

هيئة الإمارات للمواصفات و المقاييس  
EMIRATES AUTHORITY FOR STANDARDIZATION AND METROLOGY  
(ESMA)



UAE.S 5010-8:2016

Labeling – Energy Efficiency Label for Electrical Appliances  
Part 8: Television Sets

دولة الإمارات العربية المتحدة  
UNITED ARAB EMIRATES

## **INTRODUCTION**

The Energy Efficiency Standardization and Labeling (EESL) Program is an energy conservation initiative by the United Arab Emirates implemented and maintained by Emirates Authority for Standardization and Metrology, also known as ESMA. With the UAE's commitment to consumer safety, energy conservation and environment protection, this regulation is developed to ensure that television sets are registered and monitored for their continuous compliance to the set specifications on:

- Performance: Standby/Off Mode;
- Performance: Energy Efficiency;
- Energy Efficiency Labeling Requirements.

This standard shall provide comprehensive information about the UAE Energy Efficiency Standardization and Labeling Program for Television Sets. It details requirements, references and procedures needed by traders, importers and/or manufacturers to ensure that their products complies with the program prior to making their product available in the UAE market.

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## **1 Scope**

This regulation covers television or television sets.

## **2 Definition of terms**

For the purpose of this document, the following terms and definitions apply:

### **2.1 General**

- 2.1.1. ESMA – Emirates Authority for Standardization & Metrology, the national authority mandated to implement this regulation.
- 2.1.2. Government Authorities – relevant UAE government authorities in cooperation with ESMA in conducting market monitoring and surveillance.
- 2.1.3. Manufacturer – means the natural or legal person who manufactures products covered by this Regulation and is responsible for their conformity with this Regulation in view of their being placed on the market and/or put into service under the manufacturer's own name or trademark or for the manufacturer's own use. In the absence of a manufacturer as defined in the first sentence of this point or of an importer, any natural or legal person who places on the market and/or puts into service products covered by this Regulation shall be considered a manufacturer.
- 2.1.4. Own Brand Labeler (Private Labeler) – an own brand labeler (OBL) purchases a finished (or component parts of a) product from the Original Equipment Manufacturer (OEM) which he then places on the market under his own name or trade mark (brand label). This Own Brand Labeler may not be the person who actually designs, manufactures, packages or labels the device.
- 2.1.5. Authorized Representative or Supplier – means any natural or legal person established in the UAE, having a valid trade license, who has received a written mandate from the manufacturer or from the Own Brand Labeler to perform on his behalf all or part of the obligations and formalities connected with this Regulation.
- 2.1.6. Dealer – means a retailer or other person who sells, hires, offers for hire-purchase or displays products to end-users.
- 2.1.7. Importer – means any natural or legal person established in the UAE who places a product from another country on the UAE market in the course of his business.
- 2.1.8. Point of Sale – means a physical location where the product is displayed or offered for sale, hire or hire-purchase to the end-user. Showrooms are also included under this definition.
- 2.1.9. Regulation – refers to this Regulation.
- 2.1.10. End-user – means a natural person buying or expected to buy a product for purposes which are outside his trade, business, craft or profession.
- 2.1.11. Placing on the market – means making a product available for the first time on the United Arab Emirates market with a view to its distribution or use within country.

### **2.2 Technical**

The definitions laid down in the following reference shall apply:

- 2.2.1. Directive 2010/30/EU of 19 May 2010
- 2.2.2. Commission Regulation (EC) No 642/2009

- 2.2.3. Commission Delegated Regulation (EU) No 1062/2010
- 2.2.4. UAE.S IEC 62087-1:2015 (ed.1.0)
- 2.2.5. UAE.S IEC 62087-3:2015 (ed.1.0)
- 2.2.6. UAE.S IEC 62301:2011 (ed.2.0)

### **3 References**

- 3.1. Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products
- 3.2. Commission Regulation (EC) No 642/2009 of 22 July 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to eco-design requirements for televisions
- 3.3. Commission Delegated Regulation (EU) No 1062/2010 of 28 September 2010 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labeling of televisions
- 3.4. Commission Regulation (EC) No 1275/2008 of 17 December 2008 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to eco-design requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment
- 3.5. Emirates Conformity Assessment Scheme (ECAS) for Low Voltage Equipment (LVE)
- 3.6. UAE.S IEC 60065:2014 (ed.8.0) – Audio, video and similar electronic apparatus – Safety requirements
- 3.7. UAE.S IEC 60950-1:2013 (ed.2.2) – Information technology equipment – Safety – Part 1: General requirements
- 3.8. UAE.S 5017:2014 – Receiver specification requirements for digital terrestrial TV broadcasting in UAE

### **4 Applicable Standards**

- 4.1. UAE.S IEC 62087-1:2015 (ed.1.0) – Audio, video, and related equipment – Determination of power consumption – Part 1: General
- 4.2. UAE.S IEC 62087-3:2015 (ed.1.0) – Audio, video, and related equipment – Determination of power consumption – Part 3: Television sets
- 4.3. UAE.S IEC 62301:2011 (ed.2.0) – Household electrical appliances – Measurement of standby power

### **5 General Requirements**

All televisions and television sets shall comply with the requirements set forth by this Regulation.

## **5.1 Energy Efficiency Rating and Annual Energy Consumption**

All televisions and television sets shall be rated in accordance to the rating specified in Annex I. Identification of the Energy Efficiency Rating, Energy Efficiency Index (EEI) and Annual Energy Consumption shall be in accordance with Annex I.

## **5.2 Performance and Information Requirements**

All televisions and television sets shall comply with the performance requirements set forth in Annex II. Product information and other informative requirements shall be provided by the responsible party as stated in Annex II.

## **5.3 Energy Efficiency Label**

All televisions and television sets shall be supplied with the energy efficiency label in the format and containing information as set out in Annex V.

## **5.4 Conditions and Measurements**

Test conditions and measurements for compliance of televisions and television sets shall be in accordance with the applicable standards specified in section 4 and Annex II of this regulation.

## **6 Conformity Assessment**

The Manufacturers, Own Brand Labelers (OBL), Authorized Representatives or Suppliers shall supply the technical documentation, as specified in Annex IV.

Under the Emirates Conformity Assessment Scheme or ECAS approval, the Certificate of Conformity or CoC shall be issued with a validity of no more than one (1) year from the date of issuance and is renewable every year.

Under the Emirates Quality Mark or EQM approval, the Certificate of Conformity or CoC shall be issued with a validity of no more than three (3) years from the date of issuance and is renewable every three (3) years.

## **7 Duties and Responsibilities**

### **7.1 ESMA AND OTHER GOVERNMENT AUTHORITIES**

7.1.1. Emirates Authority for Standardization and Metrology or ESMA shall have overall responsibility in maintaining this regulation. Revisions and/or updates shall be made by ESMA on a regular basis or depending on the need for such revisions and/or updates.

7.1.2. Issuance of CoCs shall be the responsibility of ESMA. Evaluation and inspection of applicants (Manufacturers, Traders and/or Distributors) shall be the responsibility of ESMA and is authorized to delegate such tasks to approved subcontractors.

7.1.3. ESMA is authorized to take appropriate action for any products that do not comply with the requirement of this regulation. Appropriate actions may include suspension, withdrawal and/or cancelation of Certificate of Conformity, Non-acceptance of substandard products and Removal of Non-conforming Products in the Market.

7.1.4. ESMA shall take immediate action by informing other Local Government Authorities for any non-complying products.

7.1.5. Relevant Government Authorities shall conduct market surveillance to ensure that only approved products are traded within their area of responsibility.

## **7.2 Manufacturers and Authorized Representatives**

7.1.6. Manufacturers, Own Brand Labelers (OBL), Authorized Representatives and Suppliers shall supply only products that comply with the requirements set forth in this regulation.

7.1.7. Manufacturers, Own Brand Labelers (OBL), Authorized Representatives and Suppliers shall secure the appropriate approval and certification as indicated in this regulation prior to placing the product on the market.

7.1.8. They shall allow ESMA and/or its authorized representative to have an access for purposes of monitoring and inspection related to regulated products covered by this Regulation.

## **7.3 Retailers and Dealers**

7.1.9. Retailers and dealers shall sell, display or place on the market only products that are complying with the requirements set forth in this regulation.

7.1.10. Retailers and dealers shall allow ESMA and/or its authorized representative to have an access for purposes of monitoring and inspection at point of sale related to regulated products covered by this regulation.

## **8 Market Surveillance**

Authorities performing market surveillance in reference to this regulation shall follow the procedure laid down in Annex VI of this regulation.

## **9 VIOLATIONS AND PENALTIES**

Violations and Penalties from the Federal Law 28 of 2001 shall apply.

## **10 REVISION**

ESMA shall review this regulation in light of technological progress no later than three (3) years after the entry into force.

## **11 LIABILITY AND DISCLAIMER**

ESMA shall not be held responsible for any action (legal or otherwise) raise by any party against the supplier of the registered product on matters resulting from the implementation of the Emirates Conformity Assessment Schemes.

The Approved Supplier is ultimately responsible for the ensuring that the product meets the requirements of other applicable regulations that were not assessed during the process. This

includes quality, safety, health and environmental regulations that are not necessarily covered by the relevant Standards and or the Specific Technical Requirements.

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**Annex I**

**Energy Efficiency Rating**

The energy efficiency rating of a television shall be determined on the basis of its Energy Efficiency Index (EEI) as set out in Table 1. The Energy Efficiency Index and Annual On-mode Energy Consumption of a television shall be determined in accordance to the method set forth in this Annex.

Table 1  
Energy Efficiency Class

| Star Rating              | Energy Efficiency Index (EEI) |
|--------------------------|-------------------------------|
| 5-Star (most efficient)  | EEI < 0.10                    |
| 4-Star                   | 0.10 ≤ EEI < 0.23             |
| 3-Star                   | 0.23 ≤ EEI < 0.42             |
| 2-Star                   | 0.42 ≤ EEI < 0.80             |
| 1-Star (least efficient) | 0.80 ≤ EEI < 1.00             |

A. The Energy Efficiency Index (EEI) is calculated as:

$$EEI = \frac{P}{P_{ref}(A)}$$

Where:

$$P_{ref}(A) = P_{basic} + A \times 4.3224 \text{ Watts/dm}^2$$

$P_{basic}$  = 20 Watts for television sets with one tuner/receiver and no hard disc,

$P_{basic}$  = 24 Watts for television sets with hard disc(s),

$P_{basic}$  = 24 Watts for television sets with two or more tuners/receivers,

$P_{basic}$  = 28 Watts for television sets with hard disc(s) and two or more tuners/receivers,

$P_{basic}$  = 15 Watts for television monitors

$A$  – is the visible screen area expressed in  $dm^2$

$P$  – is the on-mode power consumption of the television in Watts measured in accordance with Annex III, rounded to one decimal place.

B. The annual on-mode energy consumption  $E$  in kWh is calculated as:

$$E = 1.46 \times P$$

C. Televisions with automatic brightness control

For the purposes of calculating the Energy Efficiency Index and the annual on-mode energy consumption, the on-mode power consumption as established according to the procedure set out in Annex III is reduced by 5% if the following conditions are fulfilled when the television is placed on the market:

- i. The luminance of the television in the home-mode or the on-mode condition as set by the supplier, is automatically reduced between an ambient light intensity of at least 20 lux and 0 lux;
- ii. The automatic brightness control is activated in the home-mode condition or the on-mode condition of the television as set by the supplier.

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## Annex II Performance and Information Requirements

### A. On-mode power consumption

The on-mode power consumption of a television with visible screen area  $A$  expressed in  $dm^2$  shall not exceed the following limits:

|                     | All resolutions                                         |
|---------------------|---------------------------------------------------------|
| Television sets     | $16 \text{ Watts} + A \times 3.4579 \text{ Watts}/dm^2$ |
| Television monitors | $12 \text{ Watts} + A \times 3.4579 \text{ Watts}/dm^2$ |

### B. Standby/Off mode power consumption

#### i. Power consumption in 'off-mode':

Power consumption of televisions in any off-mode condition shall not exceed 0.30 Watts, unless the condition in the next paragraph is fulfilled.

For televisions with an easily visible switch, which puts the television in a condition with a power consumption not exceeding 0.01 Watts when operated to the off position, the power consumption of any other off-mode condition of the television shall not exceed 0.50 Watts.

#### ii. Power consumption in 'standby-mode(s)':

The power consumption of televisions in any condition providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function, shall not exceed 0.50 Watts.

The power consumption of televisions in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display, shall not exceed 1.00 Watt.

#### iii. Availability of off-mode and/or standby-mode:

Televisions shall have an off-mode and/or standby-mode, and/or another condition which does not exceed the applicable power consumption requirements for off-mode and/or standby-mode when the televisions is connected to the mains power source.

#### iv. Automatic power-down:

Television shall provide a function with the following characteristics:

a. After no more than 4 hours in on mode following the last user interaction and/or a channel change, the television shall be automatically switched from on mode to:

- Standby-mode, or,
- Off-mode, or,
- Another condition which does not exceed the applicable power consumption requirements for off-mode and/or standby-mode;

b. Televisions shall display an alert message before the automatic switch from on-mode to the applicable condition/modes.

This function shall be set as default.

- v. For television sets which consist of a display, and one or more tuner(s)/receiver(s) and optional additional functions for data storage and/or display such as digital versatile disc (DVD), hard disk drive (HDD) or videocassette recorder (VCR) in a separate unit, point

C. 'Home-mode' for televisions which are delivered with a forced menu

Televisions with forced menu on initial activation of the television shall provide a 'home-mode' in the forced menu, which shall be the default choice on initial activation of the television. If the user selects a mode other than 'home-mode' on initial activation of the television, a second selection process shall be prompted to confirm this choice.

D. Peak luminance ratio

- i. Televisions without forced menu: the peak luminance of the on-mode condition of the television as delivered by the manufacturer shall not be less than 65% of the peak luminance of the brightest on-mode condition provided by the television.
- ii. Televisions with forced menu: the peak luminance of the home-mode condition shall not be less than 65% of the peak luminance of the brightest on-mode condition provided by the television.

E. Information to be provided by manufacturers

The following information shall be made publicly available on free-access websites:

- i. Energy Efficiency Label of the television,
- ii. The on-mode power consumption data in Watts rounded to the first decimal place for power measurements up to 100 Watts, and to the first integer for power measurements above 100 Watts,
- iii. For each standby and/or off-mode, the power consumption data in Watts rounded to the second decimal place,
- iv. For televisions without forced menu: the ratio of the peak luminance of the on-mode condition of the television as delivered by the manufacturer and the peak luminance of the brightest on-mode condition provided by the television expressed in percentage, rounded to the nearest integer,
- v. For televisions with a forced menu: the ratio of the peak luminance of the home-mode condition and the peak luminance of the brightest on-mode condition provided by the television, expressed in percentage, rounded to the nearest integer,
- vi. If the television contains mercury or lead: the content as X.X mg and the presence of lead.

## Annex III      Conditions and Measurements

Measurements shall be made by reliable, accurate and reproducible measurement procedures, which takes into account the generally recognized state of the art measurement methods.

### A.                    Measurements of on-mode power consumption

#### i.                    General conditions:

- a.            Measurements shall be made at an ambient temperature of  $23\text{ °C} \pm 5\text{ °C}$ ;
- b.            Measurements shall be made using a dynamic broadcast-content video signal representing typical broadcast TV content; the measurement shall be the average power consumed over 10 consecutive minutes;
- c.            Measurements shall be made after the television has been in the off-mode for a minimum of 1 hour immediately followed by a minimum of 1 hour in the on-mode and shall be completed before a maximum of 3 hours in on-mode. The relevant video signal shall be displayed during the entire on-mode duration. For televisions that are known to stabilize within 1 hour, these durations may be reduced if the resulting measurement can be shown to be within 2% of the results that would otherwise be achieved using the durations described here;
- d.            Measurements shall be made with an uncertainty of less than or equal to 2% at the 95% confidence level;
- e.            Measurements shall be made with the Automatic Brightness Control function, if such function exists, made inactive. If the Automatic Brightness Control function exists and cannot be made inactive, then the measurements shall be performed with the light entering directly into the ambient light sensor at a level of 300 lux, or more.

#### ii.                  Conditions for measuring the on-mode power consumption of televisions:

- a.            Television sets without forced menu: The power consumption shall be measured in the on-mode condition of the television as delivered by the manufacturer, that is the brightness controls of the television shall be in the position adjusted by the manufacturer for the end-user;
- b.            Television sets with forced menu: The power consumption shall be measured in the 'home-mode' condition;
- c.            Television monitors without forced menu: The television monitor shall be connected to an appropriate tuner. The power consumption shall be measured in the on-mode condition of the television as delivered by the manufacturer, that is, the brightness controls of the television monitor shall be in the position adjusted by the manufacturer for the end-user. The power consumption of the tuner is not relevant for the measurements of on-mode power consumption of the television monitor;
- d.            Television monitors with forced menu: The television monitor shall be connected to an appropriate tuner. The power consumption shall be measured in the 'home-mode' condition.

### B.                    Measurements of standby/off-mode power consumption

Measurements of power of 0.50 Watts or greater shall be made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurement of power less than 0.50 Watts shall be made with an uncertainty of less than or equal to 0.01 Watts at the 95% confidence level.

C. Measurements of peak luminance

- i. Measurements of peak luminance shall be made with a luminance meter, detecting that portion of the screen exhibiting a full (100%) white image, which is part of a 'full screen test' test pattern that does not exceed the average picture level (APL) point where any power limiting occurs in the display luminance drive system.
- ii. Measurements of luminance shall be made without disturbing the luminance meter's detection point on the display whilst switching between the home-mode condition and the on-mode condition of the television as set by the supplier, as applicable, and the brightest on-mode condition.

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## Annex IV      Technical Documentation

For the purposes of conformity assessment pursuant to Article 5, the technical documentation shall contain the following elements:

- A.            The name and address of the supplier;
- B.            A general description of the television model, sufficient for it to be unequivocally and easily identified;
- C.            The reference of the harmonized standards applied;
- D.            Other technical standards and specifications used;
- E.            Identification and signature of the person empowered to bind the supplier;
- F.            Address of the free-access website referred to in Annex II (E);
- G.            Test parameters for measurements:
  - i.            Ambient temperature;
  - ii.           Test voltage in V and frequency in Hz;
  - iii.           Total harmonic distortion of electricity supply system;
  - iv.           The input terminal for the audio and video signals;
  - v.            Information and documentation on the instrumentation, set-up and circuits used for electrical testing;
- H.            On-mode parameters:
  - i.            The power consumption data in Watts rounded to the first decimal place for power measurements up to 100 Watts, and to the first integer for power measurements above 100 Watts;
  - ii.           The characteristics of the dynamic broadcast-content video signal representing typical broadcast TV content;
  - iii.           The sequence of steps for achieving a stable condition with respect to power consumption;
  - iv.           For televisions with a forced menu, the ratio of the peak luminance of the home-mode and the peak luminance of the brightest on-mode condition provided by the television, expressed as a percentage;
  - v.            For television monitors, a description of the relevant characteristics of the tuner used for measurements;
- I.            For each standby or off-mode:
  - i.            The power consumption data in Watts rounded to the second decimal place;
  - ii.           The measurement method used;

- iii. Description of how the mode was selected or programmed;
- iv. Sequence of how the mode was selected or programmed;
- v. Sequence of events to reach the mode were the television automatically changes modes.

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Annex V Energy Efficiency Label

|                                                                                               |                                                                                     |                                                                                      |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| EESL SERIAL NO.                                                                               |                                                                                     |    |
| هيئة الإمارات للمواصفات والمقاييس<br>Emirates Authority for Standardization & Metrology       |                                                                                     |                                                                                      |
| بطاقة كفاءة الطاقة الإماراتية الخاصة بأجهزة التلفاز<br>Energy Efficiency Label for Television |                                                                                     |                                                                                      |
| UAE.S 5010-8:2016                                                                             |                                                                                     |                                                                                      |
|              |                                                                                     | <b>5</b>                                                                             |
| الاستهلاك السنوي من الطاقة<br>ANNUAL ENERGY CONSUMPTION                                       | <b>XYZ</b><br>كيلو واط- ساعة \ سنة<br>kWh / Year                                    |                                                                                      |
| أجهزة التلفاز<br>TELEVISION                                                                   |  |  |
| BRAND NAME                                                                                    | XYZ XYZ<br>cm inch                                                                  | XYZ<br>Watt                                                                          |
| MODEL/TYPE NO.                                                                                |                                                                                     |                                                                                      |
| 5010-8/2016                                                                                   |                                                                                     |                                                                                      |

## **Annex VI      Market Surveillance**

The following market surveillance checks shall apply:

- A.            The authorities shall test one single television unit.
- B.            The model shall be considered complying if:
  - i.            The result for on-mode power consumption does not exceed the applicable limit value set in Annex II (A) by more than 7%; and
  - ii.           The results for standby/off-mode conditions does not exceed the applicable limits set out in Annex II, points B(i) and B(ii) by more than 0.10 Watt; and
  - iii.           The result of the peak luminance ratio set out in Annex II D does not fall below 60%.
- C.            If the results referred to in above points B (i), B (ii) and B (iii) are not achieved, three additional units of the same model shall be tested.
- D.            After three additional units of the same model have been tested, the model shall be considered to comply with the requirements set out in this regulation, if:
  - i.            The average of the results for the latter three units for on-mode power consumption does not exceed the applicable limit value set in Annex II (A) by more than 7%; and
  - ii.           The average of the results for the latter three units for standby/off-mode conditions does not exceed the applicable limits set out in Annex II, points B(i) and B(ii) by more than 0.10 Watt; and
  - iii.           The average results for the latter three units for the peak luminance ratio set out in Annex II D does not fall below 60%.
- E.            If the results referred to in above points D (i), D (ii) and D (iii) are not achieved, the model shall be considered not to comply with the requirements.