

# GUIDE ON MINIMUM ENERGY PERFORMANCE STANDARDS FOR ELECTRIC RICE COOKER

Issue Date:

1<sup>st</sup> APRIL 2020

## TABLE OF CONTENTS

1.	OBJECTIVE .....	2
2.	SCOPE.....	2
3.	DEFINITIONS AND INTERPRETATION .....	2
4.	TESTING STANDARD .....	3
5.	EFFICIENCY .....	4
6.	MEASUREMENT CONDITIONS .....	4
7.	STAR RATING .....	5
8.	MEPS REQUIREMENT .....	5
9.	ENERGY EFFICIENCY LABEL .....	5

## **1. OBJECTIVE**

- 1.1. This Guide is developed by the Commission to specify the MEPS and energy labelling requirements for rice cooker that can be connected to mains power and for household use.

## **2. SCOPE**

- 2.1. Subject to paragraph 2.3, this Guide shall apply to the rice cooker as following: -
- (a) Capacity:  $1.0L \leq \text{Capacity} \leq 3.6L$ ; and
  - (b) Rated Power:  $400W \leq P \leq 1600W$
- 2.2. A multi cooker with the function of cooking rice shall also be tested.
- 2.3. The following equipment and technologies are excluded from this Guide:
- (a) Induction heating rice cooker; and
  - (b) any rice cooker model(s) that have been granted exemption by the Commission.
- 2.4. This Guide does not specify the procedure for the application of a COA. For further information regarding the application of a COA, please visit <https://www.st.gov.my/web/application/details/5/5> .
- 2.5. This Guide is not intended in any way to circumvent the application of and obligations or requirements under any other written law or standards. Parties relying on this Guide are advised to obtain independent advice on the applicability of the same to their equipment.

## **3. DEFINITIONS AND INTERPRETATION**

- 3.1. In this Guide, the following terms shall bear the following meanings:

<b>“Act”</b>	means the Electricity Supply Act 1990 [Act 447], as amended, modified or supplemented from time to time;
<b>“CAB”</b>	means a conformity assessment body recognised by the Commission;
<b>“COA”</b>	means the Certificate of Approval issued in accordance with Regulation 97 of the Electricity Regulations 1994, as amended, modified or supplemented from time to time;
<b>“Commission”</b>	means Suruhanjaya Tenaga;
<b>“Energy Laws”</b>	means the Act and all subsidiary legislations made thereunder;
<b>“MEPS”</b>	means minimum energy performance standards, which is the minimum level of energy efficiency which has to be met by an equipment; and
<b>“test report”</b>	means a test report issued by a CAB.

3.2. Subject to paragraph 3.1 and unless expressly indicated to the contrary or unless the context otherwise requires, terms adopted and used in this Guide shall bear the same meaning as they are defined in the Energy Laws.

3.3. If there are any conflict between the provisions of this Guide and of those contained in the Energy Laws, the provisions in the Energy Laws shall prevail.

#### **4. TESTING STANDARD**

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

- (i) MS 2024:2020 Electric Rice Cooker for household use – Method of measuring the performance

## 5. EFFICIENCY

5.1. The efficiency shall be calculated in accordance with the following formula:

$$\eta = \frac{1.16 \times G \times (T2 - T1)}{E} \times 100$$

Where:

$\eta$  = is the energy efficiency , in % , rounded to one decimal

G = is the volume of water before test, in kilogram (kg)

T1 = is the initial water temperature before test, in °C

T2 = is the highest temperature after test, in °C

E = is the energy consumption, in Wh

## 6. MEASUREMENT CONDITIONS

6.1. The energy consumption shall have the following specific conditions:

(a) Supply voltage and frequency: 230V, 50Hz; and

(b) Water volume shall be 80% of the maximum rated water capacity

6.2. Any modifications made to the equipment after measurement has been completed, other than cosmetic modifications which do not in any way affect the functionality of the device, would require the equipment to be retested.

## 7. STAR RATING

7.1. The star rating shall be in accordance with Table 1 below:

Rated power, P (W)	Efficiency, $\eta$ (%)				
	1	2	3	4	5
$P \leq 400$	$\geq 65$	$\geq 70$	$\geq 75$	$\geq 80$	$\geq 85$
$400 < P \leq 600$	$\geq 66$	$\geq 71$	$\geq 76$	$\geq 81$	$\geq 87$
$600 < P \leq 800$	$\geq 67$	$\geq 72$	$\geq 77$	$\geq 82$	$\geq 89$
$800 < P \leq 1000$	$\geq 68$	$\geq 73$	$\geq 78$	$\geq 83$	$\geq 91$
$1000 < P \leq 2000$	$\geq 69$	$\geq 74$	$\geq 79$	$\geq 84$	$\geq 93$

Table 1 : Star Rating

## 8. MEPS REQUIREMENT

A COA will only be issued upon fulfilment of all the following requirements:

8.1. The MEPS rating to be achieved shall be 2-Star.

## 9. ENERGY EFFICIENCY LABEL

9.1. In accordance with the Energy Laws, any equipment that meets all the requirements of efficient use of electricity shall be affixed with an efficiency rating label. It shall be the responsibility of the manufacturer or importer to affix such label.

9.2. Information to be included in the label is as per Figure 1.

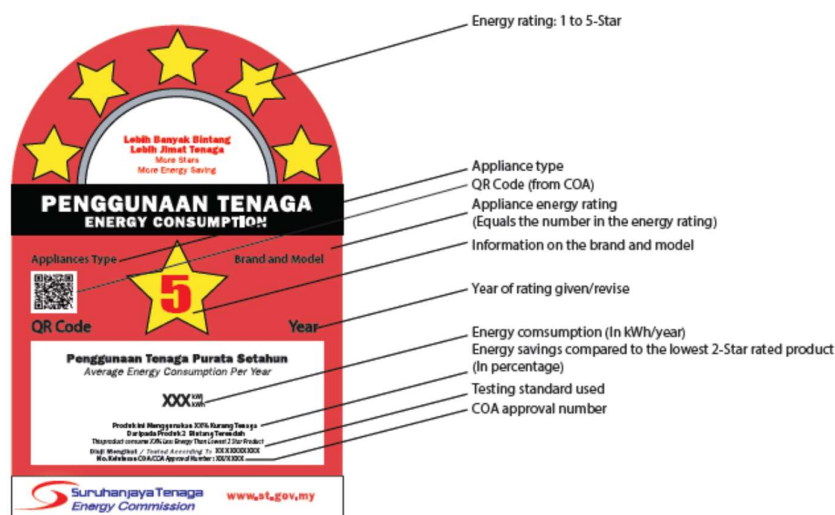


Figure 1

### 9.3. Calculation Method

In order to obtain the value of “energy savings compared to the lowest 2-Star rated product (in percentage)”, the following formula shall be applied:

- Annual Energy Consumption, kWh = 365 x 2 x E
- Percentage energy saving compared to the lowest 2 star rating model

$$= 100 \% - \left[ 100 \times \left( \frac{\eta_{\text{lowest 2 Star Model}}}{\eta_{\text{tested}}} \right) \right]$$

Rated Power	Lowest 2 Star Model
$P \leq 400$	70
$400 < P \leq 600$	71
$600 < P \leq 800$	72
$800 < P \leq 1000$	73
$1000 < P \leq 2000$	74

For the avoidance of doubt, the word “product” on the energy efficient label refers to an equipment as defined in the Energy Laws.

- 9.4. Size Specification : The size of the energy efficiency label is as per Figure 2.



Figure 2

- 9.5. Font Specification : The type and minimum size of the font for the energy efficiency label is as per Figure 3.

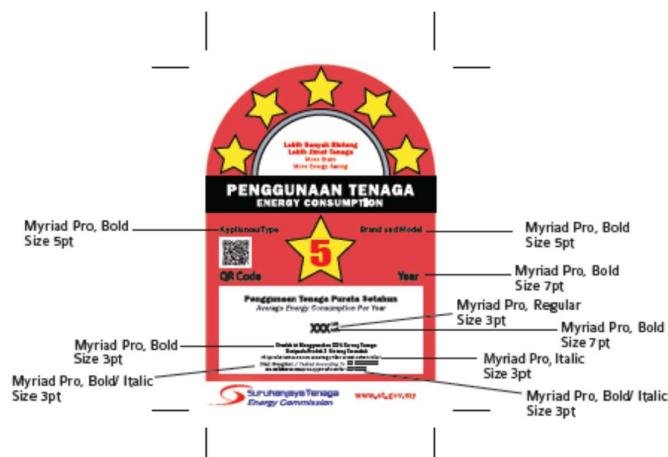


Figure 3

- 9.6. Colour Specifications : The energy efficiency label shall be printed according to the colour specifications in Figure 4.



Figure 4

- 9.7. Design Specification : The designs for the energy efficiency label for each star rating is as per Figure 5.



Figure 5

A softcopy of energy efficiency label in AI format can be obtained from the Commission by emailing [meps@st.gov.my](mailto:meps@st.gov.my) with a request.