

Texte zu EU-Regelungen zur umweltgerechten Produktgestaltung und zur Energieverbrauchskennzeichnung in der Beleuchtung – Zusammenstellung <sup>[1]</sup> des Umweltbundesamtes (UBA), Deutschland



## Diskussion über eine künftige Änderungsverordnung (Produktgestaltung)

### Anhang II Nummer 2 – SVM-Höchstwert: **Meßwerte und Kommentare des Herstellerverbandes LE <sup>[2]</sup>** **vom 17. Dezember 2019**

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

**EN:** Information on EU Lighting Regulations – Ecodesign and Energy Labelling – Compilation <sup>[1]</sup> of the Federal Environment Agency (UBA), Germany

Discussion of a future amending regulation (Product Design)

### **Annex II.2 – SVM limit value: Measured values and comments by the Industry Association LE <sup>[2]</sup>** **as of 17 December 2019**

**FR:** Informations sur réglementations de l'UE concernant l'éclairage – l'écoconception et l'étiquetage énergétique – Compilation <sup>[1]</sup> de l'Agence Fédérale de l'Environnement (UBA), Allemagne

Discussion d'un futur règlement modificatif (Conception des produit)

### **Annexe II, point 2 – Valeur maximale du SVM : Valeurs mesurées et commentaires par l'association de producteurs LE <sup>[2]</sup>** **de 17 décembre 2019**

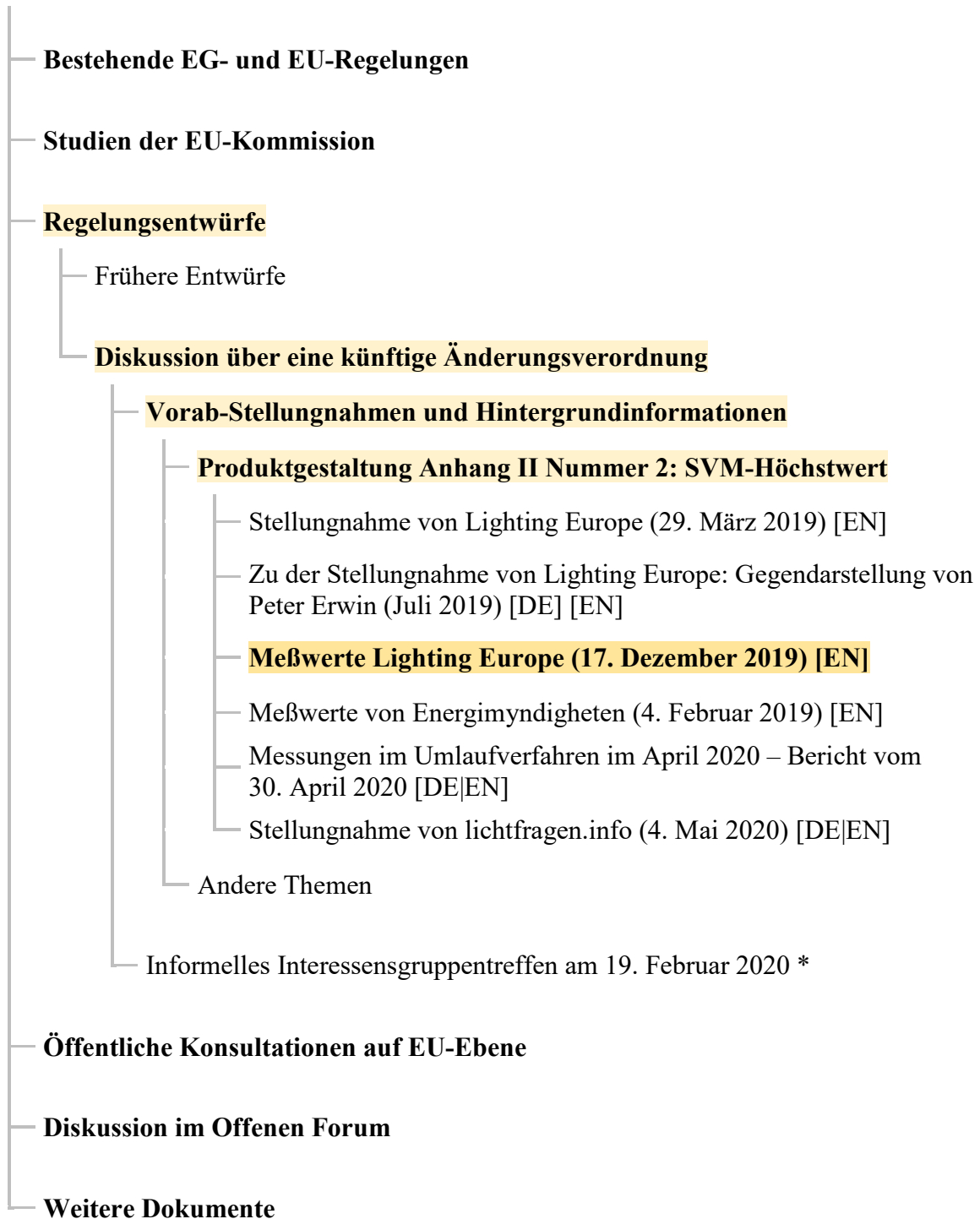
*Indication : Veuillez noter que le présent texte n'est disponible qu'en anglais.*

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

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

Texte im Offenen Forum

(abc = vorliegender Text)



\* Stand 20. März 2020: Diese Texte stehen noch nicht zur Verfügung.

Abkürzungen: ● EG = Europäische Gemeinschaft ● Energimyndigheten ist die staatliche Energieagentur Schwedens; <https://www.energimyndigheten.se/en/> ● EU = Europäische Union ● SVM : Maß für die Sichtbarkeit des Stroboskopeffektes

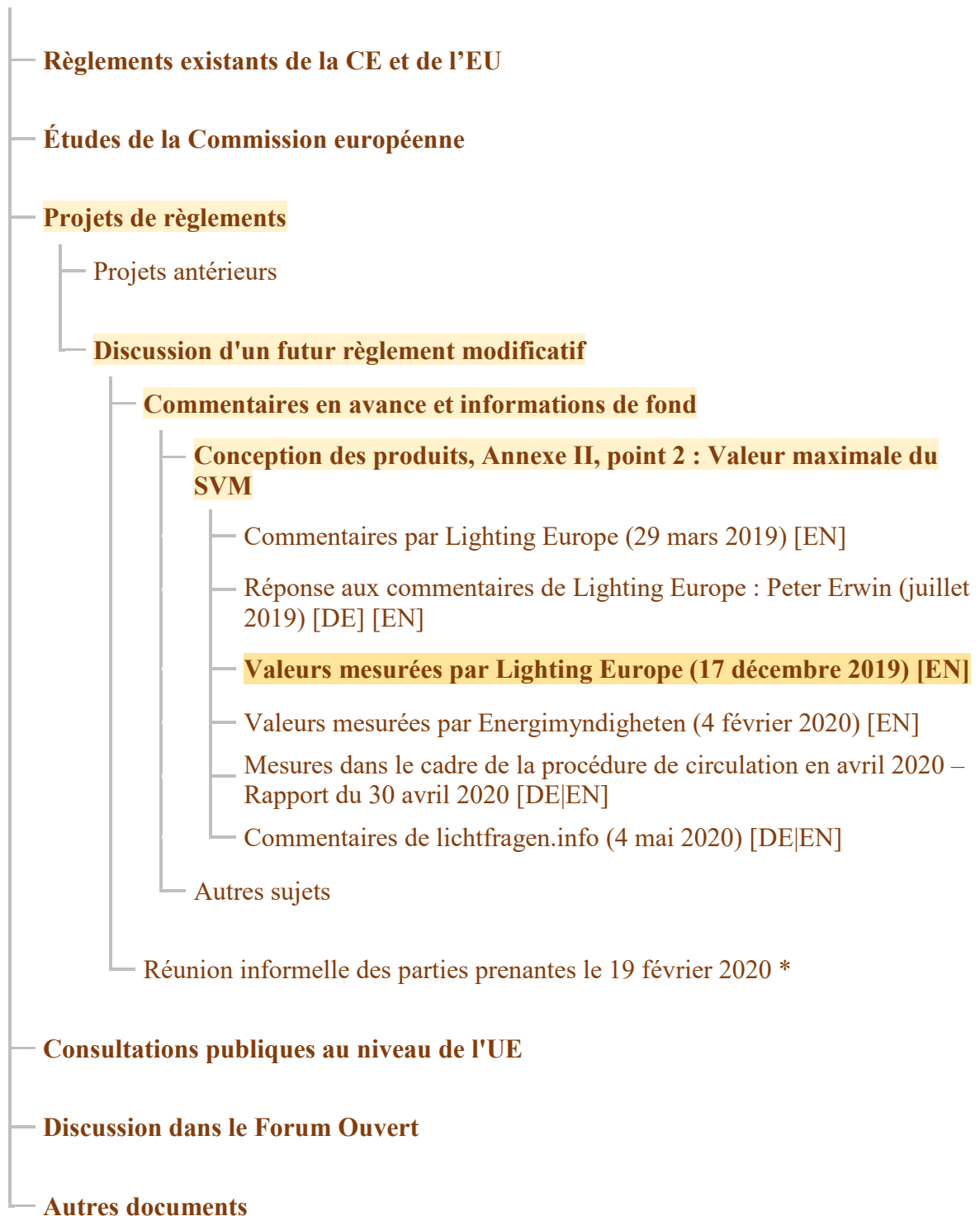
**Documents in the Open Forum**

(abc = text at hand)



\* Status as of 20 March 2020: These texts are not yet available.

Abbreviations: • EC = European Communities • Energimyndigheten is the national Energy Agency of Sweden (SEA); <https://www.energimyndigheten.se/en/> • EU = European Union • SVM = Stroboscopic Visibility Measure



\* État au 20 mars 2020 : Ces textes ne sont pas encore disponibles.

Abréviations : ● CE = Communauté européenne ● Energimyndigheten et l'administration nationale suédoise de l'énergie ; <https://www.energimyndigheten.se/en/> ● SVM : mesure de la visibilité stroboscopique ● UE = Union européenne

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Es folgen zwei Texte. Der erste (2 Seiten) ist ein unveränderter Originaltext von Lighting Europe. Der zweite Teil (4 Seiten) basiert auf einer Excel-Datei von Lighting Europe, die die EU-Kommission am 29. Januar 2020 mit der Einladung zu dem Treffen am 19. Februar 2020 versandt hat. Den Inhalt dieser Excel-Datei hat der Herausgeber in ein anderes Format übertragen ohne Werte und Aussagen zu ändern.

**EN:** Two texts follow. The first (2 pages) is an unchanged original text from Lighting Europe. The second (4 pages) is based on an Excel file from Lighting Europe, which the EU Commission sent out on 29 January 2020 with the invitation to the meeting on 19 February 2020. The editor has transferred the content of this Excel file into another format without changing values and statements.

**FR:** Deux textes suivent. Le premier (2 pages) est un texte original inchangé de Lighting Europe. Le second (4p pages) est basé sur un fichier Excel de Lighting Europe, que la Commission européenne a envoyé le 29 janvier 2020 avec l'invitation à la réunion du 19 février 2020. L'éditeur a transféré le contenu de ce fichier Excel dans un autre format sans modifier les valeurs et les déclarations.

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# Comments to the European Commission and Member States based on SVM testing results

## Our request

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Based on recent tests performed by LightingEurope members, we have found that many mains LED light sources and also many mains conventional light sources, which have been in the market for many years, do not comply with the new requirement of SVM < 0.4 established for mains (O)LED light sources.

Therefore, we request the European Commission and the Member States to take part to an exchange of views to take place in January or early February 2020 aimed at clarifying:

- what Stroboscopic effect and Flicker are;
- how light sources perform technically in terms of SVM and  $P_{st}^{LM}$  compared to requirements put in legislation;
- whether there is any evidence to date of any health impact due to a long exposure to high levels of stroboscopic effect; and
- how current legislation on light sources can be revised regarding the requirements on SVM but also other critical issues, such as incorrect wording on stage lighting and no exemption for heating light sources.

Assuming the meeting is scheduled, we request that all parties attending exchange test results and documents that will be used at the meeting in good faith and in advance of the meeting.

We offer our services to test light sources already tested by other experts in order to compare results delivered by different laboratories.

## Background

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### The aim of our testing exercise

- The aim of our testing exercise was to illustrate how commonly available LED light sources perform under the SVM and Flicker requirements of the new Ecodesign Regulation for light sources. We have been testing for SVM  $\leq 0.4$  and  $P_{st}^{LM} \leq 1.0$ . In most cases, compatibility with EMC has been tested as well.
- The testing forms a basis for a technical discussion with Member State authorities on a possible legislative amendment to the SVM requirement in the Ecodesign Regulation for light sources.

- The testing aims to check technical compatibility and is based on a first limited selection of products. It is in no way meant to be translated into an exemption list to be included in the legislation.

## Our list and our methodology for testing

- The list of products to be tested is made up of products that LightingEurope members have found to be representative of products commonly available on the EU market and focussed on dimmable light source types as we expect that dimmable products will have difficulties to achieve a very low SVM value. This list includes also a few conventional light sources for the purpose of comparison.
- Samples have been chosen from 8 different company brands (3 LightingEurope members and 5 non-LightingEurope members).
- Brands have been kept anonymous by the LightingEurope Secretariat.
- Where there is a choice, for LED products, testing has been done on the highest power version of common products with multiple power levels.
- All values are at 100 % light output and for mains-connected light sources.

## Our findings on the test results

- Test results are in red when light sources were found to be noncompliant with the new requirements. Most of the light sources tested are found noncompliant with the new SVM levels (some reaching over SVM 5.0).
- Many conventional light sources not in the scope of the new requirements with regard to SVM would also not meet the  $SVM \leq 0.4$  requirement.
- Meanwhile, all tested light sources comply with the requirement on Flicker ( $P_{st}^{LM} < 1.0$ ).

## Attachments

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LightingEurope SVM test results (dated 17 December 2019).

## Contact

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For further information on this topic, please contact Elena Scaroni, Policy Director, through [elena.scaroni@lightingeurope.org](mailto:elena.scaroni@lightingeurope.org).

LightingEurope is the industry association that represents the lighting industry in Europe. We are the voice of more than 1,000 lighting companies that employ more than 100,000 Europeans and create an annual European turnover of over € 20 billion. Our daily mission is to advocate and defend the lighting industry in Brussels, while reconciling it with ongoing EU policy aims. In doing so, we are dedicated to promoting efficient lighting practices for the benefit of the global environment, human comfort, and the health and safety of consumers. More information is available on: [www.lightingeurope.org](http://www.lightingeurope.org).



## LightingEurope - SVM results (12 December 2019)

Test on:  $P_{st}^{LM}$  value, SVM value, and if needed on Mains Harmonics Distortion (MHD)





$P_{st}^{LM}$  test: IEC TR 61547-1.







SVM test: IEC TR 63158.

Mains Harmonics Distortion test: EN 61000-3-2








Lamp type	Product model reference	Data			Power (W) (rated/declared)	Luminous flux (lm) (rated/declared)	Comments	Pictures (when available)
		Pst	SVM	MHD <sup>[1]</sup>				
<b>Reference types</b>								
Incandescent A60 (mains-connected)	1	< 1	0,6	y	60	710		
	2	< 1	0,91	y	40	450		
	3	< 1	0,55	y	60	800		
CFL-I, 25W equivalent (mains-connected)	4	< 1	0,18	y	5	250		
	5	< 1	0,298	y	7	300		
	6	< 1	0,09	y	5	250		
	7	< 1	0,341	y	20	1230		
T8 fluorescent 4ft (non-mains, SVM dependent on the interaction between driver, dimmer, light source, etc.)	8	< 1	0,1	y	58	5200		
	9	< 1	HF < 0,1	y	32	2800		
	10	< 1	EM 1,305	y	32	2800		
HID (non-mains, SVM dependent on the interaction between driver, dimmer, light source, etc.)	11	< 1	2,21	y	35	3000		
	12	< 1	3,08	y	50	4400		
	13	< 1	1,5	y	70	6500		
Halogen GU10 dimmable (mains-connected)	14	< 1	1,1	y	20	100		

<sup>1</sup> Measure, to confirm EMC meets requirements, if SVM < 0.4. Pst is to be measured without applied voltage fluctuations. Indicate if Pst < 1.

Lamp type	Product model reference		Data SVM MHD		Power (W) (rated/declared)	Luminous flux (lm) (rated/declared)	Comments	Pictures (when available)
	Pst	SVM	MHD <sup>[1]</sup>					
<b>LED light sources</b>								
T8 TLED non-dimmable 4/5ft (mains-connected)	15	< 1	2,8	y	22,5	3600		
	16	< 1	1,04	y	various	various		
	17	< 1	0,8	y	various	various		
	18	< 1	0,8	y	various	various		
	19	< 1	1,8	y	various	various		
	20	< 1	1,0	y	various	various		
	21	< 1	1,4	y	16	2400		
	68	< 1	0,022	y	16	1700		
	69	< 1	0,024	y	20	2050		
	70	< 1	1,575	y	14	1750		
	71	< 1	1,426	y	17	2100		
72	< 1	1,302	y	24	3400			
T5 TLED HO non-dimmable 4/5ft (mains-connected)	22	< 1	3,2	y	26	3600		
	23	< 1	3,1	y	26	3700		
	24	< 1	3,1	y	26	3900		
	25	< 1	3,1	y	26	3900		
	26	< 1	3,1	y	26	3700		
	27	< 1	3,1	y	26	3900		
	28	< 1	3,1	y	26	3900		
	73	< 1	< 0,4	y	16	2400		
	74	< 1	< 0,4	y	26	3900		
75	< 1	< 0,4	y	34	5100			
LED GU10 non-dimmable (mains-connected)	29	< 1	0,01	y	6,5	460		
	30	< 1	0,1	y	6,5	460		
LED GU10 dimmable (mains-connected)	31	< 1	0,27	y	5	350		
	32	< 1	0,66	y	5	365		
	80	< 1	0,01	y	5,3	400		
LED G9 non-dimmable (mains-connected)	33	< 1	5,49	y	2,8	315		
	34	< 1	5,49	y	3,2	400		
	79	< 1	0,01	y	2,4	200		
LED G9 dimmable (mains-connected)	35	< 1	5,45	y	2,3	215		
	36	< 1	2,0	y	4	470		

Lamp type	Product model reference	Data SVM MHD			Power (W) (rated/declared)	Luminous flux (lm) (rated/declared)	Comments	Pictures (when available)
		Pst	SVM	MHD <sup>[1]</sup>				
LED R7s non-dimmable (mains-connected)	37	< 1	5,97	y	7,5	950		
	38	< 1	1,9	y	11,5	1521		
	39	< 1	4,79	y	6,5	806		
LED R7s dimmable (mains-connected)	40	< 1	1,9	y	11,5	1521		
	41	< 1	1,95	y	-	-		
	42	< 1	6,12	y	-	-		
LED filament dimmable (mains-connected)	43	< 1	0,92	y	12	1521		
	44	< 1	0,24	y	8	806		
	45	< 1	0,28	-	5,5	470		
	46	< 1	0,5	-	5	470		
LED E27 non-dimmable (mains-connected)	56	-	0,22	-	8	1020		
	57	-	1,140	-	9,5	806		
LED E27 dimmable (mains-connected)	58	-	0,82	-	21	2452		
	61	-	0,810	-	8,5	806		
	76	< 1	0,2	y	11	1000		
LED E27 filament non-dimmable (mains-connected)	47	< 1	0,7	y	11	1420		
LED E27 filament dimmable (mains-connected)	48	< 1	2,5	y	8	806		
	62	-	0,76	-	14	1520		
	63	-	0,028	-	8	740		
	64	-	0,016	-	8	560		
	77	< 1	0,01	y	7	600		
LEDspot PAR dimmable (mains-connected)	49	< 1	0,7	y	6	350	[2] 	
	50	< 1	0,55	y	9	750		
	51	< 1	0,78 - 0,85	y	40	3600		
	81	< 1	0	y	5,3	400		
LED HQI (HID retrofit) (mains-connected)	52	< 1	1,6	y	16	1800		

<sup>2</sup> LED spot PAR Dimmable: Please test the smallest size that is commonly used, which will have the greatest challenge to reach low SVM

Lamp type	Product model reference	Data SVM MHD			Power (W) (rated/declared)	Luminous flux (lm) (rated/declared)	Comments	Pictures (when available)
		Pst	SVM	MHD <sup>[1]</sup>				
LED dimmable E27 tubular (mains-connected)	59	-	2,240	-	13	1400	[3] 	
	60	-	0,840	-	17	2000		
LED filament E14 dimmable (mains-connected)	78	< 1	0,64	y	2,3	200	[4] 	
LED E14 non-dimmable (mains-connected)	65	-	0,001	-	8	360	[5] 	
LED E14 dimmable (mains-connected)	66	-	1,32	-	10	900	[6] 	
	67	-	0,007	-	8	700		
	82	< 1	0,1	y	5,3	400		
LED filament B15 dimmable (mains-connected)	53	< 1	0,001	-	4	300	[7] 	
LED B15 dimmable (mains-connected)	54	< 1	0,702	-	4	250	[8] 	
LED B15 dimmable (mains-connected)	55	< 1	1,033	-	6	470	[9] 	

<sup>3</sup> LED Dimmable E27 Tubular: This dimmable lamp is used to replace the HL lamp (originally 250w, than 205) with a light emission of more than 4000 lm; at the present the luminous flux is much lower than the previous one (more al less half of such emission); the new requirements about SVM, and the relevant modifications needed (particularly with lamp base up), would cause a reduction of light emission (with problems on the market). The dimensions cannot be increased to allow the use on the products already on the market and still in production (diameter 32 mm and length 105 mm).

<sup>4</sup> The dimmable lamp is used to replace the HL lamp, with a similar appearance; also in this situation, the dimensions are very important (both diameter and length). Recommend to also include candle and 'golf' ball shapes in testing.

<sup>5</sup> The dimmable lamp is used to replace the HL lamp; also in this situation, the dimensions are very important (both diameter, 26 mm and length, 55mm, also due to aesthetical reasons). Recommend to also include candle and 'golf' ball shapes in testing.

<sup>6</sup> The dimmable lamp is used to replace the HL lamp (with light emission of 700 lm); also in this situation, the dimensions are very important (particularly the diameter, 26 mm) Recommend to also include candle and 'golf ball' shapes in testing.

<sup>7</sup> The dimmable lamp is used to replace the HL lamp, with a similar appearance; also in this situation, the dimensions are very important (both diameter and length). Recommend to also include candle and 'golf' ball shapes in testing.

<sup>8</sup> The dimmable lamp is used to replace the HL lamp; also in this situation, the dimensions are very important (both diameter, 26 mm and length, 55mm, also due to aesthetical reasons). Recommend to also include candle and 'golf' ball shapes in testing.

<sup>9</sup> The dimmable lamp is used to replace the HL lamp (with light emission of 700 lm); also in this situation, the dimensions are very important (particularly the diameter, 26 mm) Recommend to also include candle and 'golf ball' shapes in testing.