

Technical Specifications for Lighting Emittted Diodes (LEDs)

This is a summary of Technical Specifications for LEDs under the Sustainable Energy Investment Programme (Energy Smart Fund) to be used for the EE Lighting Distribution Facility. The Goods and Related Services shall comply with the following Technical Specifications and Standards:

1. **Type of Lighting:** Self ballasted Light Emittted Diodes (LEDs), in one body, for use in residential sector.
2. **Base type:** standard base of 2.54 cm of diameter, (medium screw base E-26) that should permit the direct substitution of incandescent bulbs.
3. **Lamp Lifetime:** The minimum lamp life will be at least of 50,000 hours of functioning.
4. **Power of the LEDs:** the power of the LEDs will be: 6 – 11 W. These values include the LED driver. The measured power can vary until 15% of the power declared.
5. **Electromagnetic interference:** the LEDs shall comply with the IEC 1036 requirements relating to the interference with other electronics appliances.
6. **Power Factor:** The minimum capacitive power factor will be 0.5 or 0.6. The maximum inductive power factor will be 0.90.
7. **Harmonics Distortion:** No bigger than 20% based in ANSI C82.
8. **Frequency:** 50/60 Hz. Barbados operates on 110 V, 50 Hz, hence preference will be given to 50 Hz bulbs.
9. **Lighting Efficiency:** Greater that 60 lumens/Watt.
10. **Colour Rendering Index:** At least 82.

11. **Colour temperature:** Cool White, temperature more than or equal than 4,200 °K at nominal intensity.
12. **Quality of the materials:** a) no burn materials, fusion point equal or more than 250°C. b) Materials are not to emit toxic gases. c) minimum thermal capacity of 155°C. d) It is recommended that materials have certification of UL.
13. **Package of the lamps:** the packages will have in English language, labels about the model, origin, factory, nominal voltage, maximum and minimum voltage level, lifetime, luminous flux, color temperature, colour rendering. Warning about the management of the package, information about the ballasts: model, origin, factory.
14. **Standard Required:** C22.2 No.250.0-08, 3rd edition standard (trilateral standard adopted throughout North America, in accordance with the *Canadian Electrical Code (CEC), Part I (C22.1)*, with the *US National Electrical Code (NEC) (ANSI/NFPA 70)*, and with the *Mexican National Electrical Code (NOM-001-SEDE)*.
15. **Heavy Metal Content:** No heavy metal content is preferred. If heavy metal content is present in the LED, it must be clearly stated for the project to determine if the level is acceptable by the responsible regulator and the proper disposal recommended.

Energy and Telecommunications Division
Under the Prime Minister's Office
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