



**Schedule- 40**

**Standards and Labeling of Evaporative Air Coolers**

**1. Scope**

This schedule specifies the requirement for participating in the star labeling program for direct evaporative air coolers (commercially known as desert coolers) for household and similar use for capacity up to and including 6000 CMH( 1.67m<sup>3</sup>/sec) suitable for rated voltage upto and including 250V 50Hz ac covered under the scope of IS 3315: 2024 as amended from time to time, being manufactured, imported or assembled for the purpose of commercial sale

This schedule specifies the following:

- 1. Reference standards
- 2. Terminology
- 3. Reference standards
- 4. Test Report requirement
- 5. Cooling Efficiency
- 6. Energy Efficiency Ratio (EER)
- 7. Star Rating plan
- 8. The validity period of the label
- 9. Company registration
- 10. Model registration process
- 11. Test report format
- 12. Fee structure
- 13. Label design and manner of display
- 14. Check testing mechanism

**2. Reference standards**

This schedule shall be read in conjunction with the following standards with all amendments, for the purpose of star labelling.

Reference Standard	Title of the Standard
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IS 3315: 2024 as amended from time to time

Evaporative air coolers – Construction, performance and testing methodology.

### 3. Terminology

For this schedule, the following definitions in addition to those given in IS 3315 shall apply:

#### 3.1. Evaporative air coolers

A device which cools air by evaporation of water.

#### 3.2. Energy Efficiency Ratio (EER)

It is the ratio of Cooling Capacity (kW) to power input (kW).

#### 3.3. Cooling Efficiency:

The extent to which the leaving air dry bulb temperature approaches the wet bulb temperature of entering air is expressed as cooling efficiency. (Calculation of cooling efficiency kindly refer IS 3315)

#### 3.4. Family of models

Family of models is the range of models of a particular brand, to which a single set of test reports is applicable and where each of the models have the same physical characteristics, air delivery, cooling efficiency, CMH/W, power consumption and other performance characteristics.

#### 3.5. Label

Any written, printed, marked, stamped or graphic matter affixed to, or appearing on the product and the packaging provided always that the product inside the packaging to which the label is thus applied conforms to every requirement of this schedule.

#### 3.6. Label Period

It is the label validity period of the EER values range standards provided under the star rating plan as specified in the schedule.

#### 3.7. Star Rating

The number of stars displayed on the star label. The available stars are between a minimum of one and a maximum of five shown in one-star interval. The star rating is calculated from the Star Rating Band on the basis of EER values.

#### 3.8. Star Rating Band

The Star Rating Band is a range of the EER values which is arrived at by an established tests method and calculations and is used for determining the number of stars to be



displayed on the Star Label.

### 3.9. Validity of Label

The validity period of Energy Efficiency Ratio (EER) band is specified in this schedule.

### 3.10. Test Report

The results of the test shall be reported in the prescribed format as given in **Annex A** of this Schedule. The tests reports issued by NABL accredited labs in India or any other accreditation bodies who are signatory to 'Mutual Recognition Arrangement' (MRA) with 'Asia Pacific Accreditation Cooperation' (APAC) and/or 'International Laboratory Accreditation Cooperation' (ILAC) in India as well as overseas/other countries are acceptable.

### 3.11. Tolerance limit

There is no negative tolerance for star rating band. The EER of the evaporative air coolers must be at par or better than the star rating band threshold. The EER of the evaporative air coolers shall be rounded off to the nearest two decimal places as per IS 2 Indian standards.

### 3.12. Star rating /labeling plan

To achieve a star rating level, the evaporative air cooler must meet the '**specified EER values**' condition corresponding to the star rating level given in Table 1 & Table 2.

**Table 1, For Fan Type model**

(Validity period from 1<sup>st</sup> July, 2025 to 30<sup>th</sup> June, 2026)

CMH	Energy Efficiency Ratio (EER)				
	1 Star	2 Star	3 Star	4 Star	5 Star
Up to 2000	≥ 6 to < 10	≥ 10 to < 14	≥ 14 to < 18	≥ 18 to < 22	≥ 22
2001 to 4000	≥ 15 to < 19	≥ 19 to < 23	≥ 23 to < 27	≥ 27 to < 31	≥ 31
4001 above	≥ 20 to < 23	≥ 23 to < 26	≥ 26 to < 29	≥ 29 to < 32	≥ 32

**Table 2 For, Blowers type models**

(Validity period from 1<sup>st</sup> July, 2025 to 30<sup>th</sup> June, 2026)

CMH	Energy Efficiency Ratio (EER)				
	1 Star	2 Star	3 Star	4 Star	5 Star
Up to 1000	≥ 5 to <7	≥ 7 to < 9	≥ 9 to < 11	≥ 11 to < 13	≥ 13
1001 to 2000	≥ 7 to < 10	≥ 10 to < 13	≥ 13 to < 16	≥ 16 to < 20	≥ 20
2001 above	≥ 10 to < 13	≥ 13 to < 16	≥ 16 to < 19	≥ 19 to < 22	≥ 22

#### 4. COMPANY REGISTRATION

For participating in the Evaporative Air Cooler star Rating program, the manufacturer has to first register his organization. The manufacturer shall submit to BEE all necessary documents required as per BEE guidelines. BEE after scrutiny and subject to submission of all documents by the manufacturer shall grant company registration to the organization/manufacturer to participate in BEE's Evaporative Air Cooler labeling program.

#### 5. MODEL REGISTRATIONS

- 5.1.** For a Star Rating label, manufacturer shall apply on BEE's S&L website ([www.beestarlabel.com](http://www.beestarlabel.com)) along with a valid test report of the model/family of models and other relevant documents as required for registration process.
- 5.2.** The manufacturer may register a evaporative air cooler model under star labelling program, with a physical test report from NABL/ILAC /APAC accredited lab tested as per the test conditions mentioned in IS 3315:2024. In the absence of above, BEE may also accept test report from manufacturer's self-test facility accredited by national accreditation body having scope of the tests mentioned in IS 3315:2024(with amendment from time to time).

#### 6. Test Parameter/report requirement:

##### 6.1. Air delivery Test

Test shall be carried out in accordance with clause 8.3 of IS 3315:2024. The tested value of air delivery shall be within  $\pm 10$  percent of the value declared by the manufacturer



## 6.2. Cooling Efficiency test

Test shall be carried out in accordance with clause 8.4 of IS 3315:2024 (as amendment from time to time). The tested value of cooling efficiency shall not be less than 90 percent of the value declared by the manufacturer

## 6.3. Power Consumption Test

Test shall be carried out in accordance with clause 8.5 of IS 3315:2024 (as amendment from time to time). The tested value of power consumption shall not be greater than 105 percent of the value declared by the manufacturer

## 6.4. Power Factor

Test shall be carried out in accordance with clause sub clause C of Clause 8.1 of IS 3315:2024(as amendment from time to time). The power factor of the air cooler measured at rated voltage and frequency of not less than 0.85.

## 6.5. Energy Efficiency Ratio (EER)

Test shall be carried out in accordance with clause 8.6 of IS 3315:2024(as amendment from time to time). The energy efficiency range corresponding to each star rating band shall be as specified in Table 1 for fan type air cooler and Table 2 for blower type air cooler.

## 6.6. Safety Requirements

Tests for safety shall be carried out in accordance with Clause 12.2.2 to 12.2.5 of IS 3315 (as amendment from time to time).

**Note:** For ECO-Mark the evaporative air cooler shall conform to the noise levels as notified under the Environment (Protection) Act, 1986 from time to time.

## 7. Test Report Format

The result of the tests carried out in laboratory accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL) or International Laboratory Accreditation Cooperation (ILAC) or Asia Pacific Accreditation Cooperation (APAC) or equivalent bodies for ensuring consistency in quality of the equipment as well as the scope of the relevant Indian standards shall be reported in the prescribed format mentioned in the **Annexure-A** of this Schedule. Accreditation of the test labs should be based on IS 3315:2024(with amendment from time to time).



## 8. FEES

- 8.1.** For the purpose of registration with BEE, every permittee would be required to deposit a refundable label security fee of INR 1,00,000/- (Rupees One Lakh Only), payable by only electronic mode in favor of the Bureau of Energy Efficiency, New Delhi. In case of small-scale industries (SSI units), the label security fee shall be INR 25,000/- (Rupees Twenty-five thousand only), provided they submit the valid SSI registration certificate.
- 8.2.** Application fee payable for a new model registration shall be INR 2,000/- (Rupees Two thousand only), payable by only electronic mode in favour of the Bureau of Energy Efficiency, New Delhi.
- 8.3.** No application fee is payable on application for renewal of permission to affix label on model.
- 8.4.** Labelling fee for affixation of label on each unit sold of the registered Evaporative air cooler model is INR 5/- (Five Rupees only) per unit. The labelling fees also shall be submitted by manufacturer through the online portal on a quarterly basis.
- 8.5.** Every permittee shall furnish to the Bureau a statement containing details of the production of labeled equipment for each financial year within one month from the date of closure of each financial year. The accrued label fee shall be paid annually within one month from the date of closure of each financial year.

## 9. LABEL DESIGN AND MANNER OF DISPLAY

### 9.1. Label Content

The content of the label shall include the following information:

1. Product Name: Evaporative air cooler
2. Type of Evaporative air cooler(Fan/blower):
3. Brand:
4. Model Name/year:
5. EER:
6. Power Input(Watt):
7. Air delivery(CMH):
8. Sump tank capacities (Litre):
9. Star Rating Level:
10. Label Period:
11. Cooling Efficiency(%)
12. QR Code:



## **9.2. Placement of label and QR Code**

With an intent to authenticate the star rating approval issued for a model of evaporative air cooler, BEE will share the printable/readable version of the dedicated QR code for each model along with approval letter with manufacturers. The QR code is recommended to be placed just below the star label being affixed on each unit of the evaporative air cooler. The QR code will contain the information as mentioned in under Clause 10.1 of Evaporative Air Cooler Schedule.

On every Evaporative Air Cooler, label along with QR code shall be displayed at the point of sale and such label shall be affixed in the following manner:-

- a) The placement of label along with QR code shall be affixed on the front side of the left top corner of evaporative air cooler.
- b) Self-adhesive label along with QR code affixed on the front side of the exterior of the packing.

## **9.3. Material, Dimension and Shape**

The label shall be made of any corrosion resistant and durable material (aluminum anodized) and shall be cutout as per the dimensions, design and colour scheme as given in Figure 1 to 3.

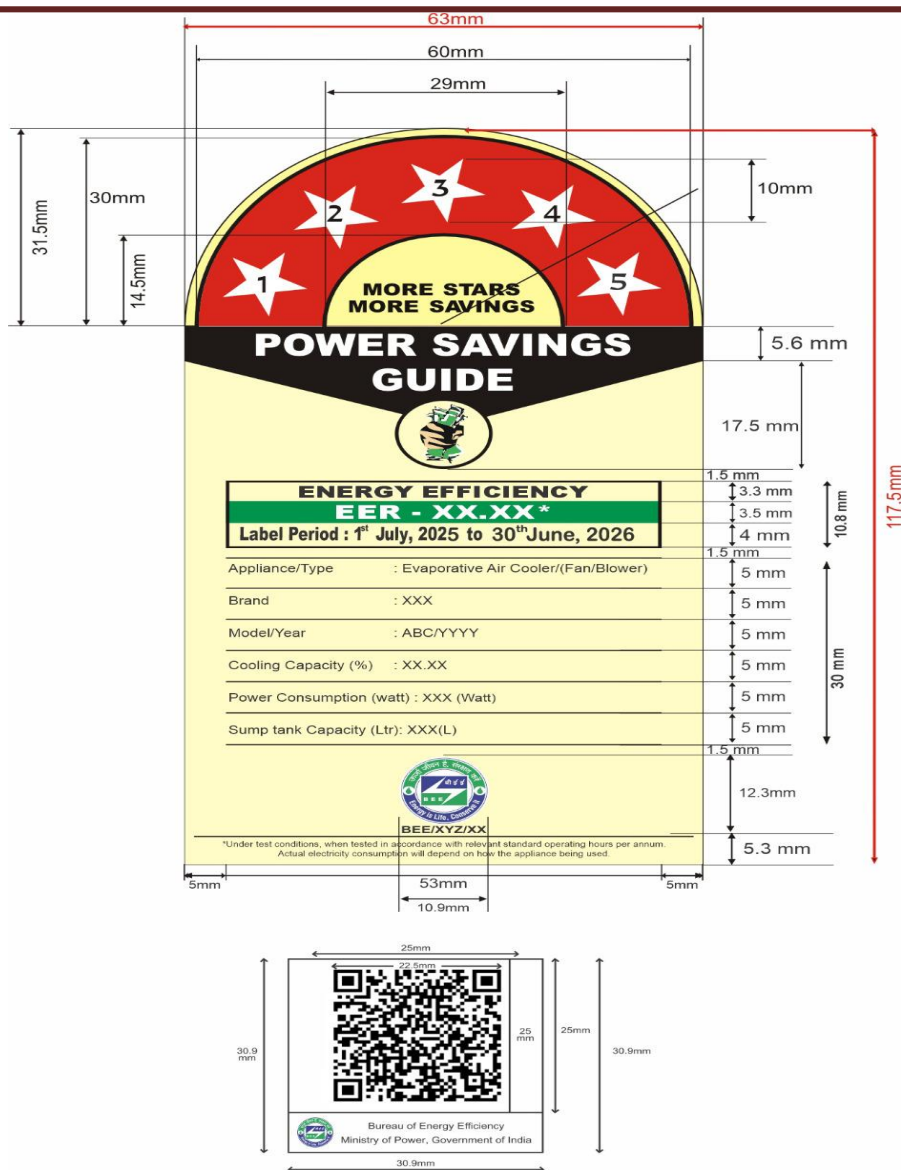


Figure 1 Dimension of the Label

#### 9.4. Color scheme

The label shall be printed as per the color scheme given in Figure 2.

##### BLUE –

Hue (H)- 239° Saturation(S):64% Brightness (B):59% Luminance or lightness (L):28, chromatic components -a: 24 b: 54

Red(R):54 Green (G):55 Blue (B):151 Cyan(C):97% Magenta (M):95% Yellow(Y):6% Black (K):1% Web color code - #363797





GREEN –

Hue (H)-150° Saturation(S):10% Brightness (B):67% Luminance or lightness (L):61, chromatic components -a: 53 b: 32 Red(R):0 Green (G):170 Blue (B):87 Cyan(C):81% Magenta (M):10% Yellow(Y):90% Black (K):1% Web color code - #00AA56

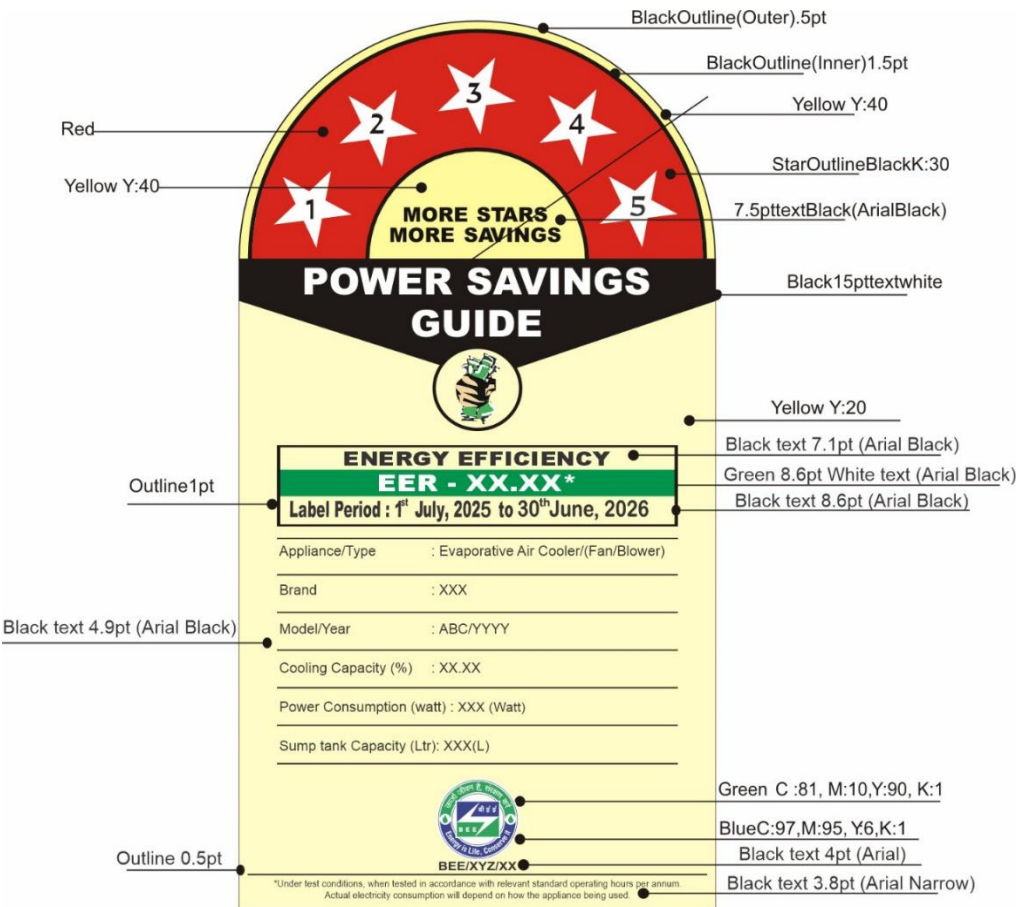
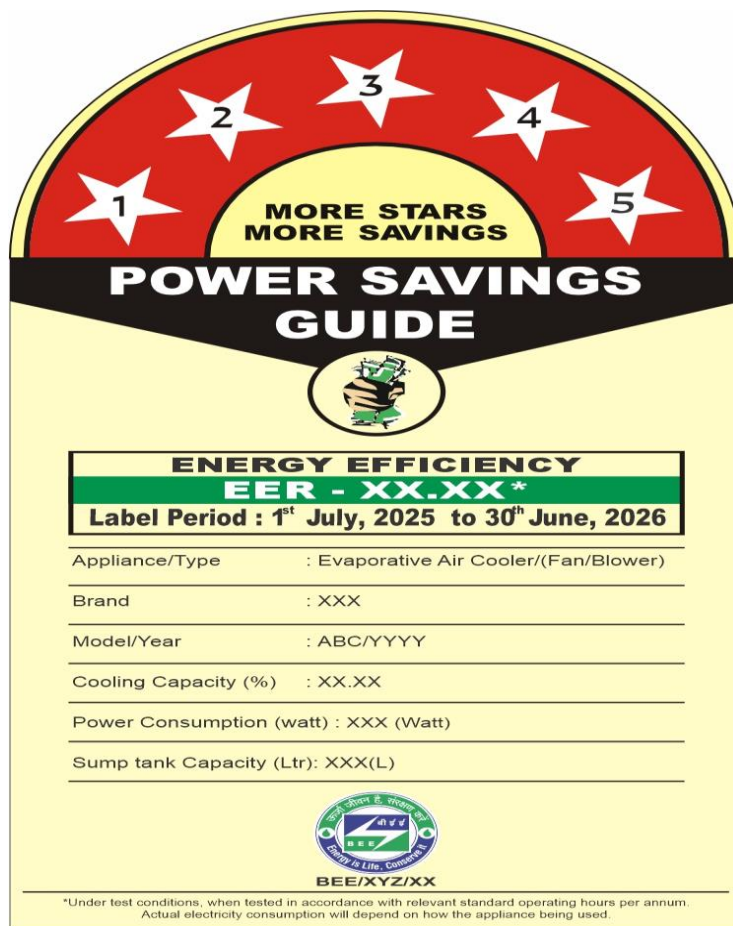


Figure 2 Color Scheme for the Label

## 9.5. Sample for the Label



The label is a semi-circular design with a red and yellow background. At the top, five white stars are arranged in a semi-circle, numbered 1 to 5. Below the stars, the text "MORE STARS MORE SAVINGS" is written. The main title "POWER SAVINGS GUIDE" is prominently displayed in the center. Below the title is a small icon of a hand holding a leaf. The label contains a table with the following information:

ENERGY EFFICIENCY	
<b>EER - XX.XX *</b>	
Label Period : 1 <sup>st</sup> July, 2025 to 30 <sup>th</sup> June, 2026	
Appliance/Type	: Evaporative Air Cooler/(Fan/Blower)
Brand	: XXX
Model/Year	: ABC/YYYY
Cooling Capacity (%)	: XX.XX
Power Consumption (watt)	: XXX (Watt)
Sump tank Capacity (Ltr):	XXX(L)

Below the table is the BEE logo and the text "BEE/XYZ/XX". At the bottom, a small disclaimer states: "Under test conditions, when tested in accordance with relevant standard operating hours per annum. Actual electricity consumption will depend on how the appliance being used."



Figure 3: Sample Label

## 10. Check Testing

- The Bureau shall from time to time carry out a verification process to ensure that the evaporative air cooler conforms to the star level and other related information



displayed on its label and that it complies with the other terms and conditions of the permission. All the tests shall be conducted by the Bureau or through its designated agency in line with the latest version of IS 3315:2024 (with all amendments from time to time) for the purpose of check testing (verification testing) and check challenge testing.

- b) For the purpose of verification, one complete unit of air cooler will be picked up at random from the open market/authorized dealer/distributor by Bureau or its authorized agencies and testing will be carried out in an independent laboratory duly accredited by the National Accreditation Board for testing and calibration Laboratories (NABL) in India. If the first sample fails, the Bureau shall draw twice the samples and conduct all the relevant tests specified in this schedule in another NABL accredited independent test laboratory which is different from the one where the first check testing was conducted, in the presence of authorized representatives from the manufacturer and an officer from the Bureau or its authorized representatives.
- c) If one of the second check testing samples fails, the bureau shall direct corrective measures to the concerned manufacturer and shall publish the details of the model failed in check testing for the benefit of the consumers. If those directions are not complied with, the Bureau may initiate adjudication proceedings against the manufacturer.



## Annexure A

### Form for reporting the result of the test

#### 1.1 Details of the sample tested

Test report number and date:	
Brand:	
Name and address of the manufacturer	
Model name: (if applicable):	
Model number	
Type of evaporative air cooler(Fan/Blower)	
Serial number of the unit tested	
Rated voltage of unit	
Rated frequency	
Minimum Air Deliver(Air Flow) test in CMH	
Rated power consumption at full capacity (Watt)	
Sump tank capacity (L)	
Does this evaporative air cooler uses a motor (single speed or multi speed): (Yes/No)	
Cooling efficiency (%)	
Energy Efficiency Ratio(EER)	



### 10.1. Test summary

a separate copy of this page for each test type, as applicable:

Date of test:	
Test report Number:	
Name of the testing personnel:	
Nature of tests conducted:	
Test condition:	
Test Standard followed:	
Supply Test voltage (V):	
Supply frequency: Hz	
Average Nominal current (A):	
Power consumption(W) :	
Test period (minutes):	
Cooling Efficiency (%)	
Energy Efficiency Ratio (EER)	
Inlet – mean dry-bulb (°C):	
Inlet – maximum variation dry-bulb (Max – min) (°C):	
Inlet – mean wet bulb (°C):	
Inlet – maximum variation wet bulb (max – min) (°C):	
Rated air delivery (CMH):	
Outlet – mean dry-bulb (°C):	
Outlet – maximum variation dry-bulb (Max – min) (°C):	
Outlet – mean wet bulb (°C):	
Outlet – maximum variation wet bulb (max – min) (°C):	



## 10.2. Cooling efficiency

Parameters	Values
i. Inlet air – mean dry-bulb (°C):	
ii. Inlet air – mean wet bulb (°C):	
iii. Outlet air – mean dry-bulb (°C):	
iv. Outlet air – mean wet bulb (°C):	
v. Cooling efficiency (%)	

## 10.3. Declared performance parameters

	Measured value	Rated value
<b>Air Delivery (m<sup>3</sup>/h):</b>		
<b>Power Consumption (W)</b>		
<b>Cooling efficiency (%)</b>		
<b>Energy Efficiency Ratio(EER)</b>		
<b>Speed(RPM)</b>		
<b>Power factor</b>		