

**CRITERIA FOR AWARDING THE ENERGY SAVING PROCEL SEAL
TO COMPACT FLUORESCENT LAMPS WITH
INTEGRATED BALLAST**

(DOCUMENT COMPLEMENTARY TO THE REGULATION FOR AWARDING
THE ENERGY SAVING PROCEL SEAL)

(Review – II)

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1 Introduction

This document is complementary to the “Regulation for Awarding the Energy Saving Procel Seal”, which may be accessed on the Procel website (www.eletrobras.com/procel). Its goal is to define the criteria that must be met by **compact fluorescent lamps with integrated ballast** in order to earn the Energy Saving Procel Seal.

2 Evaluation of product characteristics

The mechanism for evaluating the conformity of compact fluorescent lamps with integrated ballast covered by this regulation is the labeling, through the Brazilian Labeling Program - PBE, coordinated by the National Institute of Metrology, Quality, and Technology - Inmetro, in partnership with Eletrobras Procel.

Therefore, the product applying for the Procel Seal must be subjected to the stages for granting the use of the National Energy Conservation Label - ENCE¹, described in the current document "Conformity Evaluation Requirements (RAC) for compact fluorescent lamps with integrated ballast" of the Brazilian Labeling Program - PBE, published on the Inmetro website (www.inmetro.gov.br).

The reference labs to perform the tests, the respective sampling, the testing and the allowed tolerances for the results are the ones detailed in the document cited in the previous paragraph.

¹ ENCE – Its goal is to inform the energy consumption and/or energy efficiency of equipment. Its use is subject to the authorization by Inmetro.

3 Criteria for awarding the Procel Seal

3.1 Minimal requirements

The manufacturer / importer who intends to make use of the Procel Seal on an equipment model of his manufacturing line (or on an imported model) shall prove, through the tests prescribed in the document "RAC for Compact Fluorescent Lamps with Integrated Ballast", that the referred model meets the following minimum requirements:

3.1.1 Energy efficiency class

In order to earn the Procel Seal, the compact fluorescent lamp shall achieve the class "A" rating in the labeling process.

3.1.2 Luminous flux depreciation

It will be accepted that the depreciation of the average luminous flux measured at 2,000 hours, in relation to the average luminous flux measured at 100 hours, may be a maximum of 15%.

3.1.3 Power factor

The power factor shall be higher or equal to 0.5, for lamps with rated power up to 25W. For lamps with rated power higher than 25W, the power factor shall be higher or equal to 0.92.

Note: This limit will be confirmed in lab tests with a tolerance of plus or minus 0.05.

3.1.4 Luminous efficacy

In order to earn the Procel Seal, the compact fluorescent lamp with integrated ballast shall meet the minimum luminous efficacy presented in the following Table:

Table 1

LAMP POWER (W) AND CONFIGURATION FOR VOLTAGES OF 127V AND 220V	MINIMUM EFFICACY (lumens/watt)
<u>Lamp without housing</u>	
Lamp power \leq 6W	52.0
6W < Lamp power \leq 8W	54.0
8W < Lamp power \leq 12W	59.0
12W < Lamp power \leq 15W	61.0
15W < Lamp power \leq 18W	63.0
18W < Lamp power \leq 25W	64.0
Lamp power > 25W	65.0
<u>Lamp with housing</u>	
Lamp power \leq 8W	42.0
8W < Lamp power \leq 15W	45.0
15W < Lamp power \leq 25W	49.0
Lamp power > 25W	50.0

3.1.5 Rated life

In order to earn the Procel Seal, the compact fluorescent lamp with integrated ballast shall have a minimum rated life of 6,000 hours.

3.2 Results confirmation

After finishing the tests, the manufacturer/ importer shall send to Eletrobras Procel the Technical Specifications Worksheet (PET) and the test report of the model, or shall authorize the reference lab to do so. The submission may be made by email.

4 Re-evaluation of the product characteristics

Each year Eletrobras will promote the re-evaluation of the compact fluorescent lamps with integrated ballast with the Procel Seal, in order to verify whether their performance characteristics remain valid for the maintenance of the authorized use of the Seal. This verification will be performed through the Production Monitoring stage, proposed in the current "RAC for Compact Fluorescent Lamps with Integrated Ballast", of the Brazilian Labeling Program - PBE, published on the Inmetro website (www.inmetro.gov.br).