

The Danish Energy Authority

Comments on

EuP Directional Lighting – Technical Support Reports Task 1 and 2 from Defra, eceee and Swedish Energy Agency consortium

The following comments are given on behalf of
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The Danish Energy Authority (DEA) appreciates the effort by the consortium to supplement the base for eco-design regulation.

We also support the aim at making requirements compatible in the different markets (Australia, Canada, Europe and USA). Thus the burden of market surveillance can be shared among a larger number of national authorities, and the manufacturers' quality control will be simpler.

For the authorities enforcement of the regulations they need to be based on well defined parameters and test methods. We have drawn attention of the EC representatives to the fact that a number of standards for testing in this field need to be elaborated or strengthened before products legally can be rejected based on market surveillance tests.

Following the general approach of in the eco-design directive for EuPs, the requirements should be as independent of technology as possible considering practical aspects. Therefore correction factors for different types of light sources are difficult to avoid.

The use of the known energy classes is also implied. Therefore a factor (like 1.25) to account for the losses in the optics of directional light source is necessary.

The Technical Support Reports claim that it is more accurate to measure the flux in the solid angle of 2π (180° "cone") than to measure the flux in a cone of 90° or 120° , but gives no exact explanation why. Using a "simulated luminaire" to cut off the unintentional light (i.e. the upwards light) also introduces sources of errors, especially if the front of the light source is not plane.

One could question if accurate tests of directional light sources always can be done without measuring the light distribution in a goniophotometer.

A combination with measurements in an integrating sphere could be a solution for rationalization when a sample batch is to be tested. The Australian experiences in this field are welcome.

Among other things the flux (or efficacy) depends on the geometrical design governing the amount of flux hitting the reflector and the amount emitted directly. Thus two directional sources of the same beam angle and only differing in reflector geometry may easily have different downwards flux.

Using the downwards flux (solid angle of 2π or 180°) tends to award an open design of reflectors with a large amount of 'spill light'.

Using a cone of 90° or 120° (solid angle of 0.6π or π) tend to award a more closing reflector design with less 'spill light'.

It is a matter of what is found to be most relevant for the end user in the sense of a 'functional unit' as required in the eco-design directive.

The Technical Support Report 2 mentions the 10% "margin" rule to be used in verification procedure for market surveillance, but does not inform about the authors attitude towards this rule.

The study reported is however useful as a supplement for the members of the Consultation Forum to deal with the proposal for regulation.