

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



Entwürfe der EU-Kommission vom 13. November 2017

**Stellungnahme des Herstellerverbandes LE **
vom 24. Januar 2018
– Produktinformation –**

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 * of the Federal Environment Agency (UBA), Germany

The EU Commission's drafts of 13 November 2017

**Comments by the Industry Association LE **
as of 24 January 2018
– Product information –**

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

Les projets de la Commission Européenne du 13 novembre 2017

**Commentaires de l'association de producteurs LE **
du 24 janvier 2018
– Informations relatives au produit –**

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

* <http://www.eup-network.de/de/eup-netzwerk-deutschland/offenes-forum-eu-regelungen-beleuchtung/dokumente/texte/>

** LE = Lighting Europe; <http://www.lightingeurope.org/>

Liste der von Lighting Europe (LE) am 24. Januar 2018 versandten Dokumente und Kennzeichnung des vorliegenden Textes

- Hauptanliegen
- Produktgestaltung
- Produktinformation

EN: List of the documents, sent out by Lighting Europe (LE) on 24 January 2018 and identification of the text at hand

- Main concerns
- Product design
- Product information

FR: Liste des documents qui Lighting Europe (LE) a envoyé le 24 janvier 2018 et marquage de le présent document

- Préoccupations principales
- Conception des produits
- Informations relatives au produit

Es folgt ein unveränderter Originaltext.

EN: The following is an unmodified original text.

FR: Ce qui suit est un texte original.

LightingEurope – List of comments to European Commission’s proposal on energy labelling for lighting
Date: 23 January 2018

European Commission proposal	LightingEurope proposal	LightingEurope comments and questions
<p>Preamble</p> <p>THE EUROPEAN COMMISSION, Having regard to the Treaty on the Functioning of the European Union, Having regard to Regulation 2017/1369 of the European Parliament and of the Council of 28 July 2017 setting a framework for energy labelling (1) repealing Directive 2010/30/EU, and in particular Articles 11 and 16 thereof,</p> <p>Whereas:</p> <p>(1) Regulation 2017/1369 empowers the Commission to adopt delegated acts as regards the labelling or re-scaling of the labelling of product groups representing significant potential for energy savings and, where relevant, other resources.</p> <p>(2) Provisions on the energy labelling of lighting products, namely electrical lamps and luminaires, were established by Commission Delegated Regulation (EU) No 874/2012 of 12 July 2012 supplementing Directive 2010/30/EU (2) and its successive amendment (3).</p> <p>(3) Lighting products are among the product groups mentioned in Article 11(5)(b) of Regulation (EU) 2017/1369 for which the</p>		<p>The Delegated Act on labelling for lighting should ideally enter into force on 1 September 2020, which is the same proposed entry-into-force of the Single Lighting Regulation. The reason is that a large part of the conventional portfolio will be in the process of phasing out by then, and it is necessary to avoid high cost burden and end-user confusion of intermediate (for < 1 year only) new packaging creation with new labels. It should be stated that the portfolio not meeting SLR requirements will not require new labelling (can remain to have their actual packaging until ban).</p>

¹ OJ L 198, 28.07.2017, p. 1.

² OJ L 314, 2010, p. 47

³ OJ L 147, 17.5.2014, p.1

<p>Commission should adopt a delegated act to introduce an A to G rescaled label.</p> <p>(4) Regulation (EU) No 874/2012 contains a review clause in Article 7 requiring the Commission to review the regulation in light of technological progress.</p> <p>(5) The Commission has reviewed Regulation (EU) No 874/2012 and analysed technical, environmental and economic aspects of as well as real-life user behaviour. The review was undertaken 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.</p> <p>(6) The review concluded that there was a need for the introduction of revised energy labelling requirements for lighting products, namely light sources.</p> <p>(7) The environmental aspect of light sources, identified as the most significant for the purposes of this Regulation, is electricity consumption in the use phase.</p> <p>(8) The electricity used by light sources accounts for a significant share of total household electricity demand in the Union. The review has shown that the electricity consumption of products subject to this Regulation can be further significantly reduced by implementing energy label measures.</p> <p>(9) The measures provided for in this Regulation were discussed by the Consultation Forum and the Member States' experts in accordance Articles 14 and 18 of Regulation (EU) 2017/1369.</p>		
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(10) Regulation 874/2012 should be repealed and new provisions should be laid down by this Regulation. HAS ADOPTED THIS REGULATION:		
Article 1: Subject matter and scope 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. This Regulation shall not apply to light sources specified in Annex I points 1 and 2. Light sources specified in Annex I point 3 shall only be subject to the requirements of Annex V point 5.	Article 1: Subject matter and scope This Regulation establishes requirements for the labelling of, and the provision of supplementary product information on, light sources, with or without integrated control gear, but not to the containing product itself in case the light sources and control gear can be measured individually, separated from the containing product. The requirements also apply to light sources placed on the market in a containing product. Energy label requirements and the energy label are limited to end-users replaceable light sources only. Such light source are lamps with socket and LED modules that can be replaced by end-users. This Regulation shall not apply to light sources specified in Annex I points 1 and 2. Light sources specified in Annex I point 3 shall only be subject to the requirements of Annex V point 5.	It needs to be made absolutely clear if this Regulation remains just for products sold direct to end-users (i.e. information to be seen at the point of sale) or if it is intended for the new Regulation to have a wider scope. Exempt physical labelling for Business to Business, including all relevant information in datasheet on free accessible websites should be enough. This option would not cause any limitation to the proposed eco-design requirements that still will be applicable to any type of light sources, even if not removable by end-users so that any luminaire on the market has to be provided with eco-design compliant LED modules anyhow.
Article 2: Definitions In addition to the definitions laid down in Article 2 of Regulation (EU) 2017/1369, the following definitions shall apply for the purposes of this Regulation:		
(1) <i>'light source'</i> means an electrically operated product intended to emit and/or be possibly tuned to emit light with 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 < 1000 <i>lm per mm²</i> of projected light-emitting surface area as specified in Annex II;	(b) a luminous flux < 264 1,000 lm per mm² of projected light-emitting surface area as defined in Annex II;	The HID stage and studio lamps to be included in (a) and lowering the luminous flux < 1 000 lm per mm ² of projected light-emitting surface area in Article 2: Definitions (1) (b) to luminous flux < 264, the HID stage and studio lamps would be exempted by this parameter and would not need any other technical parameter that makes them special purpose. In the note is mentioned that the value of 1,000 is well above what LEDs can do (264 lm/mm ²) and a discussion point could be to reduce this value
(c) a luminous flux between 60 and 82 000 <i>lumen</i> ;		
(d) a colour rendering index CRI > 0 <i>Ra</i> ; using incandescence, fluorescence, high-intensity discharge, light emitting diodes or their combinations as lighting technology.		
High-pressure sodium light emitters (HPS, as defined in Annex II) that do not fulfil condition (1)(a) are anyway considered light sources in the sense of this Regulation.		
If a containing product is itself a light source, the light source to be considered for the purpose of this Regulation is the smallest physical unit that can be readily removed from the containing product without permanent mechanical damage and that meets the definition for light source.	If a containing product is itself a light source, The light source to be considered for the purpose of this Regulation is the smallest physical unit that can be readily removed from the containing product without permanent mechanical damage of the light source and that meets the definition for light source. The light source to be considered for the purpose of this Regulation is the smallest physical unit, such as lamps, modules, or the part of the containing product as identified by the manufacturer for the purpose of market surveillance.	It is unclear whether the phrase “without permanent mechanical damage” refers to the light source, allowing testing of these components, or to the containing product in its entirety. This should be clarified.

(2) <i>'control gear'</i> means one or more devices, possibly integrated in a light source, intended to prepare the mains electricity supply 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) <i>'containing product'</i> means a product containing one or more light sources in scope of this Regulation. Suppliers of containing products shall enable verification by market surveillance authorities of compliance of light source(s) as set out in Annex VI.		<ul style="list-style-type: none"> - According to this definition, a lot of products will be in the scope of this Regulation, in addition to light sources (like luminaires, furniture, ovens, households, etc.) - Is this the effective scope of the Regulation? - The result of this definition would be that a part of luminaires (without light source) would be outside the scope, luminaires with integrated light source and luminaires sold with a light source in its packaging would be inside the scope. - The meaning of Regulation 874/2012 is mainly to provide the "compatibility" of luminaires with light sources.
(4) <i>'light'</i> means electromagnetic radiation with a wavelength between 380 <i>nm</i> and 780 <i>nm</i> .		
(5) <i>'mains'</i> or <i>'mains voltage'</i> or <i>'mains electricity supply'</i> (MV) means the <i>electricity supply</i> of 230 (±10%) <i>Volt</i> of alternating current at 50 <i>Hz</i> .		

(6) ' <i>chromaticity</i> ' means the property of a colour stimulus defined by its chromaticity coordinates (x and y).		
(7) ' <i>luminous flux</i> ' or ' <i>flux</i> ' (Φ), expressed in lumen (<i>lm</i>), 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 <i>steradians</i> 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. ' <i>Luminous flux</i> ' without further specification is the total luminous flux in a 360° sphere. 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 II.		<p>An example why no changes to the existing definitions should be introduced by new Regulations could be the proposed definition for <i>luminous flux</i>:</p> <ul style="list-style-type: none"> - There is no need for any changes of IEV definition of luminous flux; it would bring only confusion when referring to the luminous flux e.g. emitted by a light source in a different <u>condition</u> from the <u>specified in the applicable standard</u>... - With ref. to: "<i>Luminous flux</i>' without further specification is the total luminous flux in a 360° sphere." - Why this further specification? Ulbricht sphere? Or it refers to 4π steradians? If the latter case, it will be a confusing repetition, otherwise it would be an unjustified limitation. <p>Keep as much as possible definitions as is in current Regulations 244/2009, 245/2009, and 1194/2012.</p>
(8) ' <i>colour rendering index</i> ' (CRI), expressed in Ra, 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. For the purposes of this Regulation it refers to the mean of colour rendering indices for a set of 8 test colour samples as specified in standards (<i>Ra8</i>).		
(9) ' <i>incandescence</i> ' 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.		
(10) ' <i>halogen light source</i> ' (HL) means an incandescent light source with a threadlike conductor made from tungsten surrounded by gas containing halogens or halogen compounds.		
(11) ' <i>gas discharge</i> ' 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.		
(12) ' <i>high intensity discharge</i> ' (HID) means an electric gas discharge in which the light-producing arc is stabilised by wall temperature and the arc has a bulb wall loading in excess of 3 <i>Watts per square centimetre</i> . For the purpose of this Regulation, HID light sources are limited to metal halide, high pressure sodium and mercury vapour types as defined in Annex II.		
(13) ' <i>fluorescence</i> ' or ' <i>fluorescent light source</i> ' (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) ' <i>inorganic light emitting diode</i> ' (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.		
(15) ' <i>organic light emitting diode</i> ' (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.		
(16) ' <i>point of sale</i> ' means a physical location where the product is displayed or offered for sale, hire or hire-purchase to the end-user.		
(17) ' <i>end-user</i> ' means a natural person buying or expected to buy a product for purposes which are outside his trade, business, craft or profession.		
(18) ' <i>final owner</i> ' means the entity owning a product during the use phase of its life cycle, or any other entity acting on its behalf.		
Other definitions are set out in Annex II.		
Article 3: Obligations of suppliers		
1. In addition to the obligations of suppliers laid down in Regulation (EU) 2017/1369, suppliers shall ensure that:		
(a) each light source is supplied with a printed label in the format as set out in Annex III;	(a) each light source is supplied with a printed label in the format as set out in Annex III when the product is sold directly to end-users;	<ul style="list-style-type: none"> - If modules are sold to OEMs, why should the lighting industry supply a printed label as it is available on the website? This creates an unnecessary waste stream. - Same for professional luminaires: choice for a luminaire is done based on website / tender information and done before the delivery of the luminaire.

		<ul style="list-style-type: none"> - Proposal to include the obligation only for light sources in view of end-users, as indicated in the text above.
(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;		<p>Take any luminaires out of data bank, even if they are a containing light sources.</p> <p>What to include for LED boards with output depending on control gear settings? Proposal to exclude for registration:</p> <ul style="list-style-type: none"> - There can be a technical I_{max} for a LED board, e.g. 1A - And there will be the reference I_{max} e.g. 0.7A - The 1A will be on the board for safety purpose - In case the flux will have to be on the board: is this the flux corresponding to the 0.7A? With an indication that this is the "reference SLR" value? - The product supplied can be programmed at 0.3A with a different flux (which could be placed on the product label) - How to solve?
(c) an electronic label in the format and containing the information as set out in Annex III shall be made available to dealers for each light source model;		
(d) an electronic product information sheet shall be made available to dealers for each light source model;		
(e) if requested by the dealer, the product information sheet shall be made available in printed form; the content of the technical		
(f) documentation uploaded into the product database established by		

Regulation (EU) 2017/1369 is according to Annex V;		
(g) any visual advertisement for a specific model of light source, including on the internet, contains the energy efficiency class and the range of efficiency classes available on the label in accordance with Annex IX;		
(h) any technical promotional material concerning a specific model of light source which describes its specific technical parameters, including on the internet, includes the energy efficiency class of that model and the range of efficiency classes available on the label, in accordance with Annex IX;		
(i) the printed label to rescale products is a sticker, of the same size as the one which is already on the package;		No relabelling for millions of lighting products.
(j) no products are placed on the market that have been designed so that a model's performance is automatically altered in test conditions with the objective of reaching a more favourable level for any of the parameters specified in this delegated act or included in the documentation provided for the product.		

2. Suppliers of containing products placed on the market shall provide information on the contained light sources as specified in Annex V point 3.2.		
3. The energy efficiency class shall be calculated in accordance with Annex IV.		
Article 4: Obligations of dealers		Is the dealer a wholesaler? The definition of dealer in Regulation 2017/1369 is not clear, and especially the definition of customer of a dealer. The customer is not always a consumer.
1. In addition to the obligations of dealers laid down in Regulation (EU) 2017/1369, dealers shall ensure that:		
(a) each light source, at the point of sale, bears the label provided by suppliers in accordance with Article 3.1(a) displayed as indicated in Annex III, in such a way as to be clearly visible;		
(b) the label and product information sheet are provided in the case of distance selling in accordance with Annexes VI and VII;		
(c) any visual advertisement for a specific model of light source, including on the internet, contains the energy efficiency class and the range of efficiency classes available on the label, in accordance with Annex IX;		
(d) 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 IX;		

<p>(e) existing labels on products on display at points of sale are replaced by the rescaled labels that need to be attached to the packages in such a way as to cover the existing label.</p>	<p>Delete the requirement as in letter (e) and replace it by a general "infographic" at the point of sale (even downloadable from the website of any supplier).</p>	<ul style="list-style-type: none"> - For Luminaires already on the market, an electronic label is available on the manufacturer website; this avoids the use of millions of labels that would never be used in point of sales (some items only would be displayed in the point of sales). - Furthermore, luminaires are often displayed in point of sales without their package, or in a way that the packaging (and relevant label) could not be seen (it is necessary to consider also the dimensions of certain products). - The required action for dealers would be relevant to millions of lamps (maybe billions in all EU Member States); this clearly infringes the principle of proportionality because of the huge cost and burdens to any dealers everywhere in Europe (including small villages and islands). As a consequence, the supplier should spend infinite time in designing printing and shipping stickers of the right dimension to be attached for each single version of packaging (because each model identifier may also have several types of packaging) - By doing this, the administrative burden for industry as well as the verification burden for market surveillance will very much outweigh the negligible energy savings that could be obtained by this specific requirement.
<p>Article 5: Measurement methods</p> <p>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</p>		

and calculation methods, as set out in Annex IV and in Annex VIII.		
Article 6: Verification procedure for market surveillance purposes Member States shall apply the procedure laid down in Annex VIII when assessing the conformity of the declared energy efficiency class, the energy consumption and the information entered in the product database.		
Article 7: Revision The Commission shall review this Regulation in the light of technological progress and present the results of this review to the Consultation Forum no later than five years after its entry into force. The review shall in particular assess the energy efficiency classes and the possibility to introduce requirements on other environmental aspects in coherence with the objective to promote a circular economy. In addition, the Commission shall review the label to rescale it when the requirements in Article 11 of Regulation (EU) 2017/1369 are met.		
Article 8: Repeal Regulation (EU) No 874/2012 is repealed as of the day of application of this Regulation as specified in Article 9.2.		
Article 9: Entry into force and application 1. This Regulation shall enter into force on the 20th day following its publication in the Official Journal of the European Union. 2. It shall apply from XXXX.	Delete paragraph 3 of Article 9 1. This Regulation shall enter into force on the 20th day following its publication in the Official Journal of the European Union. 2. It shall apply from XXXX.	- The date of enforcement should be made clear. - Para. 3: Apparently there is no good reason for the requirement "4 months before XXXX."

<p>3. The obligations in Article 3(1)(a) and (b) shall apply 4 months before XXXX.</p> <p>4. The obligation in Article 4(1)(e) shall apply 30 days after the date of entry into force.</p> <p>5. This Regulation shall be binding in its entirety and directly applicable in all Member States.</p> <p>Done at Brussels, <i>For the Commission</i> <i>Jean-Claude JUNCKER</i> <i>The President</i></p>	<p>3. The obligations in Article 3(1)(a) and (b) shall apply 4 months before XXXX.</p> <p>4. The obligation in Article 4(1)(e) shall apply 30 days after the date of entry into force.</p> <p>5. This Regulation shall be binding in its entirety and directly applicable in all Member States.</p>	<p>- It should be from the date of applicability as set in para. 2 and it should also be in line with Art. 21.</p> <p>- Start time should be consistent with Ecodesign Regulation for light sources (1 September 2020).</p>
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ANNEX

ANNEX I: Exemptions 1. This Regulation shall not apply to light sources specifically tested and approved to operate: (a) in or on motor vehicles, their trailers and systems, components and separate technical units intended therefore as set out in Regulation No 661/2009 ⁴ , Regulation (EU) No 168/2013 ⁵ and their amendments;		
(a) in or on civil aviation aircrafts as set out in Commission Regulation 748/2012 ⁶ ;		
(b) in railway vehicle lighting as set out in Directive 2008/57/EC ⁷ and its amendments, as well as relevant Member State legislation;		
(c) in marine equipment as set out in Council Directive 2014/90/EU ⁸ and its amendments or recasts;		
(d) in or on military or civil defence ground vehicles, marine equipment or aircraft as set out in Member States' Regulations or in documents issued by the European Defence Agency. For the purpose of this point, 'specifically tested and approved' means that the light source: - has been specifically tested for the mentioned operating condition or application, according to the European legislation mentioned or related implementing acts, relevant Member State legislation, and/or relevant European or international standards, and		

⁴ OJ L 200, 31.7.2009, p.1-24

⁵ OJ L60, 2.3.2013, p. 52

⁶ OJ L 224, 21.8.2012, p. 1-85

⁷ OJ L 191, 18.7.2008, p.1-45.

⁸ OJ L 257, 28.8.2014, p. 146–185

- 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		- The type of certificate requested is not clear; third party certification is not mandatory in the lighting sector. - Furthermore, a clear definition of “certification” is needed (Test Houses in EU, outside, qualified by whom, etc.). - Necessary to better clarify the meaning of “certificate” and “approval mark.”
- is placed on the market specifically for the mentioned operating condition or application, as evidenced at least by the technical documentation, and possibly by information on the packaging and/or in publicity.		
2. In addition, this Regulation shall not apply to: (a) electronic displays (e.g. televisions, computer monitors, notebooks, tablets, mobile phones, e-readers, game consoles), including but not limited to displays in scope of Commission Regulation (EU) No 617/2013 ⁹ , Commission Decision (EU) 2015/1402 ¹⁰ , Commission Regulation (EC) No 642/2009 ¹¹ , Commission Decision (EU) 2016/1756 ¹² , European Commission COM(2015)178 ¹³ .		
(b) light sources in portable battery-operated containing products, including but not limited to e.g. torches, mobile phones with integrated torch light, toys including light sources, desk lamps operating only on batteries, armband lamps for cyclists, solar-powered garden lamps.	(b) light sources in portable battery-operated containing products, including but not limited to e.g. torches, mobile phones with integrated torch light, toys including light sources, desk lamps operating only on batteries, armband lamps for cyclists, solar-powered garden lamps.	Battery operated is the main part of this paragraph. The addition ‘portable’ is not functional. Solar garden lights are not always portable.

⁹ OJ L 175, 27.6.2013, p.13 (computers)

¹⁰ OJ L 217, 18.8.2015, p.9 (office equipment, computers)

¹¹ OJ L 191, 23.7.2009, p.42 (televisions)

¹² OJ L 268, 1.10.2016, p.90 (office equipment, displays)

¹³ COM(2015) 178 final, 22.4.2015 (related to self-regulatory initiative regarding game consoles)

(c) light sources on bicycles and other non-motorized vehicles.		
(d) light sources that do not comply with requirements becoming applicable in 2020 according to Regulations implementing Directive 2009/125/EC of the European Parliament and of the Council.		
<p>3. Any light source in scope of this Regulation shall be exempt from the requirements of Articles 3 and 4, with the exception of Annex V.5, if it has a specific technical design for its intended use in at least one of the following applications:</p> <p>(a) signalling (including, but not limited to, road-, railway-, marine- or air traffic- signalling, traffic control or airfield lamps);</p> <p>(b) image capture and image projection (including, but not limited to, photocopiers and video projectors).</p> <p>For these products, the information requirements of Annex V.5 apply.</p>		
<p>ANNEX II – Definitions</p> <p>The following definitions apply in addition to those in Article 2 of the main text:</p> <p>(1) <i>‘mains light source (MLS)’</i> means a light source that can be operated directly on the mains electricity supply. Examples include incandescent light sources designed to operate directly on the mains, light sources with physically integrated control gear. Light sources that can operate both directly on the mains, and indirectly on the mains using a separate control gear, shall be considered to be mains light sources. E.g. tubular LED light sources intended to replace linear FL, by-passing or keeping the existing FL control gear.</p>		
(2) <i>‘non-mains light source (NMLS)’</i> , means a light source that is not a mains light source. These light sources require a separate control gear to operate		

on the mains but they are placed on the market without such control gear. Examples include extra-low-voltage light sources, light sources for operation on power-over-ethernet, and LED-, OLED-, HID- and FL- light sources placed on the market without control gear.		
(3) ' <i>separate control gear</i> ' 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 a part of a containing product.		
(4) ' <i>directional light source</i> ' (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) ' <i>non-directional light source</i> ' (NDLS) means a light source that is not a directional light source.		
(6) ' <i>connected light source</i> ' (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.' To maintain the reference control settings the data-connection parts cannot be disconnected, switched-off or their power consumption minimised. 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 as a single product.		
(7) ' <i>data-connection parts</i> ' means parts that perform one of the following functions: <ul style="list-style-type: none"> - reception or transmission of wired or wireless data signals and the processing thereof (either used to control the light emission function or otherwise), - sensing and processing of the sensed signals (either used to control the light emission function or otherwise), - actuation by audio control (including voice control), 		

<p>- a combination of these.</p>		
<p>(8) ‘<i>colour-tuneable light source</i>’ (CTLS) means a connected light source (CLS) using LED- or OLED-technology, that can be set to emit light with a large variation of colours outside the range defined in article 2 (1)(a), but can also be set to emit white light inside the range defined in article 2 (1)(a) for which the light source is in scope of this Regulation. The term does not include tuneable-white light sources that can only be set to emit light, with different colour temperatures, within the range defined in article 2 (1)(a). The term also does not include dim-to-warm light sources, that shift their white light output to lower colour temperature when dimmed, simulating the behaviour of incandescent light sources.</p>	<p>‘<i>colour-tuneable light source</i>’ (CTLS) means a connected light source (CLS) using LED- or OLED-technology, that can be set to emit light with a large variation of colours outside the range defined in article 2 (1)(a), but can also be set to emit white light inside the range defined in article 2 (1)(a) for which the light source is in scope of this Regulation.</p> <p>The term does include tuneable white light source that can only be set to emit light, with different colour temperatures, within the range defined in article 2 (1)(a) allows a continuous tuneable white with more than 2000 K variation in CCT.</p> <p>The term also does not include dim-to-warm light sources, that shift their white light output to lower colour temperature when dimmed, simulating the behaviour of incandescent light sources.</p>	<p>A CTLS is not necessarily a connected light source. It could also be a light source without data connection, just having multiple power inputs for multiple LED channels.</p>
<p>(9) ‘<i>lighting control parts</i>’ 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, 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 1275/2008¹⁴.</p>		

¹⁴ OJ L 339, 18.12.2008, p. 45 and later amendments.

<p>(10) '<i>non-lighting parts</i>' means parts that are integrated in a light source, or physically separate 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)</p>		
<p>(11) '<i>useful luminous flux</i>' (Φ_{use}), means the part of the luminous flux of a light source that is considered when determining its energy efficiency:</p> <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 solid angle of π sr (corresponding to a cone with angle of 120°). - 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>(12) '<i>beam angle</i>' 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 considered.</p>		<p>Do not change any methodology already covered by harmonised standard EN 61341, e.g. "<i>For light sources that have different beam angles in different planes, the largest beam angle shall be considered.</i>" This sentence will impact on and prevent any future implementation of this harmonised standard within the relevant CLC TC. At least the specific subject should be duly included in the new EC Mandate to the CLC.</p>

For light sources with user-controllable beam angle, the beam angle corresponding to the 'reference control setting' shall be considered.		
<p>(13) '<i>full-load</i>' means:</p> <ul style="list-style-type: none"> - the condition of a light source, within the declared operating conditions, in which it is emitting the maximum (undimmed) initial luminous flux, or - the operating conditions and loads of the control gear under efficiency measurement as specified in the relevant standards. 		
<p>(14) '<i>standby mode</i>' means the condition of a light source, where it is connected to the power supply but the light sources are intentionally not emitting light, and the light source is awaiting a control signal 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 minimized following manufacturer's instructions.</p>		
<p>(15) '<i>networked standby mode</i>' 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 and data-connection parts shall be in a state enabling the networked standby function. Non-lighting parts shall be disconnected or switched off or their power consumption shall be minimized following manufacturer's instructions.</p>		
<p>(16) '<i>control mode</i>' 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 lighting control signal can be internally generated or an external control signal can be received, by wire or</p>		

wireless, and processed to lead to a change in the light emission of the light source.		
(17) ' <i>control signal</i> ' means an analogue or digital signal transmitted to light source wirelessly or wired either via voltage modulation in separate control cables or via a modulated signal in the supply voltage.		
(18) ' <i>remotely initiated trigger</i> ' means a signal that comes from outside the light source via a network.		
(19) ' <i>network</i> ' means a communication infrastructure with a topology of links, an architecture, including the physical components, organisational principles, communication procedures and formats (protocols).		
<p>(20) '<i>on-mode power</i>' (P_{on}), expressed in Watt, is 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 manufacturer's instructions.</p> <p>In case of a non-mains light source (NMLS) that requires a separate control gear to operate, P_{on} can be measured directly on the input to the light source, or P_{on} is determined using a control gear with known efficiency, whose electric power consumption is subsequently subtracted from the measured mains power input value.</p>		
(21) ' <i>standby power</i> ' (P_{sb}), expressed in Watt, is the electric power consumption of a light source in standby mode.		
(22) ' <i>networked standby power</i> ' (P_{net}), expressed in Watt, is the electric power consumption of a connected light source in networked standby mode.		
(23) ' <i>reference control settings</i> ' 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		

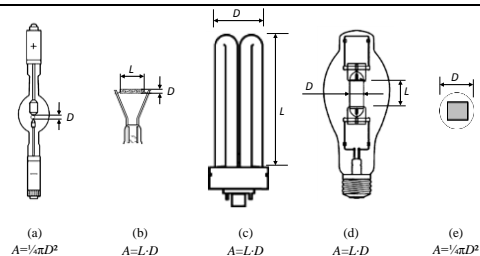
intensity, colour, colour temperature, spectrum, and/or beam angle of the emitted light.		
The reference control settings shall be those predefined by the supplier as factory default values, and encountered by the user at first installation (out-of-the-box values). If the installation procedure foresees 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.	Add: publish reference settings in EPREL database	With LED products, it is becoming more common that supplied products are adjusted to the user requirements before supply to ease installation and commissioning. Therefore, “out-of-the-box” values are not necessarily standard for a product, and for these products the definition for reference control setting will be unnecessarily burdensome for manufacturers. In the absence of clarity on whether this Regulation applies just for products sold directly to the end-user or also covers the professional market, the use of default values, which are those supplied unless specified, by a user would be preferable.
<p>The light source supplier shall define the reference control settings such that:</p> <ul style="list-style-type: none"> - the light source is in scope of this Regulation according to Art.2(1) and none of the conditions for exemption of Annex I applies (if this is not possible, the light source is out-of-scope or exempted); - the power consumption of lighting control parts and non-lighting parts is minimal (if these parts cannot be disconnected or switched-off); - the full-load condition is obtained (maximum initial luminous flux given the other chosen settings); - when the end-user opts to reset factory defaults, the reference control settings are obtained. 		
(24) ‘ <i>high-pressure mercury light source</i> ’ means a high intensity discharge light source in which the major portion of light is produced, directly or indirectly, by radiation from predominantly vaporized mercury operating at a partial pressure in excess of 100 kilopascals.		
(25) ‘ <i>high-pressure sodium light source</i> ’ (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.		
(26) ' <i>metal halide light source</i> ' (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) ' <i>compact fluorescent light source</i> ' (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) ' <i>T2</i> ', ' <i>T5</i> ', ' <i>T8</i> ', ' <i>T9</i> ' and ' <i>T12</i> ' means a tubular light source with diameter of approximately 7, 16, 26, 29 and 38 mm respectively, as defined in harmonised standards. The tube can be straight (linear) or bent (e.g. U-shaped, circular)		
(29) ' <i>LFL T5-HE</i> ' means a high-efficiency linear fluorescent T5 light source with driving current lower than 0.2 A.		
(30) ' <i>LFL T5-HO</i> ' means a high-output linear fluorescent T5 light source with driving current higher than or equal to 0.2 A.		
(31) ' <i>HL R7s</i> ' is a mains-voltage, double capped, linear halogen light source with a cap-diameter of 7 mm.		
(32) ' <i>portable battery-operated</i> ' means a containing product that is not fixed to the ambient, that is intended to be carried around by people or to be frequently moved, whose position can be changed		

by a simple manual pick-and-place operation, and that operates only on direct current (DC) with a voltage of less than 24 V supplied from a source contained in the same product, without being connected directly or indirectly to the mains electricity supply.		
(33) <i>'Second envelope'</i> 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) <i>'Non-clear envelope'</i> means a HID light source with a non-transparent outer envelope or outer tube in which the light producing arc tube is not visible.		
(35) <i>'anti-glare shield'</i> 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.		
<p>(36) <i>'flicker'</i> 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.</p> <p>The metric for flicker used in this Regulation is the '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.</p>		
(37) <i>'declared value'</i> for a parameter means the value given by the manufacturer or importer in the		

technical documentation pursuant to Article 3(3) of Regulation 2017/1369.		
(38) ' <i>luminous intensity</i> ' (candela or <i>cd</i>) 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.		
(39) ' <i>colour temperature</i> ' (T_c [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.		
(40) ' <i>colour consistency</i> ' 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 (c_x and c_y) declared by the manufacturer or the importer, expressed as the size (in steps) of the MacAdam ellipse formed around the chromaticity centre point (c_x and c_y).		
<p>(41) '<i>displacement factor</i> ($\cos \phi_1$)' 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.</p> <p>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 manufacturer's instructions.</p>		
(42) ' <i>lumen maintenance factor</i> ' (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.		
(43) ' <i>survival factor</i> ' (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.		

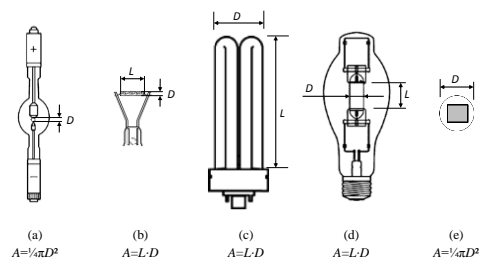
<p>(44) <i>'lifetime'</i> for LED and OLED light sources means the time in hours between the start of their use and the moment when 50% of a population of light sources have either abruptly failed (no light output anymore) or their light output has gradually degraded to a value below 70% of the initial luminous flux. This is also referred to as the M70F50 lifetime.</p>	<p>(44) <i>'lifetime'</i> for LED and OLED light sources means the time in hours between the start of their use and the moment when 50% of a population of light sources have either abruptly failed (no light output anymore) or their light output has gradually degraded to a light output value below a specified value (e.g. 70%) of the initial luminous flux (median useful life). This is also referred to as the L70 M70F50 lifetime.</p>	<p>This should be aligned with IEC 6271.</p>
<p>(45) <i>'equivalent model'</i> means a model with the same relevant technical and performance characteristics as another model placed on the market under a different commercial code.</p>		
<p>(46) <i>'projected light-emitting surface area'</i>(A), in mm², is the surface area 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).</p> <p>For light sources with non-clear envelope or with anti-glare shield, the light-emitting surface area is the entire area through which light is leaving the light source.</p> <p>For light sources containing more than one light emitter, the smallest gross volume enveloping all emitters shall be taken as the light-emitting surface.</p>	<p>(46) <i>'projected light-emitting surface area'</i>(A), in mm², is the surface area 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).</p> <p>For light sources with non-clear envelope or with anti-glare shield, the light-emitting surface area is the entire area through which light is leaving the light source.</p> <p>For light sources containing more than one light emitter, the smallest gross</p>	<p>Lighting manufacturers need to know exactly under what conditions they can approximate the shape of an arc with a spherical surface. This could particularly be relevant in case of the so-called 'single ended short arc quartz metal halide discharge lamps' that are used in showbiz applications. For these lamp types it makes a significant difference whether lighting manufacturers use definition (a) or (d) for luminous flux per projected light-emitting surface area.</p>



volume enveloping all emitters shall be taken as the light-emitting surface.

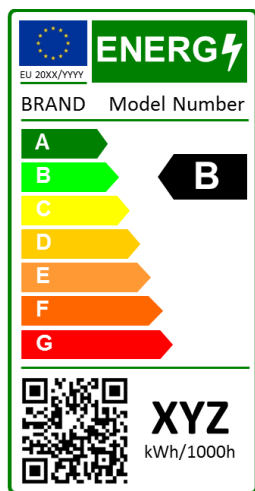
The HID lamps fall under definition 55(a) unless the dimensions defined in 55(d) apply with $L > D$

In 55(d) L is the distance between the electrode tips and D the inner diameter of the arc tube



ANNEX III - Label for light sources

(1) The label shall be as in the following illustration :



(2) The following information shall be included in the label for light sources		
I. trademark or supplier's name;		
II. model identifier), meaning the code, usually alphanumeric, which distinguishes a light source model from other models with the same trade mark or supplier's name;		
III. the energy efficiency class determined in accordance with Annex IV; the head of the arrow containing the energy efficiency class of the light source shall be placed at the same height as the head of the arrow of the relevant energy efficiency class;		
IV. a quick response code (QR-code) redirecting to a website optimized for mobile devices where additional information on the light source can be found;	IV, a quick response code (QR-code) redirecting to to a website optimized for mobile devices the homepage of the public part of the PRODUCT DATABASE ESTABLISHED BY REGULATION (EU) 2017/1369 , where additional information on the light source can be found;	The link in the QR code is not clear; obligatory QR code in the label is limiting (blocking) the use by suppliers to have their own QR code - double QR codes will confuse to end-users. Therefore, link of the QR code should be towards EPREL (public part).
V. the energy consumption (XYZ), expressed in kWh of electricity consumption per 1000 hours of light source on-mode operation.	V. the energy consumption (XYZ), expressed in kWh of electricity consumption per 1000 hours of light source on-mode operation. Wh have to be rounded to the upper nearest integer.	Point V is too vague: it should be specified that the figure should be rounded with the same rule as in Regulation. 874/2012.
(3) The label shall meet all the following requirements in its standard size. If the label is printed in a larger format, its content must nevertheless remain proportionate to the specifications for the standard size below: (XXX)	Add: the dimensions of the label as in Regulation 874/2012	Dimension of the label is missing.
(4) The following label application rules shall apply: (a) The label shall be placed on the side of the packaging that the end-user is intended to see first in a point of sale. Only if the label would	Delete para. (4) (a)	There is no unique rule to judge when a package has one main side, especially when it is a parallelepiped or a cube; this vague requirement

significantly distort or complicate the packaging (such as in some blister packages) can the label be placed on another side.		could be used to complain against a supplier with no clear evidence of noncompliance.
(b) If the packaging is too small to accommodate the standard size label, a standard size or larger label shall be attached or placed in close proximity to the packaging, making it clear which product the label refers to.		
(c) If the label cannot be placed on the side of the packaging that the end-user is intended to see first in a point of sale as described in point (a), or if the packaging is too small to accommodate the minimum size label as described in point (b), a coloured arrow designating the energy efficiency class shall be placed on the side of the packaging that the end-user is intended to see first in a point of sale. The arrow shall follow the relevant design specifications as described in Annex IX, and have a minimum size of 33,4mm width and 21mm height.	Delete para. (4) (c)	<p>The dimensions of the arrow are too large for small products. So, the dimensions should be halved.</p> <p>It is a further burden that is useless; so even in case of non-acceptance of above proposal (para. (a)), this specific requirement should not be introduced anyhow.</p> <p>Note: the proposed dimension are not feasible because the arrow, which is an additional pictogram, is really too big.</p>
(d) If a model specimen is presented in a point of sale, a standard size label shall be attached or placed in close proximity to the specimen, making it clear which product the label refers to.		
(e) Nothing else placed or printed on, or attached to, the individual packaging or the model shall obscure the label, confuse its meaning or reduce its visibility, except if the model has been awarded an 'EU ecolabel' under Regulation (EC) No 66/2010. In this case a copy of the EU ecolabel may be added, but the energy label shall continue to be visible.		
(f) The label, and where applicable the coloured arrow under point (c), can be printed directly on the packaging, or can be a sticker firmly attached to the packaging, or can be a separate item inside the packaging provided it is clearly visible from the outside through e.g. a transparent part of		

the packaging, or any other solution, as long as it is clearly visible without opening the packaging and does not obstruct other information required to be present on the packaging according to Annex V.																																						
ANNEX IV - 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 η_{TM} , which is defined as the total initial luminous flux (in <i>lm</i>) divided by mains power input (in <i>W</i>) – (<i>lm/W</i>) – as set out in Table 1.																																						
<table><tr><th colspan="2">Table 1</th></tr><tr><th>Energy efficiency class</th><th>Total mains efficacy η_{TM} (<i>lm / W</i>)</th></tr><tr><td>A</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><tr><td>F</td><td>$85 \leq \eta_{TM} < 110$</td></tr><tr><td>G</td><td>$85 \leq \eta_{TM}$</td></tr></table> The total mains efficacy η_{TM} is calculated by dividing the declared useful luminous flux Φ_{use} (expressed in <i>lm</i>) by the declared on-mode power consumption P_{on} (expressed in <i>W</i>) and multiplying by the applicable factor F_{TM} of Table 2, i.e.: $\eta_{TM} = (\Phi_{use} / P_{on}) * F_{TM} \text{ (lm/W)}.$	Table 1		Energy efficiency class	Total mains efficacy η_{TM} (<i>lm / W</i>)	A	$210 \leq \eta_{TM}$	B	$185 \leq \eta_{TM} < 210$	C	$160 \leq \eta_{TM} < 185$	D	$135 \leq \eta_{TM} < 160$	E	$110 \leq \eta_{TM} < 135$	F	$85 \leq \eta_{TM} < 110$	G	$85 \leq \eta_{TM}$	<div>Change: G : $\eta_{TM} < 85$</div>	<table><tr><th colspan="2">Table 1</th></tr><tr><th>Energy efficiency class</th><th>Total mains efficacy η_{TM} (<i>lm / W</i>)</th></tr><tr><td>A</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><tr><td>F</td><td>$85 \leq \eta_{TM} < 110$</td></tr><tr><td>G</td><td>$\eta_{TM} \leq 85$</td></tr></table> The limit for class G is wrong.	Table 1		Energy efficiency class	Total mains efficacy η_{TM} (<i>lm / W</i>)	A	$210 \leq \eta_{TM}$	B	$185 \leq \eta_{TM} < 210$	C	$160 \leq \eta_{TM} < 185$	D	$135 \leq \eta_{TM} < 160$	E	$110 \leq \eta_{TM} < 135$	F	$85 \leq \eta_{TM} < 110$	G	$\eta_{TM} \leq 85$
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	A > 170	- The classes are too different from the current label.																																				


	<div>B > 140 C > 120</div>	<div><div>- Example: LED filament lamps A++>> E Trust in label is lowered, resulting in that consumers might accuse the suppliers of cheating with current products. - Is there sufficient market study done on the end-user perception/ behaviour (in case of rescaling labels) proving the positive effects of such rescaling? If not, market end-user acceptance study should be performed. If yes, this study should be shared.</div><div><div>LEDi NDLS Label compromise with "Average" expectation 2025</div></div></div>										
<div><div>Table 2 Factors F_{TM} to be used for determination of $\eta_{TM} = (\Phi_{use} / P_{on}) * F_{TM} (lm/W)$</div><table><tr><th>Light source type</th><th>Factor F_{TM}</th></tr><tr><td>Non-directional mains light source (NDLS, MLS)</td><td>1.000</td></tr><tr><td>Non-directional non-mains light source (NDLS, NMLS)</td><td>0.926</td></tr><tr><td>Directional mains light source (DLS, MLS)</td><td>1.176</td></tr><tr><td>Directional non-mains light source (DLS, NMLS)</td><td>1.089</td></tr></table></div>	Light source type	Factor F_{TM}	Non-directional mains light source (NDLS, MLS)	1.000	Non-directional non-mains light source (NDLS, NMLS)	0.926	Directional mains light source (DLS, MLS)	1.176	Directional non-mains light source (DLS, NMLS)	1.089		<div><div>Non-directional mains light source (NDLS, MLS)</div><div>1.000</div></div> <div>In the column Factor F_{TM}, the decimal separator shall be a comma and not a point.</div>
Light source type	Factor F_{TM}											
Non-directional mains light source (NDLS, MLS)	1.000											
Non-directional non-mains light source (NDLS, NMLS)	0.926											
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Directional non-mains light source (DLS, NMLS)	1.089											
ANNEX V - Product information												

		<ul style="list-style-type: none"> - Claimed equivalent incandescent lamp power. - Either ban the possibility for equivalent incandescent lamp power claims or add the allowed values (ref. Table 6 in Regulation 244/2009). - Is equivalent incandescent lamp power claiming still allowed (there is no reference to a table, while 244/2009 has been repealed)? - Either it is forbidden to add any equivalent power on the packaging or anywhere else or keep the existing system from 244/2009 (or a new one). Otherwise everyone can do whatever they like. - Additionally for <u>directional lamps</u> this should also be valid (see Regulation 1194/2012).
1. PRODUCT INFORMATION SHEET <p>The product information sheet to be provided by the supplier pursuant to Article 3(d) shall contain all the information entered in the public part of the product database established by Regulation (EU) 2017/1369, as specified in point 4.1 of this Annex.</p>		
2. TECHNICAL DOCUMENTATION <p>The technical documentation to be provided by the supplier pursuant to Article 3(f) shall include at least the information entered in the compliance part of the product database established by Regulation (EU) 2017/1369, as specified in point 4.2 of this Annex.</p> <p>The information in the technical documentation shall be sufficient to enable market surveillance authorities to assess the accuracy of the energy label as specified in Annex III, of the product information sheet as specified in point 1 of this Annex and of the information entered in the product database as specified in point 4 of this Annex.</p>		

<p>3. INFORMATION TO BE DISPLAYED ON THE PACKAGING</p> <p>3.1. Light source as an independent product</p> <p>If a light source is placed on the market in a packaging containing information to be visibly displayed to users prior to their purchase, the following information shall be clearly and prominently displayed on the packaging in addition to the energy label of Annex III:</p>	<p>3. INFORMATION TO BE DISPLAYED ON THE PACKAGING</p> <p>3.1. Light source as an independent product</p> <p>If a light source is placed on the market in a packaging containing information to be visibly displayed to end-users prior to their purchase, the following information shall be clearly and prominently displayed on the packaging in addition to the energy label of Annex III:</p> <p>Light sources, except LFL, CFLni, other FL, and HID, in scope of this Regulation are in scope of Commission Delegated Regulation (EU) .../... supplementing Regulation (EU) 2017/1369 with regard to energy labelling for light sources. As concerns the information to be visibly displayed on the single packaging wrapping the light sources, manufacturers and importers shall apply the requirements set out in Annex V of Commission Delegated Regulation (EU) .../... .</p>	<ul style="list-style-type: none"> - There is no exclusion for those products which are not in the scope of eco-design but they could be in the scope of the energy labelling requirements. - The information should be limited to energy labelling parameters only. - The whole text of 3.1 should be applied for components that are marketed to end-users, and not for components sold through B2B (as in this situation such information would be useless). For example, only “independent control gears” could be sold to end-users, and not built-in ones (as they should be used by “skilled persons”). - For the traditional products, the packaging information requirement shall be kept on the same level as it is today.
<p>(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°);</p>		
<p>(b) the colour temperature T_c in K, rounded to the nearest 100 K, also expressed graphically or in</p>		

	words, or the range of colour temperatures that can be set;		
(c)	the beam angle in degrees (for directional lamps), 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 $M_{70}F_{50}$ lifetime for LED and OLED light sources, in hours (not longer than the declared lifetime).	e) the $M_{70}F_{50}$ lifetime L_x Median useful life for LED and OLED light sources, in hours (not longer than the declared lifetime).	The parameter as required under item e) life time, is not available for LED module as the standard EN 62717 require L_x as median useful life.
(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 but shall anyway be declared in the technical documentation and on websites;		
(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 but shall anyway be declared in the technical documentation and on websites;		
(i)	the colour rendering index CRI in R_a , rounded to the nearest integer, or the range of CRI-values that can be set;		
(j)	if $CRI < 80$ R_a , 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 shall be provided on the manufacturer's website;		
(m) if it contains mercury, a warning about it including the mercury content in mg rounded to the first decimal place;		
(n) if it is in scope of Directive 2012/19/EU or contains mercury, a warning that it should not be disposed of in the general waste stream;		
(o) in addition to the QR-code included in the energy label of Annex III, the internet address for the website(s), where full information on the light source as set out in point 2.1 of this Annex can be found.		
Items (a) to (d) shall be displayed on the packaging in the direction meant to face prospective buyers; for other items this is also recommended, if space permits.		
For light sources that can be set to emit light with different characteristics, the information shall be reported for the reference control settings, or a range of obtainable values shall be indicated.		
The information does not need to use the exact wording on the list above. In addition, it may be displayed in the form of graphs, drawings or symbols.		
If the packaging is too small to accommodate all required information, following Annex III.4(b), a standard size or larger label shall be attached or placed in close proximity to the packaging, and 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.		

<p>3.2. Light source in a containing product</p> <p>If a light source is placed on the market as a part in a containing product the following information requirements shall apply:</p>	<p>3.2 Light source in a containing product</p> <p>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 to end-users prior to their purchase, the following information requirements shall apply:</p>	
<p>(a) the technical documentation for the containing product shall clearly identify the contained light source(s), including the energy efficiency class according to Annex III;</p>		
<p>(b) the following text shall be displayed, clearly legible, on the outside of the containing product's packaging, 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><i>'This product contains a light source of energy efficiency class <X> according to <replace by final indication of this Regulation>'</i></p> <p>where <X> shall be replaced by the energy efficiency class of the contained light source according to Annex IV.</p> <p>In case the product contains more than one light source, the sentence can be in plural, or repeated per light source, as suitable.</p>	<p>(b) the following text or following pictogram shall be displayed, clearly legible, (...)</p> <p>Example pictogram:</p> 	<ul style="list-style-type: none"> - Prescribed is very specific wording that must be placed on the outside of the containing products packaging (not a symbol). This will be a big burden for luminaire manufacturers to manage, especially as it is assumed that local language translations would also be expected. At least the use of an alternative symbol should requested for this situation. - The need for the physical marking of product packaging, as opposed to information for display at the point of sale, will lead to higher product costs and the use of less environmentally friendly packaging solutions. - The sentence outside the package would not always seen by the end user in a point of sale as luminaires are often displayed without their packaging. - Furthermore, the required sentence should be translated in 20 different languages (in some cases for more lamps). - If this text is required by the Regulation, it makes the product specific for one of the European countries only. Can we replace this by a pictogram? - Shall the information of the packaging of the light sources been included or only the mentioned text?

<p>4. INFORMATION TO BE ENTERED IN THE PRODUCT DATABASE ESTABLISHED BY REGULATION (EU) 2017/1369</p> <p>4.1. Public part of the product database</p> <p>If a light source is placed on the market, including when it is a part in a containing product, the following information shall be entered in the public part of the product database:</p>		<ul style="list-style-type: none"> - The database should be limited to light sources. - The information should be limited to energy labelling parameters only.
(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;		
(d) the energy efficiency class according to Annex III;		
(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 anti-glare shield in the sense of this Regulation;		


(l) the date (day, month, year) of last update of the information;		
(m) the date (month, year) of first production of the light source for the EU market;		
(n) if the light source is still in production for sale on the EU-market (yes/no);		
(o) if the light source is no longer in production for sale on the EU-market, the date (month, year) when production for the EU market stopped;		
(p) the information specified in point 1.1 of this Annex;		This link does not exist.
(q) the outer dimensions in mm, without separate control gear, lighting control parts and non-lighting parts, if any;		
(r) the mass in grams of the light source, without packaging, and without separate control gear, lighting control parts and non-lighting parts, if any and if they can be physically separated from the light source;		
(s) the spectral power distribution in the range 250 nm to 800 nm, at full-load;	(s) the spectral power distribution in the range 250 380 nm to 800 780 nm, at full-load;	Show only the visible range: 380 nm to 780 nm.
(t) the displacement factor, $\cos(\phi_1)$, (for LED and OLED mains light sources);		
(u) the chromaticity coordinates (x,y);		
(v) the colour consistency in McAdam ellipses (for LED and OLED mains light sources);		
(w) the peak luminous intensity for directional light sources (in cd);		
(x) 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;	Delete (x) and (y)	Eco-design does not include anymore (x) and (y) parameters.

(y) 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;	Delete (x) and (y)	Eco-design does not include anymore (x) and (y) parameters.
(z) the reference control settings, and instructions how they can be implemented, where applicable;		
(aa) instructions how to remove lighting control parts and/or non-lighting parts, if any, or how to switch them off or minimize their power consumption during light source testing;		
(bb) if it is dimmable, a list of dimmers it is compatible with, and the light source – dimmer compatibility standard(s) it is compliant with, if any;		
(cc) if it contains mercury, instructions on how to clean up the lamp debris in case of accidental breakage;		
(dd) recommendations on how to dispose of it at the end of its life for recycling in line with Directive 2012/19/EU.		
For light sources that can be tuned to emit light at full-load with different characteristics, the values of parameters (including those of point 1.1 of this Annex) that vary with these characteristics shall at least be reported at the reference control settings.		
The information does not need to use the exact wording on the list above. In addition, it may also be displayed in the form of graphs, drawings or symbols.		


<p>4.2. Compliance part of the product database</p> <p>If a light source is placed on the market, including when it is a part in a containing product, the following information shall be entered in the compliance part of the product database:</p>	<p><i>We propose to adapt the text to include the following principles: the information shall be limited to energy labelling parameters only, and the database shall not be applicable to containing products.</i></p>	<ul style="list-style-type: none"> - At this moment, the final version of the database is not known. In the “compliance part” the supplier shall provide the necessary technical info to prove the compliance of its products to the labelling requirements. The database should be: <ul style="list-style-type: none"> • user friendly • without the need to use “particular”/expensive IT tools • without the need to high user profile - In other words, it should be very simple, particularly for micro-companies (with only some people working on compliance with all the requirements, not only labelling). - It is also necessary to make clear that luminaire manufacturers have done a lot of work regarding labelling in the last years, starting from the compliance to the requirements of Regulation 874/2012, then to comply with the requirements of its amendment 518/2014 (with the necessary availability of the electronic labels) and the changes due to the Regulation 2015/1428 (after which the compatibility of luminaires with at least A+ lamps shall be shown with a label). - Now a further change is coming, and luminaire manufacturers shall provide further efforts, not only to comply with the requirements, but also to “justify” to the market these fast changes. - In Article 15 (d) of Directive 2009/125/EU (Ecodesign Directive) it is stated that “there shall be no significant negative impact on industry’s competitiveness”; the same approach should be ensured for the implementation of the Energy Labelling Regulation (particularly for very small Companies). <ul style="list-style-type: none"> • In IEC it is now available the Technical Report 61547-1 (Published on October 2017) • This TR provides details about the test equipment and the test method
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		<ul style="list-style-type: none"> • Regarding the acceptance criteria, there is only a reference (i.e. values below 1 are considered non-visible, so the flicker amount is acceptable). - Please note that in the TR forward, it is specified that even if the main task of IEC Technical Committees is to prepare International Standards, in the view of a future International Standard, a TR has been published in order to collect data; that means that at the present not enough experience has been acquired.
(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;		<p>This should not be changed when a new and better performance may be achieved by the product; this information would be specified in the Product Technical File.</p> <p>As a consequence, every single light engine (PCB with LEDs) needs a model identifier, and the supplier's name and address has to be published.</p>
(c) the model identifier of all equivalent models already placed on the market;		
(d) the measured technical parameters of the model, including the declared values for:		The test method considers, at the present, situations in which the observer and the lighted object are in static conditions (no movement); it covers only a part of the task. Furthermore, the requirements for different applications are not specified, so at the present requirements for the different conditions of use are unknown. Nothing is mentioned about the visual comfort or for no visual effect of the light.
(1) useful luminous flux (Φ_{use}) in <i>lm</i> ;		
(a) colour rendering index (CRI) in <i>Ra</i> ;		Remark: paragraph numbering inconsistent.
(b) on-mode power (P_{on}) in <i>W</i> ;		
(c) beam angle in degrees, for directional light sources (DLS);		
(d) colour temperature (T_c) in <i>K</i> , for FL and HID light sources;		
(e) standby power (P_{sb}) in <i>W</i> , including when it is zero;		

(f) networked standby power (P_{net}) in W, for connected light sources (CLS);		
(g) displacement factor (DF, $\cos(\phi_1)$), for LED and OLED mains light sources;		
(h) colour consistency in MacAdam ellipse steps, for LED and OLED light sources;		
(i) flicker metric P_{stLM} , for LED and OLED light sources;	Delete (i) and reference to flicker (to be considered at a later stage of eco-design regulation)	<ul style="list-style-type: none"> - It is necessary to gain experience about the use of the just published test method for flicker (IEC TR 61547-1 – October 2017); the same also for the coming IEC Technical Report. - “Objective test method for stroboscopic effects of lighting equipment” (IEC TR 63158 – forecast publication: 2018 – 08).
(j) other measurable parameters from the public part of the product database.		
(e) the calculations performed with the measured parameters, including the determination of the energy efficiency class according to Annex IV;		
(f) references to the harmonised standards applied or other measurements standards used;		
(g) testing conditions if not described sufficiently in point (d);	Delete (g)	As point (d) is a list of values and does not contain testing conditions, this requirement does not make sense. Testing conditions should be to recognised standards and therefore this should state the standards tested too. Entering real test conditions would increase the workload during entry and allow non-standard test conditions to be specified.
(h) the reference control settings, and instructions how they can be implemented, where applicable;		
(i) instructions how to remove lighting control parts and/or non-lighting parts, if any, or how to switch them off or minimize their power consumption during light source testing;		
(j) specific precautions that shall be taken when the model is assembled, installed, maintained or tested.		

<p>5. INFORMATION FOR PRODUCTS SPECIFIED IN ANNEX I POINT 3</p> <p>For the light sources specified in Annex I point 3, the intended purpose 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 2017/1369 shall list the technical parameters that make the product design specific to qualify for the exemption.</p>		
<p>ANNEX VI - Information to be provided in the case of distance selling, except distance selling on the Internet</p> <p>Any paper based distance selling must show the energy class and the range of available efficiency classes as following the example below, with the colour of the arrow matching the letter of the energy class:</p>  <p>It must be possible for the customer to access the full label and the product information sheet through a free access website, or to request a printed copy.</p> <p>Telemarketing based distance selling must specifically inform the customer of the energy class of the product and the range of energy classes available on the label,</p>		

and that they can access the full label and the product information sheet through a free access website, or by requesting a printed copy.		
ANNEX VII - Information to be provided in the case of distance selling through the Internet 1. For the purpose of points 2 to 5 of this Annex the following definitions shall apply:	ANNEX VII - Information to be provided in the case of distance selling through the Internet 1. For the purpose of points 2 to 5 4 of this Annex the following definitions shall apply:	There is no Point 5 in Annex VII.
(a) 'display mechanism' means any screen, including tactile screen and visual technology used for displaying internet content to end-users;		
(b) 'nested display' means visual interface where an image or data set is accessed by mouse click, mouse roll-over or tactile screen expansion of another image or data set;		
(c) 'tactile screen' means a screen responding to touch, such as that of a tablet computer, slate computer or a smartphone;		
(d) 'alternative text' means text provided as an alternative to a graphic allowing information to be presented in non-graphical form where display devices cannot render the graphic or as an aid to accessibility such as input to voice synthesis applications.		
2. The appropriate label made available by suppliers in accordance with Article 3(1)(c) 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 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>3. The image used for accessing the label in the case of nested display shall:</p> <ul style="list-style-type: none"> (a) be an arrow in the colour corresponding to the energy efficiency class of the product on the label; (b) indicate on the arrow energy efficiency class of the product in white in a font size equivalent to that of the price; and (c) have the following format (specular image with the arrow pointing to the right is also possible): <div style="text-align: center;">  </div>		
<p>4. In the case of nested display, the sequence of display of the label shall be as follows:</p>		
<p>(a) the image referred to in point 3 of this Annex shall be shown on the display mechanism in proximity to the price of the product;</p>		
<p>(b) the image shall link to the label;</p>		
<p>(c) the label shall be displayed after a mouse click, mouse roll-over or tactile screen expansion on the image;</p>		
<p>(d) the label shall be displayed by pop up, new tab, new page or inset screen display;</p>		
<p>(e) for magnification of the label on tactile screens, the device conventions for tactile magnification shall apply;</p>		
<p>(f) the label shall cease to be displayed by means of a close option or other standard closing mechanism;</p>		
<p>(g) the alternative text for the graphic, to be displayed on failure to display the label, shall be the energy efficiency class of the product in a font size equivalent to that of the price.</p>		
<p>The appropriate product information sheet made available by suppliers in accordance with Article 3(1)(d) shall be shown on the display mechanism in proximity to the price of the product. The size shall be such that the product</p>		

information sheet is clearly visible and legible. The product information sheet may be displayed using a nested display, 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.		
ANNEX VIII - Verification procedure for market surveillance purposes The verification tolerances set out in this Annex relate only to the verification of the declared parameters by Member State authorities and 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 in the product information sheet shall not be more favourable for the supplier than the declared values reported in the technical documentation.		
When verifying the compliance of a product model with the requirements laid down in this Delegated Regulation, for the requirements referred to in this Annex, the authorities of the Member States shall apply the following procedure:		
(1) The Member State authorities shall verify one single unit of the model.		
(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,		
(3) If the results referred to in point 2(a) or (b) are not achieved, the model and all equivalent models shall be considered not to comply with this Regulation.		
(4) If the results referred to in point 2(a) and (b) are achieved, the Member States authorities shall test 10 units of the model. If the acquisition costs for the 10 units exceed 500 euros, Member State authorities will have the option to reduce the sample size to 3 units.		"If the acquisition costs for the 10 units exceed 500 euros:" These criteria are not fair and create unjustified different treatment of suppliers only because of the final price for similar products. The price should not be a justification for changing the testing criteria.
(5) The model and all equivalent models shall be considered to comply with the applicable requirements if the determined values of the applicable parameters comply with the respective verification tolerances as given in Table 4. The determined values are assessed as follows: (a) for each unit measure the applicable parameters from Table 4; (b) calculate the determined value of each applicable parameter as the arithmetical mean of the measured values of the 10 (or 3) units for that parameter.		
(6) If the results referred to in point 5 are not achieved, the model and all equivalent models shall be considered not to comply with this Regulation.		
(7) The Member State authorities shall provide all relevant information to the authorities of the other Member States and to the Commission without delay after a decision being taken on the non-compliance of the model according to points 3 and 6.		
The Member State authorities shall use reliable, accurate and reproducible measurement procedures, which take into account the generally recognised state-of-the-art measurement methods, including methods set out in documents whose reference numbers have been published for that purpose in the <i>Official Journal of the European Union</i> .		

The Member State authorities shall only apply the verification tolerances that are set out in Table 4 and shall only use the procedure described in points 1 to 7 for the requirements referred to in this Annex. No other tolerances, such as those set out in harmonised standards or in any other measurement method, shall be applied.		
In case light sources are placed on the market as parts inside a containing product or supplied with the product, the supplier of this containing product shall facilitate market surveillance authorities verifying compliance of the light sources with this Regulation by providing, on request, detailed instructions to the market surveillance authorities how to dismount light source(s) for inspection without permanent mechanical damage.	In case light sources are placed on the market as parts inside a containing product or supplied with the product, the supplier of this containing product shall facilitate market surveillance authorities verifying compliance of the light sources with this Regulation by providing, on request, detailed instructions to the market surveillance authorities how to dismount light source(s) for inspection without permanent mechanical damage of the light source .	It is understood that it is necessary to avoid “permanent mechanical damage” on the light source to be tested; it would be better to clarify this.
If the containing product contains multiple identical light sources, possibly each individually emitting less than 60 lm but in total emitting more than 60 lm, verification testing of the market surveillance authorities may be limited to a representative subset of the individual light sources and the results can be extrapolated.		
Table 4: Verification tolerances		<ul style="list-style-type: none"> - The list of parameters to be considered is long; is this the intention of the proposal to simplify eco-design requirements? - Flicker should not be considered, and lifetime should be left to company declarations. - Currently, there is no unique method to declare the light source lifetime, so it would be better to leave this declaration to manufacturers or importer until a consolidated method is available. - Tolerances are narrow in the Regulations for flux (5%), intensity (5%), angle (5%). - Tolerances on performance standards are for flux (10%), intensity (25%), angle (25%).

		<ul style="list-style-type: none"> - Narrow tolerances mean increasing costs without a very big benefit for the costumer (especially on angle and intensity). - Tolerance on CRI and intensity should be asymmetric. - Declared values shall refer to design target values of manufactures (it is not beneficial for costumers if product values deviate too much from declared values – even in “allowed” direction (e.g. higher useful luminous flux) which can lead to undesired inhomogeneous lighting scenes). - Measurement uncertainties of the labs of the market surveillance authorities are not defined. - The reference standards are missing in the Regulation (how it will be measured – operating conditions (cooling), without list of references to the harmonised standards it is impossible to assess the limits correctly). - Only use standardised parameters and state-of-the-art measurement procedures. - Error! Reference source not found. 2 gives the location of relevant parameters in the Regulation and the applicability of the standards given in Error! Reference source not found.2. Only the standard for incandescent lamps does not contain a description of all relevant measurement methods, as indicated in the table by “No*”. For these parameters, the standard for halogen lamps should be used. <p>Proposal: Add lists for the products in the scope of this (part of the) Regulation and their related performance standards.</p> <p><i>Table 1: Lamps in the scope</i></p>
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					<table> <tr> <th>Lamps in the scope of article 1</th><th>abbreviation</th><th>standard</th><th>date</th><th>& amendments to</th><th>updating in Cenelec?</th></tr> <tr> <td>Incandescent lamps</td><td>GLS</td><td>EN 60064</td><td>1995</td><td>2009</td><td>no</td></tr> <tr> <td>Halogen lamps</td><td>HAL</td><td>EN 60357</td><td>2003</td><td>2016</td><td>no</td></tr> <tr> <td>Fluorescent lamps with integrated ballast</td><td>CFLi</td><td>EN 60969</td><td>1993</td><td>2000</td><td>yes</td></tr> <tr> <td>Fluorescent lamps without integrated ballast</td><td>CFLni</td><td>EN 60901</td><td>1996</td><td>2012</td><td>yes</td></tr> <tr> <td>Fluorescent lamps without integrated ballast</td><td>TL</td><td>EN 60081</td><td>1998</td><td>2013</td><td>yes</td></tr> <tr> <td>High Pressure Sodium lamps</td><td>HPS</td><td>EN 60662</td><td>2012</td><td></td><td>yes</td></tr> <tr> <td>Metal Halide lamps</td><td>MH</td><td>EN 61167</td><td>2016</td><td></td><td>yes</td></tr> </table> <p>Add to the table above: LED Lamps > 50V LEDi EN 62612:2013 + Amendment 1: 2017 LED Modules ?? EN 62717:2017</p> <p><i>Table 2: Location of relevant parameters in the regulation and the applicability of the standards.</i></p>	Lamps in the scope of article 1	abbreviation	standard	date	& amendments to	updating in Cenelec?	Incandescent lamps	GLS	EN 60064	1995	2009	no	Halogen lamps	HAL	EN 60357	2003	2016	no	Fluorescent lamps with integrated ballast	CFLi	EN 60969	1993	2000	yes	Fluorescent lamps without integrated ballast	CFLni	EN 60901	1996	2012	yes	Fluorescent lamps without integrated ballast	TL	EN 60081	1998	2013	yes	High Pressure Sodium lamps	HPS	EN 60662	2012		yes	Metal Halide lamps	MH	EN 61167	2016		yes
Lamps in the scope of article 1	abbreviation	standard	date	& amendments to	updating in Cenelec?																																																
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Metal Halide lamps	MH	EN 61167	2016		yes																																																
Parameter	Sample size	Verification tolerances	<p><i>Instead of ‘determined value,’ use ‘determined arithmetical mean of the measured values’ throughout the table.</i></p>		<p>Tolerances are smaller than a quality measurement lab can deliver (5%, 2.5% etc.).</p>																																																
Full-load on-mode power P_{on} [W]:																																																					
$P_{on} \leq 5W$	3	The determined value shall not exceed the declared value by more than 10 %.	<p>Keep the 10 % for all powers > 5 W and for all sample sizes.</p> <p>Use an absolute 0.5 W tolerance for $P_{on} \leq 5 W$.</p>		<p>Use 0.5 W tolerance below $P_{on} = 5 W$</p> <ul style="list-style-type: none"> - Critical to low power lamps, e.g. ,2W - Take the 0.2 W tolerances. - We can put the requirement for below 5 W, use 0.5 W for all as the tolerances. 																																																
	10	The determined value shall not exceed the declared value by more than 10 %.																																																			
$5W < P_{on} < 100W$	3	The determined value shall not exceed the declared value by more than 10 %.	<p><i>Instead of ‘determined value,’ use ‘determined arithmetical mean of the measured values.’</i></p>																																																		
	10	The determined value shall not exceed the declared value by more than 5 %.																																																			
$P_{on} \geq 100W$	3	The determined value shall not exceed the declared value by more than 5 %.	<p><i>Instead of ‘determined value,’ use ‘determined arithmetical mean of the measured values.’</i></p> <p>Keep the same limit and use 5%.</p>																																																		
	10	The determined value shall not exceed the																																																			

		declared value by more than 2,5 %.		
Power factor [0-1]	3	The determined value shall not be less than the declared value minus 10 %.	Use displacement factor ($DF \cos(\varphi_1)$)	In the Regulation the displacement factor is used.
	10	The determined value shall not be less than the declared value minus 5 %.		
Useful luminous flux Φ_{use} [lm]	3	The determined value shall not be less than the declared value minus 10 %.	Keep the 10 % for all sample sizes.	<p>5% is too small as measurement equipment has typical tolerances of 3 % for luminous flux. Use 10% for 10 lamps.</p> <p>Luminous flux measurements have an intrinsic uncertainty of 10 % coming from testing equipment, test procedure and lamp-to-lamp variations. Decreasing sample number from 20 (as required by 245/2009) to 10 could lead to an additional uncertainty of test values, so tolerances should not be further decreased.</p>
	10	The determined value shall not be less than the declared value minus 5 %.		
No-load power P_{no}, 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.		
CRI [0-100]	3	The determined value shall not deviate from the declared value by more than 3.	<u>Both sample sizes shall use the following sentence:</u> The determined arithmetical mean of the measured values shall not deviate from be lower than the declared value by more than 3.'	<p>Since variation is relatively low, LightingEurope suggests keeping the deviation value given by the EN 60081 Section 1.5.6 (c) standard for individual CRI value, which is 3, regardless of the sample size.</p> <p>Tolerance on CRI and Intensity should be asymmetric. Also, all "plus" tolerances must be allowed.</p>
	10	The determined value shall not deviate from the declared value by more than 2.		



Flicker [<i>P_{st} LM</i>]	3	The determined value shall not exceed the declared value by more than 10 %.	<i>Delete this line and all requirements on flickering</i>	Following the previous points, requirements for flicker should be removed.
	10	The determined value shall not exceed the declared value by more than 5 %.		
Colour Consistency [<i>MacAdam ellips steps</i>]	3	The determined number of steps shall not exceed the declared number of steps.		
	10	The determined number of steps shall not exceed the declared number of steps.		
Control gear efficiency [%]				
$P_{out} \leq 5W$	10	The determined value shall not be less than 90% of the declared value.	<i>Change from P_{out} to P_{cg} (as referred to in Table 3)</i>	P_{out} is not defined and not used in this Regulation.
$5W < P_{out} < 100W$	10	The determined value shall not be less than 95% of the declared value.		
$P_{out} \geq 100W$	10	The determined value shall not be less than 97,5% of the declared value.		
Luminous intensity [cd]	3	The determined value shall not deviate from the declared value by more than 10 %.	<i>Change sentence:</i> "The determined value shall not deviate from be less than the declared value by more than 5 % minus 25 %. "	Increase tolerances for angle and intensity to 25 %.
	10	The determined value shall not deviate from the declared value by more than 5 %.		

Beam angle (degrees)	3	The determined value shall not deviate from the declared value by more than 10 %.	Change sentence: "The determined value shall not deviate from the declared value by more than 25 %."	<ul style="list-style-type: none">- The tolerances are too small. There is no difference for the used value to have a different beam angle.- We suggest to follow Energy Star requirement as below, or to use 25 % as the limit. 4.3 Beam angle tolerance of PAR and R lamps Beam angles used in designations are nominal values. However, beam angles of PAR and MR lamps, made from pressed glass lenses and reflectors, vary considerably over time from mold wear. Similarly, blown glass R, BR, ER, and BRL lamps have a wide variation due to changes in frost density and light center length. The following are normally expected tolerances from the nominal value. <table><tr><th colspan="4">Beam Angle Tolerance</th></tr><tr><th colspan="2">PAR and MR Lamps</th><th colspan="2">R Lamps</th></tr><tr><th>Beam Angle</th><th>Tolerance</th><th>Beam Angle</th><th>Tolerance</th></tr><tr><td>1° to 12°</td><td>+/- 3°</td><td>All</td><td>+/- 12°</td></tr><tr><td>15°</td><td>+/- 4°</td><td></td><td></td></tr><tr><td>20° to 40°</td><td>+/- 6°</td><td></td><td></td></tr><tr><td>45° & higher</td><td>+/- 10°</td><td></td><td></td></tr></table>	Beam Angle Tolerance				PAR and MR Lamps		R Lamps		Beam Angle	Tolerance	Beam Angle	Tolerance	1° to 12°	+/- 3°	All	+/- 12°	15°	+/- 4°			20° to 40°	+/- 6°			45° & higher	+/- 10°		
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Beam Angle	Tolerance	Beam Angle	Tolerance																													
1° to 12°	+/- 3°	All	+/- 12°																													
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20° to 40°	+/- 6°																															
45° & higher	+/- 10°																															
10	The determined value shall not deviate from the declared value by more than 5 %.																															

Lumen Maintenance Factor (for FL and HID)	3	The determined value shall not be less than 90% of the declared value.	Keep 90 %, regardless of sample size.	Keep 90 %, regardless of sample size, as reducing the number of samples from 20 to 10 will not result in lower deviation. In addition, these are matured products, there will not be any investment done in any further manufacturing process improvement.
	10	The determined value shall not be less than 95% of the declared value.		

Survival Factor (for FL and HID)	3	The determined value shall not be less than 0.65 (1 of 3 allowed to fail)	Maintain tolerance levels from Regulation 245/2009	<ul style="list-style-type: none">- The goal of this Regulation is to simplify the verification procedure. It does not seem to be a viable solution to test matured product types for full life time (i.e.: 20,000 hrs). The definition of tolerance in Table 6 is also unclear. What is 0.65?- In reality, the number of surviving lamps during life time is decreasing as the survival factor is changing. We do not understand the 0.65 value.
	10	The determined value shall not be less than 0.90 (1 of 10 allowed to fail).		

M ₇₀ F ₅₀ lifetime (for LED and OLED)	3	The determined value shall not be less than the declared value minus 20%	Change M₇₀F₅₀ to L₇₀	
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	10	The determined value shall not be less than the declared value minus 10%		
ANNEX IX - Displaying the energy class and the range of efficiency classes in visual advertisements and in promotional material 1. For the purposes of ensuring conformity with the requirements laid down in Article 3(1)(g) and Article 4(1)(c), the energy class and the range of efficiency classes available on the label shall be shown on visual advertisements as follows, with the colour of the arrow matching the letter of the energy class:				Reference to Article 3(1)(g) seems outdated.
 <p>The diagram shows a green arrow pointing left with the letter 'B' inside. To the right of the arrow is a vertical scale with 'A' at the top and 'G' at the bottom, with an upward-pointing arrow between them.</p>				- Reference to Article 3(1)(h) seems outdated - Remark: It seems 1. and 2. could be combined: “For the purposes of ensuring conformity with the requirements laid down Article 4(1)(c) and (d), the energy class and the range of efficiency classes available on the label shall be shown on visual advertisements and in promotional material as follows, with the colour of the arrow matching the letter of the energy class:”
2. For the purposes of ensuring conformity with the requirements laid down in Article 3(1)(h) and Article 4(1)(d) the energy class and the range of efficiency classes available on the label shall be shown in promotional material as follows, with the colour of the arrow matching the letter of the energy class:				 <p>The diagram shows a green arrow pointing left with the letter 'B' inside. To the right of the arrow is a vertical scale with 'A' at the top and 'G' at the bottom, with an upward-pointing arrow between them.</p>