

Working Document on a draft

COMMISSION DELEGATED REGULATION (EU) No .../..

of [...]

implementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of general lighting lamps

[The green highlight in the preamble and recitals indicates text taken from another recent energy labelling delegated regulation, modified only for the product group covered.]

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2010/30/EU of the European Parliament and of the Council on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products¹, and in particular Article 10 thereof,

Whereas:

- (1) Directive 2010/30/EU requires the Commission to adopt delegated acts as regards the labelling of energy-related products representing significant potential for energy savings and having a wide disparity in performance levels with equivalent functionality.
- (2) Provisions on the energy labelling of household lamps were established by Commission Directive 98/11/EC of 27 January 1998 implementing Council Directive 92/75/EEC with regard to energy labelling of household lamps².
- (3) The electricity used by general lighting lamps accounts for a significant share of total electricity demand in the Union. In addition to the energy efficiency improvements already achieved, the scope for further reducing the energy consumption of general lighting lamps is substantial.
- (4) Commission Directive 98/11/EC should be repealed and new provisions should be laid down by this Regulation in order to ensure that the energy label provides dynamic incentives for suppliers to further improve the energy efficiency of general lighting lamps and to accelerate the market transformation towards energy-efficient technologies. The scope of Directive 98/11/EC is limited to certain technologies within the category of household lamps. In order to use the label to improve the energy efficiency of other lamp technologies, including in professional lighting, this

¹ OJ L 153, 18.6.2010, p.1.

² OJ L 71, 10.3.1998, p. 1.

Regulation should cover also directional lamps, light emitting diodes, and lamps predominantly used in professional lighting, such as high-intensity discharge lamps.

- (5) The information provided on the label should be obtained through reliable, accurate and reproducible measurement procedures, which take into account the recognised state-of-the-art measurement methods including, where available, harmonised standards adopted by the European standardisation bodies, as listed in Annex I to Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services³.
- (6) This Regulation should specify a uniform design and content for the label for general lighting lamps.
- (7) In addition, this Regulation should specify requirements as to the technical documentation and the fiche for general lighting lamps.
- (8) Moreover, this Regulation should specify requirements as to the information to be provided for any form of distance selling, advertisements and technical promotional materials for general lighting lamps.
- (9) It is appropriate to provide for a review of the provisions of this Regulation taking into account technological progress.
- (10) In order to facilitate the transition from Directive 98/11/EC to this Regulation, provisions should be made that household lamps labelled in accordance with this Regulation should be considered as compliant with Directive 98/11/EC.
- (11) Directive 98/11/EC should therefore be repealed.

HAS ADOPTED THIS REGULATION:

Chapter 1
Subject matter and scope

This Regulation establishes requirements for the labelling of and the provision of supplementary product information on general lighting electric lamps, including when they are integrated into other products.

This Regulation does not apply to special purpose lamps.

Chapter 2
Definitions

In addition to the definitions laid down in Article 2 of Directive 2010/30/EU, the following definitions shall apply for the purposes of this Regulation:

³ OJ L 204, 21.7.1998, p. 37.

[Text in grey highlight shows definitions that are shared with the draft ecodesign regulation on directional lamps. Any changes should be checked for implementation in the other regulation too.]

1. "general lighting" means the full or partial illumination of an area, by replacing or complementing natural light with artificial light, in order to enhance visibility in that area;
2. "general lighting product" means a product intended for use in general lighting; it does not include special purpose products;
3. "accent lighting" means a form of general lighting where light is directed so as to emphasize an object or a part of an area;
4. 'special purpose lamp' means a lamp not intended for general lighting and exempted from minimum requirements for general lighting lamps in implementing measures of Directive 2009/125/EC;
5. "light source" means a surface or object emitting usually visible optical radiation produced by a transformation of energy;
6. "lamp" means a unit consisting of one or several light sources whose performance can be assessed independently. It may include additional components necessary for starting, power supply or stable operation of the unit or for the distribution, filtering or transformation of the optical radiation, in case those components cannot be removed without permanently damaging the unit;
7. "lamp cap" means that part of a lamp which provides connection to the electrical supply by means of a lamp holder or lamp connector and, in most cases, also serves to retain the lamp in the lamp holder;
8. "lamp holder" means a device which holds the lamp in position, usually by having the cap inserted in it, in which case it also provides the means of connecting the lamp to the electric supply;
9. "directional lamp" means a lamp having at least 80% light output within a solid angle of π sr (corresponding to a cone with angle of 120°);
10. "filament lamp" means a lamp in which light is produced by means of a threadlike conductor which is heated to incandescence by the passage of an electric current. The lamp may or may not contain gases influencing the process of incandescence;
11. "incandescent lamp" means a filament lamp in which the filament operates in an evacuated bulb or is surrounded by inert gas;
12. "tungsten halogen lamp" means a filament lamp in which the filament is made of tungsten and is surrounded by gas containing halogens or halogen compounds. Tungsten halogen lamps are supplied either with or without integrated power supply;
13. "discharge lamp" means a lamp in which the light is produced, directly or indirectly, by an electric discharge through a gas, a metal vapour or a mixture of several gases and vapours;

14. "fluorescent lamp" means a discharge lamp of the low pressure mercury type in which most of the light is emitted by one or several layers of phosphors excited by the ultraviolet radiation from the discharge. Fluorescent lamps are supplied either with or without integrated ballasts;
15. "fluorescent lamp without integrated ballast" means a single or double capped fluorescent lamp without integrated ballast;
16. "high intensity discharge lamp" means an electric discharge lamp in which the light producing arc is stabilized by wall temperature and the arc has a bulb wall loading in excess of 3 watts per square centimetre;
17. "light emitting diode (LED)" means a light source which consists of a solid state device embodying p-n junctions, emitting optical radiation when excited by an electric current;
18. "LED package" means an assembly of one more LED(s), possibly with optical element and thermal, mechanical and electrical interfaces;
19. "LED module" means an assembly having no cap and incorporating one or more LED packages on a printed circuit board, which may have electrical, optical, mechanical and thermal components, and control gear;
20. "LED lamp" means a lamp incorporating one or more LED modules, which may be equipped with a cap;
21. "lamp control gear" means one or more components between the electrical supply and one or more lamps which may serve to transform the supply voltage, limit the current of the lamp(s) to the required value, provide starting voltage and preheating current, prevent cold starting, correct power factor, reduce radio interference, and to provide any other functionality related to the operation of the lamp(s);
22. "external lamp control gear" means lamp control gear designed to be installed outside the enclosure of a lamp or luminaire, or to be removed from the enclosure without permanently damaging the lamp or the luminaire;
23. 'ballast' means lamp control gear inserted between the supply and one or more discharge lamps which by means of inductance, capacitance or a combination of inductance and capacitance, serves mainly to limit the current of the lamp(s) to the required value;
24. "halogen lamp control gear" means lamp control gear that transforms mains voltage to extra low voltage for halogen lamps;
25. "compact fluorescent lamp" means a fluorescent lamp that includes all the components necessary for starting and stable operation of the lamp;
26. "luminaire" means an apparatus which distributes, filters or transforms the light transmitted from one or more lamps and which includes all the parts necessary for supporting, fixing and protecting the lamps, and where necessary, circuit auxiliaries together with the means for connecting them to the supply.

27. "point of sale" means a location where the product is displayed or offered for sale, hire or hire-purchase;
28. "end user" means a consumer buying or expected to buy a general lighting lamp;
29. "final owner" means the person or entity owning a product during the use phase of its life cycle, or any person or entity acting on behalf of such a person or entity.

Chapter 3 *Responsibilities of suppliers*

Suppliers of general lighting lamps placed on the market as individual products shall ensure that:

- (a) if the lamp is meant to be marketed through a point of sale, a label produced in the format and containing information as set out in Annex I is placed or printed on, or attached to, the outside of the individual packaging;

Suppliers who place on the market luminaires together with lamps shall ensure that:

- (b) the packaging of a luminaire meant to be marketed through a point of sale reproduces the label(s) corresponding to the lamp type(s) included in the packaging, and the packaging contains a separate sheet with the label(s) corresponding to the lamp type(s);

Both suppliers referred to above shall ensure that:

- (c) a product fiche, as set out in Annex II, is made available;
- (d) the technical documentation as set out in Annex III is made available on request to the authorities of the Member States and to the Commission;
- (e) any offer or advertisement disclosing energy-related or price information for a specific lamp contains the energy efficiency class;
- (f) any technical promotional material concerning a specific lamp which describes its specific technical parameters includes the energy efficiency class of that lamp.

Suppliers who place on the market luminaires together with lamps and who provide information according to paragraph (b) shall be considered as having fulfilled their distributor responsibilities with respect to product information requirements for lamps laid down in Commission regulations setting ecodesign requirements for lamps pursuant to Directive 2009/125/EC.

Chapter 4 *Responsibilities of dealers*

Dealers shall ensure that:

- (a) each model presented at the point of sale outside of its packaging (for example, in a luminaire) or in a packaging without a label printed or placed on or attached to it in accordance with Chapter 3(a), bears the label provided in accordance with Chapter 3(a) or (b) in such a way as to be clearly visible, or is accompanied by the label in such a way as to be clearly visible and identifiable as the label belonging to the model;
- (b) each model offered for sale, hire or hire-purchase where the final owner cannot be expected to see the product displayed is marketed with the information to be provided by suppliers in accordance with Annex IV;
- (c) any offer or advertisement disclosing energy-related or price information for a specific model contains the energy efficiency class;
- (d) any technical promotional material concerning a specific model which describes its specific technical parameters includes the energy efficiency class of that model.

Chapter 5 Measurement methods

The information to be provided under Chapters 3 and 4 shall be obtained by reliable, accurate and reproducible measurement procedures, which take into account the recognised state-of-the-art measurement methods.

Chapter 6 Verification procedure for market surveillance purposes

Member States shall apply the procedure laid down in Annex V when assessing the conformity of the declared energy efficiency class and of the energy consumption.

Chapter 7 Revision

The Commission shall review this Regulation in the light of technological progress no later than four years after its entry into force. The review shall in particular assess the verification tolerances set out in Annex V.

Chapter 8 Repeal

Directive 98/11/EC shall be repealed from 1 September 2013.

References to Directive 98/11/EC shall be construed as references to this Regulation. References to Annex IV of Directive 98/11/EC shall be construed as references to Annex VI of this Regulation.

Chapter 9
Transitional provisions

1. Chapter 4 (a) shall not apply to general lighting lamps excluded from Directive 98/11/EC before 1 March 2014.
2. Chapters 3 (e) and (f) and Chapter 4 (b), (c) and (d) shall not apply to printed advertisements and printed technical promotional material published before 1 March 2014.
3. Lamps defined in Chapter 1(1) and (2) of Directive 98/11/EC placed on the market before 1 September 2013 shall comply with the provisions set out in Directive 98/11/EC.
4. Lamps defined in Chapter 1(1) and (2) of Directive 98/11/EC which comply with the provisions of this Regulation and which are placed on the market or offered for sale, hire or hire-purchase before 1 September 2013 shall be regarded as complying with the requirements of Directive 98/11/EC.

Chapter 10
Entry into force and application

1. This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.
2. It shall apply from 1 September 2013, except in the cases listed in Chapter 9.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

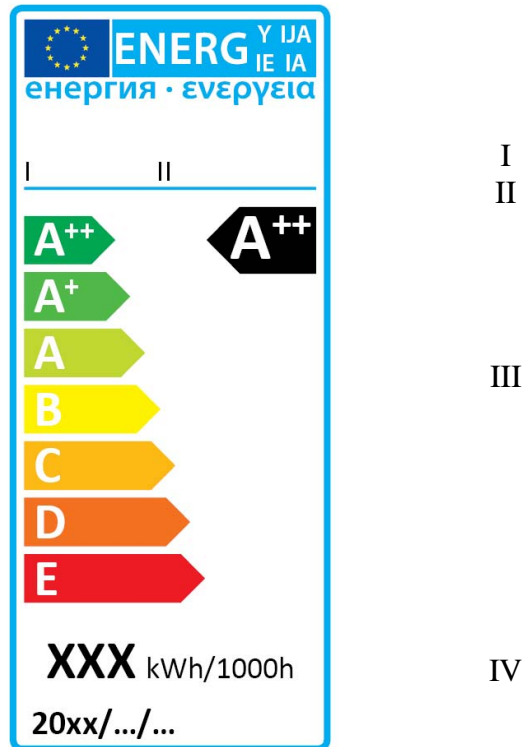
Done at Brussels,

For the Commission
The President

ANNEX I Label

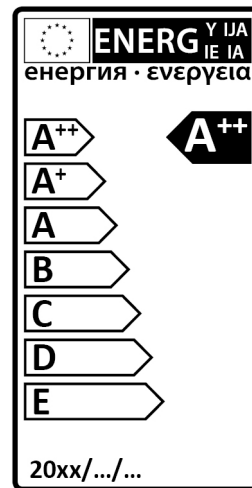
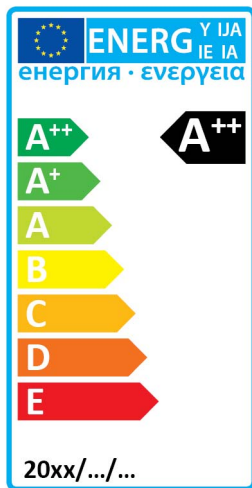
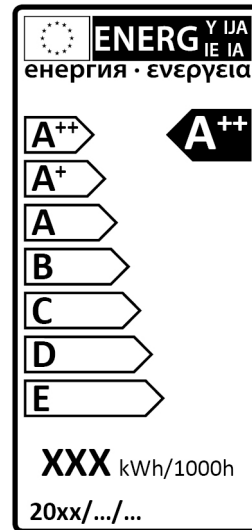
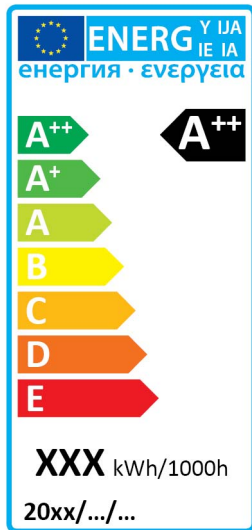
[The text in green highlight in this Annex comes from lamp labelling Directive 98/11/EC]

- (1) The label shall be as in the following illustration when it is not printed on the packaging:



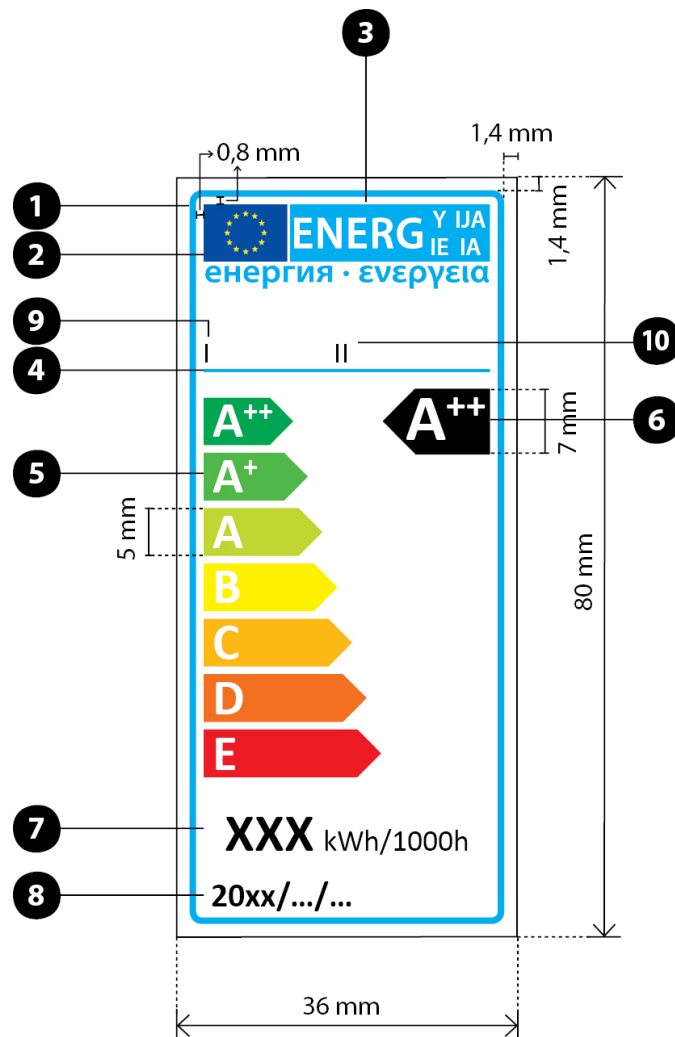
[* Numbering of the Regulation to be added on the label before publication in the OJ]

- (2) The following information shall be included in the label:
- I. supplier's name or trade mark;
 - II. supplier's model identifier, meaning the code, usually alphanumeric, which distinguishes a specific lamp model from other models with the same trade mark or supplier's name;
 - III. the energy efficiency class determined in accordance with point 1 of Annex VI; the head of the arrow containing the energy efficiency class of the lamp shall be placed at the same height as the head of the arrow of the relevant energy efficiency class;
 - IV. weighted energy consumption (E_C) in kWh per 1000h, rounded up to the nearest integer in accordance with Annex VII;
- (3) Where the label is printed on the packaging and the information specified in I, II and IV of point (2) is included elsewhere on the packaging, it may be omitted from the label. The label shall then be chosen from the following illustrations:



[* Numbering of the Regulation to be added on the label before publication in the OJ]

- (4) The design of the label shall be as in the figures below.



Whereby:

- (a) The size specifications above and in (d) apply to a lamp label of 36 mm wide and 80 mm high. Where the label is printed in a different format, its content must nevertheless remain proportionate to the specifications above.

The label version specified in point (2) must be at least 36 mm wide and 80 mm high, and the label versions specified in point (3) must be respectively at least 36 mm wide and 73 mm high and at least 36 mm wide and 67 mm high. Where there is no side of the packaging that is large enough to contain the label and this blank border, or where this would cover more than 50 % of the surface area of the largest side, the label and border may be reduced, but by no more than is required to meet both these conditions. However, in no case may the label be reduced to less than 40 % (by length) of its standard size. Where the packaging is too small to take such a reduced label, the label must be attached to the lamp or the packaging. However, where a full-size label is displayed together with the lamp (for example attached to the shelf on which the lamp is displayed), then the label may be omitted.

- (b) The background shall be white for the colour version of the label. If the 'black on white' version of the label is used, the printing and background may be in any colours that preserve the legibility of the label.
- (c) For the colour version of the label, colours shall be CMYK — cyan, magenta, yellow and black, following this example: 00-70-X-00: 0% cyan, 70% magenta, 100% yellow, 0% black.
- (d) The label shall fulfil all of the following requirements (numbers refer to the figure above, colour specifications apply only to the colour version of the label):
- ① **Border stroke:** 2 pt – colour: Cyan 100% – round corners: 1 mm.
 - ② **EU logo** – colours: X-80-00-00 and 00-00-X-00.
 - ③ **Energy logo:** colour: X-00-00-00.
Pictogram as depicted: EU logo and energy logo (combined): width: 30 mm, height: 9 mm.
 - ④ **Sub-logos border:** 1 pt – colour: Cyan 100% – length: 30 mm.
 - ⑤ **A-G scale**
 - **Arrow:** height: 5 mm, gap: 0.8 mm – colours:
 - Highest class: X-00-X-00,
 - Second class: 70-00-X-00,
 - Third class: 30-00-X-00,
 - Fourth class: 00-00-X-00,
 - Fifth class: 00-30-X-00,
 - Sixth class: 00-70-X-00,
 - Last class: 00-X-X-00.
 - **Text:** Calibri bold 15 pt, capitals and white; '+' symbols: Calibri bold 15 pt, Superscript, white, aligned on a single row.
 - ⑥ **Energy efficiency class**
 - **Arrow:** width: 11,2 mm, height: 7 mm, 100% black;
 - **Text:** Calibri bold 20 pt, capitals and white; '+' symbols: Calibri bold 20 pt, Superscript, white, aligned on a single row.
 - ⑦ **Weighted energy consumption**
Value: Calibri bold 16 pt, 100% black; and Calibri regular 9 pt, 100% black.
 - ⑧ **Numbering of the Regulation:** Calibri bold 10 pt, 100% black.
 - ⑨ **Supplier's name or trade mark**
 - ⑩ **Supplier's model identifier**
The suppliers' name or trade mark and the model identifier should fit in a space of 30 x 7 mm.

Nothing else placed or printed on, or attached to, the individual packaging shall obscure the label or reduce its visibility.

By way of derogation, where a model has been awarded an 'EU Ecolabel' under Regulation (EC) No 66/2010⁴ of the European Parliament and of the Council, a copy of the EU Ecolabel may be added.

⁴ OJ L 27, 30.1.2010, p. 1.

ANNEX II
Product Fiche

1. The information in the product fiche shall be provided in the following order and shall be included in the product brochure or other literature provided with the product:
 - (a) supplier's name or trade mark;
 - (b) supplier's model identifier, meaning the code, usually alphanumeric, which distinguishes a specific model from other models with the same trade mark or supplier's name;
 - (c) energy efficiency class(es) in accordance with point 1 of Annex VI;
 - (d) where the model has been awarded an 'EU Ecolabel' under Regulation (EC) No 66/2010⁵ of the European Parliament and of the Council, this information may be included;
 - (e) weighted energy consumption (E_C) in kWh per 1000h, rounded up to the nearest integer; it shall be described as: 'Energy consumption "X" kWh per 1000h';
2. One fiche may cover a number of models supplied by the same supplier.
3. The information contained in the fiche may be given in the form of a copy of the label, either in colour or in black and white. Where this is the case, the information listed in point 1 not already displayed on the label shall also be provided.

⁵ OJ L 27, 30.1.2010, p. 1.

Annex III
Technical documentation

The technical documentation referred to in Chapter 3(d) shall include:

- (a) the name and address of the supplier;
- (b) a general description of the model, sufficient for it to be unequivocally and easily identified;
- (c) where appropriate, the references of the harmonised standards applied;
- (d) where appropriate, the other technical standards and specifications used;
- (e) identification and signature of the person empowered to bind the supplier;
- (f) technical parameters for measurement of energy consumption,
- (h) the results of calculations performed in accordance with Annex VII.

The information contained in this technical documentation may be merged with the technical documentation provided in accordance with measures under the Ecodesign Directive.

Annex IV

Information to be provided in the cases where final owners cannot be expected to see the product displayed

1. The information referred to in Chapter 4(b) shall be provided in the following order:
 - (a) the energy efficiency class as defined in point 1 of Annex VI;
 - (b) where required by Annex I, the weighted energy consumption in kWh, rounded up to the nearest integer and calculated in accordance with point 1(c) of Annex VII.
2. Where other information contained in the product fiche is also provided, it shall be in the form and order specified in Annex II.
3. The size and font, in which all the information referred in this Annex is printed or shown, shall be legible.

ANNEX V
Verification procedure for market surveillance purposes

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 the reference numbers of which have been published for that purpose in the Official Journal of the European Union.

1. VERIFICATION PROCEDURE FOR LAMPS OTHER THAN LED LAMPS AND FOR LED LAMPS THAT ARE MEANT TO BE REPLACED IN THE LUMINAIRE BY THE END-USER

For the purposes of checking conformity with the requirements laid down in Chapters 3 and 4, Member State authorities shall test a sample batch of minimum twenty lamps of the same model from the same manufacturer, randomly selected.

The batch shall be considered to comply with the requirements laid down in Chapters 3 and 4 if the average results of the batch do not vary from the limit, threshold or declared values by more than 10%.

Otherwise, the model shall be considered not to comply with the requirements laid down in Chapters 3 and 4.

2. VERIFICATION PROCEDURE FOR LED LAMPS OR MODULES THAT ARE NOT MEANT TO BE REPLACED IN THE LUMINAIRE BY THE END-USER

Member State authorities shall request from the manufacturer of the luminaire containing the lamp(s) or module(s) the identity of the manufacturer(s) who placed on the EU market the LED lamp(s) or module(s) integrated into the luminaire. They shall then obtain 20 copies of each LED lamp or module for testing according to point 1 above.

If not all the LED light sources integrated into the luminaire can be obtained separately as testable lamps or modules, then the whole luminaire shall be tested. In that case, Member State authorities shall test one single luminaire as a lamp.

The model shall be considered to comply with the requirements laid down in Chapters 3 and 4 if the results of its testing do not vary from the limit, threshold or declared values by more than 10%.

Otherwise, three more luminaires shall be tested.

The batch shall be considered to comply with the requirements laid down in Chapters 3 and 4 if the average results of the batch do not vary from the limit, threshold or declared values by more than 10%.

Otherwise, the model shall be considered not to comply.

ANNEX VI
Energy efficiency classes

The energy efficiency class of lamps shall be determined on the basis of their Energy Efficiency Index (*EEI*) as set out in Table 1.

The Energy Efficiency Index (*EEI*) of lamps shall be determined in accordance with Annex VII.

Table 1: Energy efficiency classes for lamps

Energy efficiency class	Energy Efficiency Index (EEI) for non-directional lamps	Energy Efficiency Index (EEI) for directional lamps
A++ (most efficient)	$EEI \leq 0.11$	$EEI \leq 0.15$
A+	$0.11 < EEI \leq 0.20$	$0.15 < EEI \leq 0.20$
A	$0.20 < EEI \leq 0.24$	$0.20 < EEI \leq 0.50$
B	$0.24 < EEI \leq 0.6$	$0.50 < EEI \leq 0.95$
C	$0.6 < EEI \leq 0.8$	$0.95 < EEI \leq 1.20$
D	$0.8 < EEI \leq 0.95$	$1.20 < EEI \leq 1.75$
E (least efficient)	$EEI > 0.95$	$EEI > 1.75$

ANNEX VII

Method for calculating the Energy Efficiency Index and energy consumption

1. CALCULATION OF THE ENERGY EFFICIENCY INDEX

For the calculation of the Energy Efficiency Index (*EEI*) of a model, its power corrected for any control gear losses is compared to its reference power. The reference power is obtained from the useful luminous flux, which is the total flux for non-directional general lighting lamps, and the flux in a 90° or 120° cone for directional general lighting lamps.

The Energy Efficiency Index (*EEI*) is calculated as follows and rounded to two decimal places:

$$EEI = P_{cor} / P_{ref}$$

where:

P_{cor} is the rated power (P_{rated}) for models without external control gear and the rated power (P_{rated}) corrected according to Table 2 for models with external control gear. The rated power of the lamps is measured at their nominal input voltage.

Table 2: Power correction if the model requires external control gear

Scope of the correction	Power corrected for control gear losses (P_{cor})
lamps operating on external halogen lamp control gear	$P_{rated} \times 1.06$
lamps operating on external LED lamp control gear	$P_{rated} \times 1.20$
lamps operating on external fluorescent lamp control gear	$P_{rated} \times \frac{0.24\sqrt{\Phi_{use}} + 0.0103\Phi_{use}}{0.15\sqrt{\Phi_{use}} + 0.0097\Phi_{use}}$
lamps operating on external high-intensity discharge lamp control gear	$P_{rated} \times 1.10$
lamps operating on external low pressure sodium lamp control gear	$P_{rated} \times 1.15$

P_{ref} is the reference power obtained from the useful luminous flux of the model (Φ_{use}) according to the following formula:

$$\text{For models with } \Phi_{use} < 1300 \text{ lumen : } P_{ref} = 0.88\sqrt{\Phi_{use}} + 0.049\Phi_{use}$$

$$\text{For models with } \Phi_{use} \geq 1300 \text{ lumen : } P_{ref} = 0.07341\Phi_{use}$$

The useful luminous flux (Φ_{use}) is defined according to Table 3.

Table 3: Definition of the useful luminous flux

Model	Useful luminous flux (Φ_{use})
Non-directional general lighting lamps	Total rated luminous flux (Φ)
Directional lamps other than filament lamps with a beam angle $\geq 90^\circ$ and carrying a textual or graphical warning on their packaging that they are not suitable for accent lighting	Rated luminous flux in a 120° cone (Φ_{120°)
Other directional lamps	Rated luminous flux in a 90° cone (Φ_{90°)

2. CALCULATION OF THE ENERGY CONSUMPTION

The weighted energy consumption (E_c) is calculated in kWh/1000h as follows and is rounded to two decimal places:

$$E_c = \frac{P_{\text{cor}} \times 1000 h}{1000}$$

Where P_{cor} is the power corrected for any control gear losses according to part 1 above.