CELMA

Federation of National Manufacturers Association for Luminaires and Electrotechnical Components for Luminaires in the European Union

CELMA STATEMENT
RELATED TO ANSES REPORT
ON LIGHTING SYSTEMS USING LEDs AND HEALTH ISSUES TO BE CONSIDERED

17 November 2010

Based on the Statement from the Syndicat de l'Eclairage dated 26 October 2010
English version - http://www.syndicat-eclairage.com/upload/declarations/67.pdf
French version - http://www.syndicat-eclairage.com/upload/declarations/66.pdf

SYNDICAT DE L'ÉCLAIRAGE

On 25th October 2010, ANSES, the French National Health Safety Issues Agency for Food, Environment and Work, has made public a report on "Lighting systems using light-emitting diodes: health issues to be considered" (http://www.afsset.fr/index.php?pageid=2248&parentid=523).

CELMA experts are currently analysing the 300 pages report of ANSES.

This ANSES report, which is a "première" as such a study has never been carried out before, puts forward the numerous benefits of LED (energy savings, light control, etc) and mentions:

- Risks of glare associated to the use of certain LED with high luminance (luminous intensity on a surface, expressed in candela/m²) under certain use conditions,
- Photobiological risks induced by certain LED whose spectral distribution contains a high ratio of blue wavelenth light due to the particular process of generating white light[1].

Within the framework of its expertise and under a pioneering context, the ANSES has carried out several tests (under maximal evaluation conditions of EN 62471 standard[2], as interpreted by ANSES). These tests lead ANSES to emit several recommendations relating to the information of the consumer, to the further development and implementation of standards as well as the acquisition of new knowledge about artificial lighting.
Concerning the tests carried out, only those made on finished products "lamps and luminaires" do concern the lighting manufacturers (limited in the study to very few samples - see also the Note at the end of the Statement).

As far as glare due to luminance of LED is concerned, CELMA reminds that other lamp types used since several years present comparable luminance. In day to day lighting applications there is no more risk in using LED than other conventional light source (reaction of people to glare is to avoid viewing the light source as all people are use to it as it happens with the sun outside which emits much more radiation).

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[1] Three methods enable to obtain white light with LED. This is one of those methods which is evaluated in this report, the one using LED emitting in blue.
[2] EN 62471 is a standard published on the OJ in the List of references of harmonised standards for LVD 2006/95/CE and will become mandatory for CE marking in September 2011.

However, it is in all cases recommended:

- Not to look into the light source, whatever it is, from the front,
- To use a LED light source equipped with a diffuser and/or an lamp integrated reflector and/or
- To integrate the light source in a luminaire which, by its design and its reasonable implementation, limits the luminance perceived by the user and in the meanwhile comply with prescriptions of European standards[3].

As a matter of fact, these recommendations are relevant for all lamps types and luminaires, professional or domestic currently available.

In normal conditions of usage, LED do not present any particular health risk.

CELMA aligns with the opinion of ANSES about the necessity of informing the professional chain and in particular public and private contractors as well as the building administrators in order to have compliance of the standards and the accompanying lighting project approach. We work daily in that direction, since too often lighting installations are carried out without preliminary study.

CELMA aligns with the ANSES opinion regarding the evolution of the European Standard EN 62471[4], so that the latter includes sensitive risk populations: i.e. those whose crystalline is not mature (children), persons who are sensitive to light (affected notably by macular degeneration associated with age) or who are particularly exposed because of their work conditions.

The definition of marking of lighting products relating to photobiological risk[5] is ongoing at the international electro-technical commission (IEC) level. CELMA is involved in this work through all its representatives, in TC 34 (luminaire and lamp committee) and in liaison with TC 76 (in charge of all types of radiation).

This normative marking should be available in 2011 and would therefore allow the European public authorities to take decisions relating to the placing on the market of lamps belonging to the highest risk groups and to remind to respect the recommendations according to the various end-uses.

LED technology should replace part of the existing technologies. It is therefore important to support its development by appropriate standards and regulations, enabling light quality and usage safety.

Note: the ANSES report also deals with use of LED in toys for children or car lamps, sectors for which the exposure modes are not the same. CELMA is not entitled to cover these areas but understands that this is about applications with high luminance, where the products deserve to be controlled and as well as to be covered by recommendations for the usage.

About CELMA

CELMA is the Federation of National Manufacturers Associations for Luminaires and Electrotechnical Components for Luminaires in the European Union, representing 19 Manufacturers Associations from 13 EU countries, over 1.000 companies which include a majority of small and medium sized companies, employing 107.000 people and generating 15 billion EUR annual turnover in Europe.

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[3] *NF X 35 103 "principles of visual ergonomy" and the standard EN 12 464-1 "lighting of work places"of which the luminance values are around few millions of candela/m².*

[4] *Standard EN 62 471: This standard applies to lamps and devices using lamps. It recommends exposure limits for radiation from these light sources. It considers all of the photobiological hazards that may affect the eye (thermal and photochemical hazards) and defines 4 risk groups: risk group 0 (no risk), risk group 1 (low risk), risk group 2 (moderate risk), risk group 3 (high risk).*

[5] *There is an IEC proposal for symbols to be used for Risk Group 2*