

WORKING DOCUMENT 4

ON A POSSIBLE COMMISSION REGULATION

amending Commission Regulation (EC) No 245/2009 as regards the ecodesign requirements for fluorescent lamps without integrated ballast, for high intensity discharge lamps, and for ballasts and luminaires able to operate such lamps

Chapter 1

Amendments to Regulation (EC) No 245/2009

Regulation (EC) No 245/2009 is amended as follows:

- (1) The last paragraph of Article 1 is replaced by the following:
"Conditions for exempting certain products are listed in Annex I."
- (2) Annexes I, II, III and IV to Regulation (EC) No 245/2009 are amended as set out in the Annex to this Regulation.

Chapter 2

Entry into force

This Regulation shall enter into force on the first day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 13 April 2010.

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

Done at Brussels,

For the Commission
Member of the Commission

ANNEX
Amendments in Annexes I, II, III and IV to Regulation (EC) No 245/2009

(1) The word "General" is removed from the title of Annex I .

(2) The first sentence of Part 1 of Annex I is replaced by the following:

"The following lamps shall be exempt from the provisions of Annex III, provided that the technical documentation file drawn up for the purposes of conformity assessment pursuant to Article 8 of Directive 2005/32/EC states which of the technical parameters listed hereunder provide(s) a basis for their exemption:"

(3) Annex I.1(c) and (d) are replaced by the following:

"(c) blended high intensity discharge lamps having:

- 6% or more of total radiation of the range 250-780 nm in the range of 250-400 nm and
- 11% or more of total radiation of the range 250-780 nm in the range of 630-780 nm and
- 5% or more of total radiation of the range 250-780 nm in the range of 640-700 nm"

"(d) blended high intensity discharge lamps having:

- the peak of the radiation between 315 - 400 nm (UVA) or 280 - 315 nm (UVB),"

(4) Part 2 of Annex I is replaced by the following:

"2. The following products shall be exempt from the provisions of Annex III, provided that in all forms of product information it is stated that they are not intended for general lighting use within the meaning of this Regulation, or that they are intended for use in applications falling under the Directives listed in paragraphs (b) to (e) below. The intended purpose shall be stated for each product in the product information, and the technical documentation file drawn up for the purposes of conformity assessment pursuant to Article 8 of Directive 2005/32/EC shall list the technical parameters (if any) that make the product design specific for the stated intended purpose.

- (a) products intended for use in applications other than general lighting and products incorporated into products which do not provide a general lighting function;

- (b) lamps covered by the requirements of Directives 94/9/EC of the European Parliament and of the Council¹ or Directive 1999/92/EC of the European Parliament and of the Council²;
- (c) emergency lighting luminaires and emergency sign luminaires within the meaning of Council Directive 2006/95/EC³;
- (d) ballasts intended for use in luminaires defined in paragraph (c) and designed to operate lamps in emergency conditions;
- (e) luminaires covered by the requirements of Directives 94/9/EC of the European Parliament and of the Council⁴, Directive 1999/92/EC of the European Parliament and of the Council⁵, Directive 2006/42/EC of the European Parliament and of the Council⁶, Council Directive 93/42/EEC⁷, Council Directive 88/378/EEC⁸ and luminaires integrated into equipment covered by these requirements."

(5) The first sentence of Part 1 of Annex II is deleted.

(6) The following paragraph is added to Part 3 of Annex II:

"(o) "Blended lamp" means a lamp containing a mercury vapour lamp and an incandescent lamp filament connected in series in the same bulb."

(7) Table 2 of Annex III is replaced by the following:

"Table 2 - Rated minimum efficacy values for single capped fluorescent lamps working on electromagnetic and electronic ballast

Small single parallel tube, lamp cap G23 (2 pin) or 2G7 (4 pin)	Double parallel tubes, lamp cap G24d (2 pin) or G24q (4 pin)	Triple parallel tubes, lamp cap GX24d (2 pin) or GX24q (4 pin)
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¹ Directive 94/9/EC of the European Parliament and of the Council of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres, OJ L 100, 19.4.1994, p. 1

² Directive 1999/92/EC of the European Parliament and of the Council of 16 December 1999 on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres, OJ L 23, 28.1.2000, p. 57

³ Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (codified version), OJ L 374, 27.12.2006, p. 10

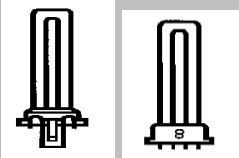
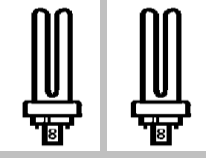
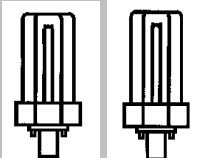
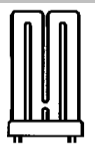
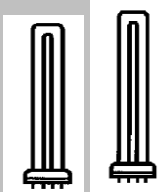
⁴ Directive 94/9/EC of the European Parliament and of the Council of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres, OJ L 100, 19.4.1994, p. 1

⁵ Directive 1999/92/EC of the European Parliament and of the Council of 16 December 1999 on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres, OJ L 23, 28.1.2000, p. 57

⁶ Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast), OJ L 157, 09/06/2006 P. 0024 - 0086

⁷ Council Directive 93/42/EEC of 14 June 1993 concerning medical devices, OJ L 169, 12/07/1993 P. 0001 – 0043

⁸ Council Directive 88/378/EEC of 3 May 1988 on the approximation of the laws of the Member States concerning the safety of toys, Official Journal L 187, 16/07/1988 P. 0001 - 0013

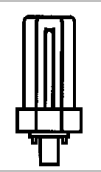
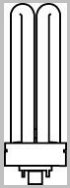
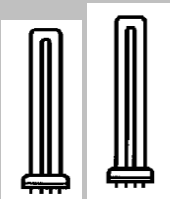
					
Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value	Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value	Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value
5	48	10	60	13	62
7	57	13	62	18	67
9	67	18	67	26	66
11	76	26	66		
4 legs in one plane, lamp cap 2G10 (4 pin) 		Long single parallel tube, lamp cap 2G11 (4 pin) 			
Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value	Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value		
18	61	18	67		
24	71	24	75		
36	78	34	82		
		36	81		

"

(8) Table 3 of Annex III is replaced by the following:

"Table 3 - Rated minimum efficacy values for single capped fluorescent lamps, working only on electronic ballast

Triple parallel tubes, lamp cap GX24q (4 pin)	Four parallel tubes, lamp cap GX24q (4 pin)	Long single parallel tube, lamp cap 2G11 (4 pin)
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Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value	Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value	Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value
32	75	57	75	40	83
42	74	70	74	55	82
57	75			80	75
70	74				

"

(9) Table 6 of Annex III is replaced by the following:

"Table 6 - Deduction percentages for rated minimum efficacy values for fluorescent lamps with high colour temperature, high colour rendering, second lamp envelope and/or long life"

Lamp parameter	Deduction from luminous efficacy at 25°C
$T_c \geq 5000K$	- 10%
$95 \geq Ra > 90$	- 20%
$Ra > 95$	- 30%
Second lamp envelope	- 10%
Lamp Survival Factor ≥ 0.50 after 40000 burning hours	- 5%

"

(10) The title of Table 7 of Annex III is replaced by the following:

"Table 7 - Rated minimum efficacy values for high pressure sodium lamps with $Ra \leq 60$ "

(11) The title of Table 8 of Annex III is replaced by the following:

"Table 8 - Rated minimum efficacy values for Metal Halide Lamps with $Ra \leq 80$ and for high pressure sodium lamps with $Ra > 60$ "

(12) The second paragraph of Annex III.1.1.C is replaced by the following:

"Fluorescent lamps without integrated ballast shall be able to operate also with ballasts of energy efficiency class A2 or more efficient ballasts according to Annex III.2.2."

(13) Table 11 of Annex III is replaced by the following:

"Table 11 - Lamp lumen maintenance factors for single and double capped fluorescent lamps - Stage 2

Lamp lumen maintenance factor	Burning hours			
	2000	4000	8000	16000
Lamp types				
Double-Capped Fluorescent lamps operating on non-high frequency ballasts	0.95	0.92	0.90	-
T8 Double-Capped Fluorescent lamps on high frequency ballast with warmstart	0.96	0.92	0.91	0.90
Other Double-Capped Fluorescent lamps on high frequency ballast with warmstart	0.95	0.92	0.90	0.90
Circular Single-Capped Fluorescent lamps operating on non-high frequency ballasts	0.80	0.74	-	-
	0.72 at 5000 burning hours			
Circular Single-Capped Fluorescent lamps operating on high frequency ballasts	0.85	0.83	0.80	-
	0.75 at 12000 burning hours			
Other Single-Capped Fluorescent lamps operating on non-high frequency ballasts	0.85	0.78	0.75	-
Other Single-Capped Fluorescent lamps on high frequency ballast with warmstart	0.90	0.84	0.81	0.78

The following cumulative deductions shall be applied to the values in Table 11:

Table 11bis – Deduction percentages for fluorescent lamp lumen maintenance requirements

Lamp parameter	Deduction from lamp lumen maintenance requirement
Lamps with $95 \geq Ra > 90$	At burning hours $\leq 8000h$: -5 % At burning hours $> 8000h$: -10 %
Lamps with $Ra > 95$	At burning hours $\leq 4000h$: -10 % At burning hours $> 4000h$: -15 %
Lamps with a colour temperature $\geq 5000K$	-10 %

"

(14) Table 12 of Annex III is replaced by the following:

"Table 12 - Lamp survival factors for single and double capped fluorescent lamps – Stage 2

Lamp survival factor	Burning hours			
	2000	4000	8000	16000
Lamp types				
Double-Capped Fluorescent lamps operating on non-high frequency ballasts	0.99	0.97	0.90	-
Double-Capped Fluorescent lamps on high frequency ballast with warmstart	0.99	0.97	0.92	0.90
Circular Single-Capped Fluorescent lamps operating on non-high frequency ballasts	0.98	0.77	-	-
	0.50 at 5000 burning hours			
Circular Single-Capped Fluorescent lamps operating on high frequency ballasts	0.99	0.97	0.85	-
	0.50 at 12000 burning hours			
Other Single-Capped Fluorescent lamps operating on non-high frequency ballasts	0.98	0.90	0.50	-
Other Single-Capped Fluorescent lamps on high frequency ballast with warmstart	0.99	0.98	0.88	-

"

(15) Table 13 of Annex III is replaced by the following:

"Table 13 - Lamp lumen maintenance factors & lamp survival factors for high pressure sodium lamps - Stage 2

High pressure sodium lamp category and burning hours for measurement	Lamp lumen maintenance factor	Lamp survival factor
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P ≤ 75 W LLMF/LSF measured at 12000 burning hours	Ra ≤ 60	> 0.80	> 0.90
	Ra > 60	> 0.75	> 0.75
	all retrofit lamps designed to operate on high pressure mercury vapour lamp ballast	> 0.75	> 0.80
P > 75 W LLMF/LSF measured at 16000 burning hours	Ra ≤ 60	> 0.85	> 0.90
	Ra > 60	> 0.70	> 0.65
	all retrofit lamps designed to operate on high pressure mercury vapour lamp ballast	> 0.75	> 0.55

The requirements in Table 13 for retrofit lamps designed to operate on high pressure mercury vapour lamp ballast shall be applicable until 6 years after the entry into force of this Regulation."

(16) Annex III.1.3(i) is replaced by the following:

"(i) Ambient temperature inside the luminaire at which the lamp was designed to maximise its luminous flux. If this temperature is equal to or lower than 0°C or equal to or higher than 50°C, it shall be stated that the lamp is not suitable for indoor use at standard room temperatures."

(17) Table 17 of Annex III is replaced by the following:

"Table 17 – Energy efficiency index requirements for non-dimmable ballasts for fluorescent lamps

LAMP DATA					BALLAST EFFICIENCY (Plamp / Pinput)				
					Non-dimmable				
Lamp type	Nominal Wattage	ILCOS CODE	Rated/typical wattage		A2 BAT	A2	A3	B1	B2
			50Hz	HF					
	W		W	W					
T8	15	FD-15-E-G13-26/450	15	13.5	87.8 %	84.4 %	75.0 %	67.9 %	62.0 %
T8	18	FD-18-E-G13-26/600	18	16	87.7 %	84.2 %	76.2 %	71.3 %	65.8 %
T8	30	FD-30-E-G13-26/900	30	24	82.1 %	77.4 %	72.7 %	79.2 %	75.0 %
T8	36	FD-36-E-G13-26/1200	36	32	91.4 %	88.9 %	84.2 %	83.4 %	79.5 %
T8	38	FD-38-E-G13-26/1050	38.5	32	87.7 %	84.2 %	80.0 %	84.1 %	80.4 %
T8	58	FD-58-E-G13-26/1500	58	50	93.0 %	90.9 %	84.7 %	86.1 %	82.2 %
T8	70	FD-70-E-G13-26/1800	69.5	60	90.9 %	88.2 %	83.3 %	86.3 %	83.1 %
TC-L	18	FSD-18-E-2G11	18	16	87.7 %	84.2 %	76.2 %	71.3 %	65.8 %
TC-L	24	FSD-24-E-2G11	24	22	90.7 %	88.0 %	81.5 %	76.0 %	71.3 %

TC-L	36	FSD-36-E-2G11	36	32	91.4 %	88.9 %	84.2 %	83.4 %	79.5 %	
TCF	18	FSS-18-E-2G10	18	16	87.7 %	84.2 %	76.2 %	71.3 %	65.8 %	
TCF	24	FSS-24-E-2G10	24	22	90.7 %	88.0 %	81.5 %	76.0 %	71.3 %	
TCF	36	FSS-36-E-2G10	36	32	91.4 %	88.9 %	84.2 %	83.4 %	79.5 %	
TC-D / DE	10	FSQ-10-E-G24q=1 G24d=1	FSQ-10-I- G24d=1	10	9.5	89.4 %	86.4 %	73.1 %	67.9 %	59.4 %
TC-D / DE	13	FSQ-13-E-G24q=1 G24d=1	FSQ-13-I- G24d=1	13	12.5	91.7 %	89.3 %	78.1 %	72.6 %	65.0 %
TC-D / DE	18	FSQ-18-E-G24q=2 G24d=2	FSQ-18-I- G24d=2	18	16.5	89.8 %	86.8 %	78.6 %	71.3 %	65.8 %
TC-D / DE	26	FSQ-26-E-G24q=3 G24d=3	FSQ-26-I- G24d=3	26	24	91.4 %	88.9 %	82.8 %	77.2 %	72.6 %
TC-T / TE	13	FSM-13-E-GX24q=1 GX24d=1	FSM-13-I- GX24d=1	13	12.5	91.7 %	89.3 %	78.1 %	72.6 %	65.0 %
TC-T / TE	18	FSM-18-E-GX24q=2 GX24d=2	FSM-18-I- GX24d=2	18	16.5	89.8 %	86.8 %	78.6 %	71.3 %	65.8 %
TC-T / TC-TE	26	FSM-26-E-GX24q=3 GX24d=3	FSM-26-I- GX24d=3	26.5	24	91.4 %	88.9 %	82.8 %	77.5 %	73.0 %
TC-DD / DDE	10	FSS-10-E-GR10q	FSS-10-L/P/H- GR10q	10.5	9.5	86.4 %	82.6 %	70.4 %	68.8 %	60.5 %
TC-DD / DDE	16	FSS-16-E-GR10q	FSS-16-I-GR8 FSS-16-L/P/H-GR10q	16	15	87.0 %	83.3 %	75.0 %	72.4 %	66.1 %
TC-DD / DDE	21	FSS-21-E-GR10q	FSS-21-L/P/H-GR10q	21	19.5	89.7 %	86.7 %	78.0 %	73.9 %	68.8 %
TC-DD / DDE	28	FSS-28-E-GR10q	FSS-28-I-GR8 FSS-28-L/P/H-GR10q	28	24.5	89.1 %	86.0 %	80.3 %	78.2 %	73.9 %
TC-DD / DDE	38	FSS-38-E-GR10q	FSS-38-L/P/H- GR10q	38.5	34.5	92.0 %	89.6 %	85.2 %	84.1 %	80.4 %
TC	5	FSD-5-I-G23	FSD-5-E-2G7	5.4	5	72.7 %	66.7 %	58.8 %	49.3 %	41.4 %
TC	7	FSD-7-I-G23	FSD-7-E-2G7	7.1	6.5	77.6 %	72.2 %	65.0 %	55.7 %	47.8 %
TC	9	FSD-9-I-G23	FSD-9-E-2G7	8.7	8	78.0 %	72.7 %	66.7 %	60.3 %	52.6 %
TC	11	FSD-11-I-G23	FSD-11-E-2G7	11.8	11	83.0 %	78.6 %	73.3 %	66.7 %	59.6 %
T5	4	FD-4-E-G5-16/150		4.5	3.6	64.9 %	58.1 %	50.0 %	45.0 %	37.2 %
T5	6	FD-6-E-G5-16/225		6	5.4	71.3 %	65.1 %	58.1 %	51.8 %	43.8 %
T5	8	FD-8-E-G5-16/300		7.1	7.5	69.9 %	63.6 %	58.6 %	48.9 %	42.7 %
T5	13	FD-13-E-G5-16/525		13	12.8	84.2 %	80.0 %	75.3 %	72.6 %	65.0 %
T9-C	22	FSC-22-E-G10q-29/200		22	19	89.4 %	86.4 %	79.2 %	74.6 %	69.7 %
T9-C	32	FSC-32-E-G10q-29/300		32	30	88.9 %	85.7 %	81.1 %	80.0 %	76.0 %

T9-C	40	FSC-40-E-G10q-29/400	40	32	89.5 %	86.5 %	82.1 %	82.6 %	79.2 %
T2	6	FDH-6-L/P-W4.3x8.5d-7/220		5	72.7 %	66.7 %	58.8 %		
T2	8	FDH-8-L/P-W4.3x8.5d-7/320		7.8	76.5 %	70.9 %	65.0 %		
T2	11	FDH-11-L/P-W4.3x8.5d-7/420		10.8	81.8 %	77.1 %	72.0 %		
T2	13	FDH-13-L/P-W4.3x8.5d-7/520		13.3	84.7 %	80.6 %	76.0 %		
T2	21	FDH-21-L/P-W4.3x8.5d-7/		21	88.9 %	85.7 %	79.2 %		
T2	23	FDH-23-L/P-W4.3x8.5d-7/		23	89.8 %	86.8 %	80.7 %		
T5-E	14	FDH-14-G5-L/P-16/550		13.7	84.7 %	80.6 %	72.1 %		
T5-E	21	FDH-21-G5-L/P-16/850		20.7	89.3 %	86.3 %	79.6 %		
T5-E	24	FDH-24-G5-L/P-16/550		22.5	89.6 %	86.5 %	80.4 %		
T5-E	28	FDH-28-G5-L/P-16/1150		27.8	89.8 %	86.9 %	81.8 %		
T5-E	35	FDH-35-G5-L/P-16/1450		34.7	91.5 %	89.0 %	82.6 %		
T5-E	39	FDH-39-G5-L/P-16/850		38	91.0 %	88.4 %	82.6 %		
T5-E	49	FDH-49-G5-L/P-16/1450		49.3	91.6 %	89.2 %	84.6 %		
T5-E	54	FDH-54-G5-L/P-16/1150		53.8	92.0 %	89.7 %	85.4 %		
T5-E	80	FDH-80-G5-L/P-16/1150		80	93.0 %	90.9 %	87.0 %		
T5-E	95	FDH-95-G5-L/P-16/1150		95	92.7 %	90.5 %	84.1 %		
T5-E	120	FDH-120-G5-L/P-16/1450		120	92.5 %	90.2 %	84.5 %		
T5-C	22	FSCH-22-L/P-2GX13-16/225		22.3	88.1 %	84.8 %	78.8 %		
T5-C	40	FSCH-40-L/P-2GX13-16/300		39.9	91.4 %	88.9 %	83.3 %		
T5-C	55	FSCH-55-L/P-2GX13-16/300		55	92.4 %	90.2 %	84.6 %		
T5-C	60	FSCH-60-L/P-2GX13-16/375		60	93.0 %	90.9 %	85.7 %		
TC-LE	40	FSDH-40-L/P-2G11		40	91.4 %	88.9 %	83.3 %		
TC-LE	55	FSDH-55-L/P-2G11		55	92.4 %	90.2 %	84.6 %		
TC-LE	80	FSDH-80-L/P-2G11		80	93.0 %	90.9 %	87.0 %		
TC-TE	32	FSMH-32-L/P-2GX24q=3		32	91.4 %	88.9 %	82.1 %		
TC-TE	42	FSMH-42-L/P-2GX24q=4		43	93.5 %	91.5 %	86.0 %		
TC-TE	57	FSM6H-57-L/P-2GX24q=5 FSM8H-57-L/P-2GX24q=5		56	91.4 %	88.9 %	83.6 %		

TC-TE	70	FSM6H-70-L/P-2GX24q=6 FSM8H-70-L/P-2GX24q=6		70	93.0 %	90.9 %	85.4 %		
TC-TE	60	FSM6H-60-L/P-2G8=1		63	92.3 %	90.0 %	84.0 %		
TC-TE	62	FSM8H-62-L/P-2G8=2		62	92.2 %	89.9 %	83.8 %		
TC-TE	82	FSM8H-82-L/P-2G8=2		82	92.4 %	90.1 %	83.7 %		
TC-TE	85	FSM6H-85-L/P-2G8=1		87	92.8 %	90.6 %	84.5 %		
TC-TE	120	FSM6H-120-L/P-2G8=1 FSM8H-120-L/P-2G8=1		122	92.6 %	90.4 %	84.7 %		
TC-DD	55	FSSH-55-L/P-GRY10q3		55	92.4 %	90.2 %	84.6 %		

"

(18) The following paragraph is added after the first paragraph of Annex IV:

"Member States 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."