests	
1.5 Relevant accreditation(s) (where applicable)	
2. Client (This part can be skipped, in the case of in-house testing laboratory)	
2.1 Company registration number	
2.2 Manufacture/importer/supplier's name	
2.3 Address of manufacture/importer/supplier	
2.4 Contact name and title	
2.5 Contact details (Phone number and e-mail address)	
3. Test methods	
3.1 Test standards and editions used	
3.2 Test method (to identify "calorimeter test method" or "indoor air enthalpy test method")	

4. Energy consumption of room air conditioner	
4.1 Brand	
4.2 Model	
4.3 Serial number	
4.4 Rated voltage and frequency in volts and hertz	
4.5 Phase	
4.6 Refrigerant	
4.7 Test results for cooling mode	
4.7.1 Tested full capacity – Standard T (35C), in watts	
4.7.2 Tested full power input – Standard T (35C), in watts	
4.7.3 Tested half energy capacity – Standard T (35C), in watts	Variable only
4.7.4 Tested half power input – Standard T (35C); in watts	Variable only
4.7.5 Cooling seasonal performance factor (CSPF), Wh/Wh	

## SCHEDULE-II

[See regulation 4(3)]

## FEE STRUCTURE

Sr. No	Fee Type	Fee in Pak Rs.
(1)	(2)	(3)
1	Company/Firm Registration Fee (One Time)	200,000/-
2	Product Registration Fee (One Time)	Nil
3	Model Registration/Renewal Fee (2 Years)	20,000/-
4	Pakistan Energy Label / Security Sticker Fee	50/-

Note: For the companies/importers which are going to register with the Authority within one year of notification of the regulations, the company/firm registration fee shall be waived off. The fee prescribed in column (3) of the table above shall have to be submitted by the companies or firms which shall register with the Authority after one year of notification of these regulations. The Authority may revise the fee subject to change in market price of testing, labeling, and other associated expenses.

**SCHEDULE-III**

[See regulations 2(xv) and 4(10)]  
**Star Rating Band & Classification**

**1. Star Rating Band**

The star rating shall be in accordance with the following table:-

Rated cooling capacity (kW)	< 4.5	4.5 ≤ - ≤10.5
5 star	≥ 4.80	≥ 4.50
4 star	4.30 ≤ CSPF < 4.80	4.00 ≤ CSPF < 4.50
3 star	3.90 ≤ CSPF < 4.30	3.70 ≤ CSPF < 4.00
2 star	3.50 ≤ CSPF < 3.90	3.30 ≤ CSPF < 3.70
1 star	3.20 ≤ CSPF < 3.50	3.00 ≤ CSPF < 3.30

**2. MEPS requirement**

MEPS requirements shall be in accordance with following table:

Rated cooling capacity (kW)	< 4.5	4.5 ≤ - ≤10.5

**SCHEDULE-IV**

[See regulations 2(xv) and 5(1)]

**Pakistan Energy Label****1.1 Affixing of Pakistan Energy Label:**

The energy star rating label shall be in the form of a sticker and affixed to the indoor and outdoor unit and printed on packing on some prominent position with at least one side of the package box fully displaying the label for clear visibility. The label shall display the approved energy star rating for the model of the AC. The format of the energy star rating label sticker shall be as given in Figure-1. This label will have some proprietary material, Overt & Covert security features with QR Code along with unique code for instant digital verification by the end-user. The label Pakistan Energy Label shall be provided by NEECA after granting permission to use Pakistan Energy Label. Pak Rs. 50 would be charged per product unit from the manufacturer by NEECA on the basis of the production/import quantity as declared vide Part III 6(2), which shall be paid in advance in the form of a nonrefundable Payee Account Demand Draft in favor of the Authority as per declared production quantity.

The following contents shall be displayed on its label:-

- The name of manufacturer, seller or importer and brand;
- The model and year of manufacturing or import;

- (c) Cooling capacity (100 per cent.) in Watts and tons of refrigeration in brackets for reference;
- (d) Electricity consumption in kWh per year;
- (e) Annual electricity consumption shall be calculated by the multiplying cooling full capacity in Watts by 1.37 and divided by CSPF.  
Annual electricity consumption (kWh) = Cooling capacity (100 per cent) in Watts  $\times$  1.37  $\div$  CSPF;
- (f) Compressor type;
- (g) CSPF:- The value of CSPF shall be rounded to three significant figures;
- (h) Star level;
- (i) Label period;
- (j) Refrigerant;

The figure displays five sample Pakistan Energy Labels for different appliances. Each label includes a star rating at the top, the NEECA logo, and a table of technical specifications. The labels are designed to be informative and easy to read, with clear sections for product details and energy performance metrics.

**Top Row (Air Conditioners):**

- Label 1 (Left):** For a 1.5 Ton Air Conditioner. It shows a star rating of 4 stars, a CSPF of 12.5, and a cooling capacity of 18,000 Watts (51,300 Btu/h).
- Label 2 (Middle):** For a 2 Ton Air Conditioner. It shows a star rating of 5 stars, a CSPF of 13.5, and a cooling capacity of 24,000 Watts (67,200 Btu/h).
- Label 3 (Right):** For a 3 Ton Air Conditioner. It shows a star rating of 5 stars, a CSPF of 14.5, and a cooling capacity of 36,000 Watts (98,400 Btu/h).

**Bottom Row (Refrigerators):**

- Label 4 (Left):** For a 200L Refrigerator. It shows a star rating of 4 stars, a CSPF of 12.5, and a cooling capacity of 18,000 Watts (51,300 Btu/h).
- Label 5 (Right):** For a 300L Refrigerator. It shows a star rating of 5 stars, a CSPF of 13.5, and a cooling capacity of 24,000 Watts (67,200 Btu/h).

Each label also includes a QR code and a note about the NEECA logo and star rating.

Figure 1: Format for Pakistan Energy Label



**1.2 Dimensions & Character size of the Pakistan Energy Label**

The Pakistan Energy Label for Room Air Conditioners shall have the dimension of 50x85mm.

**1.3 Prohibited information**

Advertising information, other than that being included on the Pakistan Energy Label, is prohibited.

**SCHEDULE-V**

[See regulations 7(7) and 8(5)]

**Penalties for Non-Compliance**

Sr No.	Non-Compliance Related to	Penalties(Rs.)
(1)	(2)	(3)
1	Pattern/design of label	100,000
2	Validity of authorization of label users	100,000
3	Label contents	200,000
4	Manner of display of label	150,000
5	Verification test failure	1,500,000
6	Manufacture/assemble, sale and import without getting registered	2,000,000

**SCHEDULE-VI**

[See regulation 4(8)]

**TESTING PARAMETERS & CONDITIONS**

Star rating index shall be based on CSPF Cooling Seasonal Performance Factor on the basis of following standards and testing conditions:

**1. Testing standards**

MEPS shall be CSPF Cooling Seasonal Performance Factor.

The following testing standard references are indispensable for the application of this standard. For dated references, only the edition cited applies.

PS: ISO 16358-1 Air-cooled air conditioners and air-to-air heat pumps – Testing and calculating methods for seasonal performance factors – Part 1: Cooling seasonal performance factor

PS: ISO 16358-1 Amendment 1 Air-cooled air conditioners and air-to-air heat pumps – Testing and calculating methods for seasonal performance factors – Part 1: Cooling seasonal performance factor Amendment 1

PS: ISO 5151/2013 Non-ducted air conditioners and heat pumps – Testing and rating for performance

## 2. Testing condition

CSPF is specified by PS: ISO 16358-1, Air-cooled air conditioners and air-to-air heat pumps – Testing and calculating methods for seasonal performance factors – Part 1: Cooling seasonal performance factor.

To calculate CSPF, test data shall be taken according to PS: ISO5151/2013 and the temperature bin distribution shall follow Table 1.

Table 1 Temperature bin distribution

Bin number j	1	2	3	4	5	6	7	8	9
Outdoor temperature $t_j$ °C	21	22	23	24	25	26	27	28	29
Fractional bin hours $n_j$	0.034	0.038	0.038	0.042	0.051	0.055	0.072	0.088	0.103
Bin hours $n_j$	$n_1$	$n_2$	$n_3$	$n_4$	$n_5$	$n_6$	$n_7$	$n_8$	$n_9$
Bin hours ( $n_j$ ) h	78	87	87	96	116	126	164	201	234
Bin number j	10	11	12	13	14	15	16	17	18
Outdoor temperature $t_j$ °C	30	31	32	33	34	35	36	37	38
Fractional bin hours $n_j$	0.109	0.084	0.071	0.058	0.048	0.039	0.023	0.016	0.01
Bin hours $n_j$	$n_{10}$	$n_{11}$	$n_{12}$	$n_{13}$	$n_{14}$	$n_{15}$	$n_{16}$	$n_{17}$	$n_{18}$
Bin hours ( $n_j$ ) h	248	192	162	132	110	89	53	37	23
Bin number j	19	20	21	22	23	24	Total		
Outdoor temperature $t_j$ °C	39	40	41	42	43	44	-		
Fractional bin hours $n_j$	0.007	0.006	0.004	0.002	0.001	0.001			
Bin hours $n_j$	$n_{19}$	$n_{20}$	$n_{21}$	$n_{22}$	$n_{23}$	$n_{24}$	-		
Bin hours ( $n_j$ ) h	16	14	9	5	2	2	2283		

Measured cooling capacity value shall not be less than 95% of rated cooling capacity. Measured power input value shall not be greater than 105% of rated power input. For all type of air conditioner, test shall be conducted only under standard temperature condition without testing under cooling low temperature condition (Please refer to Table 1 of PS: ISO 16358-1).

CSPF for non-inverter type room air conditioner shall be calculated by multiplying EER tested at standard temperature condition by 1.024.

CSPF (Non-inverter) = 1.024 × Tested EER

For inverter room air conditioner, the 50 % load cooling capacity test, following tolerance shall be met.

50 % load = 100% load capacity × 0.5 (tolerance  $\pm$  5.0 %)

Where

100 % load capacity refers to measured cooling capacity during 100 % load capacity.

The room air conditioner shall be measured at the following conditions:

- Climate ambient T1, refer PS: ISO5151/2013
- Voltage 230 V, 50Hz

[No. Ind/Gazette/Regulation/AC/2403-001.]

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