Raising standards for consumers

The Consumer Voice in Europe

ANEC / BEUC comments on the draft Ecodesign regulation for Directional lamps, LED lamps and related equipment

Prior to vote of the Regulatory Committee of 13 July 2012

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Summary

On 13 July 2012, the Regulatory Committee under the Ecodesign Directive will be asked to vote on the draft Ecodesign regulation for directional lamps, LEDs and related equipment proposed by the European Commission.

In this briefing note, ANEC, the European Consumer Voice in Standardisation, and BEUC, the European Consumer Organisation, comment on a selected number of issues for consumers which still need to be resolved before adopting the final Commission proposal. We express two major concerns. First, the latest proposal will allow poor-quality LEDs to enter the market and second, consumers would not be correctly informed on several performance-related parameters of lamps. We therefore make the following suggestions:

Stop misleading claims on lamp lifetime:

- Express all lifetime requirements in "LSF=90";
- Align lifetime requirements with information requirements: it is grossly misleading to advertise lifetimes that only half the samples will reach;
- Bring the lifetime requirement for LEDs forward to Stage 1 (September 2013)

Lumen maintenance:

- Increase the ambition of the values proposed (see detail in section 1.2 below)

Premature failure rate:

- No premature failure should be tolerated in the case of directional CFLs and LEDs, i.e. 0% at 10% of rated lifetime.

Increase the number of switching cycles:

- The minimum number of switching cycles for LEDs should be increased from 15000 to 30000, i.e. half what the best models currently available are rated at.

Other functionality parameters for LEDs:

- Previously erased requirements such as colour temperature should be reinstated in the draft Implementing Measure.

Clarify the scope of the information requirements:

- The Commission should clarify the status of information requirements for non-directional LEDs, other than compatibility-related information.

Standardize information requirements on packaging:

- Considering that clear and comparable information is tantamount for consumers' take up of more sustainable products, functionality-related information should be provided in a standardized, comparable way on the packaging of products.

Definition of luminous flux:

- The 100hours mark for the luminance measure should be reinstated for CFLs.

Introduction

Purchasing the right lamps for one's needs has never been as complex as nowadays. A downside to the advances of design and technology is that consumers can find it difficult to compare the merits of different models of lamps. Whereas incandescent lamps were all relatively similar products, different models of compact-fluorescent lamps (CFLs) and light-emitting diodes (LEDs) differ in such functionality parameters as *lifetime*, *colour temperature*, *lumen maintenance* or *number of switching cycles*.

As our member organisations have repeatedly demonstrated in the tests they have carried out on thousands of lamps from incandescent to CFLs and LEDs, not all lamps perform equally with regard to energy efficiency and functionality parameters[1]. Yet considering the price of new lamps[2], it is crucial that consumers are satisfied with the products they purchase. This is also crucial from a policy-maker perspective for two reasons. First, because early adopters of new technologies have a tremendous multiplying effect on the following generations of customers. Mixed or negative feedback on the burgeoning market of LEDs could seriously undermine the future success of that promising technology. Second, rave reactions to the phase-out of incandescent lamps in part of the media have shown how important it is to focus not only on purely energy-related aspects, but also on aspects very close to consumers' concerns and needs, such as functionality parameters. The most important functionality parameters for lamps are their lifetime, number of on/off cycles, lumen maintenance, colour temperature and warm-up time to reach 60% of light output.

When it comes to ensuring that consumers purchase the model of lamp closest to their lighting needs, policy makers can resort to two policy instruments simultaneously, following a "push and pull" pattern. The first instrument is to set mandatory functionality requirements to guarantee that no lamps with poor functionalities are sold on the market. The second approach consists in informing consumers on the functionality parameters of the lamps they find in shops.

In this paper, we argue that the Commission's proposals on functionality parameters of directional lamps and LEDs[3] will not guarantee a satisfying shift towards efficient lighting. Worse, the proposals as they stand will do nothing to halt the current flooding of poor-quality LEDs observed on the European market. **The latest proposal will most assuredly antagonize consumers and generate mistrust with new lighting technologies**. ANEC and BEUC wish to

[1] This paper focuses primarily on functionality requirements as well as on information to consumers. We commented on energy-efficiency parameters prior to the Consultation Forum of 5 July 2011.
[2] Up to 80 euros for a single LED lamp equivalent to a 60W incandescent model.
[3] Minimum performance requirements are proposed in pages 13 to 15 of the DG ENER Ecodesign Working Document circulated in ISC. Information requirements are detailed pages 16-24.

put forward recommendations on how to overcome the gaps identified and to better enable consumers to make sustainable choices.

I. Requirements on functionality parameters

1.1 Stop misleading claims on lamp lifetime:

The lifetime of lamps is usually expressed as the percentage of lamp samples which still function at a precise time mark. This parameter is called the "Lamp Survival Factor" (LSF). For instance, the "LSF50=1000hours" requirement for halogen lamps means that 50% of the samples of a given lamp model should still function after 1000 hours of use. The mark at which only 50% of the tested samples still function defines the "*rated lifetime*" communicated to consumers on the product's package.
The consequence of this requirement is that it is legally possible that 50% of the samples will fail before the rated lifetime. *Reductio ad absurdum*, it is theoretically possible that half the production of a given lamp stops functioning after a few days, despite the package indicating e.g. 2000 hours.

The Commission's proposal:
The Commission addresses lifetime of lamps from two angles: on the one hand, it proposes to set a minimum lifetime for all directional and LED lamps; on the other hand, it authorizes manufacturers to communicate lifetimes which only half the samples will actually reach.
In the case of halogen and compact-fluorescent lamps, the lifetime communicated to consumers, expressed in hours or years, would correspond to the moment when only 50% of the samples will be legally required to still function.
In the case of LEDs, 90% of the samples will be required to function after 6000 hours of use from September 2014 on. However, the Commission will still let manufacturers keep claiming lifetimes (e.g. 40000 hours) corresponding to a mark at which 50% of the samples have already stopped functioning. This inconsistency between the requirement (90%) and the rated lifetime (at 50%) is foreseen in definition "L" page 11 of the Ecodesign working document.

ANEC/BEUC comments:
Tests carried out by our member organizations in 2012 have evidenced that **the average lifetime of lamps has decreased compared to 2011**[4]. We argue that this alarming phenomenon is hidden from consumers through ever increasing claims on lifetime. Although the Commission was given the means to address this critical issue, it has so far refused to act on it. Should the latest Commission proposal be adopted, ***purchasing lamps will continue to be a game of lottery for consumers***.

[4] See also Annex 1: on the basis of 5 samples tested per lamp model, the following results were observed: in 2011, all samples of 67% of the tested models lived longer than 5000 hours. In 2012, that percentage fell to 34%.

It is fair to assume that consumers expect a lamp rated at e.g. 10 000 hours to actually last that long, albeit a few exceptions. We argue that consumers are not aware that only one sample in two will reach the duration indicated on the package. We observe that the practice of informing consumers on the basis of an LSF=50 parameter is not only grossly misleading but also without clear legitimacy[5]. We therefore reiterate our suggestion that any functionality requirement set on the lifetime of lamps should be expressed at a much higher LSF value, e.g. 90%[6], and that the lifetime at 90% survival becomes the mandatory information communicated to consumers. We argue that the minimum lifetime requirement for LEDs will be meaningless unless it concomitantly becomes the value advertised on packages.
Despite our numerous calls for the lifetime of lamps to be communicated to consumers in a transparent and honest way, the Commission and the industry have opposed our proposal arguing that the practice of informing consumers on the basis of an LSF50 was long established and could not be addressed in the present regulation. Yet the move towards more honest consumer information is not even foreseen by the Commission, which did not mention the question of the lifetime in any of the recitals[7] of the draft regulation.
Moreover, we question why the LSF proposed for LEDs should only apply from September 2014 and not September 2013. Certainly this one year delay will allow many more poor quality LEDs to enter the market.

ANEC/BEUC recommendations :
- Express all lifetime requirements in "LSF=90";
- Align lifetime requirements with information requirements: it is severly misleading to advertise lifetimes that only half the samples will reach;
- Bring the lifetime requirement for LEDs forward to Stage 1 (September 2013) to avoid more flooding of the market by poor quality LEDs.

1.2 Lumen maintenance:

The lumen maintenance factor (LMF) refers to a lamp's capacity to provide consistent luminance over time. The LMF is usually expressed in a percentage of light output measured at a precise time mark. For instance, "LMF80=6000hours" means that a lamp still provides 80% of its original light output by the time it has been used for 6000 hours. This functionality parameter is especially important in the case of CFLs and – to a lesser extent – LEDs. Indeed, one downside of the CFL technology is that the light output of lamps tends to decrease over time.

[5] See also Annex 1 (the May 2012 issue of the French consumer organisation UFC-Que Choisir)
[6] We recognise that LSF100 would be too strict. The value needs to be set exactly at a decile for market surveillance purposes: the number of samples tested by market surveillance authorities is 20 (we recommend lowering that number to 10 samples).
[7] A recital is text coming before the mandatory articles of the Regulation. They precise the context of the Regulation and may provide guidance on future revisions of the Regulation, as does recital number 23 in the present case.

The Commission's proposal:
In the case of LEDs, the Commission's proposal for that parameter was changed from "LSF70=15000" to "LSF80=6000". The change does not increase the ambition level, but provides for more convenient market surveillance.

ANEC/BEUC comments:
We are concerned with the ambition of the values proposed. Most of the ***directional CFLs tested by our members already achieve much better results than the values proposed by the Commission***. Our proposals detailed below align the time marks used to check the LSF and the LMF parameters. They also align the approaches used for different technologies and increase the level of ambition for all three technologies to a degree commonly observed in our members' tests.

ANEC/BEUC recommendations:
- Directional CFLs: Change values to "At 6000h:≥80%" for stage 1 (instead of 2000h) and "At 8000h:≥90%" (instead of "6000h:≥70%") for stage 3.
- All LEDs: Change parameter to "lumen maintenance" (instead of "lumen maintenance at 6000h") to align with CFLs and halogens. The value for stage 1 should be "At 6000h:≥90%".

1.3 Premature failure rate:

The premature failure rate (PFR) parameter is another parameter related to the lamp lifetime; it sets the maximum number of lamps which will fail very early. The PFR is meant to complement the above-mentioned LSF parameter. It is considered by the industry as being a key parameter to address consumer dissatisfaction with expensive lamps failing early. Similarly to the LSF and the LMF, the PFR is expressed in a percentage measured at a precise time mark.

The Commission's proposal:
In the ISC working document, the Commission had proposed to set a maximum PFR of 2% at the 1000 hours mark for LEDs. It has lowered that ambition to 5% in the latest document. It means that a maximum of 5% of the tested samples are allowed to fail before they reach 1000 hours of use.
The 2011 document did not set the PFR at a same time mark for all models, but at 10% of the rated lifetime of the lamp. Considering that most LEDs are rated as lasting much more than 10000 hours (some of them being rated at up to 40000 hours), the latest proposal amounts to lowering the ambition of the measure.

ANEC/BEUC comments:
Considering that our members have found ***LEDs with a price tag of up to 80 euros, a PFR of 5% is exceedingly high for such an investment***.

ANEC/BEUC recommendation:

- No premature failure should be tolerated in the case of directional CFLs and LEDs (i.e. 0% at 10% of rated lifetime). The value proposed for directional halogens (5% at 100 hours) is acceptable.

1.4 Increase the number of switching cycles:

One much heralded benefit of LEDs over CFLs is that LEDs can be switched on and off many more times than CFLs. This functionality parameter is referred to as the "number of switching cycles before failure". It has been rated at up to 40000 times for some models.

The Commission's proposal:
Surprisingly, the Commission proposes to set a minimum requirement on the number of switching cycles of LEDs at only 15000 cycles for LEDs with a rated lifetime of less than 30000 hours. This is about equal to what many CFLs achieve.

ANEC/BEUC comments:
A high number of switching cycles is an easy way to distinguish good LEDs from bad LEDs. ***If the Commission is serious about allowing good LEDs only on the European market, it must considerably increase the value for this parameter***.

ANEC/BEUC recommendation:
- The minimum number of switching cycles for LEDs should be increased to 30000 (i.e. half what the best models currently available are rated at).

1.5 Other functionality parameters for LEDs:

The Commission's proposal:
A whole set of additional requirements for LEDs was removed between the CF working documents and the latest version. These requirements were meant for LEDs that "*are claimed to be retrofits to halogen or incandescent lamps*". With these proposed requirements, LEDs meant to replace other lamps were supposed to:

- have a colour temperature between 2600K and 3200K;
- respect standard dimensions of replaced lamps.

We argue that consumers are very sensible to these practical requirements. ***Without these requirements, consumers risk purchasing LEDs claimed to be retrofits to old lamps but not actually fulfilling that expectation***. This poses a major threat to consumers' acceptability of LEDs.

ANEC/BEUC recommendation:
- Above-mentioned requirements should be reinstated in the draft Implementing Measure.

II. Information requirements

2.1 Clarify the scope of the information requirements:

The Commission's proposal:
The latest Commission document lists comprehensive information requirements for directional lamps[8].

ANEC/BEUC comments:
It is our understanding that directional LEDs are covered by information requirements set on all directional lamps. However, we believe that it is not made sufficiently clear in the introduction of paragraph 3.2 that these same requirements should also apply to other categories of LEDs (e.g. LEDs replacing halogens).

ANEC/BEUC recommendation:
- The Commission should clarify the status of information requirements for non-directional LEDs, other than compatibility-related information (page 24 of the Ecodesign document).

2.2 Standardize information requirements on packaging:

One of ANEC/BEUC's strongest requests regarding the various lighting lots in Ecodesign has been that information on functionality parameters should be communicated to consumers in a clear, credible and comparable way across products. Comparability is one of the three cornerstones of good consumer information[9]. For example, consumers need to be able to quickly identify luminous efficacy and wattage equivalence, to better choose efficient and performing solutions for their lighting needs. In terms of the functionalities of lamps, ***comparability would be ensured by standardisation of the various pictograms used by the industry***.

We regret that this essential tenet, which forms the basis of our joint position, was not acceded to by the Commission. The Commission has expressed concerns that standardising functionality pictograms could lead to "*monotonous*"[10] packages in shops' lighting departments. The industry has argued that standardising functionality pictograms would "*interfere with the corporate identity*" of the various manufacturers. We express our serious disappointment that the Commission has followed the industry position without taking into account the consumer interests. After all, it is precisely the consistency of

[8] These requirements are detailed in point 3 of the Ecodesign document, page 19
[9] In our papers, we refer to the cornerstones of consumer information as the « three Cs »: Clarity, Comparability, Credibility.
[10] See page 7 of the Minutes of the CF meeting of 5 July 2011.

pictograms which are the essential feature of comparability. They are not mutually exclusive. Rather, such consistency in visual pictograms is to be sought. We argue that *corporate identity* can still be featured prominently on lamps packages even with standardised information on functionalities.
Moreover, we believe that improving the comparability of products is one of the easy steps which could yield important gains in consumer support to the Ecodesign process. Considering how controversial the phase-out of incandescent lamps has been in part of the media, it is crucial that any step which can reinforce the credibility of the scheme be taken.
We would also like to point out that the Commission does foresee a very little amount of standardization for information related to colour temperature[11]. We would like this principle developed further.

ANEC/BEUC recommendation:
- Considering this is of utmost importance for consumers' take up of more sustainable products, we call for functionality-related information to be provided in a standardized, comparable way on the packaging of products.

III. Other outstanding issues in the ISC working documents

3.1 Definition of luminous flux:

The Commission's proposal:
The new definition of "luminous flux" (Annex 2, point a) no longer requires that the flux be measured "*after 100 hours of lamp running time*" but "*after a short operating period*". The 100 hours initial mark was also taken out of the definition of the Lumen Maintenance Factor parameter (Annex 2, point j).

ANEC/BEUC comments:
It must be noted that the luminance of CFLs can increase or decrease significantly in the first 100 hours of the lamp's life, before stabilizing. This period of running-in is necessary for the lamp to clear up impurities in the tube that occur during manufacturing; it also enables the lamp to distribute the mercury inside the lamp. Informing consumers only on the *initial luminance* of the lamp can thus be misleading. The value measured at the 100 hours mark will be more representative of the consumers' experience.

Moreover, the mark at which one measures the initial luminance of a lamp impacts a key functionality parameter of lamps: the lumen maintenance factor.

[11] Ecodesign document, page 16, on information requirements for directional lamps: "*Colour temperature, also expressed as a value in Kelvins, and if the value is higher than 3200K, illustrated by a drawing that includes or consists of a snow flake*".

If the luminance of the lamp is higher after 100h than at zero hour, dropping the 100 hours mark amounts to indirectly lowering the ambition of the LMF functionality parameter, since the lumen maintenance calculated between t=0h and t=6000h will be higher than the lumen maintenance calculated between t=100h and t=6000h.

ANEC/BEUC recommendation:

- The 100 hours mark for the luminance measure should be reinstated in the case of CFLs. One alternative could be to set the luminance measure time at a given % of the lamp lifetime, depending on the technology.

ANNEX 1 – Consumer press reaction to misleading claims on lifetime

TEST Ampoules longue durée

→ qui ont le meilleur rendement, au-delà de 65 lumens par watt, suivies par les tubes en U et celles de forme classique. Les LED offrent un rendement moyen, un peu inférieur à celui des fluo compactes avec 51 lumens par watt. Mais les écarts sont considérables d'un modèle à l'autre dans cette catégorie.

Temps d'allumage

Plus ou moins rapide

C'est le gros défaut des fluo compactes. Appuyer sur l'interrupteur et rester plongé dans la pénombre pendant de longues secondes peut agacer à juste titre. Or, en achetant sans consulter au préalable notre test, le risque est grand. Sur les 29 LFC évalués, 13 mettent un temps fou à éclairer. Quand elles sont notées ■■, elles n'éclairent vraiment qu'au bout de 30 secondes, une éternité ! Heureusement, 10 de nos fluo compactes s'allument instantanément ou presque, en 1 à 2 secondes au plus, et décrochent ★★★ et ★★. Parfait pour les impatients.

Usage extérieur

Les fluo compactes n'aiment pas le froid

Les ampoules fluo compactes peuvent être utilisées sans problème dans un jardin ou sur une terrasse en climat méditerranéen. En revanche, elles ne sont pas adaptées à un usage extérieur par temps froid. Les basses températures ne les détériorent pas, elles conservent leur flux lumineux intact à 5 °C et, pour certaines, par – 10 °C, le souci c'est qu'il leur faut du temps pour s'allumer. Si l'on a besoin d'éclairer l'allée du jardin pour ne pas rentrer dans l'obscurité complète les soirs d'hiver, c'est beaucoup trop long, s'il s'agit par contre d'un éclairage d'ambiance en soirée, cela n'est pas gênant. Pour un éclairage immédiat à l'extérieur par tous les temps, y compris les grands froids, c'est sur les ampoules halogènes qu'il convient de miser.

Durée de vie

La qualité se dégrade

Les fabricants n'ont pas peur de donner dans la surenchère. De 6 000 heures à l'origine, la plupart des fluo compactes sont passées à 8 000 et 10 000 heures, voire à 12 000. Inutile de se baser sur ces promesses-là pour faire son choix, elles sont souvent illusoires. À *Que Choisir*, on apprécierait déjà beaucoup que toutes les fluo compactes tiennent 5 000 heures, or c'est loin d'être le cas. Lors des essais de laboratoire, les Carrefour Discount 11 watts avaient toutes flanché avant, les Lexman EU-18W aussi, alors que l'emballage de cette référence annonce 10 000 heures. Ça ne va guère mieux pour l'Osram Duluxstar Nano Twist ou la Sylvania Mini Lynx Fast Start, qui n'ont plus qu'un exemplaire sur 5 en fonctionnement à 5 000 heures. Et sur les 29 fluo compactes sélectionnées, seules 10 passent ce cap des 5 000 heures sans qu'aucun exemplaire ne lâche. C'est bien peu. L'an dernier (*QC* n° 490), sur les 24 fluo compactes testées, 16 avaient franchi cet essai des 5 000 heures avec succès. On tombe donc d'un taux de réussite de 67 % à 34 % en un an, c'est grave. Manifestement, il existe de sérieuses dérives dans la fabrication pour une majorité d'ampoules, aussi bien chez les marques de distributeurs que les grandes marques. Osram admet d'ailleurs un problème de « *composant électronique défaillant* » pour sa Duluxstar Nano Twist (4 exemplaires sur 5 ont lâché avant 5 000 heures) mais nous assure avoir corrigé ce défaut. Au vu de ces mauvais résultats, *Que Choisir* conseille vivement de ne pas acheter au hasard en magasin, car si les fluo compactes constituent une solution d'éclairage économique, c'est seulement à condition de tenir leurs promesses en longévité. Se baser sur ce critère des 5 000 heures est impératif pour faire le bon choix. Quant aux halogènes, leur durée de vie maximale est de 2 000 heures, mais elles ne l'atteignent pas toujours.

Allumage/extinction

Certaines flanchent

Des fluo compactes supportent une multitude d'allumages brefs, d'autres pas. S'il s'agit d'équiper un lieu de passage ou des toilettes, ça compte. Les ampoules écopant de ■■ ne conviennent pas, elles flanchent à 9 000 cycles tandis que celles notées ★★★ franchissent 30 000 cycles, ce qui leur assure une belle longévité : plus de vingt ans à raison de plusieurs allumages de courte durée tous les jours.

Coût sur 5 000 heures

Faites vos comptes

Les fluo compactes sont les plu économiques. Les halogènes sont handicapées par leur consommation et la nécessité d'acheter trois ampoules pour avoir 5 000 heures de longévité, les LED par leur prix excessif. Si le coût de revient d'une fluo compacte est élevé, c'est qu'elle ne tient pas 5 000 heures et qu'il faut en acheter deux pour atteindre cette durée. ◘

Retrouvez gratuitement le guide d'achat Ampoules sur **www. quechoisir.org/ampbc**

POUR EN SAVOIR PLUS

Longévité annoncée

Polémique avec les fabricants

Nos résultats de longévité sont catastrophiques pour une majorité de fluo compactes testées. Leurs cinq exemplaires ne franchissent pas tous les 5 000 heures de fonctionnement. Il y a tromperie sur la marchandise. Mais plutôt que d'améliorer leur processus de production et renforcer leurs contrôles qualité en fabrication, pour fournir des ampoules fiables à la clientèle, les industriels de l'éclairage préfèrent s'en prendre aux tests de *Que Choisir* ! Effectivement, nos essais ne suivent pas la norme qu'ils ont établie. Nous testons cinq exemplaires tandis qu'elle en prévoit vingt, et la réglementation se révèle très laxiste. Pour qu'une référence soit jugée conforme, il suffit que 50 % des exemplaires atteignent la durée de vie annoncée, les fabricants s'en contentent. À *Que Choisir*, en revanche, nous considérons que l'achat n'est pas une loterie et que ce n'est pas seulement une ampoule sur deux qui doit fonctionner durablement mais 100 % des ampoules payées par les consommateurs.

Le paradoxe des LED

À éviter malgré leurs résultats

Les résultats des LED sélectionnées aux tests de performance sont très satisfaisants, pourtant nous ne les conseillons pas. Cela mérite explication.

- C'est pour une question de prix prohibitif concernant la Philips myAmbiance, car, à 45 €, il est impossible de la rentabiliser.
- C'est surtout pour une question de flux lumineux très faible concernant les deux autres. Elles ne peuvent remplacer que des ampoules à incandescence de 25 watts, alors que leur format standard pourrait laisser espérer plus de lumière.
- Les LED annoncent une durée de vie formidablement longue qui pourrait justifier leur prix si elles fonctionnaient effectivement 25 000 heures, c'est-à-dire 25 ans. Mais il est impossible de vérifier cette durée de vie, il faudrait quatre ans de tests en laboratoire, or les références changent beaucoup plus vite en magasin ! En résumé, pour que les LED deviennent un choix intéressant, il faut attendre la chute des prix de vente et une sérieuse progression des flux lumineux.

END.