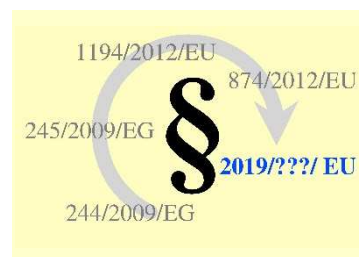


Texte zu den geplanten neuen EU-Regelungen zur umweltgerechten Produktgestaltung und zur Energieverbrauchs-kennzeichnung in der Beleuchtung – Zusammenstellung ^[1] des Umweltbundesamtes (UBA), Deutschland



Entwürfe der EU-Kommission vom 8. Oktober 2018

Stellungnahme des Herstellerverbandes LE ^[2]

– Produktinformation (28. November 2018) –

Hinweis: Bitte beachten Sie, daß der angehängte Text nur in Englisch verfaßt ist.

EN: Information on the coming EU Lighting Regulations – Ecodesign and Energy Labelling – Compilation ^[1] of the Federal Environment Agency (UBA), Germany

The EU Commission's drafts of 8 October 2018

Comments by the Industry Association LE ^[2]

– Product information (28 November 2018) –

FR: Informations sur les futures réglementations de l'UE concernant l'éclairage – l'écoconception et l'étiquetage énergétique – Compilation ^[1] de l'Agence Fédérale de l'Environnement (UBA), Allemagne

Les projets de la Commission Européenne du 8 octobre 2018

Commentaires de l'association de producteurs LE ^[2]

– Informations relatives au produit (28 novembre 2018) –

Indication : Veuillez noter que le présent texte n'est disponible qu'en anglais.

^[1] <https://www.eup-network.de/de/eup-netzwerk-deutschland/offenes-forum-eu-regelungen-beleuchtung/dokumente/texte/>

^[2] LE = Lighting Europe; <http://www.lightingeurope.org/>

Texte im Offenen Forum

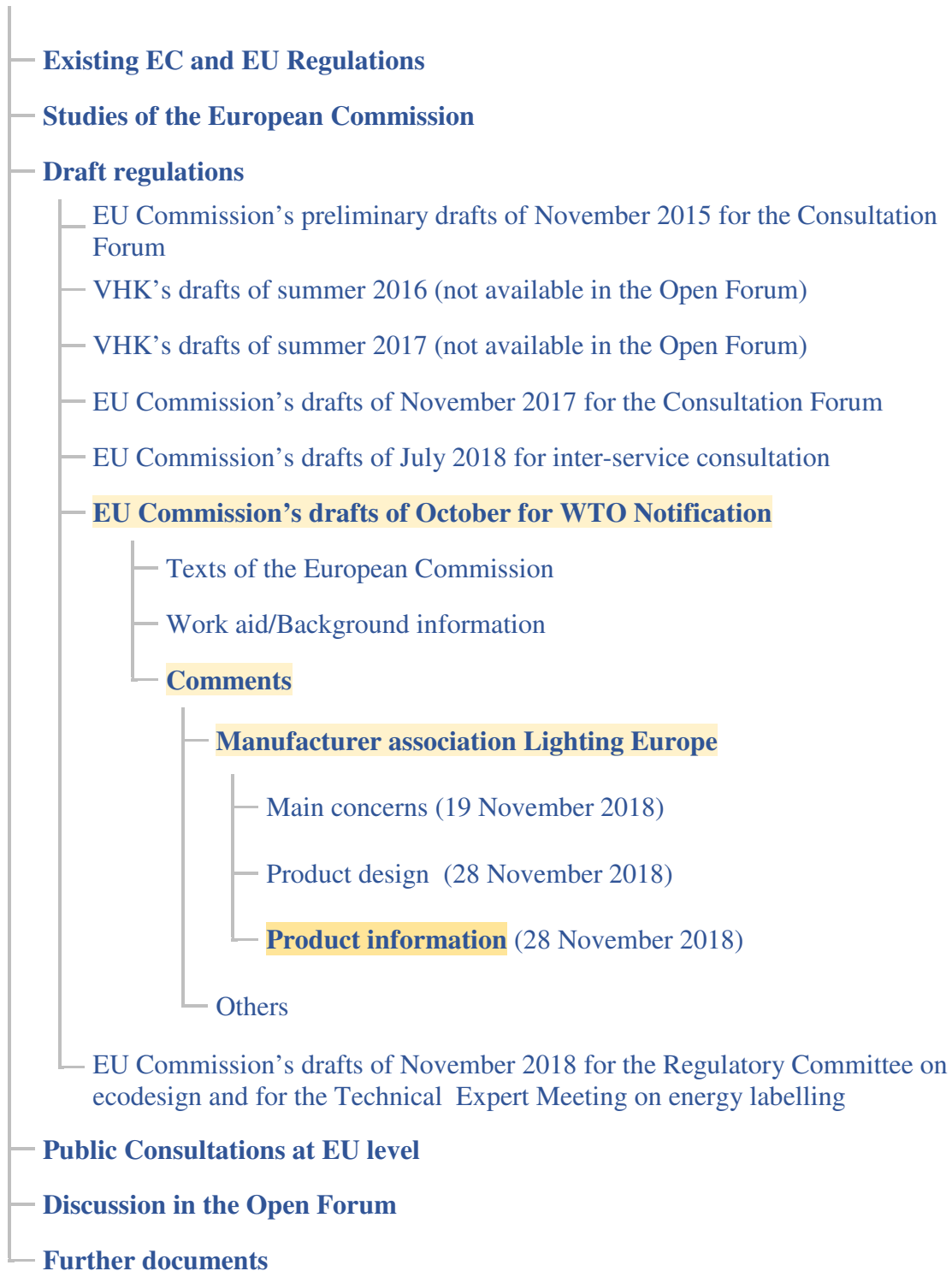
(**abc** = vorliegender Text)

- **Bestehende EG- und EU-Regelungen**
- **Studien der EU-Kommission**
- **Regelungsentwürfe**
 - EK-Vorentwürfe vom November 2015 für das Konsultationsforum
 - VHK-Entwürfe vom Sommer 2016 (nicht im Offenen Forum verfügbar)
 - VHK-Entwürfe vom Sommer 2017 (nicht im Offenen Forum verfügbar)
 - EK-Entwürfe vom November 2017 für das Konsultationsforum
 - EK-Entwürfe vom Juli 2018 für die dienststellenübergreifende Konsultation
 - **EK-Entwürfe vom Oktober 2018 für die WHO-Notifizierung**
 - EK-Texte
 - Arbeitshilfen/Hintergrundtexte
 - **Stellungnahmen**
 - **Herstellerverband Lighting Europe**
 - Hauptanliegen (19. November 2018)
 - Produktgestaltung (28. November 2018)
 - **Produktinformation** (28. November 2018)
 - Andere
 - EK-Entwürfe vom November 2018 für den Regelungsausschuß zur Produktgestaltung und das Fachgespräch zur Produktinformation
- **Öffentliche Konsultationen auf EU-Ebene**
- **Diskussion im Offenen Forum**
- **Weitere Dokumente**

Abkürzungen: • EG = Europäische Gemeinschaft • EU = Europäische Union • EK = EU-Kommission
• WHO = Welthandelsorganisation • VHK = Van Holsteijn en Kemna, <https://www.vhk.nl/>

Documents in the Open Forum

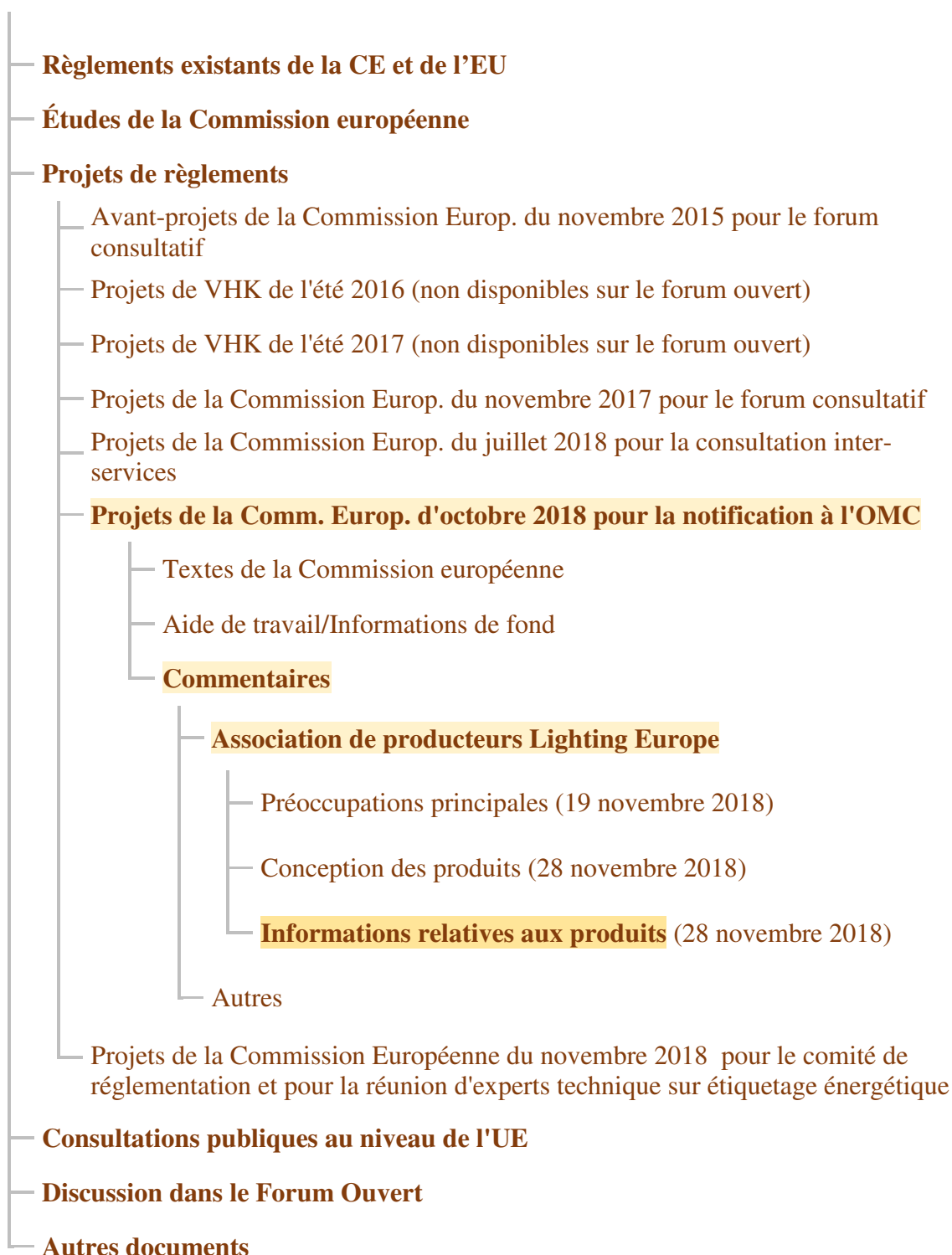
(**abc** = text at hand)



Abbreviations: • EC = European Communities • EU = European Union • WTO = World Trade Organisation
 • VHK = Van Holsteijn en Kemna, <https://www.vhk.nl/>

Documents dans le forum ouvert

(abc = présent document)



Abréviations : ● CE = Communauté européenne ● UE = Union européenne ● OMC = Organisation mondiale du commerce ● VHK = Van Holsteijn en Kemna, <https://www.vhk.nl/>

Es folgt ein unveränderter Originaltext.

EN: The following is an unmodified original text.

FR: Ce qui suit est un texte original.

Commission proposal (8 October 2018)	LightingEurope proposal	LightingEurope comments
<p>Preamble</p> <p>Having regard to the Treaty on the Functioning of the European Union,</p> <p>Having regard to Regulation (EU) 2017/1369 of the European Parliament and of the Council of 28 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU¹, in particular Article 11(5) and Article 16(1) thereof,</p> <p>Whereas</p>		
<p>1) Regulation (EU) 2017/1369 of the European Parliament and of the Council empowers the Commission to adopt delegated acts as regards the labelling or rescaling of the labelling of product groups representing significant potential for energy savings and, where relevant, other resources</p>		
<p>2) The Eco-design Working Plan 2016-2019² established by the Commission in application of Article 16(1) of Directive 2009/125/EC of the European Parliament and of the Council sets out the working priorities under the eco-design and energy labelling framework for the period 2016-2019. The Working Plan identifies</p>		

¹ OJ L 198, 28.7.2017, p. 1.

² COM(2016) 773 final of 30.11.2016.

the energy-related product groups to be considered as priorities for the undertaking of preparatory studies and eventual adoption of implementing measures, as well as the review of the current regulations		
3) Measures from the Working Plan have an estimated potential to deliver a total in excess of 260 TWh of annual final energy savings in 2030, which is equivalent to reducing greenhouse gas emissions by approximately 100 million tonnes per year in 2030. Lighting is one of the product groups listed in the Working Plan, with an estimated 41,9 TWh of annual final energy savings in 2030		
4) Provisions on the energy labelling of lighting products, namely electrical lamps and luminaires, were established by Commission Delegated Regulation (EU) No 874/2012 ³		
5) Lighting products are among the priority product groups mentioned in Article 11(5)(b) of Regulation (EU) 2017/1369 for which the Commission should adopt a delegated act to introduce an A to G rescaled label.		
6) Regulation (EU) No 874/2012 contains a review clause in Article 7 requiring the Commission to review the Regulation in light of technological progress		

³ Commission Delegated Regulation (EU) No 874/2012 of 12 July 2012 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of electrical lamps and luminaires (OJ L 258, 26.9.2012, p. 1).

7) The Commission has reviewed Regulation (EU) No 874/2012 and analysed the technical, environmental and economic aspects of lighting products as well as real-life user behaviour. The review was carried out in close cooperation with stakeholders and interested parties from the Union and third countries. The results of the review were made public and presented to the Consultation Forum established by Article 14 of Regulation (EU) 2017/1369		
8) The review concluded that there was a need to introduce revised energy labelling requirements for lighting products, namely for light sources		
9) The environmental aspect of light sources that has been identified as significant for the purposes of this Regulation is energy consumption in the use phase		
10) The review has shown that the electricity consumption of products subject to this Regulation can be further reduced significantly by implementing energy label measures		
11) As this Regulation discontinues the energy label specifically dedicated to luminaires in Regulation (EU) No 874/2012, suppliers of luminaires should be exempted from the obligations related to the product database established under Regulation (EU) 2017/1369		There is a gap between 1 January 2019 (applicability of EPREL) and the entry-into-force of this Regulation, creating confusion and uncertainty for luminaire producers.

12) Recognizing the growth of sales of energy-related products through web-stores and internet sales platforms, rather than directly from suppliers, it should be clarified that web-stores and internet sales platforms should be responsible for displaying the label provided by the supplier in proximity to the price, as from Commission Delegated Regulation (EU) No 518/2014		
13) The measures provided for in this Regulation were discussed by the Consultation Forum and the Member States' experts in accordance with Article 14 of Regulation (EU) 2017/1369		
14) Regulation (EU) No 874/2012 should therefore be repealed		
HAS ADOPTED THIS REGULATION:		

<p>Article 1: Subject Matter and Scope</p> <p>1) This Regulation establishes requirements for the labelling of, and the provision of supplementary product information on light sources with or without integrated control gear. The requirements also apply to light sources placed on the market in a containing product.</p>	<p>Article 1: Subject Matter and Scope</p> <p>1) This Regulation establishes requirements for the labelling of, and the provision of supplementary product information on light sources with or without integrated control gear. The requirements also apply to light sources placed on the market in a containing product if intended to be removed by end-users, for example when they are offered for sale, hire or hire purchase, or when they are displayed separately to the end-user.</p>	<p>Labelling of light sources not intended to be replaced by the end-user is not useful for professional users; furthermore, this would increase the number of models to be uploaded in EPREL, with the relevant consequences.</p> <p>Labelling for light sources even when they are into a containing product imposes to suppliers disproportionate conditions (unreasonable huge burdens) if compared with the objectives set by this regulation, for the following reasons:</p> <ul style="list-style-type: none"> - Implications for the EPREL database (data entry, data retention, time to market of the containing product); - Need to test all the modules to determine each single energy class for all lights source mounted in the luminaire (usually a luminaire operates with more than one LED light source; <p>No use of such light source information for the end user, particularly in the professional sector where the only need for the market is to work with luminaires data.</p>
<p>2) This Regulation shall not apply to light sources specified in Annex IV, points 1, 2 and 4</p>		
<p>3) Light sources specified in Annex IV, point 3 shall comply only with the requirements of Annex V, point 3</p>		

NEW	4) This Regulation also shall not apply to light sources (lamps and LED modules) not intended to be replaced by the end-user, also when they are marketed as part of a contained product, except when the light sources are offered for sale, hire or hire purchase or displayed separately to the end user, for example as spare parts.	Idem.
Article 2: Definitions For the purposes of this Regulation, the following definitions shall apply		
1) 'light source' means an electrically operated product intended to emit and/or be possibly tuned to emit light with all of the following optical characteristics:		
(a) chromaticity coordinates x and y in the range: $0,270 < x < 0,530$ and $-2,3172 x^2 + 2,3653 x - 0,2199 < y < -2,3172 x^2 + 2,3653 x - 0,1595$		
(b) a luminous flux $< 500 \text{ lm per mm}^2$ of projected light-emitting surface area as defined in Annex I		
(c) a luminous flux between 60 and 82 000 lumen;		
(d) a colour rendering index (CRI) $R_a > 0$; using incandescence, fluorescence, high-intensity discharge, inorganic light emitting diodes (LED) or organic light emitting diodes (OLED), or their combinations		

as lighting technology, and that can be verified as a light source according to the procedure of Annex IX		
High-pressure sodium light sources that do not fulfil condition (a) are considered light sources for the purposes of this Regulation		
Light sources do not include: (a) LED dies or LED chips; (b) LED packages; (c) products containing light source(s) from which these light source(s) can be removed for verification; (d) light-emitting parts contained in a light source from which these parts cannot be removed for verification as a light source		
2) 'control gear' means one or more devices, that can be or not physically integrated in a light source, intended to prepare the mains for the electric format required by one or more specific light sources within boundary conditions set by electric safety and electromagnetic compatibility. It may include transforming the supply and starting voltage, limiting operational and preheating current, preventing cold starting, correcting the power factor and/or reducing radio interference		
3) 'containing product' means a product containing one or more light sources and/or separate control gears. Examples of containing products are luminaires that		

can be taken apart to allow separate verification of the contained light source(s), household appliances containing light source(s), furniture (shelves, mirrors, display cabinets) containing light source(s). If a containing product cannot be taken apart for verification of the light source and separate control gear, the entire containing product is to be considered a light source		
4) 'light' means electromagnetic radiation with a wavelength between 380 nm and 780 nm		
5) 'mains' or 'mains voltage' (MV) means the electricity supply of 230 (±10 %) Volt of alternating current at 50 Hz		
6) 'LED die or LED chip' means a small block of light-emitting semiconducting material on which a functional LED circuit is fabricated		
7) 'LED package' means a single electric part comprising principally at least one LED die. It does not include a control gear or parts of it, a cap, active electronic components and is not connected directly to the mains voltage.		
It is used as a part of an LED module or of an LED lamp.		
It can include one or more of the following: optical elements, light converters (phosphors), thermal, mechanical and electric interfaces, parts to address electrostatic discharge concerns. So called Chip-on-Board (CoB) packages, and similar	It can include one or more of the following: optical elements, light converters (phosphors), thermal, mechanical and electric interfaces, parts to address electrostatic discharge concerns. So-called Chip-on-Board (CoB) packages, and similar	CoB technologies can either be used as a component (package) or to produce a module. CoBs that are intended to be used as components are treated as LED packages

light-emitting devices that are intended to be used directly in an LED luminaire, are not considered to be LED packages but LED modules	Any light-emitting device that is intended to be used directly in an LED luminaire, are is not considered to be an LED packages, but an LED module	(not qualified/registered as a “light source” by the manufacturer). CoBs that are intended to be used as a “light source” are treated as LED modules (qualified/registered as a light source by the manufacturer).
8) ‘chromaticity’ means the property of a colour stimulus defined by its chromaticity coordinates (x and y)		
9) ‘luminous flux’ or ‘flux’ (Φ), expressed in lumen (lm), means the quantity derived from radiant flux (radiant power) by evaluating the electromagnetic radiation in accordance with the spectral sensitivity of the human eye. It refers to the total flux emitted by a light source in a solid angle of 4π steradians under conditions (e.g. current, voltage, temperature) specified in applicable standards. It refers to the initial flux for the undimmed light source after a short operating period, unless it is clearly specified that the flux in a dimmed condition or the flux after a given period of operation is intended. For light sources that can be tuned to emit different light spectra and/or different maximum light intensities, it refers to the flux in the ‘reference control settings’ as defined in Annex I		
10) ‘colour rendering index’ (CRI) means the effect of an illuminant on the colour appearance of objects by conscious or subconscious comparison with their colour appearance under the reference illuminant and is the average Ra of the		

colour rendering for the first 8 test colours (R1-R8) defined in standards		
11) 'incandescence' means a phenomenon where light is produced from heat, in light sources typically produced through a threadlike conductor ('filament') which is heated by the passage of an electric current. Incandescent light sources include GLS – general lamp shape light sources and halogen light sources	11) 'Incandescence' means a phenomenon where light is produced from heat, in light sources typically produced through a threadlike conductor ('filament') which is heated by the passage of an electric current. Incandescent light sources are either GLS – General Lamp Shape light sources or halogen light sources.	"Incandescent light sources are either GLS General Lamp Shape" - this is not true, other technologies can also have General Lamp Shape. GLS can also mean General Lighting Service and usually refers to a particular bulb shape. The definition is misleading because there are LED GLS lamps as well.
12) 'halogen light source' means an incandescent light source with a threadlike conductor made from tungsten surrounded by gas containing halogens or halogen compounds	12) 'halogen light source' means an are also incandescent light source with a threadlike conductor made from tungsten surrounded by gas containing halogens or halogen compounds;	
13) 'fluorescence' or 'fluorescent light source' (FL) 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. 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		
14) 'high intensity discharge' (HID) means an electric gas discharge in which the light-producing arc is stabilised by wall temperature and the arc chamber has a bulb wall loading in excess of 3 Watts per		

<p>square centimetre. HID light sources are limited to metal halide, high-pressure sodium and mercury vapour types as defined in Annex I</p> <p>15) 'gas discharge' means a phenomenon where light is produced, directly or indirectly, by an electric discharge through a gas, plasma, metal vapour or mixture of gases and vapours</p>		
<p>16) 'inorganic light emitting diode' (LED) means a technology in which light is produced from a solid state device embodying a p-n junction of inorganic material. The junction emits optical radiation when excited by an electric current</p>		
<p>17) 'organic light emitting diode' (OLED) means a technology in which light is produced from a solid state device embodying a p-n junction of organic material. The junction emits optical radiation when excited by an electric current</p>		
<p>18) 'high-pressure sodium light source' (HPS) means a high intensity discharge light source in which the light is produced mainly by radiation from sodium vapour operating at a partial pressure of the order of 10 kilopascals. HPS light sources may have one ('single-ended') or two ('double-ended') connectors to their electricity supply</p>		
<p>19) 'point of sale' means a physical location where the product is displayed or offered</p>		

for sale, hire or hire-purchase to the end-user		
20) 'end-user' means a natural person buying or expected to buy a product for purposes that are outside his trade, business, craft or profession		
For the purposes of the Annexes, additional definitions are set out in Annex I		
Article 3: Obligations of suppliers 1. Suppliers of light sources shall ensure that	Propose to limit the information for custom built B2B light sources to Annex V.1 (technical information for verification purposes).	<p>Regarding slides in the PowerPoint on Product Information and Technical Information: we consider the Product Information Data (Annex V) not to be relevant for custom (built to spec) B2B light sources, as they are not available on the general market.</p> <p>This would have impact on administrative burden (with no added value), and also disclose commercially sensitive information of custom designs.</p>
a) each light source which is placed on the market as an independent product (i.e. not in a containing product) and in a packaging containing information to be visibly displayed to potential buyers prior to their purchase, is supplied with a printed label in the format as set out in Annex III	<p>a) If the light source is intended to be marketed through a point of sale, a label produced in the format and containing information as set out in Annex III is placed or printed on, or attached to, the outside of the individual packaging.</p> <p>each light source which is placed on the market as an independent product (i.e. not in a containing product) and in a packaging containing information to be visibly displayed to potential buyers prior to their purchase, is supplied with</p>	<p>Annex III says that if the light source is intended to be marketed through a point of sale, a label produced in the format and containing information as set out in this Annex is placed or printed on, or attached to, the outside of the individual packaging. The requirements in the regulation and in the Annex should be aligned, we should have same wording in these two documents, and otherwise it becomes confusing.</p>

	a printed label in the format as set out in Annex III	
b) the parameters of the product information sheet, as set out in Annex V, are entered into the product database established by Regulation (EU) 2017/1369		
c) if requested by the dealer, the product information sheet shall be made available in printed form	c) if requested by the dealer, the product information sheet shall be made available in printed form ;	Dealers should be able to generate it directly from the database. Try to simplify and rationalise the requirements. Electronic form should be sufficient: printed form not practicable
d) the content of the technical documentation uploaded into the product database is in accordance with Annex VI		
e) any visual advertisement for a specific model of light source, including on the internet, contains the energy efficiency class of that model and the range of efficiency classes available on the label, in accordance with Annex VII		
f) any technical promotional material concerning a specific model of light source, including on the internet, which describes its specific technical parameters includes the energy efficiency class of that model and the range of efficiency classes available on		

the label, in accordance with Annex VII		
g) an electronic label in the format and containing the information, as set out in Annex VIII, is made available to dealers for each light source model	g) an electronic label in the format and containing the information, as set out in Annex VIII III, is made available to dealers for each light source model	
h) an electronic product information sheet, as set out in Annex VIII, is made available to dealers for each light source model	h) an electronic product information sheet, as set out in Annex VIII, is made available to dealers for each light source model	Duplicate of point (c)
i) upon request by dealers and in accordance with Article 4(e), printed labels to rescale products are provided as a sticker, of the same size as the one which already exists	Delete requirements or find more reasonable solutions to give information at the retailer on the pre-existing and the existing energy classes.	<p>The requirement for the products already on the market is unfeasible (e.g.: sticking on shelf; opening of boxes of containing products).</p> <p>Only information at the point of sale about the equivalence between the old and new energy classes should be made available by the supplier (in Art. 3(1)(i)) and information at the point of sale about the equivalence between the old and new energy classes should be displayed (in Art. 4(e)).</p> <p>The requirement for re-labelling the packaging of products already placed on the market is disproportionate and unachievable (many millions of pieces having infinite different sizes and dimensions); therefore, it should be complete deleted or, alternatively, it should be replaced by a more reasonable measure such as information at the point</p>

		of sale about the equivalence between the old and new energy classes.
2. Suppliers of containing products shall:	Delete the requirement specified in Annex V about information on the product packaging.	The information will not be available to end-users for a lot of containing products/luminaires (e.g. furniture, products displayed without packaging, professional luminaires, large products...).
a) provide information on the contained light source(s), as specified in Annex V, point 2.2;		
b) as specified in Annex IX, upon request by market surveillance authorities, provide information on how light sources can be removed for verification without permanent damage		
3. The energy efficiency class shall be calculated in accordance with Annex II		
Article 4: Obligations of dealers		
Dealers shall ensure that:		
a) each light source, at the point of sale, bears the label provided by suppliers in accordance with point (a) of Article 3, with the label being displayed a in such a way		

as to be clearly visible, as indicated in Annex III		
b) in the event of distance selling, the label and product information sheet are provided, in accordance with Annexes VII and VIII		
c) any visual advertisement for a specific model of light source contains the energy efficiency class of that model and the range of efficiency classes available on the label, in accordance with Annex VII		
d) any technical promotional material concerning a specific model of light source, including technical promotional material on the internet, which describes its specific technical parameters includes the energy efficiency class of that model and the range of efficiency classes available on the label, in accordance with Annex VII		
e) existing labels on light sources at points of sale are replaced by the rescaled labels in such a way as to cover the existing label, including when printed on or attached to the package, within nine months after the application of this Regulation.	e) —existing labels on light sources at points of sale are replaced by the rescaled labels in such a way as to cover the existing label, including when printed on or attached to the package, within nine months after the application of this Regulation.	The requirement for the products already on the market is unfeasible (e.g.: stickering on shelf; opening of boxes of containing products). We should also not relabel products that fall within the scope of current Reg. 874/2012 but not under the new energy labelling requirements (for example, luminaires).
Article 5: Obligations of internet hosting platforms		

Where a hosting service provider as referred to in Article 14 of Directive 2000/31/EC of the European Parliament and of the Council allows the selling of light sources through its internet site, the service provider shall enable the showing of the electronic label and electronic product fiche sheet provided by the dealer on the display mechanism in accordance with the provisions of Annex VIII and shall inform the dealer of the obligation to display them		
Article 6: Measurement methods The information to be provided pursuant to Articles 3 and 4 shall be obtained by reliable, accurate and reproducible measurement and calculation methods, which take into account the recognised state-of-the-art measurement and calculation methods set out in Annex II		
Article 7: Verification procedure for market surveillance purposes Member States shall apply the verification procedure laid down in Annex IX to this Regulation when performing the market surveillance checks referred to in Article 8(3) of Regulation (EU) 2017/1369.		
Article 8: Review The Commission shall review this Regulation in the light of technological progress and present the results of this review, including, if appropriate, a draft revision proposal, to the Consultation Forum no later than <i>TOP-</i>		

<i>please insert the date - five years after day of entry into force of this Regulation</i>]. The review shall in particular assess the energy efficiency classes and the possibility of introducing requirements for the circular economy.		
Article 9: Repeal Regulation (EU) No 874/2012 is repealed with effect from 1 September 2021, with the exception of Articles 3(2) and 4(2) which are repealed with effect from <i>[OP: please insert the day of entry into force of this Regulation]</i> .		
Article 10: Entry into force and application This Regulation shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Union.		
It shall apply from 1 September 2021.		
However, Article 3(1)(b) shall apply from 1 May 2021 and Article 4(e) shall apply from 1 June 2022.	However, Article 3(1)(b) and Article 4 of Regulation 2017/1360 shall apply from 1 May 2021 and Article 4(e) shall apply from 1 June 2022.	We propose to maintain one single stage for EPREL and not to create additional confusion to introduce a multi-stage database for lighting products.
This Regulation shall be binding in its entirety and directly applicable in all Member States. Done at Brussels, <i>For the Commission</i> Jean-Claude JUNCKER <i>The President</i>		

ANNEX

ANNEX I – Definition applicable for the Annexes		
1) ‘mains light source (MLS)’ means a light source that can be operated directly on the mains electricity supply. Light sources that operate directly on the mains, and can also operate indirectly on the mains using a separate control gear, shall be considered to be mains light sources;		
2) ‘non-mains light source (NMLS)’ means a light source that is not a mains light source. These light sources require a separate control gear to operate on the mains;		
3) ‘separate control gear’, means a control gear that is not physically integrated with a light source and is placed on the market as a separate product or as part of a containing product;		
4) ‘directional light source’ (DLS) means a light source having at least 80% of total luminous flux within a solid angle of π sr (corresponding to a cone with angle of 120°);		
5) ‘non-directional light source’ (NDLS) means a light source that is not a directional light source;		
6) ‘connected light source’ (CLS) means a light source including data-connection parts that are physically or functionally inseparable from the light emitting parts to maintain the ‘reference control		

settings'. The light source can have physically integrated data-connection parts in a single inseparable housing, or the light source can be combined with physically separate data-connection parts placed on the market together with the light source as a single product;		
<p>7) 'data-connection parts' means parts that perform any one of the following functions:</p> <ul style="list-style-type: none"> a) reception or transmission of wired or wireless data signals and the processing thereof (used to control the light emission function and possibly otherwise); b) sensing and processing of the sensed signals (used to control the light emission function and possibly otherwise); c) actuation by audio control (including voice control); d) a combination of these; 		
<p>8) 'colour-tuneable light source' (CTLS) means a light source that can be set to emit light with a large variation of colours outside the range defined in Article 2 but can also be set to emit white light inside the range defined in Article 2 for which the light source is within the scope of this Regulation.</p>		
The term does not include tuneable-white light sources that can only be set to emit light, with different correlated colour		

temperatures, within the range defined in Article 2.		
The term also does not include dim-to-warm light sources, that shift their white light output to lower correlated colour temperature when dimmed, simulating the behaviour of incandescent light sources;		
9) 'colour purity index' means a percentage computed for a CTLS set to emit light of a certain colour, using a procedure further defined in standards, by drawing a straight line on an (x and y) colour space graph from a point with colour coordinates $x=0.313$ and $y=0.330$ (D65 reference point, point 1), going through the point representing the (x and y) colour coordinates of the light source (point 2), and ending on the outer border of the colour space (locus; point 3). The colour purity index is computed as the distance between points 1 and 2 divided by the distance between points 1 and 3. The full length of the line represents 100% colour purity (point on the locus). The D65 reference point represents 0 % colour purity (white light);		
10) 'lighting control parts' means parts that are integrated in a light source, or physically separated but marketed together with a light source as a single product, that are not strictly necessary for the light source to emit light at full-load, but that enable manual- or automatic-, direct- or remote-, control of luminous intensity, chromaticity, correlated colour		

temperature, light spectrum and/or beam angle. Dimmers shall also be considered as lighting control parts.		
The term also includes data-connection parts, but the term does not include devices within the scope of Commission Regulation (EC) No 1275/2008 ¹ ;		
11) 'non-lighting parts' means parts that are integrated in a light source, or physically separated but marketed together with a light source as a single product, that are not necessary for the light source to emit light at full-load, and that are not 'lighting control parts'. Examples include, but are not limited to: speakers (audio), cameras, repeaters for communication signals to extend the range (e.g. WiFi), parts supporting grid balance (switching to own internal batteries when necessary), battery charging, visual notification of events (mail arriving, door bell ringing, alert), use of Light Fidelity (Li-Fi, a bidirectional, high-speed and fully networked wireless communication technology);		
12) 'useful luminous flux' (Φ_{use}), means the part of the luminous flux of a light source that is considered when determining its energy efficiency: <ul style="list-style-type: none"> - for non-directional light sources it is the total flux emitted in a solid angle of 4π sr (corresponding to a 360° sphere); - for directional light sources with beam angle $\geq 90^\circ$ it is the flux emitted in a 		

<p>solid angle of π sr (corresponding to a cone with angle of 120°);</p> <ul style="list-style-type: none"> - for directional light sources with beam angle $< 90^\circ$ it is the flux emitted in a solid angle of 0.586π sr (corresponding to a cone with angle of 90°); 		
<p>13) 'beam angle' of a directional light source means the angle between two imaginary lines in a plane through the optical beam axis, such that these lines pass through the centre of the front face of the light source and through points at which the luminous intensity is 50 % of the centre beam intensity, where the centre beam intensity is the value of luminous intensity measured on the optical beam axis.</p> <p>For light sources that have different beam angles in different planes, the largest beam angle shall be the one taken into account;</p> <p>For light sources with user-controllable beam angle, the beam angle corresponding to the 'reference control setting' shall be the one taken into account;</p>		
<p>14) 'full-load' means the condition of a light source, within the declared operating conditions, in which it emits the maximum (undimmed) initial luminous flux;</p>		
<p>15) 'standby mode' means the condition of a light source, where it is connected to the power supply but the light sources are</p>		

intentionally not emitting light, and the light source is awaiting a control signal (from a source different from a network) to return to a state with light emission. Lighting control parts enabling the standby function shall be in their control mode. Non-lighting parts shall be disconnected or switched off or their power consumption shall be minimised following manufacturer's instructions;		
16) 'networked standby mode' means the condition of a connected light source (CLS) where it is connected to the power supply but the light source is intentionally not emitting light and is awaiting a remotely initiated trigger to return to a state with light emission. Lighting control parts shall be in their control mode. Non-lighting parts shall be disconnected or switched off or their power consumption shall be minimised following manufacturer's instructions;		
17) 'control mode' means the condition of lighting control parts where they are connected to the light source and performing their functions in such a way that a control signal can be internally generated or a remotely initiated trigger can be received, by wire or wireless, and processed to lead to a change in the light emission of the light source;		
18) 'remotely initiated trigger' means a signal that comes from outside the light source via a network;		

<p>19) 'control signal' means an analogue or digital signal transmitted to the light source wirelessly or wired either via voltage modulation in separate control cables or via a modulated signal in the supply voltage. The signal transmission is not through a network but e.g. from an internal source or from a remote control delivered with the product;</p>		
<p>20) 'network' means a communication infrastructure with a topology of links, an architecture, including the physical components, organisational principles, communication procedures and formats (protocols);</p>		
<p>21) 'on-mode power' (Pon), expressed in Watt, means the electric power consumption of a light source in full-load with all lighting control parts and non-lighting parts disconnected. If these parts cannot be disconnected, they shall be switched off or their power consumption shall be minimised following the manufacturer's instructions. In case of a non-mains light source (NMLS) that requires a separate control gear to operate, Pon can be measured directly on the input to the light source, or Pon is determined using a control gear with known efficiency, whose electric power consumption is subsequently subtracted from the measured mains power input value;</p>		

22) 'standby power' (Psb), expressed in Watt, is the electric power consumption of a light source in standby mode;		
23) 'networked standby power' (Pnet), expressed in Watt, is the electric power consumption of a connected light source (CLS) in networked standby mode;		
24) 'reference control settings' (RCS) means a control setting or a combination of control settings that is used to verify compliance of a light source with this Regulation. These settings are relevant for light sources that allow the end-user to control, manually or automatically, directly or remotely, the luminous intensity, colour, correlated colour temperature, spectrum, and/or beam angle of the emitted light.		
<p>In principle, the reference control settings shall be those predefined by the manufacturer as factory default values, and encountered by the user at first installation (out-of-the-box values). If the installation procedure provides for an automatic software update during first installation, or if the user has the option to perform such an update, the resulting change in settings (if any) shall be taken into account.</p> <p>If the out-of-the-box value is deliberately set differently from the reference control setting (e.g. at low power for safety purposes), the manufacturer shall indicate in the technical documentation how to</p>		

recall the reference control settings for compliance verification.		
The light source manufacturer shall define the reference control settings such that:		
<ul style="list-style-type: none"> - the light source is within the scope of this Regulation according to Article 1 and none of the conditions for exemption applies; - lighting control parts and non-lighting parts are disconnected or switched-off, or, in case this is not possible, the power consumption of these parts is minimal; - the full-load condition is obtained; - when the end-user opts to reset factory defaults, the reference control settings are obtained. 		
For light sources that allow the manufacturer of a containing product to make implementation choices that influence light source characteristics (e.g. definition of the operating current(s); thermal design), and that cannot be controlled by the end-user, the reference control settings need not be defined. In that case the nominal test conditions as defined by the light source manufacturer apply;		
25) 'high-pressure mercury light source' means a high intensity discharge light source in which the major portion of light		

is produced, directly or indirectly, by radiation from predominantly vaporised mercury operating at a partial pressure in excess of 100 kilopascals;		
26) 'metal halide light source' (MH) means a high intensity discharge light source in which the light is produced by radiation from a mixture of metallic vapour, metal halides and the products of the dissociation of metal halides. MH light sources may have one ('single-ended') or two ('double-ended') connectors to their electricity supply. The material for the arc tube of MH light sources can be quartz (QMH) or ceramic (CMH);		
27) 'compact fluorescent light source' (CFL) means a single-capped fluorescent light source with a bent-tube construction designed to fit in small spaces. CFLs may be primarily spiral-shaped (i.e. curly forms) or primarily shaped as connected multiple parallel tubes, with or without a second bulb-like envelope. CFLs are available with (CFLi) or without (CFLni) physically integrated control gear;		
28) 'T2', 'T5', 'T8', 'T9' and 'T12' means a tubular light source with diameter of approximately 7, 16, 26, 29 and 38 mm respectively, as defined in standards. The tube can be straight (linear) or bent (e.g. U-shaped, circular);		
29) 'LFL T5-HE' means a high-efficiency linear fluorescent T5 light source with driving current lower than 0,2 A;		

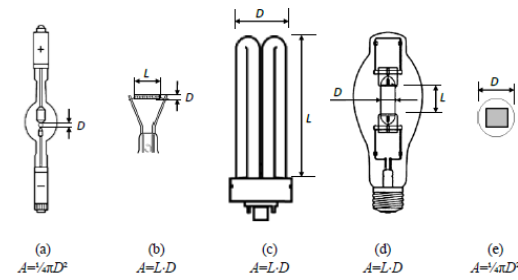
30) 'LFL T5-HO' means a high-output linear fluorescent T5 light source with driving current higher than or equal to 0,2 A;		
31) 'HL R7s' means a mains-voltage, double-capped, linear halogen light source with a cap diameter of 7 mm;		
32) 'battery-operated' means a product that operates only on direct current (DC) supplied from a source contained in the same product, without being connected directly or indirectly to the mains electricity supply;		
33) 'second envelope' means a second outer envelope on a HID light source that is not required for the production of light, such as an external sleeve for preventing mercury and glass release into the environment in case of lamp breakage. In determining the presence of a second envelope, the HID arc tubes shall not count as an envelope;		
34) 'non-clear envelope' for a HID light source means a non-transparent outer envelope or outer tube in which the light producing arc tube is not visible;		
35) 'anti-glare shield' means a mechanical or optical reflective or non-reflective impervious baffle designed to block direct visible radiation emitted from the light emitter in a directional light source, in order to avoid temporary partial blindness (disability glare) if viewed directly by an observer. It does not include surface coating of the light emitter in the directional light source;		

36) 'flicker' means the perception of visual unsteadiness induced by a light stimulus, the luminance or spectral distribution of which fluctuates with time, for a static observer in a static environment. The fluctuations can be periodic and non-periodic and may be induced by the light source itself, the power source or other influencing factors.		
The metric for flicker used in this Regulation is the parameter 'Pst LM', where 'st' stands for short term and 'LM' for light flickermeter method, as defined in standards. A value Pst LM=1 means that the average observer has a 50 % probability of detecting flicker;		
37) 'stroboscopic effect' means a change in motion perception induced by a light stimulus the luminance or spectral distribution of which fluctuates with time, for a static observer in a non-static environment. The fluctuations can be periodic and non-periodic and may be induced by the light source itself, the power source or other influencing factors.		
The metric for the stroboscopic effect used in this Regulation is the 'SVM' (stroboscopic visibility measure), as defined in standards. SVM = 1 represents the visibility threshold for an average observer;		
38) 'R9' means the colour rendering index for a red coloured object as defined in standards;		

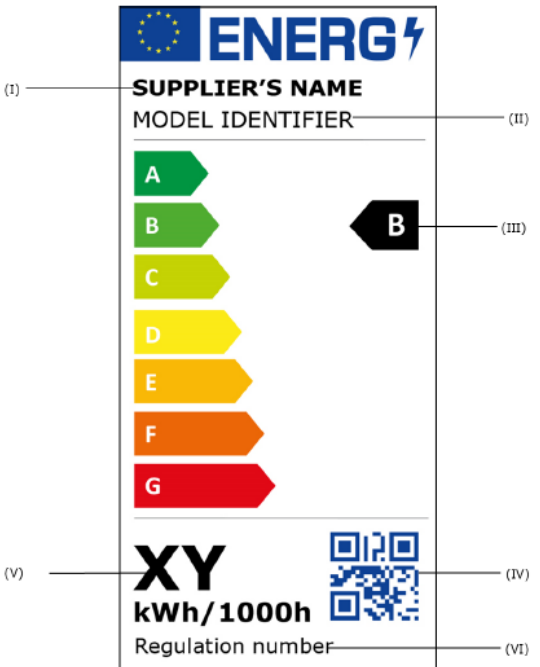
39) 'declared value' for a parameter means the value given by the supplier in the technical documentation pursuant to Article 3(3) of Regulation (EU) 2017/1369;		
40) 'luminous intensity' (candela or cd) means the quotient of the luminous flux leaving the source and propagated in the element of solid angle containing a given direction, by the element of solid angle;		
41) 'correlated colour temperature' (CCT [K]) means the temperature of a Planckian (black body) radiator whose perceived colour most closely resembles that of a given stimulus at the same brightness and under specified viewing conditions;		
42) 'colour consistency' means the maximum deviation of the initial (after a short period of time), spatially averaged chromaticity coordinates (x and y) of a single light source from the chromaticity centre point (cx and cy) declared by the manufacturer or the importer, expressed as the size (in steps) of the MacAdam ellipse formed around the chromaticity centre point (cx and cy);		
43) 'displacement factor (cos ϕ_1)' means the cosine of the phase angle ϕ_1 between the fundamental harmonic of the mains supply voltage and the fundamental harmonic of the mains current. It is used for mains light sources using LED- or OLED-technology. The displacement factor is measured at full-load, for the reference control settings where		

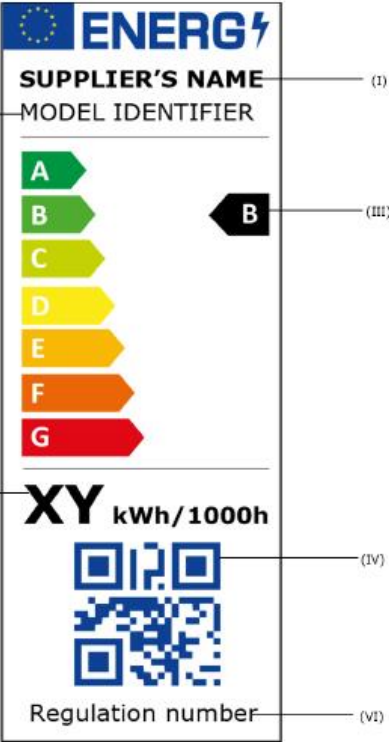


applicable, with any lighting control parts in control mode and non-lighting parts disconnected, switched off or set to minimum power consumption according to the manufacturer's instructions;		
44) 'lumen maintenance factor' (LMF) means the ratio of the luminous flux emitted by a light source at a given time in its life to the initial luminous flux;		
45) 'survival factor' (SF) means the defined fraction of the total number of light sources that continue to operate at a given time under defined conditions and switching frequency;		
46) 'lifetime' for LED and OLED light sources means the time in hours between the start of their use and the moment when for 50 % of a population of light sources the light output has gradually degraded to a value below 70 % of the initial luminous flux. This is also referred to as the L70B50 lifetime;		
47) 'equivalent model' means a model with the same relevant technical and performance characteristics as another model placed on the market under a different commercial code;	47) 'equivalent model' means a model with the same relevant technical and performance characteristics as another model placed on the market under a different commercial code which has the same technical characteristics relevant for the label and the same product information sheet, but which is placed on the market or put into service by the same supplier as another model with a different model identifier;	The energy labelling framework regulation 2017/1369 defines equivalent models in the following way: (6) <i>'equivalent model' means a model which has the same technical characteristics relevant for the label and the same product information sheet, but which is placed on the market or put into service by the same supplier as another model with a different model identifier;</i> These definitions should be consistent and aligned.

48) 'projected light-emitting surface area (A)' is the surface area in mm ² (square millimetres) of the view in an orthographic projection of the light-emitting surface from the direction with the highest light intensity, where the light-emitting surface area is the surface area of the light source that emits light with the declared optical characteristics, such as the approximately spherical surface of an arc (a), cylindrical surface of a filament coil (b) or a gas discharge lamp (c, d), flat or semi-spherical envelope of a light-emitting diode (e).		
For light sources with a non-clear envelope or with anti-glare shield, the light-emitting surface area is the entire area through which light leaves the light source.		
For light sources containing more than one light emitter, the projection of the smallest gross volume enveloping all emitters shall be taken as the light-emitting surface.		
For HID light sources definition (a) applies, unless the dimensions defined in (d) apply with $L > D$, where L is the distance between the electrode tips and D the inner diameter of the arc tube.		

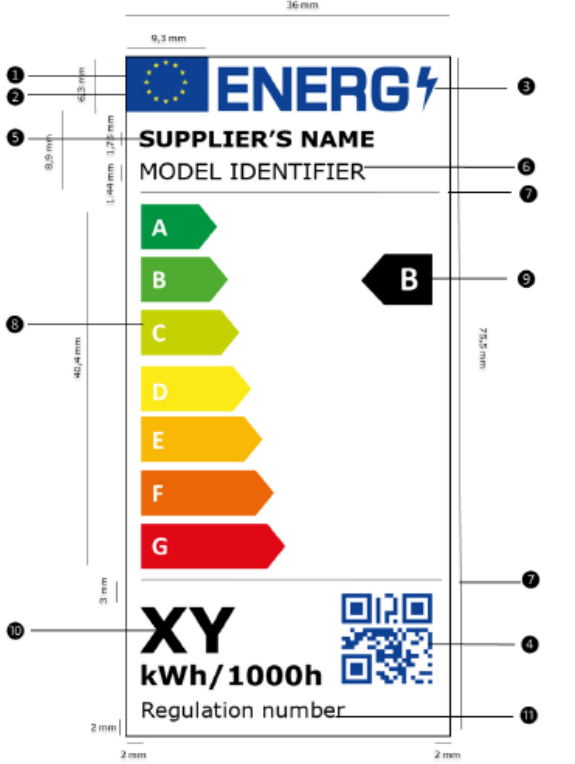
<div><div>(a) $A=\frac{1}{4}\pi D^2$</div><div>(b) $A=L\cdot D$</div><div>(c) $A=L\cdot D$</div><div>(d) $A=L\cdot D$</div><div>(e) $A=\frac{1}{4}\pi D^2$</div></div>																
ANNEX II – Energy Efficiency classes and calculation method																
The energy efficiency class of light sources shall be determined on the basis of the efficacy values expressed in total mains efficacy which is defined as the total initial luminous flux (in lm) divided by mains power input (in W) — (lm/W) — as set out in Table 1.		The energy efficiency class of light sources shall be determined on the basis of the efficacy values expressed in luminous efficacy total-mains efficacy η_{TM} , which is defined as the total initial luminous flux (in lm) divided by mains power input (in W) – (lm/W) corrected by factor FTM – as set out in Table 1														
Table 1: Energy efficiency classes of light sources <div><table><tr><th colspan="2">Table 1</th></tr><tr><th>Energy efficiency class</th><th>Total mains efficacy η_{TM} (lm / W)</th></tr><tr><td>A (most efficient)</td><td>$210 \leq \eta_{TM}$</td></tr><tr><td>B</td><td>$185 \leq \eta_{TM} < 210$</td></tr><tr><td>C</td><td>$160 \leq \eta_{TM} < 185$</td></tr><tr><td>D</td><td>$135 \leq \eta_{TM} < 160$</td></tr><tr><td>E</td><td>$110 \leq \eta_{TM} < 135$</td></tr></table></div>		Table 1		Energy efficiency class	Total mains efficacy η_{TM} (lm / W)	A (most efficient)	$210 \leq \eta_{TM}$	B	$185 \leq \eta_{TM} < 210$	C	$160 \leq \eta_{TM} < 185$	D	$135 \leq \eta_{TM} < 160$	E	$110 \leq \eta_{TM} < 135$	
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E	$110 \leq \eta_{TM} < 135$															

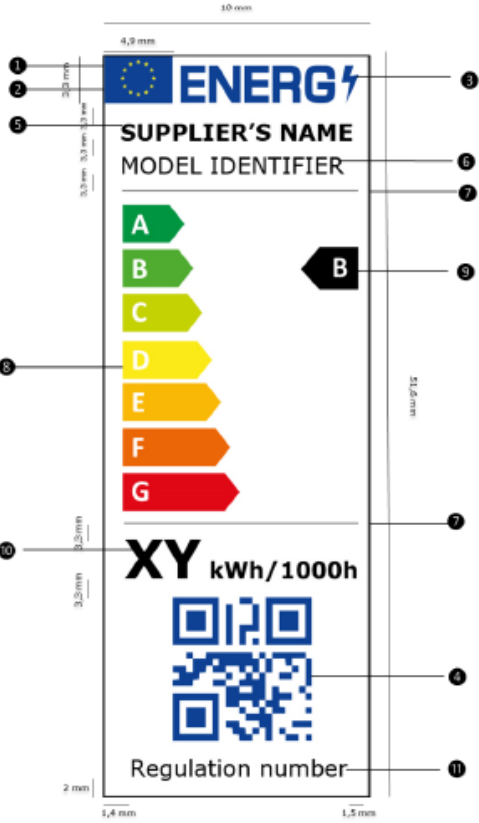
F	$85 \leq \eta_{TM} < 110$												
G (least efficient)	$\eta_{TM} < 85$												
<p>The total mains efficacy is calculated by dividing the declared useful luminous flux Φ_{use} (expressed in lm) by the declared on-mode power consumption P_{on} (expressed in W) and multiplying by the applicable factor FTM of Table 2, i.e.:</p> <p>Total mains efficacy = $(\Phi_{use} / P_{on}) * FTM$ (lm/W).</p>		<p>The total mains efficacy η_{TM} is calculated by dividing the declared useful luminous flux ϕ_{use} (expressed in lm) by the declared on-mode power consumption P_{on} (expressed in W) and multiplying by the applicable factor FTM of Table 2, i.e.:</p> <p>$\eta_{TM} = (\phi_{use} / P_{on}) * FTM * R$ (lm/W), where R is the CRI factor $R = (CRI + 80) / 160$ for CRI >25 and 0.65 for CRI <25 from Ecodesign Requirements Annex II Total mains efficacy = $(\Phi_{use} / P_{on}) * FTM$ (lm/W).</p>	<p>The energy label without the correction factor R is punishing light sources with high CRI /light quality. The correction factor R is used for the calculation of the ecodesign minimum requirements and should be used also here.</p> <p>Please note that the correction factor R is not fully compensating for the higher power consumption typically required for high CRI light sources.</p>										
<p>Table 2: Factors FTM by light source type</p> <table><tr><th>Light source type</th><th>Factor FTM</th></tr><tr><td>Non-directional (NDLS) operating on mains (MLS)</td><td>1,000</td></tr><tr><td>Non-directional (NDLS) not operating on mains (NMLS)</td><td>0,926</td></tr><tr><td>Directional (DLS) operating on mains (MLS)</td><td>1,176</td></tr><tr><td>Directional (DLS) not operating on mains (NMLS)</td><td>1,089</td></tr></table>		Light source type	Factor FTM	Non-directional (NDLS) operating on mains (MLS)	1,000	Non-directional (NDLS) not operating on mains (NMLS)	0,926	Directional (DLS) operating on mains (MLS)	1,176	Directional (DLS) not operating on mains (NMLS)	1,089		
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<p>ANNEX III – Label for light sources</p>			<p>Labels are available in fixed sizes and coloured formats only, which significantly reduces the possibilities to avoid packaging waste for smaller light sources</p>										
<p>1. LABEL</p>													

<p>If the light source is intended to be marketed through a point of sale, a label produced in the format and containing information as set out in this Annex is placed or printed on, or attached to, the outside of the individual packaging.</p> <p>Suppliers shall choose a label format between point 1.1 and point 1.2 of this Annex.</p>		
<p>1.1. Standard label:</p> 		
<p>1.2. Label for small packaging: For a part of the packaging which is not meant to face the prospective buyer, the label shall be:</p>	<p>1.2. Label for small packaging: For a part of the packaging which is not meant to face the prospective buyer, the label shall be:</p>	<p>The position of the standard label is not specified unlike the label for small packaging. This should be consistent regardless of the label size. We prefer to carry on the present</p>

		<p>practice and do not regulate the place of the label.</p>
<p>For the part of the packaging meant to face the prospective buyer, the arrow containing the letter of the energy efficiency shall be displayed in one of the two following formats:</p> 	<p>1.3. For the part of the packaging is not meant to face the prospective buyer, the arrow containing the letter of the energy efficiency shall be displayed in front of the prospective buyer in one of the two following formats:</p> 	<p>With a coloured label the arrow should match the colour of the energy class, but it is possible to have a black arrow if the label is monochrome.</p> <p>To avoid confusion, place the small arrows under a separate point 1.3.</p>
<p>The colour of the arrow shall match the colour of the energy class.</p>	<p>In case the label is printed on a monochrome box, these formats can also be printed in greyscale.</p>	<p>As we asked for full labels in greyscale the arrow should also be in greyscale. Otherwise we would have to print in colour only for the</p>

	The colour of the arrow shall match the colour of the energy class.	arrow. Is it wanted that only small packages have an arrow facing the customer.
1.3 The following information shall be included in the label for light sources:	1.4. The following information shall be included in the label for light sources:	To synchronise with the previous point, 1.3 has to be changed here into 1.4.
I. supplier's name or trade mark;	I. I supplier's name or trade mark if not somewhere else on the packaging;	
II. supplier's model identifier;		
III. the energy efficiency class; the head of the arrow containing the energy efficiency class shall be placed at the same height as the head of the arrow of the relevant energy efficiency class		
IV. the QR-code, linking to the model information available in the public part of the product database;		
V. the energy consumption, expressed in kWh of electricity consumption per 1000 hours of light source in on-mode operation;		
VI. the number of this Regulation, that is [OP- please insert the number of this Regulation].		
2. LABEL DESIGN		
2.1. Standard label:		

		
<p>NEW</p>	<p>The label may also be displayed in horizontal orientation, in which case it shall be at least 100 mm wide and 50 mm high. If there is not enough space for displaying the energy class arrows in the text box to the left from the A to G scale, the text box may be enlarged vertically as necessary.</p>	<p>See comments above.</p>
<p>2.2. Label for small packaging: For small packaging, the label can be in the following format, for a part of the</p>		

<p>packaging which is not meant to face the prospective buyer:</p>  <p>The diagram shows a vertical energy label with the following elements and dimensions:</p> <ul style="list-style-type: none">Top: European Union flag and 'ENERGY' logo (width: 4,8 mm).Text: 'SUPPLIER'S NAME' and 'MODEL IDENTIFIER' (width: 10 mm).Energy efficiency scale: Letters A through G in colored arrows. A black arrow labeled 'B' is highlighted (width: 1,6 mm).Consumption: 'XY kWh/1000h' (width: 1,4 mm).QR code (width: 1,5 mm).Bottom: 'Regulation number' (width: 2 mm). <p>Dimensions and callouts are indicated by lines and numbers 1 through 11.</p>		
<p>2.3. Description: Whereby:</p>		
<p>a) The background of the label shall be white.</p>		
<p>b) The single typeface shall be Verdana.</p>		
<p>c) Colours shall be CMYK – cyan, magenta, yellow and black, following</p>		

this example: 0-70-100-0: 0 % cyan, 70 % magenta, 100 % yellow, 0 % black.		
d) The label shall fulfil all the following requirements (numbers refer to the numbers in the black bullets in the figures above):		
1) the border of the label shall have weight of 1 pt;		
2) the colour of the background of the EU logo shall be 1,80,0,0 and the colour of the stars shall be 0,0,100,0;	2) the colour of the background of the EU logo shall be 100 ,80,0,0 and the colour of the stars shall be 0,0,100,0;	This is supposed to be blue, and not magenta.
3) the colour of the energy logo shall be 100,80,0,0;		
4) the colour of the QR code shall be 100,80,0,0 and the minimum size 10 x 10 mm;		
5) the supplier's name shall be in colour black in font bold, 9 pt;	5) the supplier's name shall be in colour black in font bold, 9 pt if not somewhere else on the packaging;	
6) the model identifier shall be in colour black in font regular, 9 pt;		
7) the dividers shall be 86 mm wide and have a weight of 1 pt. The colour of the divider shall be 39,4,0,62;		How can the divider be 86 mm wide when the label is 36 respectively 19 mm?
8) the A to G scale shall be as follows: <ul style="list-style-type: none"> - the colour of the energy rating scale shall be in colour white, and font bold, 19 pt; - the dimensions and colours of the energy rating scale for the standard label shall be as follows: 		The colours of the label for small packaging should be the same.

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be in font bold, 16 pt; and the text shall be centred.		
NEW	11) If the label is printed in a different format, its content must nevertheless remain proportionate to the specifications above;	Can we also have a label in a different format under the new label?
NEW	12) it is possible to have a monochrome version of the label;	
ANNEX IV – Exemptions	Exempt emergency lighting from energy labelling requirements	Safety product: no added value to characterise energy use, as safety of human lives is primary concern of emergency lighting. Emergency light sources are powered by independent energy sources (e.g. batteries) that need to be continuously fully charged. No illumination function when mains is on. Labelling creates additional complexities and burden for industry with no additional value to users.
1) This Regulation shall not apply to light sources specifically tested and approved to operate:		
a) in radiological and nuclear medicine installations, as defined in Article 3 of Directive 2009/71/EURATOM ⁴ ;		
b) in or on military or civil defence establishments, equipment, ground vehicles, marine equipment or aircraft as set out in Member States' regulations or in documents issued by the European Defence Agency		

⁴ OJ L 172, 2.7.2009, p. 18

c) in or on motor vehicles, their trailers and systems, interchangeable towed equipment, components and separate technical units, as set out in Regulation (EC) No 661/2009 of the European Parliament and of the Council ⁵ , Regulation (EU) No 167/2013 of the European Parliament and of the Council ⁶ and Regulation (EU) No 168/2013 of the European Parliament and of the Council ⁷ ;		
d) in or on non-road mobile machinery as set out in Regulation (EU) 2016/1628 of the European Parliament and of the Council		
e) in or on civil aviation aircrafts as set out in Commission Regulation (EU) No 748/2012		
f) in railway vehicle lighting as set out in Directive 2008/57/EC of the European Parliament and of the Council		
g) in marine equipment as set out in Directive 2014/90/EU of the European Parliament and of the Council		
h) in medical devices as set out in Council Directive 93/42/EEC ⁸ and in vitro medical devices as set out in		

⁵ OJ L 200, 31.7.2009, p.1-24

⁶ OJ L60, 2.3.2013, p. 1–51

⁷ OJ L60, 2.3.2013, p. 52

⁸ OJ L 169, 12.7.1993, p. 1

Directive 98/79/EC of the European Parliament and of the Council ⁹ .		
For the purpose of this point, 'specifically tested and approved' means that the light source: <ul style="list-style-type: none"> - has been specifically tested for the mentioned operating condition or application, according to the European legislation mentioned or related implementing measures, or relevant European or international standards or, in the absence of these, according to relevant Member States legislation; and 		
<ul style="list-style-type: none"> - is accompanied by evidence, in the form of a certificate, a type approval mark, a test report or other documentation, that the product has been specifically approved for the mentioned operating condition or application; and 		
<ul style="list-style-type: none"> - is placed on the market specifically for the mentioned operating condition or application, as evidenced at least by the technical documentation, information on the packaging and any advertising or marketing materials 		

⁹ OJ L331, 7.12.1998, p.1

2.	In addition, this Regulation shall not apply to:		
	<p>a) electronic displays (e.g. televisions, computer monitors, notebooks, tablets, mobile phones, e-readers, game consoles), including but not limited to displays within the scope of Commission Regulation (EU) <i>[OP-please insert here the references of the regulation on ecodesign requirements for electronic displays and TV review]</i> Commission Regulation (EU) No 617/2013¹⁰, Commission Decision (EU) 2015/1402¹¹, Commission Regulation (EC) No 642/2009¹², Commission Decision (EU) 2016/1756¹³, Commission Communication COM(2015)178</p>		
	b) light sources in range hoods within the scope of Commission Delegated Regulation (EU) No 65/2014		
	c) light sources in battery-operated products, including but not limited to e.g. torches, mobile phones with an integrated torch light, toys including light sources, desk lamps operating		

¹⁰ OJ L 175, 27.6.2013, p.13 (computers)

¹¹ OJ L 217, 18.8.2015, p.9 (office equipment, computers)

¹² OJ L 191, 23.7.2009, p.42 (televisions)

¹³ OJ L 268, 1.10.2016, p.90 (office equipment, displays)

only on batteries, armband lamps for cyclists, solar-powered garden lamps		
d) light sources on bicycles and other non-motorised vehicles		
e) light sources that do not comply with requirements becoming applicable with Commission Regulation (EU) <i>[OP – please insert here the number of the accompanying ecodesign regulation for light sources and separate control gears (review)]</i> implementing Directive 2009/125/EC of the European Parliament and of the Council.		
3. Any light source within the scope of this Delegated Regulation shall be exempt from the requirements of this Regulation, with the exception of the requirements set out in Annex V, point 3, if it is specifically designed and marketed for its intended use in at least one of the following applications:		
a) signalling (including, but not limited to, road-, railway-, marine- or air traffic- signalling, traffic control or airfield lamps);		
b) image capture and image projection (including, but not limited to, photocopying, printing (directly or in pre-processing), lithography, film and video projection, holography);		
c) light sources with specific effective ultraviolet power >2 mW/klm and		

intended for use in applications requiring high UV-content		
d) light sources with a peak radiation around 253,7 nm and intended for germicidal use (destruction of DNA);		
e) light sources emitting 5 % or more of total radiation power of the range 250-800 nm in the range of 250-315 nm and/or 20 % or more of total radiation power of the range 250-800 nm in the range of 315-400 nm, and intended for disinfection or fly trapping		
f) light sources having the primary purpose to emit radiation around 185,1 nm and intended to be used for the generation of ozone		
g) light sources emitting 40 % or more of total radiation power of the range 250-800 nm in the range of 400-480 nm, and intended for coral zooxanthellae symbioses		
h) FL light sources emitting 80 % or more of total radiation power of the range 250-800 nm in the range of 250-400 nm, and intended for sun-tanning		
i) HID light sources emitting 40 % or more of total radiation power of the range 250-800 nm in the range of 250-400 nm, and intended for sun-tanning		
j) light sources with a photosynthetic efficacy >1.2 $\mu\text{mol/J}$, and/or		

emitting 25 % or more of total radiation power of the range 250-800 nm in the range of 700-800 nm, and intended for use in horticulture		
4. Light sources in refrigerating appliances within the scope of Commission Delegated Regulation (EU) <i>[OP- please insert the number of the regulation on energy labelling for refrigerating appliances (review)]</i> shall be only subject to the requirements for light sources laid down in that Regulation when the light sources are not placed on the Union market before they are integrated into the refrigerating appliance.		
ANNEX V – Product information		<p>Simplify the list and include only the parameters which required for the energy efficiency and are useful for the consumers/end-users</p> <p>The information required is far too much and far too complicated.</p> <p>LightingEurope does not see any reason nor any added value in this. It is only generating a huge administrative burden for the manufacturers and importers without helping the market surveillance authorities. It goes against the aim of having simple and easily enforceable Regulations in place.</p> <p>Art. 12(7) (a) of 2017/1369 says:</p>

		<p>7. <i>The product database shall be established in accordance with the following criteria:</i></p> <p>(a) <i>minimising the administrative burden for suppliers and other database users.</i></p> <p>The new delegated act is going completely against this.</p>
<p>1. PRODUCT INFORMATION SHEET</p> <p>1.1 The information in the product information sheet of a light source referred to in Article 3.1(b), including when the light source is a part in a containing product, shall be provided in the following order and shall be included in the product brochure or other literature provided with the product:</p>		<p>EPREL should be able to generate such information sheet. Why is this not enough?</p>
a) supplier's name or trade mark, address, contact details and other legal identification of the supplier		
b) supplier's model identifier, meaning the code, usually alphanumeric, which distinguishes a specific light source model from other models with the same trade mark or supplier's name		
c) the energy label according to Annex III in electronic format		<p>The system should be able to generate the label.</p> <p>This should be optional; the system should generate the label and suppliers may also create their own label if they want to.</p>

		Label in electronic format to be included in the product brochure or other literature provided with the product?
d) the energy efficiency class according to Annex II		
e) the energy consumption expressed in kWh of electricity consumption per 1000 h of light source on-mode operation		
f) the lighting technology used, i.e. HL, LFL T5 HE, LFL T5 HO, CFLni, other FL, HPS, MH, other HID, LED, OLED, mixed, other		
g) if the light source is non-directional (NDLS) or directional (DLS) in the sense of this Regulation		
h) if the light source is a mains light source (MLS) or a non-mains light source (NMLS) in the sense of this Regulation		
i) if the light source is a connected light source (CLS) in the sense of this Regulation		
j) if the light source is a colour-tuneable light source (CTLS) in the sense of this Regulation		
k) if the light source has a second envelope, a non-clear envelope and/or an antiglare shield in the sense of this Regulation		
l) the date (month, year) when the light source was first produced for the EU market	(l) the date (month, year) when the light source was first produced for the EU market	<p>This information is not available, and we will not be able to have it.</p> <p>Showing the customer that this light source is a new one will lead to a lot of "new" light</p>

		sources that are technically the same as the older ones.
m) the information specified in point 2.1 of this Annex		
n) the outer dimensions in mm, without separate control gear, lighting control parts and non-lighting parts, if any		
o) the spectral power distribution in the range 250 nm to 800 nm, at full-load	o) the spectral power distribution in the range 380 250 nm to 780 800 nm, at full-load	This should be the visible light aligned with the 'light' definition. Also, the very low range of around 250 nm cannot be measured. This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
p) the displacement factor ($\cos \phi_1$) for LED and OLED mains light sources		
q) the chromaticity coordinates (x and y)		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
r) the colour consistency in McAdam ellipses for LED and OLED mains light sources		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
s) the R9 colour rendering index value for LED and OLED light sources	s) the R9 colour rendering index value for LED and OLED light sources	This requirement has little value for determining the energy efficiency and performance of a product. It makes no sense to include this as an information requirement for EPREL.

t) the peak luminous intensity for directional light sources (in cd)		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
u) the lumen maintenance factor for FL and HID light sources at 2 000 h, 4 000 h, 6 000 h, 8 000 h, 12 000 h, 16 000 h and 20 000 h (up to 8 000 h only for new light sources on the market where no data is yet available), indicating which operation mode of the light source was used for the test if both 50 Hz and high frequency operation are possible		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
v) the survival factor for FL and HID light sources at 2 000 h, 4 000 h, 6 000 h, 8 000 h, 12 000 h, 16 000 h and 20 000 h (up to 8 000 h only for new light sources on the market where no data is yet available), indicating which operation mode of the light source was used for the test if both 50 Hz and high frequency operation are possible		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
w) the lumen maintenance factor for LED and OLED light sources		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
x) the survival factor for LED and OLED light sources		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include

		this as an information requirement for EPREL.
y) the reference control settings, and instructions on how they can be implemented, where applicable		
z) instructions on how to remove lighting control parts and/or non-lighting parts, if any, or how to switch them off or minimize their power consumption		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
(aa) if the light source is dimmable: a list of dimmers it is compatible with, and the light source – dimmer compatibility standard(s) it is compliant with, if any		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
(bb) if the light source contains mercury: instructions on how to clean up the debris in case of accidental breakage		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
(cc) recommendations on how to dispose of the light source at the end of its life in line with Directive 2012/19/EU of the European Parliament and of the Council		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
For light sources that can be tuned to emit light at full-load with different characteristics, the values of parameters that vary with these characteristics shall at least be reported at the reference control setting		This information should only be available upon request for the market surveillance authorities, but it makes no sense to include this as an information requirement for EPREL.
If the light source is no longer supplied for sale on the EU market, the supplier shall put in the product database the date (month, year) when the supply for the EU market stopped	If the light source is no longer supplied for sale on the EU market, the supplier shall put in the product database the date (month, year) when the supply for the EU market stopped	The database should be sustainable and easy to maintain. Parameters which require supervision require extra resources as well and this means additional burden for the suppliers.

		Thousands of products will need to be continuously supervised.
1.2. One product information sheet may cover a number of light sources supplied by the same supplier.		
1. INFORMATION TO BE DISPLAYED ON THE PACKAGING 2.1 Light Source If a light source is placed on the market, not in a containing product, in a packaging containing information to be visibly displayed at a point-of-sale prior to its purchase, the following information shall be clearly and prominently displayed on the packaging in addition to the energy label of Annex III		
a) the useful luminous flux (Φ_{use}) in a font at least twice as large as the display of the on-mode power (P_{on}), clearly indicating if it refers to the flux in a sphere (360°), in a wide cone (120°) or in a narrow cone (90°);	a) the useful luminous flux (Φ_{use}) in a font at least twice as large as the display of the on-mode power (P_{on}), clearly indicating if it refers to the flux in a sphere (360°), in a wide cone (120°) or in a narrow cone (90°);	Delete the second part, as it has no practicality for end-users.
b) the correlated colour temperature, rounded to the nearest 100 K, also expressed graphically or in words, or the range of correlated colour temperatures that can be set		
c) the beam angle in degrees (for directional light sources), or the range of beam angles that can be set		
d) electrical interface details, e.g. cap- or connector-type, type of power		

supply (e.g. 230 V AC 50 Hz, 12 V DC);		
e) the $L_{70}B_{50}$ lifetime for LED and OLED light sources, expressed in hours		
f) the on-mode power (P_{on}), expressed in W		
g) the standby power (P_{sb}), expressed in W and rounded to the second decimal. If the value is zero, it may be omitted from the packaging		
h) the networked standby power (P_{net}) for CLS, expressed in W and rounded to the second decimal. If the value is zero, it may be omitted from the packaging		
i) the colour rendering index, rounded to the nearest integer, or the range of CRI values that can be set		
j) if $CRI < 80$, and the light source is intended for use in outdoor applications, industrial applications or other applications where lighting standards allow a $CRI < 80$, a clear indication to this effect. For HID light sources with useful luminous flux > 4000 lm, this indication is not mandatory		
k) if the light source is designed for optimum use in non-standard conditions (such as ambient temperature $T_a \neq 25$ °C or specific thermal management is		

necessary): information on those conditions		
l) a warning if the light source cannot be dimmed or can be dimmed only with specific dimmers or with specific wired or wireless dimming methods. In the latter cases a list of compatible dimmers and/or methods could be provided on the manufacturer's website		
m) if the light source contains mercury: a warning about it including the mercury content in mg rounded to the first decimal place		
n) if the light source is within the scope of Directive 2012/19/EU, without prejudice to marking obligations pursuant to Article 14(4) of Directive 2012/19/EU, or contains mercury: a warning that it shall not be disposed of as unsorted municipal waste	n) if the light source is within the scope of Directive 2012/19/EU, without prejudice to marking obligations pursuant to Article 14(4) of Directive 2012/19/EU, or contains mercury: a warning that it shall not be disposed of as unsorted municipal waste	This point is redundant. The WEEE Directive requires this information, why should we duplicate this requirement? Try to simplify the regulation, and do not complicate it.
o) in addition to the QR-code included in the energy label, the internet address for the supplier's website(s) could be provided		
Items (a) to (d) shall be displayed on the packaging in the direction meant to face prospective buyer; for other items this is also recommended, if space permits		
For light sources that can be set to emit light with different characteristics, the information shall be reported for the reference control		

settings. In addition, a range of obtainable values may be indicated.		
The information does not need to use the exact wording on the list above. Alternatively, it may be displayed in the form of graphs, drawings or symbols		
If the packaging is too small to accommodate all required information, in accordance with Annex III, a standard size label shall be placed in close proximity to the packaging. Some of the information not required to face the prospective buyer may be displayed on the same physical carrier as the label instead of on the packaging		
2.2 Light sources in a containing product If a light source is placed on the market as a part in a containing product, the technical documentation for the containing product shall clearly identify the contained light source(s), including the energy efficiency class.		
If a light source is placed on the market as a part in a containing product in a packaging containing information to be visibly displayed at a point-of-sale prior to its purchase, the following text shall be displayed, clearly legible, on the outside of the containing product's packaging: <i>'This product contains a light source of energy efficiency class <X>'</i> Where <X> shall be replaced by the energy efficiency class of the contained light source.		


<p>The text can be replaced by a pictogram representing a light source and including the arrow shown in Annex VII. The arrow can be in black and white.</p> <p>If the product contains more than one light source, the sentence can be in the plural, or repeated per light source, as suitable. If pictograms are used, they should be repeated per light source.</p> <p>The text shall be present in any advertisement, formal price quote or tender offer disclosing energy-related or price information on the containing product and in any technical promotional material for the containing product, which describes specific technical parameters.</p>		
<p>3. Information for products specified in Annex IV, point 3</p> <p>For the light sources specified in Annex IV, point 3, their intended use shall be stated on all forms of packaging, product information and advertisement, together with a clear indication that the light source is not intended for use in other applications</p> <p>The technical documentation file drawn up for the purposes of conformity assessment, in accordance with Article 3.3 of Regulation (EU) 2017/1369 shall list the technical parameters that make the product design specific to qualify for the exemption.</p>		

ANNEX VI – Technical documentation		<p>Technical documentation should be limited to energy labelling, the rest should be available on request.</p> <p>Is this the compliance part of the database? Who is using it? Does it mean that every single product should have a separate technical documentation or the technical parameters listed in this annex are going to be fields in the database that need to be filled? If so, then why should we enter some information again (e.g. the name and address, model identifier)? Again, this is a huge administrative burden for the suppliers, we are talking about a huge amount of products, not just a few.</p>
1. The technical documentation referred to in Article 3.1(d) shall include:		
a) the name and address of the supplier;		
b) supplier's model identifier, meaning the code, usually alphanumeric, which distinguishes a specific light source model from other models with the same trade mark or supplier's name		
c) the model identifier of all equivalent models already placed on the market		
d) identification and signature of the person empowered to bind the supplier		



e) technical parameters for measurements, including the declared values, as follows:		
1) useful luminous flux (Φ_{use}) in lm		
2) colour rendering index (CRI);		
3) on-mode power (P_{on}) in W		
4) beam angle in degrees for directional light sources (DLS)		
5) correlated colour temperature (CCT) in K for FL and HID light sources		
6) 'standby power (P_{sb}) in W, including when it is zero		
7) networked standby power (P_{net}) in W for connected light sources (CLS)		
8) displacement factor ($\cos \phi_1$) for LED and OLED mains light sources		
9) colour consistency in MacAdam ellipse steps for LED and OLED light sources		
10) flicker metric (PstLM) for LED and OLED light sources	10) flicker metric (PstLM) for LED and OLED light sources	<p>We propose to delete points (10) and (11). The IEC documents available are still at TRs level (61547-1 and 63158 have been recently published); that means that experience is needed to use such documents.</p> <p>Furthermore, the needs regarding flicker and stroboscopic effect differ according to the needs for the different environments and the various activities carried out, also in relation to indoor and outdoor environments.</p>

		Furthermore, we propose to delete point (13) because it is too vague and leads to misunderstanding and possible disputes with market surveillance authorities about their activities.
11) stroboscopic effect metric (SVM) for LED and OLED light sources	11) stroboscopic effect metric (SVM) for LED and OLED light sources	Idem.
12) colour purity index, only for CTLS, for the following colours and dominant wavelength within the given range: Colour: Dominant wavelength range Blue 440nm – 490nm Green 520nm – 540nm Red 610nm – 670nm		
f) the calculations performed with the measured parameters, including the determination of the energy efficiency class		
g) references to the harmonised standards applied or other standards used		
h) testing conditions if not described sufficiently in point (f);		
i) the reference control settings, and instructions on how they can be implemented, where applicable		
j) instructions on how to remove lighting control parts and/or non-		

lighting parts, if any, or how to switch them off or minimise their power consumption during light source testing		
k) specific precautions that shall be taken when the model is assembled, installed, maintained or tested.		
ANNEX VII - Information to be provided in visual advertisements, in promotional material and in distance selling, except distance selling on the internet		
1. In visual advertisements, for the purposes of ensuring conformity with the requirements laid down in Article 3(1)(e) and Article 4(1)(c), the energy class and the range of efficiency classes available on the label shall be shown as set out in point 4 of this Annex		
2. In promotional material, for the purposes of ensuring conformity with the requirements laid down in Article 3(1)(f) and Article 4(1)(d), the energy class and the range of efficiency classes available on the label shall be shown as set out in point 4 of this Annex		
3. Any paper-based distance selling must show the energy class and the range of efficiency classes available on the label as set out in point 4 of this Annex		
4. The energy class and the range of efficiency classes shall be shown, as indicated in Figure 1, with:		

<ol style="list-style-type: none"> 1. an arrow containing the letter of the energy class; 2. the colour of the arrow matching the colour of the energy class, and; 3. the range of available efficiency classes. 		
 <p>Figure 1: Coloured arrow example, with range of energy classes indicated</p>		
<p>By derogation, if the visual advertisements, promotional material or paper-based distance selling is printed in black and white, the colour of the arrow can be in black and white in that visual advertisements, promotional material or paper-based distance selling.</p>		
<ol style="list-style-type: none"> 5. Telemarketing-based distance selling must specifically inform the customer of the energy class of the product and of the range of energy classes available on the label, and that the customer can access the full label and the product information sheet through a free access website, or by requesting a printed copy 		
<ol style="list-style-type: none"> 6. For all the situations mentioned in points 1, 2, 3 and 5, it must be possible for the customer to access the full label and the product information sheet through a link to the product database website, or to request a printed copy 	<ol style="list-style-type: none"> 6. For all the situations mentioned in points 1, 2, 3 and 5, it must be possible for the customer to access the full label and the product information sheet of the light source through a link to the product database website, or to request a printed copy 	

<p>ANNEX VIII - Information to be provided in the case of distance selling on the internet</p> <p>1. The appropriate label made available by suppliers in accordance with Article 3(1)(g) shall be shown on the display mechanism in proximity to the price of the product. The size shall be such that the label is clearly visible and legible and shall be proportionate to the size specified for the standard label in Annex III. The label may be displayed using a nested display, in which case the image used for accessing the label shall comply with the specifications laid down in point 3 of this Annex. If nested display is applied, the label shall appear on the first mouse click, mouse roll-over or tactile screen expansion on the image</p>		
<p>2. The image used for accessing the label in the case of nested display shall:</p>		
<p>a) be an arrow in the colour corresponding to the energy efficiency class of the product on the label</p>		
<p>b) indicate on the arrow the energy efficiency class of the product in white in a font size equivalent to that of the price; and</p>		
<p>c) have one of the following two formats</p>		

 		
3. In the case of nested display, the sequence of display of the label shall be as follows:		
a) the image referred to in point 2 of this Annex shall be shown on the display mechanism in proximity to the price of the product		
b) the image shall link to the label		
c) the label shall be displayed after a mouse click, mouse roll-over or tactile screen expansion on the image		
d) the label shall be displayed by pop up, new tab, new page or inset screen display		
e) for magnification of the label on tactile screens, the device conventions for tactile magnification shall apply		
f) the label shall cease to be displayed by means of a close option or other standard-closing mechanism		
g) the alternative text for the graphic, to be displayed upon failure to display the label, shall be the energy efficiency class of the product in a font size equivalent to that of the price		
4. The appropriate product information sheet made available by suppliers in accordance with Article 3(1)(h) shall be		

<p>shown on the display mechanism in proximity to the price of the product. The size shall be such that the product information sheet is clearly visible and legible. The product information sheet may be displayed using a nested display or by referring to the product database established under Regulation (EU) 2017/1369, in which case the link used for accessing the product information sheet shall clearly and legibly indicate 'Product information sheet'. If nested display is used, the product information sheet shall appear on the first mouse click, mouse roll-over or tactile screen expansion on the link.</p>		
<p>ANNEX IX - Verification procedure for market surveillance purposes</p> <p>The verification tolerances defined in this Annex relate only to the verification of the measured parameters by Member State authorities. These tolerances shall not be used by the supplier as an allowed tolerance to establish the values in the technical documentation. The values and classes on the label or on the product information sheet shall not be more favourable for the supplier than the values reported in the technical documentation</p>		
<p>When verifying the compliance of a product model with the requirements laid down in this Delegated Regulation, the authorities of the Member States shall apply the following procedure:</p>		

1. The Member State authorities shall verify one single unit of the model for points 2(a) and 2(b) of this Annex. The Member State authorities shall verify 10 units of the light source model, supplied from at least two different sources, for point 2(c) of this Annex. If the acquisition costs for the 10 units exceed 500 euros, the authorities of the Member State may reduce the sample size to 3 units. The verification tolerances are laid down in Table 6 of this Annex		
2. The model shall be considered to comply with the applicable requirements if		
a) the values given in the technical documentation pursuant to Article 3.3 of Regulation (EU) 2017/1369 (declared values), and, where applicable, the values used to calculate these values, are not more favourable for the supplier than the corresponding values given in the test reports; and		
b) the values published on the label and in the product information sheet are not more favourable for the supplier than the declared values, and the indicated energy efficiency class is not more favourable for the supplier than the class determined by the declared values; and		
c) when the authorities of the Member State test the units of the		

model, the determined values comply with the respective verification tolerances as given in Table 6 of this Annex, where 'determined value' means the arithmetical mean over the tested units of the measured values for a given parameter or the arithmetical mean of parameter values calculated from other measured values		
3. If the results referred to in point 2(a) or (b) are not achieved, the model and all models that have been listed as equivalent models in the supplier's technical documentation shall be considered not to comply with this Regulation.		
4. If the result referred to in point 2(c) is not achieved, the model and all models that have been listed as equivalent models in the supplier's technical documentation shall be considered not to comply with this Regulation.		
5. The authorities of the Member State shall provide all relevant information to the authorities of the other Member States and to the Commission without delay after a decision is taken on the non-compliance of the model in accordance with points 3 and 4 of this Annex.		
The authorities of the Member State shall only apply the verification tolerances that are set out in Table 6 and shall use only the procedure described in this Annex. No other		

tolerances, such as those set out in harmonised standards or in any other measurement method, shall be applied					
Table 6			Table 6		
Parameter	Sample size	Verification tolerances	Parameter	Sample size	Verification tolerances
Full-load on-mode power P_{on} [W]:			Full-load on-mode power P_{on} [W]:		
$P_{on} \leq 2W$	3	The determined value shall not exceed the declared value by more than 0.20 W	$P_{on} \leq 2W$	3	The determined value shall not exceed the declared value by more than 0.20 W
	10	The determined value shall not exceed the declared value by more than 0.20 W		10	The determined value shall not exceed the declared value by more than 0.20 W
$2W < P_{on} \leq 5W$	3	The determined value shall not exceed the declared value by more than 10 %.	$2W < P_{on} \leq 5W$	3	The determined value shall not exceed the declared value by more than 10 %.
	10	The determined value shall not exceed the declared value by more than 10 %.		10	The determined value shall not exceed the declared value by more than 10 %.
$5W < P_{on} \leq 25W$	3	The determined value shall not exceed the declared	$5W < P_{on} \leq 25W$	3	The determined value shall not exceed the declared

		value by more than 10%.			value by more than 10%.	
	10	The determined value shall not exceed the declared value by more than 5 %.		10	The determined value shall not exceed the declared value by more than 5 %.	
$25W < P_{on} \leq 100W$	3	The determined value shall not exceed the declared value by more than 7.5%.	$25W < P_{on} \leq 100W$	3	The determined value shall not exceed the declared value by more than 7.5%.	
	10	The determined value shall not exceed the declared value by more than 5 %.		10	The determined value shall not exceed the declared value by more than 5 %.	
$100W < P_{on}$	3	The determined value shall not exceed the declared value by more than 5%.	$100W < P_{on}$	3	The determined value shall not exceed the declared value by more than 5%.	
	10	The determined value shall not exceed the declared value by more than 2.5 %.		10	The determined value shall not exceed the declared value by more than 2.5 %.	
Displacement factor [0-1]	3	The determined value shall not be less than the declared value minus 0.1 units	Displacement factor [0-1]	3	The determined value shall not be less than the declared value minus 0.1 units	
	10	The determined value shall not be less than the		10	The determined value shall not be less than the	

		declared value minus 0.1 units.			declared value minus 0.1 units.	
Useful luminous flux Φ_{use} [lm]	3	The determined value shall not be less than the declared value minus 10 %.	Useful luminous flux Φ_{use} [lm]	3	The determined value shall not be less than the declared value minus 10 %.	The tolerance should be 10 % regardless of sample size. The luminous flux measurement of lamps does have an intrinsic uncertainty of 10 % coming from testing equipment, test procedure and lamp-to-lamp variations. Decreasing the samples number from 20 to 10 could lead to an additional uncertainty of test values, so tolerances should not be further decreased.
	10	The determined value shall not be less than the declared value minus 5 %.		10	The determined value shall not be less than the declared value minus 10 5-%.	
Standby power P_{sb} and Networked standby power P_{net} [W]	3	The determined value shall not exceed the declared value by more than 0,10 W.	Standby power P_{sb} and Networked standby power P_{net} [W]	3	The determined value shall not exceed the declared value by more than 0,10 W.	
	10	The determined value shall not exceed the declared value by more than 0,10 W.		10	The determined value shall not exceed the declared value by more than 0,10 W.	
CRI and R9 [0-100]	3	The determined value shall not be less than the declared value by more than 3,0 units.	CRI and R9 [0-100]	3	The determined value shall not be less than the declared value by more than 3,0 units.	The tolerance should be 3.0 units regardless of sample size.
	10	The determined value shall not be less than the declared value by more than 2,0 units.		10	The determined value shall not be less than the declared value by more than 3,0 2,0 units.	
Flicker [P_{st} LM] and	3	The determined value shall not	Flicker [P_{st} LM] and	3	The determined value shall not	We recommend to adhere to a few parameters that can be well enforced,

Stroboscopic effect [SVM]		exceed the declared value by more than 10 %.	Stroboscopic effect [SVM]		exceed the declared value by more than 10 %.	instead of a long list of parameters of which some are not yet fully defined nor measurable, like flicker and stroboscopic effects. Furthermore, some outdoor and some indoor lighting applications do not need such requirements.
	10	The determined value shall not exceed the declared value by more than 10 %.		10	The determined value shall not exceed the declared value by more than 10 %.	
Colour Consistency [MacAdam ellips steps]	3	The determined number of steps shall not exceed the declared number of steps. The centre of the MacAdam ellipse shall be the centre declared by the supplier with a tolerance of 0,01 units.	Colour Consistency [MacAdam ellips steps]	3	The determined number of steps shall not exceed the declared number of steps. The centre of the MacAdam ellipse shall be the centre declared by the supplier with a tolerance of 0,01 units.	
	10	The determined number of steps shall not exceed the declared number of steps. The centre of the MacAdam ellipse shall be the centre declared by the supplier with a tolerance of 0,005 units.		10	The determined number of steps shall not exceed the declared number of steps. The centre of the MacAdam ellipse shall be the centre declared by the supplier with a tolerance of 0,005 units.	
Beam angle (degrees)	3	The determined value shall not deviate from the declared value by more than 25 %	Beam angle (degrees)	3	The determined value shall not deviate from the declared value by more than 25 %	

	10	The determined value shall not deviate from the declared value by more than 25 %.		10	The determined value shall not deviate from the declared value by more than 25 %.	
Efficacy [lm/W]	3	The determined value (quotient) shall not be less than the declared value minus 10 %.	Efficacy [lm/W]	3	The determined value (quotient) shall not be less than the declared value minus 10 %.	The tolerance should be 10 % regardless of sample size (see the comment about the luminous flux). Why the lm/W came in when both the lm and the W are already separately included?
	10	The determined value (quotient) shall not be less than the declared value minus 5 %.		10	The determined value (quotient) shall not be less than the declared value minus 10 5 %.	
L₇₀B₅₀ lifetime (for LED and OLED)	3	The determined value shall not be less than the declared value minus 20%	L₇₀B₅₀ lifetime (for LED and OLED)	3	The determined value shall not be less than the declared value minus 20%	
	10	The determined value shall not be less than the declared value minus 10%		10	The determined value shall not be less than the declared value minus 10%	
Lumen Maintenance Factor (for LED and OLED)	3	The determined XLMF% of the sample following the test in Annex V shall not be less than XLMF, MIN% according to Regulation [XXX to	Lumen Maintenance Factor (for LED and OLED)	3	The determined XLMF% of the sample following the test in Annex V shall not be less than XLMF, MIN% according to Regulation [XXX to	
	10					

		<i>insert the new ecodesign regulation for lighting]</i>			<i>insert the new ecodesign regulation for lighting]</i>	
Survival Factor (for LED and OLED)	3	All 3 light sources of the test sample must be operational after completing the endurance test in Annex V of Regulation [XXX to <i>insert the new ecodesign regulation for lighting]</i> .	Survival Factor (for LED and OLED)	3	All 3 light sources of the test sample must be operational after completing the endurance test in Annex V of Regulation [XXX to <i>insert the new ecodesign regulation for lighting]</i>.	Delete and maintain 500 h early failure.
	10	At least 9 light sources of the test sample must be operational after completing the endurance test in Annex V of Regulation [XXX to <i>insert the new ecodesign regulation for lighting]</i>		40	At least 9 light sources of the test sample must be operational after completing the endurance test in Annex V of Regulation [XXX to <i>insert the new ecodesign regulation for lighting]</i>	
Lumen Maintenanc e Factor (for FL and HID)	3	The determined value shall not be less than 90% of the declared value	Lumen Maintenanc e Factor (for FL and HID)	3	The determined value shall not be less than 90% of the declared value	
	10	The determined value shall not be		10	The determined value shall not be	

		less than 90% of the declared value			less than 90% of the declared value	
Survival Factor (for FL and HID)	3	The determined value shall not be less than the declared value	Survival Factor (for FL and HID)	3	The determined value shall not be less than 10% of the declared value	It should be 10 % regardless of sample size. Since we are talking about statistical data, the wording 'the determined value shall not be less than the declared value' cannot be interpreted in real life, the requirement cannot be guaranteed. Keep the 10 % as it is in 245/2009.
	10	The determined value shall not be less than the declared value		10	The determined value shall not be less than 10% of the declared value	
Colour Purity Index [%]	3	The determined value shall not be less than the declared value minus 10 %	Colour Purity Index [%]	3	The determined value shall not be less than the declared value minus 10 %	
	10	The determined value shall not be less than the declared value minus 5%		10	The determined value shall not be less than the declared value minus 5%	
Correlated Colour Temperature [K]	3	The determined value shall not deviate from the declared value by more than 10 %	Correlated Colour Temperature [K]	3	The determined value shall not deviate from the declared value by more than 10 %	The tolerance should be 10 % regardless of sample size (see above comments on tolerances).
	10	The determined value shall not deviate from the declared value by more than 5 %		10	The determined value shall not deviate from the declared value by more than 10-5 %	
Luminous peak intensity [cd]	3	The determined value shall not deviate from the declared value by more than 25 %.	Luminous peak intensity [cd]	3	The determined value shall not deviate from the declared value by more than 25 %.	

	10	The determined value shall not deviate from the declared value by more than 25 %.		10	The determined value shall not deviate from the declared value by more than 25 %.	
For light sources with linear geometry which are scalable but of very long length, such as LED strips or strings, verification testing of market surveillance authorities shall consider a length of 50 cm, or, if the light source is not scalable there, the nearest value to 50 cm. The light source supplier shall indicate which control gear is suitable for this length						
When verifying if a product is a light source, market surveillance authorities shall compare the measured values for chromaticity coordinates (x and y), luminous flux, luminous flux density, and colour rendering index directly with the limit values set out in the definition for light source of Article 2 of this Regulation, without applying any tolerances. If any of the 3 or 10 units in the sample satisfies the conditions for being a light source, the product model shall be considered to be a light source						