DANISH ENERGY AGENCY

European Commission
DGENER
att. Mr. Leo Wierda

By e-mail

28. February 2015
File no.
Ref. SFC
Building and Energy Efficiency

The Danish Energy Agency (DEA) welcomes that the Commission has started the revision and integration of the EU ecodesign regulation for domestic lighting and the opportunity to be able to give comments.

Below please find comments from the Danish Energy Agency on the Commission's Lot 8/9/19 Ecodesign Preparatory Study on Light sources draft reports for Task 0, 1, 2, 3 reports and the presentation at the first stakeholder meeting 5/2 2015.

Comments

1. The definition of special purpose lamps from 1194/2012 should also apply to NDLS.
2. DEA find it is worth to reconsider if it has been favourable for EU to choose a different path than the rest of the world by introducing the "useful flux in a cone of 90° or 120°" as basic parameter for directional lamps. DEA appreciates the intension of applying parameters closely related to the consumer usefulness of the lamp but this increases the test price of directional lamps significantly, and risking to limit the market surveillance of directional lamp.

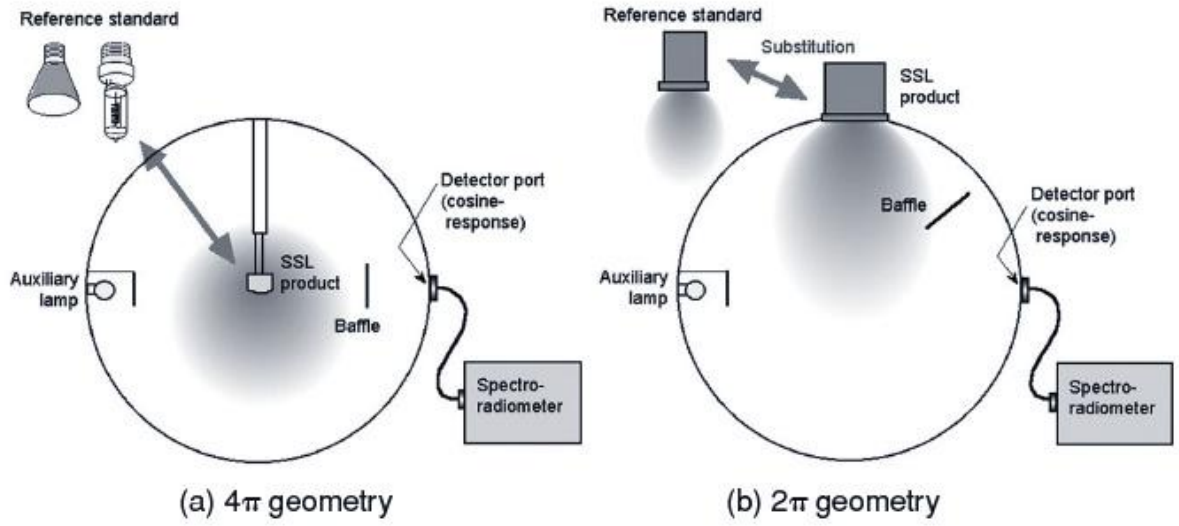
   Measurement of the useful flux value in a cone can only be established by a measurement of the light intensity distribution in a gonio-photometer followed by a numerical integration of the flux in the appropriate conical solid angles. This is several times more expensive than the measurement of the light flux using a photometric sphere which is used for non-directional lamps. The American standard for testing Solid state Lighting products IESNA LM-79-08 uses the forward flux (i.e. flux in the lower hemisphere) as the basic parameter for directional lamps. Below is shown their specification on how to measure the forward flux using a photometric sphere.

Energistyrelsen
Amaliegade 44
1256 København K
DANISH MINISTRY OF CLIMATE, ENERGY AND BUILDING

Phone 33 92 67 00
Fax 33 11 47 43
E-mail: ens@ens.dk
www.ens.dk

Office hours:
Mon-Thursday 8.30-16
Friday 8.30-15.30
CVR No. 59 77 87 14
EAN No. 5798000020009

Signe Friis Christensen
Direct 33 92 75 88
sfc@ens.dk



Setup for flux measurement according to IESNA LM-79-08
(a) Setup for all types of SSL products (LED) – also applicable for other non directional lamps
(b) Setup for SSL products (LED) with only forward emission – also applicable for other directional light sources.
(both) If measurement of colour quality is not needed an ordinary colour corrected detector may be used instead of the spectral radiometer.

The DEA regards it as important that the same basic parameters are used worldwide so burdens of testing and market surveillance can be shared among many. Furthermore this more simple type of measurements can be performed by more laboratories.

3. In case it is decided to continue with the current requirements to useful flux for directional lighting sources, DEA recommends that it becomes a requirement that for all directional light products, the manufacturer or sales company has to provide the light distribution as a photometric file in the IES format at their web sites. The manufactures already have to measure these data in order to make sure they comply with the EU regulation requirement concerning the useful flux. Provision of the IES makes it possible for the market surveillance authorities to execute numerical integration of the flux in the appropriate conical solid useful flux angles.
4. In the current regulation, the labelling of all lighting sources is determined by a square root formulae calculation system. LED lighting sources consist of a number of diodes each with the same lm/W so the formula is not accurate for LED light sources. Use of the square root formula has the consequence that LED lamps with relatively low energy efficiency obtain A+ label. Requirements for LED lamps are anywhere else in world expressed by minimum lm/W requirements and not only for LED technology but also all other kind of lighting technologies. Some argue that for the fluorescent technology the square root relation applies. This is correct but the relation is not the same and as dominant as for the incandescent lamps.
   The actual market trend is that CFL sales decrease as the consumers prefer the LED lamps due to better lighting quality, higher efficacy, no warm up time, no mercury content and the LED prices decrease actually rapidly and have reached an affordable level. We are on the entrance to a LED mass market. Consequently, it is the right time to harmonize and transfer to lm/W requirements which are used in the rest of the world. Alternatively, the square root formulae could be kept alive solely for the fluorescent technology while the new technologies (LED and OLED) should be covered by lm/W requirements.
5. In a future stage 7, we suggest that minimum ecodesign requirements for R7s and G9 are included. It is especially urgent for the G9 lamps as a there exist G9 adapters giving a major loophole in the existing regulation.

6. In a future stage 7, please define the ecodesign minimum requirements for most LED lamps to be A+. Market investigation in the IEE PremiumLight project indicates more than 50 % of the non-directional LED lamps at the market have class A+ efficacy
7. LED lamp functionality is sensitive to the heat conditions in the fixture. It is recommended to change lifetime test conditions from 25°C to 40°C (have to be specified in accordance with the conditions in the respective standards)
8. Information about colour rendering (Ra value) should be required to be shown at the packing. In the IEE PremiumLight market research was found this is a very important light quality parameter for the consumers and several EU member countries has a long tradition for recommendation of a high colour rendering for some activities both at work and in the home.
9. DEA suggest the minimum colour rendering requirement CRI > 80 is extended with R9 > 0 as recommended by IEA SSL. It might also be recommended to provide LED lamps with CRI >90 for a future stage.
10. The existing main power factor requirements should be kept to PF > 0.5 as this is fulfilled by products of quality and there is no reason to impose extra costs on LED for adding electronics which will be the consequence of requiring PF>0.7 and we want to stress IEC/EN are responsible for defining measurement methods while the public authorities are responsibility for defining the requirements. For the grid company, there are no grid measurements giving evidence of power factor problems in the grid supplying household consumers with many CFLs and LEDs. On the contrary the capacitive reactive loads from CFL and LED lamps compensate a part of the dominating inductive reactive loads in the domestic electricity supply grid. For the consumer, there are no benefits from power factor requirements. IEA SSL recommends the same power factor requirements as the existing EU requirements.
11. The best network-connected smart lamps operate with 0.17 – 0.25 W standby power consumption while other smart lamps have up to ten times higher standby consumption. DEA recommends maximum standby power consumption 0.3 W per smart lamp.

Yours sincerely

Signe Friis Christensen