

Energy Labeling Guideline

Energy Label Requirements for CEILING FANS

Constitution of Technical Committee for Labeling Program

No	Name Designation organization	Committee
01	Member, SREDA	Chairperson
02	Representative from Power Division	Member
03	Representative from Ministry of Commerce	Member
04	Representative from Ministry of Industry	Member
05	Representative from Directorate of National Consumers Right Protection	Member
06	Representative from BUET	Member
07	Representative from Institute of Engineers	Member
08	Representative from BSTI	Member
09	Representative from BAB	Member
10	Representative from Consumers Association	Member
11	Representative from SME foundation	Member
12	Representative from Related Business Association	Member
13	Representative from concern officials of SREDA	Member-Secretary

Foreword

1. This Guideline is prepared as per the instruction of “প্রবিধান ৪” of “যন্ত্রপাতির জ্বালানি দক্ষতার লেবেলিং প্রবিধানমালা ২০২৩”
2. This Guideline is prepared by Sustainable and Renewable Energy Development Authority (SREDA) after being thoroughly discussed and finalized by the Technical Committee under the “প্রবিধান ২৩” of “যন্ত্রপাতির জ্বালানি দক্ষতার লেবেলিং প্রবিধানমালা ২০২৩”.
3. This Guideline is subject to periodical reviews and amendments in order to keep pace with the latest industrial and technological development. Any suggestion for improvement will be recorded and placed to revising the guideline by the Committee when the need may arise.

Energy Labeling Guideline for Ceiling Fans

1. SCOPE

- 1.1. This guideline specifies the energy labeling requirements for electric ceiling fans powered by induction motors or brushless direct current (BLDC) motors, designed for general air circulation, operating on single-phase AC supply up to and including 250V, 50Hz, being manufactured, imported, or sold in Bangladesh.
- 1.2. This guideline does not cover ceiling fans designed specifically for industrial applications, those with decorative or aesthetic features that compromise airflow performance, or fans with non-standard sweep sizes outside the range of typical residential and commercial use.

2. NORMATIVE REFERENCE

This guideline shall be read in conjunction with the latest publication of the following standards with all amendments:

Reference Standard	Title of the Standard
BDS IEC 60335-2-80:2022	Household and similar electrical appliances – Safety – Particular requirements for fans
BDS IEC 60335-1:2021	Household and similar electrical appliances – Safety – General requirements
ISO 5801:2017	Industrial fans – Performance testing using standardized airways
BDS IEC 60034-1:2008	Rotating electrical machines – Part 1: Rating and performance
BDS ISO 2859-1:2016	Sampling procedures for inspection by attributes
BDS ISO 80000-1:2020	Quantities and units – General
BDS ISO 5151:2011	Performance testing and rating of air conditioners and fans

3. TERMINOLOGY

For the purpose this guideline, the definitions referred & given in BDS IEC 60335-2-80:2022, BDS IEC 60335-1:2021, and IEC 60879:1986, shall apply in addition to the following:

Definitions: In this notification, unless the context otherwise requires:

- 3.1. **Air delivery:** The quantity of air delivered in a given time under specified conditions. It is expressed in cubic meters per minute.
- 3.2. **Ceiling fan:** A fan with propeller blades, having two or more blades, driven by an electric motor and designed for suspension from the ceiling of a room so that the blades rotate in a horizontal plane.
- 3.3. **Rated air delivery:** The air delivery of the fan, as specified by the manufacturer under normal operating conditions.
- 3.4. **Rated power input:** The power input specified for the fan by the manufacturer, marked on the product, and expressed in Watts.
- 3.5. **Service value:** The ratio of air delivery (in cubic meters per minute) to the electrical power input (in Watts) of the fan under specified test conditions.

4. PRE-QUALIFICATION CRITERIA:

To qualify as a SREDA star labelled product, the ceiling fans covered under this guideline shall meet the following requirements:

- 4.1. The ceiling fans shall conform to the safety requirements as specified in BDS IEC 60335-2-80:2022.
- 4.2. The ceiling fans shall meet the performance requirements specified in BDS IEC 60335-2-80:2022 and ISO 5801:2017.
- 4.3. The ceiling fans shall meet the following criteria defined for star rating level:
 - **Star Rating Level:** The star rating level shall be declared based on the service value (Cubic meters per minute/Watt).
 - **Service Value:** In a batch, the failure of ceiling fans shall not exceed the qualifying limit for rated air delivery and rated power input (BDS IEC 60335-2-80:2022).

Illustration:

Technical Specifications of Ceiling Fan Star Rating Band:

- **Sweep Size** $\geq 1200\text{mm}$: ≥ 5.0 to < 5.5 CMM/W

Star Rating Level: 3 Star

Declared Service Value: 5.2 CMM/W

No. of Ceiling Fans in a Batch: 10

Case 1: Pass i.e. a batch is eligible for star rating

Out of 10 fans in a batch, 6 or more fans have an individual service value of ≥ 5.0 CMM/W and the rest of the fans have a service value of < 5.0 CMM/W. The batch passes the test because the average service value meets the star rating band, and the number of failures are within the qualifying limit of the acceptance test.

Case 2: Failure

Out of 10 fans in a batch, 5 or fewer fans have a service value of ≥ 5.0 CMM/W, and the batch has an average service value of ≥ 5.0 CMM/W. The batch fails the test because the number of failures exceeds the qualifying limit of the acceptance test.

5. STAR RATING PLAN:

- 5.1. The label to be affixed on each electric ceiling fan shall display a maximum of five stars with intervals of one star. Fans shall be rated for their energy performance from one star to five stars based on their **service value**.
- 5.2. Every electric ceiling fan shall meet energy consumption standards that align with the performance and safety requirements of **BDS IEC 60335-2-80:2022** and **BDS ISO 5151:2011**.
- 5.3. The star level of electric ceiling fans shall be determined using the following tables based on the fan's sweep size:
 - 5.3.1. **For ceiling fans with a sweep size less than 1200 mm**, the star level shall be determined as specified in Table 5.1:

Table 5.1

(Valid from the 1st July, 2025 to 30th June, 2027)

Star Levels	Rated Service Value (Cubic meters per minute/Watt)
1 Star*	≥ 2.79 to < 3.6
2 Star**	≥ 3.6 to < 4.1
3 Star***	≥ 4.1 to < 4.6
4 Star****	≥ 4.6 to < 5.1
5 Star*****	≥ 5.1

5.3.2. For ceiling fans with a sweep size greater than or equal to 1200 mm, the star level shall be determined as specified in Table 5.2:

Table 5.2

(Valid from the 1st July, 2025 to 30th June, 2027)

Star Levels	Rated Service Value (Cubic meters per minute/Watt)
1 Star*	≥ 2.93 to < 3.5
2 Star**	≥ 3.5 to < 4.5
3 Star***	≥ 4.5 to < 5.0
4 Star****	≥ 5.0 to < 6.0
5 Star*****	≥ 6.0

5.4. The star level plan shall be reviewed before the expiry of the period specified in Table 5.1 and Table 5.2. Thereafter, the star level plan shall be reviewed every two years to ensure alignment with updated energy efficiency benchmarks and standards.

6. TESTING AND TOLERANCE

6.1. For the purpose of determining the star level, ceiling-type fans shall be tested as per the standards given in Table 6.1:

Table 6.1: Test Parameters and Standards

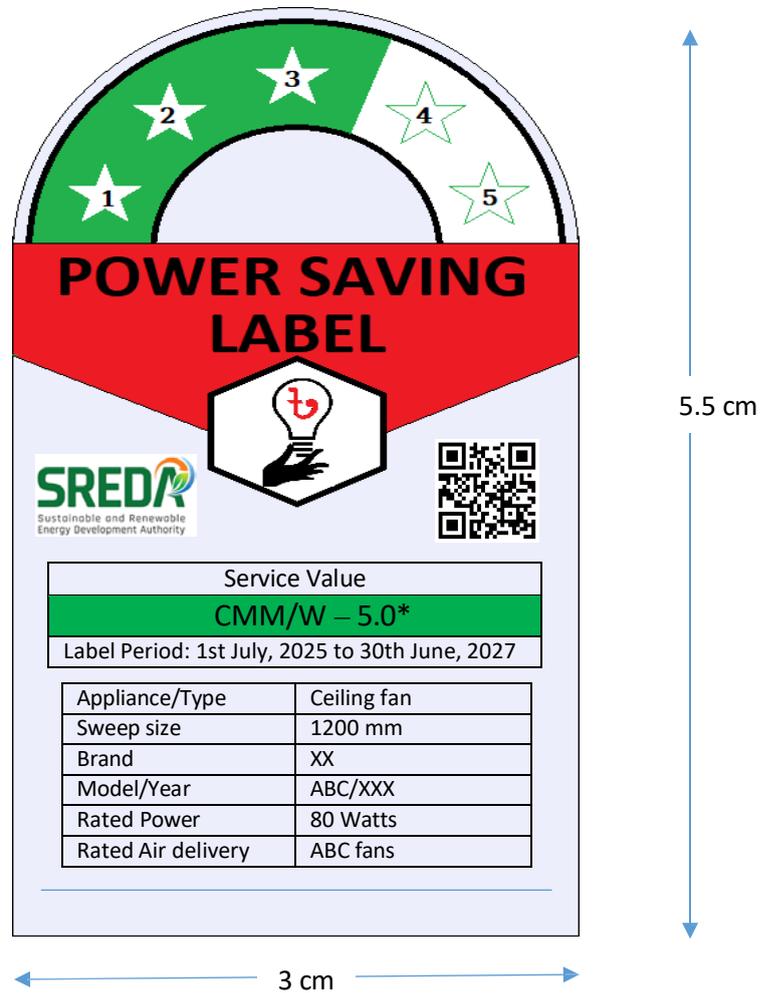
S. No.	Test Parameters	Test Standards
1	Safety Requirements (related clauses)	BDS IEC 60335-2-80:2022
2	Starting Characteristics	BDS IEC 60335-1:2021
3	Interchangeability	BDS IEC 60335-2-80:2022
4	Measurement of Speed	ISO 5801:2017
5	Measurement of Power Factor and Power Input	BDS IEC 60034-1:2008

6	Performance Requirements – Air Delivery	ISO 5801:2017
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- 6.2. The number of samples required for testing shall be two, as per the general sampling guidelines outlined in BDS ISO 2859-1:2016
- 6.3. There shall be no negative tolerance for the star rating levels.
- 6.4. The scope for manufacturing tolerance and other variations shall be accounted for by the manufacturer while determining the star rating, keeping in view the following rounding-off rules:
- 6.4.1. The values of power consumption (Watts), air delivery (cubic meters per minute), and service value (cubic meters per minute per Watt) shall be rounded off to the nearest whole number up to one decimal place.
- 6.4.2. All values shall be rounded off to the respective significant figures, as per BDS ISO 80000-1:2020.

7. LABEL DESIGN & MANNER OF DISPLAY:

7.1. Label design, dimension & content of the label: The content along with the design and dimension of label is given below:



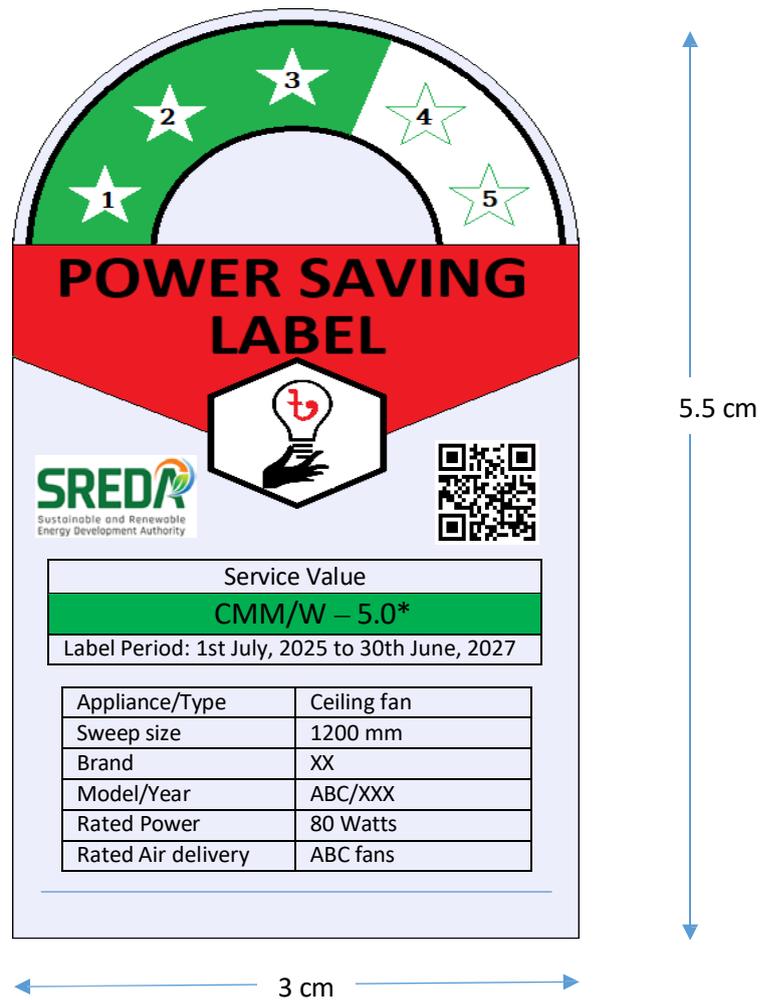
(a) Label on wrapper



(b) Label on fan

7.2. Color Scheme: The color scheme of the label is as follows:

Note: The PNG file is available on SREDA website



(c) Color Scheme

7.3. Material, Shape & Placement:

7.3.1. On wrapper {Refer figure 7.1 (a)}:

- a. The label shall be printed on the package; or
- b. A durable paper, self-adhesive on the package

7.3.2. On Fan {Refer figure 7.1(b)}: Respective star mark shall be printed on the fan.

8. FEES:

8.1.**Application Fee:** Fee payable on application for authority to affix labels is BDT 3000/- (Three thousand only).

8.2.**Renewal Fee:** Fee payable on renewal application for authority to affix labels is BDT 1500/- (One thousand Five Hundred only).

8.3.**Labeling fee** for affixation of label on each piece of LED lamp is BDT 1/- (One Only)

9. USER INFORMATION REQUIREMENT:

In order to educate and motivate the general consumer, the manufacturers shall provide the information in a tabular form about the LED lamp wattage equivalent to incandescent lamp wattage on the packing.

Annexure A

Form for reporting the results of tests

Test Report No.

Date of test:

1. Details of Electric Ceiling Type Fan:

- (i) Manufacturer's name or Brand name:
- (ii) Serial No. of the fan:
- (iii) Rated voltage or voltage rang:
- (iv) Model name/number: (if applicable)
- (v) Motor Type (Induction /BLDC):
- (vi) Sweep Size (mm):
- (vii) Power Input (watts):
- (viii) Air Delivery (cu m/min):
- (ix) Service Value (cu m/min/watts):
- (x) Power factor:

2. Test summary:

- (i) Complete a separate copy of this page for each test type, as applicable:
- (ii) Manufacturer/ Laboratory Name:
- (iii) Address of the Test Laboratory:
- (iv) Date of receipt of sample:
- (v) Date of test conducted:
- (vi) Name of Testing Personnel:
- (vii) Nature of Test and details of test conducted as per the relevant standards:
- (viii) General conditions of tests as per BDS IEC 60335-2-80:2022.
- (ix) Observations and Test results:

Table: Observation and Test Results

S. No.	Test Parameters and Relevant Units	Measured Values	Rated/Declared Values (after applying tolerances, if any, as per standards)	Relevant Test Standard
1	Power Input (Watts)	[Measured Value]	[Rated Value]	BDS IEC 60335-2-80:2022
2	Air Delivery (cu m/min)	[Measured Value]	[Rated Value]	BDS IEC 60335-2-80:2022
3	Service Value (cu m/min/Watts)	[Measured Value]	[Rated Value]	BDS IEC 60335-2-80:2022

4	Power Factor	[Measured Value]	[Rated Value]	BDS IEC 60335-2-80:2022
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Note: Aforementioned test results are to be furnished for two samples of the model.