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Alex Baker  
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Dear Mr. Baker

Tospo respects and values its relationship with the EPA and welcomes the opportunity to comment on the recent draft of the ENERGY STAR® Product Specification for Lamps Version 1.0 Draft 2<sup>nd</sup>:

- **Compact Fluorescent Lamp (CFL)**

[1. Lamps shall exhibit color rendering index scores of Ra≥80 and R9 >0.](#)

Normally, R9 of 2700K and 3000K CFLs lie within -10 --- -15. If they have to be over 0, there will be a negative effects on lumen output, lumen efficiency, SDCM, CCT and 7-step. During mass production, it is very difficult to control the performance.

[2. Luminous efficacy requirements.](#)

Directional lamp needs to be no less than 45lm/W if the wattage is over 10W. This won't work on R20  
**Comments: remain V4.2 requirement. 33lm/W instead of 45lm/W.**

[3. Stated lumen output on package.](#)

In V4.2, it requires stated lumen needs to be no less than tested initial lumen – 100, and 97% of stated lumen needs to be less than tested initial lumen. Question: in this new version, if the tested initial lumen difference of base up and based down within 5%, what stated lumen should be put on package? How if the difference is over 5%?

[4. Rapid cycle stress test.](#)

Now, all manufacturers can do 4000-6000. If products need to meet 10000 new requirement, all lamps need to be redesigned. Which means all current products can not be Energy Star. This will take too much time to get all skus to test.

**Comments: half of rated life, at least 5000.**

[5. Life testing.](#)

Cover lamps are more difficult than spare lamps. So it needs to be a difference on life requirements.

**Comments: cover lamps, min life 8000hours.**

[6. Run up time.](#)

In V4.2, it requires to reach 80% of lumen at 180S for covered lamp. Comments: for covered lamp, new requirement should be less than 100second to achieve full stabilized light output

#### 7. Power factor for CFL.

Now, over 99% products in the market are 0.5-0.6PF. To meet the new requirement( $\geq 0.7$ ), all lamps need to be redesigned. And this will bring a negative effect on lamp life and cycle time.

**Comments: stay with current requirement in V4.2**

#### 8. Passing test for Rapid Cycle Stress Test and CCT Test.

Actually, both of these passing test are really tough. In draft 2<sup>nd</sup>,  $\geq 9$  units(in 10pcs samples) shall pass the Rapid Cycle Stress Test, and all the units pass CCT Test which are hard to control well in the mass production.

**Comments: To be the same requirement as V4.3**

### - Light Emitting Diode (LED)

#### 1. Light output requirement.

Regarding the R, BR, and ER, the definition of replacement watts and lumens are not that clearly.

E.g. Two different lumen requirements for R20 45W: 450lm as the “ten times incandescent lamp’s rated wattage”; 630lm as the data in the table below:

For all other directional lamps not included above, light output (in lumens) shall be greater than or equal to that of the referenced incandescent lamp per the table below.

Rated Wattage of the Referenced Incandescent Lamp (watts)	Light Output for R20 (Lumens)	Light Output for Lamps Larger Than R20 (Lumens)
45	630	750
50	720	850
65	1,010	1,190
75	1,210	1,420
90	1,520	1,790
100	1,740	2,050
120	2,190	2,580
150	2,910	3,430

**Comments: Please help to make a clear definition of the lumen and watts replacement.**

#### 2. The Elevated Temperature Life Test in the lumen maintenance.

This test apply elevated ambient temperatures from 45°C to 55°C to LED, which is a hardly ambient temperatures to keep the same lumen maintenance performance as in 45°C.

**Comments: Considering this harsh test conditions, change 55°C to be normal temperature 45°C in V1.4.**

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