

Comments from a private individual

I offer the comments below, in relation to work on the Eco-design Regulation for Directional Lamps.

Comments on Task 2. Beam Angles and Directional Lamps

In this report reference is made to the Regulation for non directional lamps (244/2009) as a model which needs to be modified to accommodate the special problems of measuring beam performance. The costs of Market Surveillance can be very expensive taking into account the number of manufacturers and the wide range of lamp types each produces, so this is a very important issue.

The first point I would make is that REGULATION (EC) No 244/2009 does not require lamp power or light output to be measured to compare with claimed parameters. The first requirement in Annex II is "The maximum rated power (P_{max}) for a given rated luminous flux is provided in Table 1." Note the words "rated" See definition (a): "a 'rated value' is the value of a quantity used for specification purposes, established for a specified set of operating conditions of a product." So the compliance is checked by using the values printed on the carton, or otherwise published, and is just a paper exercise.

(Note that light output has to be measured to determine compliance with the lumen maintenance requirement, and power consumption as part of the calculation of power factor, but there is nothing to say they have to be within some tolerance of the Rated Values.)

If this wording is carried forward to the Directional Lamps Regulation, a much simpler method of estimating lumen maintenance could be devised for Market Surveillance

Point 2 I agree with the report authors that measurements using an integrating sphere would be a cheaper option and that 180 degrees would be simpler. They have highlighted extra problems in trying to measure directional lamps in this way, and have advised that the sphere should be set up with a lamp of similar beam angle. Lamps used to set up integrating photometers need to be very stable so that the set-up doesn't vary from one occasion to another. Normal commercial lamp designs do not generally provide this stability, so hand made types of special construction are often used. Relatively few are needed in the photometry of non directional lamps, but in the context here many types would have to be established.

The whole thing is getting too complicated. In the past it has been possible to manufacture and sell perfectly acceptable blown bulb reflector lamps without any regular quality checks on beam angles and peak intensities. The variables in the components and manufacturing process inevitably lead to quite wide variations in performance, but the market has found these quite acceptable. The MR16 LV halogen types are easier to manufacture with greater consistency, and several beam widths are available, but as pointed out in the report, many consumers just use these for general lighting.

If the new regulation just wants to establish the total flux for the purpose of establishing energy efficiency it should be done on the basis of type tests by an independent laboratory at the instigation of the manufacturer. Market Surveillance could then include asking the manufacturer to produce these results to compare with the quoted values on the package.

Anything more is likely to put up manufacturing costs, will squeeze out smaller competitors, reducing competition and put up prices.

Point 3 relates to the statement in the report :

"In the context of the proposed P_{lamp} adjustments, it should be noted by all parties that in

regulation 244/2009, Annex III, Verification procedure for market surveillance purposes, it

states: " the batch shall be considered to comply with the provisions set out in Annex II as

applicable, of this Regulation if the average results of the batch do not vary from the limit,

threshold or declared values by more than 10%." Thus, the existing regulation already

allows manufacturers to produce and sell lamps that are 10% below the required minimum

efficiency performance standards (MEPS) equation. This should be kept in mind when

reviewing and considering the magnitude of the proposed correction factors for DLS."

The statement "allows manufacturers to sell lamps that are below the minimum " should not be accepted without careful analysis.

1 All lamp products will have manufacturing tolerances, which good manufacturers will seek to minimise, but will always be present. Where measurements are involved, measurement tolerances will also be present. In the notes on the Notes on the Stakeholders' Meeting of 9th June the comment was made under Task II that : "There was a comment that setting the 10% tolerance was about the difference in testing between the laboratories and the tolerance is for this purpose, not the manufacturers." !

2 The functional tests in Table 4 of Annex II of 244/2009 number 10 (possibly 11) for CFLs and 9 (possibly 10) for non CFLs. If a failure is recorded against 2 of these, the 10% limit of the 20 sample will be reached, or if there are 2 failures in any one test, a similar conclusion is reached . Annex II also has requirements for information on the package and on the web site, so if these are not present, or not in line with the requirement, there is more scope for failure.

3 A good manufacturer will want the statistical probability of his meeting the requirements on a market sample of 20 to be better than 95%, so will seek to ensure average levels in production are, if possible high enough to achieve this. With the comments in 1 and 2 above it's almost impossible.

Point 4 As the Regulation for Directional lamps is likely to follow the pattern of Reg 244/2009, I would like to draw attention to a practical difficulty in using Annex II to carry out the Market Surveillance required in Annex III.

There are 20 lamps selected for testing. Table 4 requires a Survival Test and a Switching Test. For the latter lamps are run a switching cycle of 1 min on 3 min off, (This could take up to about 600 hours, during which the lamps would be alight for 150 hours only). The Survival Test should use the procedures in the EN Standards which generally involve burning for 23 hours out of 24. Because of this difference the lamps used for the Switching Test cannot then continue to burn to give results for the Survival Test (which, as well, would take longer to complete if they were). No guidance is given on

how to divide the sample of 20 between the two tests. Dividing the sample not only reduces the information from these tests but also reduced that from the Lumen Maintenance test.