

Italian comments to:

- COMMISSION REGULATION (EU) .../... of XXX implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for light sources and separate control gears, repealing Regulation (EC) No 244/2009 with regard to ecodesign requirements for non-directional household lamps, Regulation (EC) No 245/2009 with regard to ecodesign requirements for fluorescent lamps without integrated ballast, for high intensity discharge lamps, and for ballasts and luminaires able to operate such lamps, and, Regulation (EU) No 1194/2012 with regard to ecodesign requirements for directional lamps, light emitting diode lamps and related equipment
- COMMISSION DELEGATED REGULATION (EU) .../... of XXX supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of light sources repealing Regulation (EU) No 874/2012 with regard to energy labelling of electrical lamps and luminaires

Date: 2018 February 1st.

Ecodesign (Regulation and Annexes)

Editorial / General

- Check “.” and “,” as decimal separator
- Definition of ‘colour temperature’ (T_c [K]): it is CCT, Correlated Colour Temperature [K]
- CRI is NOT measured in Ra (e.g. CRI >0 will be Ra > 0 or CRI > 0, not CRI > 0 Ra)
- Definitions should be consistent with the ones in Energy Label or vice-versa, maintaining the more consistent one in case of differences
- Definitions of technologies and lamp types. In the Regulation the technologies are defined, while the lamps are defined in Annex II. So it is better to shift “halogen light source” and “fluorescent light source” in Annex II. Here leave only the definition of “fluorescence” (‘fluorescence’ means the phenomenon or a light source using an electric gas discharge of the low-pressure mercury type in which most of the light is emitted by one or more layers of phosphors excited by the ultraviolet radiation from the discharge)¹.
- Annex III. Table 1: clarify the number of decimal digits, i.e. if the integer numbers are meant to be really integer (e.g. 79 means 79 or 79,0)? It is important for declarations and market surveillance. This question arises because in the table that there are many numbers very close to each other, some of them with 1 decimal digit and others apparently integer.
- Annex III. Table 2. Bonus on C: as it is explained as “and additions to C for special light source features”, it means that it should be added to C. Then it should be only, for example “0,1” and not “C + 0,1”, otherwise we will have C + C + 0,1.
- check the terminology used in Annex V for “model” and “unit”. A model includes one or more physical units. Sample size is in units, not models.

¹ the definition of ‘fluorescent light source’ (FL) is a fluorescent light source. Fluorescent light sources may have one (‘single-capped’) or two (‘double-capped’) connections (‘caps’) to their electricity supply. For the purposes of this Regulation, magnetic induction light sources are also considered as fluorescent light sources.

Title

There are requirements for containing products (Obligations are in Article 2 (4).). In the title the word “containing product” is not present. How is it possible for somebody – i.e. a manufacturer of containing product - to understand that he/she is involved in this regulation, without reading the document?

During the meeting it has been explained that manufacturers of containing products have to deal with light sources, so that accordingly manufacturers of light sources will inform manufacturers of containing products of the obligation.

This procedure is not very linear and the regulation is hidden to the manufactures of containing product: the entire responsibility to inform them about an official legislation cannot be left to other manufacturers, because law has to be directly accessible.

Article 1

Exemptions, as described in Annex I point 1 and 2 are not sufficient. There are other cases which have to be exempted, for example laboratory reference lamps. See comments to Annex I.

Article 2

Definition of light source

Please provide some examples and / or images.

“luminous flux < 1000 lm per mm² of projected light-emitting surface area as defined in Annex II”: this parameter is useless, and not well defined. How to measure it? See comment to Annex II on “emitting area”. If the scope is, as in Explanatory Memorandum 3 “density of light emission less than 1000 lumen per square millimetre, excluding from the scope e.g. light guidance applications, laser sources, photographic flash tubes, etc.”. It would be much better to explicitly exempt / exclude that light sources, in Annex I point 1 / 2.

“If a containing product is itself a light source, the light source to be considered for the purpose of this Regulation is the smallest physical unit that can be readily removed from the containing product without permanent mechanical damage and that meets the definition for light source”.

- This definition is very confusing. The word “light source” is used with at least 2 different meanings. It opens the door to a lot of misinterpretations, and a lot of (hopefully) unintended requirements for “containing products”. It may be intended for example “if the containing product is a luminaire, which emits light because of light sources inside, the light source to be considered is...” but an appropriate wording has to be selected.
- This definition is also linked to the Article 4, because it assumes that every containing product may be disassembled. Otherwise, the whole containing product is to be considered as a light source. See comments on Article 4.
- Why “the smallest physical unit”? If a containing product is a luminaire and contains more than one type (size, power...) of light source, only “the smallest” has to be considered? It is more appropriate “one light source for each type”.
- “readily removed” should be clarified, specifying if it is intended “by professionals” or in another way.

- “permanent mechanical damage” should be clarified what is the object of the damage, i.e. (presumably) the light source.

Definition of containing product.

Is a refrigerator, a shelf, every object containing one or more light source/s a containing product? Extreme consequence of the definition: is a packaging of a lamp a containing product?

The definition is quite wide and not very clear. Give examples and /or images, specifying also, where possible, the “usual” name of these products (i.e. a luminaire is a luminaire). Where standardized definitions are available, please refer to them.

Definition of luminous flux

it is important to clarify that “for this regulation”, the flux, unless otherwise specified, is the initial flux.

Flicker

We propose to delete the definition and the requirements for flicker, as the matter is not completely consolidated.

Declared value

The definition of “declared value”² is in Annex II (44) but it should be shifted in Article 2, because widely used in the document.

Article 4

The whole article is based on the fact that light sources and separate control gears in scope of this Regulation can always be readily removed without permanent mechanical damage, either by the end-user or by qualified professionals.

This is not true; there are containing products which are impossible to disassemble properly. In these cases, is the containing product to be considered as a light source itself?

This assumption and this requirement are the ground on which the full regulation is based. But, as it is not realistic, the consequence is a bad overlapping of (unintended) requirements for containing products (and unintended misunderstanding of Article 2 – Definition of light source).

What in case the containing product which cannot be disassembled is, for example, a big refrigerator? Should the whole appliance be tested? It may be impossible to obtain photometry of such “light source”, because of weight, size (physical limits for laboratory equipments), and because lighting is not the main purpose of a refrigerator.

Permanent damage: explain if it refers to the light source or also to the containing product.

The requirement (always possible to disassemble) may be used in 2 different ways:

- 1) market surveillance

² ‘declared value’ for a parameter means the value given by the manufacturer or importer in the technical documentation pursuant to point 2 of Annex IV to Directive 2009/125/EC.

- 2) replacement of light sources by end-users. But in some cases (e.g. LED modules) after a short time the same product is no more available on the market, so what is the scope of disassembling if a replacing light source is no more available and there are no compatible light sources on the market?

Instructions: end-users and professionals are totally different worlds. To whom the instruction are addressed and how? If they are for everybody, the risk is that unqualified persons start disassembling products with dangerous consequences.

Article 6

The technical documentation file shall also specify at least one realistic combination of product settings and conditions in which the product complies with this Regulation.

Annex I

Add to exemptions at least:

- “reference lamps for laboratories” or similar: e.g. photometric calibration lamps, light sources used as standard illuminants
- “light guidance applications, laser sources, photographic flash tubes, etc.”
 - These are the exemptions as in Explanatory Memorandum, coming from limit of 1000 lm/mm²
- “pieces of art”
 - they are defined in a specific legislation and they are in very limited number of units. It not possible to test these models because of individual characteristics of the units.
- customized small series production, e. g. limit 200 units / year

Modify “HID light sources with specific effective ultraviolet power >2 mW/klm” in “Light sources with specific effective ultraviolet power >2 mW/klm”: this because every light sources with high UV are not allowed for general lighting, independently of the technology.

Annex II

‘*non-clear envelope*’: this is the right definition, so align the definition in Energy Label with this one

‘*Pst LM*’: delete this definition, which is linked to flicker

‘*projected light-emitting surface area (A)*’. This definition is related to a useless requirement, so that it should be deleted. The definition itself is not clear and confusing. E.g. “For light sources containing more than one light emitter, the smallest gross volume enveloping all emitters shall be taken as the light-emitting surface.”: how can a volume be considered as a surface?

NDLS and DLS: a light source may be declared by the manufacturer as “Non directional” even if the total luminous flux within a solid angle of π sr is higher than 80%. So it should be clarified that a DLS is a DSL if meant to be used as accent lighting: this info will be useful for end-users together with beam angle.

Annex III

1. Energy efficiency requirements. 1.1 Light sources

Table 1

There is a very detailed list of types of light sources, based on technologies and other items, but “LED” are not explicitly mentioned (OLED are listed). Light sources LED-based may be found under “Other light sources in scope not mentioned above”. IT would be advisable to write the word “LED” very clearly on the table, mainly because LED products are considered by the Regulation and they are indeed a very important light source typology on the market, meant to be more and more important in the future.

Table 2

The “normalization” of C factors is made on Non-directional (NDLS) not operating on mains (NMLS): for these light sources C=1. It makes the Regulation not easily understandable, because most of the light sources are Non-directional (NDLS) operating on mains (MLS). So, it would be better to renormalize C factors with this reference. Otherwise, for every common household bulb, a C factor different from 1 has to be applied.

The recalculation implies the recalculation of all the coefficients of table 1.

2. Functional requirements. 2.1 Light sources

Table 4

- Please specify what is “P”: presumably P_{on} , but it should be clearly stated.
- Displacement factor: it would be better to maintain Power Factor (adjust also corresponding definition).
- Flicker: remove requirement

Annex IV

“When verifying the compliance of a product model with the requirements laid down in this Regulation pursuant to Article 3(2) of Directive 2009/125/EC, for the requirements referred to in this Annex, the market surveillance authorities of the Member States shall apply the following procedure”:

- *“The Member State authorities shall verify a single unit of the model”:* add “for documental analysis”. This to avoid misinterpretation of following steps.
- *“the values given in the technical documentation.... and the values used to calculate these values, are not more favourable for the manufacturer or importer than the results of the corresponding measurements...”*
 - it should be clarified that these measurements are the ones carried out (directly or indirectly) by the manufacturer / importer
- *“Member States authorities shall test 10 units of the model. For light sources, if the acquisition costs for the 10 units would exceed 500 euros, Member State authorities may reduce the sample size to 3 units”.*
 - 10 units is acceptable, but 3 units are insufficient. Minimum sample size should be 5.
 - 500 € is not a good criterion for selection of sample size. This amount may be very high for a household product, but medium or low for street lighting or other professional products. Member States should be free to decide whether or not the price of 10 units is appropriate or not and, in case the price is not appropriate, they may reduce the sample size.

- *“If the containing product contains multiple identical light sources connected to one control gear, possibly each individually emitting less than 60 lm but in total emitting more than 60 lm, verification testing of the market surveillance authorities may be limited to a representative subset of the individual light sources and the results can be extrapolated”.*
 - As light sources under 60 lm are not “light sources” according to the definition in Article 2, it is impossible to deal with this item. Also in case the light sources < 60lm will be considered as light sources but exempted, this will not solve the problem, because manufacturers of light sources <60lm do not know if their light sources will be used individually (possibly exempted) or not: this will be decided by the manufacturer of containing product.
- Verification tolerances
 - If a measured (determined) parameter is better than the declaration, then the tolerance in this sense shall not be used. This will apply at least to CRI (the higher CRI, the better), power factor (the lower power factor, the better), while it is questionable for luminous flux: more light than expected may result in unsatisfied end-user, because too much light maybe unpleasant or, in certain cases (e.g. inside a museum) too much light may be not only unpleasant but also dangerous for the lighted pieces of art.
 - Luminous intensity: if the verification is related to “peak intensity”, required as product information, then a low tolerance may appear to be appropriate for end-users, but it cannot be too low due to intrinsic testing procedures and conditions. The intensities used to determine other parameters – such as the beam angle – shall not be objectives of market surveillance.
 - P_{on} : for low power light sources a flat value for tolerance is preferable to a proportional one. But, for very low power light sources (e.g. $P_{on} \leq 2W \rightarrow$ tolerance $\pm 0.2W$), this may result in unintended requirement on control gears: for low power light sources, the main part of the consumption is due to the “electronics” rather than to the light source itself. The same / control gear may be used for light sources at 5 and 2W. If we require a too strict value for low power P_{on} , we need dedicated and expensive control gears for these light sources.
 - The tolerance shall be defined on the basis (at least) of expanded uncertainty of laboratories. For this reason, we consider the proposed values in table 6 in general too strict. Some suggestion and specific comments here:
 - Full-load on-mode power P_{on} [W]: in case ranges have to be defined, it could be advisable to use the same as for Power Factor (not DF) in table 4
 - Suggested values for tolerances:
 - P_{on} :
 - $P_{on} \leq 5W$ tolerance $\pm 0.5W$
 - $5W < P_{on}$ tolerance 10%
 - Useful luminous flux Φ_{use} [lm] : 10%
 - To be decided if one way (i.e. -10%) or two ways (i.e. $\pm 10\%$)
 - CRI [0-100]: 3 units one way (i.e. -3 units. CRI better than +3 units are allowed)
 - Flicker: delete
 - Luminous intensity [cd]: 25% (only peak intensity)
 - Beam angle (degrees): 25%
- Specify decimal digits in the tables and text
- It should be decided and clarified whether verification procedures are always performed at 230 V and 50 Hz regardless of the range given by suppliers (an exemption are low voltage lamps) or under different conditions (e.g. range 230-240 V means test at 235V).
- Clarify what is the procedure to follow in case the light source(s) and/or control gear(s) cannot be removed without permanent mechanical damage.
- lm/W has no requirements. Is this the intention?

Annex V

“Member States authorities shall test 10 units of the model for each test. If the acquisition costs for 10 units would exceed 500 euros, Member State authorities have the option to reduce the sample size to 3 units for each test.”

This sentence should be deleted from Annex V, because market surveillance is in Annex IV.

Temperature testing: this test aims to check the mechanical strength of the assembly. It is out of the scope of Ecodesign: industry has to fulfill requirements (and prove compliance) related to different legislation. Furthermore it is not critical for LED, and it is costly. We suggest deleting this test.

Supply switching cycle: this test aims to check the endurance of the built-in electronic components and is not relevant for LED performances.

- Specify that the lifetime (used to calculate the number of switching cycles) is in hours.
- At the end of the test, the required number of units (not models) shall operate for a certain amount of time (at least 15 min), without any requirement on luminous flux.

Accelerated life test: this test aims to check catastrophic failures, and cannot be used to check parametric failure (e.g. light decay during time). Furthermore it may be impossible to perform for LED lamps and LED luminaires, because they cannot be operated on a temp +10°C above the maximum specified temp by manufacturer. Moreover it is a very expensive test. We suggest deleting this test.

Energy Label (Regulation and Annexes)

Editorial

- Check “.” and “,” as decimal separators
- Check the consistency of definitions with Ecodesign Regulation and Annexes
- Article 2: Remove “final owner” (Definition 18), never used in the document and Annexes
- Annex I. Definition (34) “non clear envelope” should be substituted with the analogous definition of Ecodesign Regulation.
- Annex IV. Table 1.” $85 \leq \eta_{TM}$ ” shall be “ $85 > \eta_{TM}$ ”

Article 1

Scope of exclusion of the energy labelling regulation is not in line with the scope of exclusion of the ecodesign regulation: lamps used in ambient temperatures below -30°C and above 120°C are excluded from ecodesign and they should also be excluded from Energy Label.

Article 3

“(i)the printed label to rescale products is a sticker, of the same size as the one which is already on the package”

This is almost impossible, useless and generates waste of paper. Other ways are possible, as stated in Reg. 1369/2017. Delete this requirement and refer directly to Reg.1369/2017.

Annex III

Size, fonts and other graphical details of the label are missing.

“a quick response code (QR-code) redirecting to a website optimized for mobile devices where additional information on the light source can be found”. This should refer clearly to EPREL and nothing else. Please clarify.

In the whole document and annexes, please remove references to “the side of the packaging that the end-user is intended to see first in a point of sale”, because this is inappropriate for light sources packaging. There is in general no preferred side to be displayed, and commonly packagings are moved and rotated and shifted at the point of sale.

Annex IV

- Formula η_{TM} : specify number of decimal digits for parameters to be taken into account, coherently also with Ecodesign Regulation. Result (i.e. η_{TM} is integer)
- Information to be displayed on the packaging: “ the on-mode power (P_{on}), expressed in W” is a very important parameter (item (f) of the list). Items (a) to (d) are considered as primary information, so shall be also be P_{on} . In case a particular emphasis should be given to these 5 parameters, then the suggestion is to display them on the same packaging size (avoiding reference to the direction meant to face perspective buyers); otherwise the whole requirement *“Items (a) to (d) shall be displayed on the packaging in the direction meant to face prospective buyers; for other items this is also recommended, if space permit”* may be deleted.
- Information to be entered in the product database:
 - Public part:
 - (p) check circular references. Luminous flux, power and other parameters are now missing.
 - (s) spectral power distribution: what is to be entered for tunable white sources?
- Compliance part:
 - specify that test reports are not requested in EPREL.

Annex V

We are not in favour of all the information requirements for light sources integrated in containing products whose main purpose is not lighting. These containing products include all the household appliances such as refrigerators, ovens, range hoods... Please delete the requirements.

Annex VIII

Same comments as for Ecodesign Annex IV.