

ENERGY EFFICIENCY TESTING
AT
BUREAU OF STANDARDS JAMAICA

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Introduction of the Programme

1. What is Energy Efficiency vs Energy Conservation

2. Why are we concerned about energy consumption

3. What was Jamaica doing – The Road to Energy Conservation

- **JS178** - Jamaican Standard Specification for Testing of energy performance of household refrigerators and freezers.
- **JS179** - Jamaican Standard Specification for Room Air Conditioners
- **JS1: Part 21** – Jamaican Standard Specification for the labelling of commodities Part 21: Energy labelling of appliances and products.

Laboratory Upgrade

- 1. Upgraded the existing six test station test chamber for household refrigerators and freezer.**
- 2. Acquired an additional test chamber with 10 test station for household refrigerators and freezer.**
- 3. The testing of household refrigerators and freezers will now include testing of wine coolers.**
 - Able to test at varying ambient test temperature**
 - Able to test at varying power supply**

Laboratory Upgrade

Testing at the BSJ - Refrigerators/Freezers and Wine Chillers



Laboratory Upgrade

4. Acquired a new psychrometric balance ambient room calorimeter for the testing of room air conditioners.

- Test done at varying power supply**

Laboratory Upgrade

Testing at the BSJ - Room Air Conditioners



Why do we need to do energy efficiency testing?

THE ENERGY EFFICIENCY LABEL



THE ENERGY EFFICIENCY LABEL



Energy Conservation - Everybody's Business

- 1. Regional Harmonization**
- 2. Who is CROSQ**
- 3. The BSJ/CROSQ Partnership**

Our Regional Standards

1. CRS 57 - Energy Labelling for Refrigerated Appliances

- Test done according to AHAM HRF-1-2016 standard - Energy and internal volume of refrigerating appliances

Our Regional Standards

CRS 57 - Requirements

- **The programme name**
- **The measured capacity**
- **The measured energy consumption**
- **The brand name**
- **The model number**
- **The country of origin**

Optional - Annual Operating Cost
- Validity Period

Our Regional Standards

1. CRS 57 - The MEPs (Minimum Energy Performance)

Number	Electrical household appliance description	E_{max}
1	Refrigerator only, conventional and refrigerator-freezer (R/F) with manual or semiautomatic defrosting	0.31 AV + 248.4
2	Refrigerator-freezer with partially automatic defrosting.	0.31 AV + 248.4
3	Refrigerator-freezer with auto-defrosting and top-mounted freezer, without ice dispenser, and refrigerator only with auto-defrosting	0.35 AV + 276.0
4	Refrigerator-freezer with auto-defrosting and side-mounted freezer, without ice dispenser	0.17 AV + 507.5
5	Refrigerator-freezer with auto-defrosting and bottom-mounted freezer, without ice dispense	0.16 AV + 459.0
5A	Refrigerator-freezer with auto-defrosting and bottom-mounted freezer, with door ice dispense	0.18 AV + 539.0
6	Refrigerator-freezer with auto-defrosting and top-mounted freezer, with ice dispenser	0.36 AV + 356.0
7	Refrigerator-freezer with auto-defrosting and side-mounted freezer, with ice dispense	0.36 AV + 406.0
8	Vertical freezer with manual defrosting	0.27 AV + 258.3
9	Vertical freezer with auto-defrosting	0.44 AV + 326.1
10	Horizontal freezer and all other freezers, except compact freezers	0.35 AV + 143.7
10A	Horizontal freezer with auto-defrosting	0.52 AV + 211.5
11	Refrigerator and compact refrigerator-freezer with manual defrosting	0.38 AV + 299.0
12	Compact refrigerator-freezer with partially automatic defrosting	0.25 AV + 398.0

Our Regional Standards

2. CRS 58 - Energy Labelling for Compact Fluorescent Lamps (CFLs) and Light Emitting Diode Lamps (LEDs)

Testing done according to:

- **IEC 61000-3-2**, *Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*
- **IEC 62560**, *Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety specifications*

Our Regional Standards

2. CRS 58 - Energy Labelling for Compact Fluorescent Lamps (CFLs) and Light Emitting Diode Lamps (LEDs) (cont.)

- **IEC 62612**, *Self-ballasted LED lamps for general lighting services with supply voltages > 50 V - Performance requirements*
- **IEC 60969** *Self-ballasted compact fluorescent lamps for general lighting services - Performance requirements*

Our Regional Standards

CRS 58 - Requirements

- **Rated wattage (watt)**
- **Efficacy (lumens/watt)**
- **Light output (lumens)**
- **Rated life (hrs)**

Optional

- **Estimated yearly energy use (based on 3 hours/day)**
- **Beam angle (for LEDi) (degrees)**

Our Regional Standards

3. DCRS 59 - Energy Labelling for Air Conditions

- Testing done according to ISO 5151- Non-ducted air conditioners and heat pumps - Testing and rating for performance

Our Regional Standards

DCRS 59 - Requirements

- **The name or registered trade mark of the manufacturer or responsible local distributor**
- **Model number**
- **EER (in w/w or ((Btu/h)/w))**

Optional

- **An annual energy consumption, calculated in accordance with clause 6.3**

Our Regional Standards

DCRS 59 - The MEPS - Cooling

Energy efficiency class	EER w/w	EER (Btu/h)/w
A	$3.80 < \text{EER}$	$12.92 < \text{EER}$
B	$3.80 \geq \text{EER} > 3.60$	$12.92 \geq \text{EER} > 12.24$
C	$3.60 \geq \text{EER} > 3.40$	$12.24 \geq \text{EER} > 11.56$
D	$3.40 \geq \text{EER} > 3.20$	$11.56 \geq \text{EER} > 10.88$
E	$3.20 \geq \text{EER} > 3.00$	$10.88 \geq \text{EER} > 10.2$
NOTE: Conversion 1 w = 3.4 Btu/h		

Our Regional Standards

DCRS 59 - The MEPS - Heating

Energy efficiency class	COP w/w	COP (Btu/h)/w
A	$3.60 < \text{COP}$	$12.24 < \text{COP}$
B	$3.60 \geq \text{COP} > 3.40$	$12.24 \geq \text{COP} > 11.56$
C	$3.40 \geq \text{COP} > 3.20$	$11.56 \geq \text{COP} > 10.88$
D	$3.20 \geq \text{COP} > 2.80$	$10.88 \geq \text{COP} > 10.2$
E	$2.80 \geq \text{COP} > 2.60$	$2.80 \geq \text{COP} > 2.60$

NOTE: Conversion 1 w = 3.4 Btu/h

Our Regional Energy Efficiency Labs

Regional Testing Labs - Jamaica and Trinidad

- 1. Testing at the BSJ – Refrigerators, Freezers, Wine Coolers, and Room Air Conditions**
- 2. Testing at the TTBS - CFL and LED Light Bulbs**

Our Regional Energy Efficiency Labs

Regional Testing Labs - Jamaica and Trinidad

Testing at the TTBS - CFL and LED Light Bulbs



THANK YOU

