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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, XXX  
C(2010) YYY final

Draft

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

**of [...]**

**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**

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

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**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**

**(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

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

Having regard to Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products, and in particular Article 15(1) thereof,

After consulting the Ecodesign Consultation Forum,

Whereas:

- (1) After the adoption of Regulation (EC) No 245/2009 it appeared that certain provisions of that Regulation should be amended in order to avoid unintended impacts on the availability and performance of the products covered by that Regulation.
- (2) In addition, it is necessary to improve coherence, as regards the requirements on product information, between on the one hand Commission Regulation (EC) No 245/2009 of 18 March 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for fluorescent lamps without integrated ballast, for high intensity discharge lamps, and for ballasts and luminaires able to operate such lamps, and repealing Directive 2000/55/EC of the European Parliament and of the Council<sup>1</sup>, and on the other hand Commission Regulation (EC) No 244/2009 of 18 March 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps<sup>2</sup>.
- (3) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 19(1) of Directive 2009/125/EC,

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<sup>1</sup> OJ L 76, 24.3.2009, p. 17.

<sup>2</sup> OJ L 285, 31.10.2009, p. 10.

HAS ADOPTED THIS REGULATION:

*Article 1*  
***Amendments to Regulation (EC) No 245/2009***

Annexes I, II, III and IV to Regulation (EC) No 245/2009 are amended as set out in the Annex to this Regulation.

*Article 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*  
*The President*

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

Annexes I, II, III and IV to Regulation (EC) No 245/2009 are amended as follows:

(1) Annex I is amended as follows:

(a) the title is replaced by the following:

"Exemptions";

(b) the introductory sentence in point 1 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 2009/125/EC states which of the technical parameters listed hereunder provide(s) a basis for their exemption:";

(c) points 1(c) and 1(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);";

(d) point 2 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 listed in points (b) to (e):

(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 Council<sup>3</sup> or Directive 1999/92/EC of the European Parliament and of the Council<sup>4</sup>;
- (c) emergency lighting luminaires and emergency sign luminaires within the meaning of Council Directive 2006/95/EC<sup>5</sup>;
- (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 Directive 94/9/EC, Directive 1999/92/EC, Directive 2006/42/EC of the European Parliament and of the Council<sup>6</sup>, Council Directive 93/42/EEC<sup>7</sup>, Council Directive 88/378/EEC<sup>8</sup> and luminaires integrated into equipment covered by these requirements.

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 2009/125/EC shall list the technical parameters that make the product design specific for the stated intended purpose."

(2) Annex II is amended as follows:

(a) the first sentence is deleted;

(b) The following sentence is added to point (c):

"For the purposes of Table 6 in Annex III, the LSF shall be measured in high frequency operating mode with a switching cycle of 11h/1h ."

(c) The following point (o) is added to point 3:

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

(3) Annex III is amended as follows:

(a) Table 2 is replaced by the following:

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<sup>3</sup> OJ L 100, 19.4.1994, p. 1.

<sup>4</sup> OJ L 23, 28.1.2000, p. 57.

<sup>5</sup> OJ L 374, 27.12.2006, p. 10.

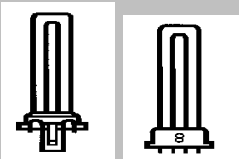
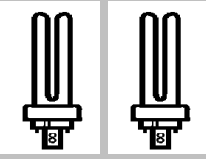
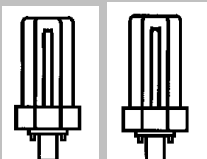
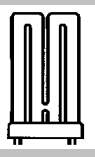
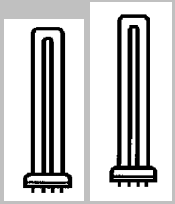
<sup>6</sup> OJ L 157, 9.6.2006, p. 24.

<sup>7</sup> OJ L 169, 12.7.1993, p. 1.

<sup>8</sup> OJ L 187, 16.7.1988, p. 1.

**"Table 2**

*Rated minimum efficacy values for single capped fluorescent lamps working on electromagnetic and electronic ballast*

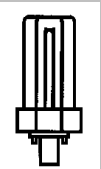
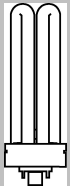
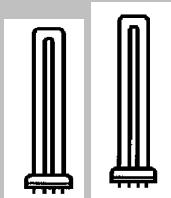
<b>Small single parallel tube, lamp cap G23 (2 pin) or 2G7 (4 pin)</b> 		<b>Double parallel tubes, lamp cap G24d (2 pin) or G24q (4 pin)</b> 		<b>Triple parallel tubes, lamp cap GX24d (2 pin) or GX24q (4 pin)</b> 	
Nominal wattage (W)	Rated luminous efficacy (lm/W), 100 h initial value	Nominal wattage (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	69	18	67
9	67	18	67	26	66
11	76	26	66		
<b>4 legs in one plane, lamp cap 2G10 (4 pin)</b> 		<b>Long single parallel tube, lamp cap 2G11 (4 pin)</b> 			
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		

”;

(b) Table 3 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)	
					
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				

”;

(c) Table 6 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 $\geq 0.50$ after 40000 burning hours	- 5%

”;

- (d) The title of Table 7 is replaced by the following:

**"Table 7**

*Rated minimum efficacy values for high pressure sodium lamps with  $Ra \leq 60$ ";*

- (e) The title of Table 8 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  $Ra > 60$ ";*

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

"Fluorescent lamps without integrated ballast shall be able to operate with ballasts of energy efficiency class A2 or more efficient ballasts in accordance with point 2.2 of Annex III. In addition they may also operate with ballasts of less efficient classes than A2."

- (g) Table 11 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

":

(h) The following introductory phrase and Table 11a is added after Table 11:

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

**Table 11a – Deduction percentages for fluorescent lamp lumen maintenance requirements**

<b>Lamp parameter</b>	<b>Deduction from lamp lumen maintenance requirement</b>
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 %

"  
";

- (i) Table 12 is replaced by the following:

**"Table 12**

*Lamp survival factors for single and double capped fluorescent lamps – Stage 2*

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

"  
";

(j) Table 13 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
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.";

(k) 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.";

(l) Table 17 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
	W		50Hz	HF					
			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 %

<b>T8</b>	<b>36</b>	FD-36-E-G13-26/1200	<b>36</b>	<b>32</b>	<b>91.4 %</b>	<b>88.9 %</b>	<b>84.2 %</b>	<b>83.4 %</b>	<b>79.5 %</b>	
<b>T8</b>	<b>38</b>	FD-38-E-G13-26/1050	<b>38.5</b>	<b>32</b>	<b>87.7 %</b>	<b>84.2 %</b>	<b>80.0 %</b>	<b>84.1 %</b>	<b>80.4 %</b>	
<b>T8</b>	<b>58</b>	FD-58-E-G13-26/1500	<b>58</b>	<b>50</b>	<b>93.0 %</b>	<b>90.9 %</b>	<b>84.7 %</b>	<b>86.1 %</b>	<b>82.2 %</b>	
<b>T8</b>	<b>70</b>	FD-70-E-G13-26/1800	<b>69.5</b>	<b>60</b>	<b>90.9 %</b>	<b>88.2 %</b>	<b>83.3 %</b>	<b>86.3 %</b>	<b>83.1 %</b>	
<b>TC-L</b>	<b>18</b>	FSD-18-E-2G11	<b>18</b>	<b>16</b>	<b>87.7 %</b>	<b>84.2 %</b>	<b>76.2 %</b>	<b>71.3 %</b>	<b>65.8 %</b>	
<b>TC-L</b>	<b>24</b>	FSD-24-E-2G11	<b>24</b>	<b>22</b>	<b>90.7 %</b>	<b>88.0 %</b>	<b>81.5 %</b>	<b>76.0 %</b>	<b>71.3 %</b>	
<b>TC-L</b>	<b>36</b>	FSD-36-E-2G11	<b>36</b>	<b>32</b>	<b>91.4 %</b>	<b>88.9 %</b>	<b>84.2 %</b>	<b>83.4 %</b>	<b>79.5 %</b>	
<b>TCF</b>	<b>18</b>	FSS-18-E-2G10	<b>18</b>	<b>16</b>	<b>87.7 %</b>	<b>84.2 %</b>	<b>76.2 %</b>	<b>71.3 %</b>	<b>65.8 %</b>	
<b>TCF</b>	<b>24</b>	FSS-24-E-2G10	<b>24</b>	<b>22</b>	<b>90.7 %</b>	<b>88.0 %</b>	<b>81.5 %</b>	<b>76.0 %</b>	<b>71.3 %</b>	
<b>TCF</b>	<b>36</b>	FSS-36-E-2G10	<b>36</b>	<b>32</b>	<b>91.4 %</b>	<b>88.9 %</b>	<b>84.2 %</b>	<b>83.4 %</b>	<b>79.5 %</b>	
<b>TC-D / DE</b>	<b>10</b>	FSQ-10-E-G24q=1 G24d=1	FSQ-10-I- G24d=1	<b>10</b>	<b>9.5</b>	<b>89.4 %</b>	<b>86.4 %</b>	<b>73.1 %</b>	<b>67.9 %</b>	<b>59.4 %</b>
<b>TC-D / DE</b>	<b>13</b>	FSQ-13-E-G24q=1 G24d=1	FSQ-13-I- G24d=1	<b>13</b>	<b>12.5</b>	<b>91.7 %</b>	<b>89.3 %</b>	<b>78.1 %</b>	<b>72.6 %</b>	<b>65.0 %</b>
<b>TC-D / DE</b>	<b>18</b>	FSQ-18-E-G24q=2 G24d=2	FSQ-18-I- G24d=2	<b>18</b>	<b>16.5</b>	<b>89.8 %</b>	<b>86.8 %</b>	<b>78.6 %</b>	<b>71.3 %</b>	<b>65.8 %</b>
<b>TC-D / DE</b>	<b>26</b>	FSQ-26-E-G24q=3 G24d=3	FSQ-26-I- G24d=3	<b>26</b>	<b>24</b>	<b>91.4 %</b>	<b>88.9 %</b>	<b>82.8 %</b>	<b>77.2 %</b>	<b>72.6 %</b>
<b>TC-T / TE</b>	<b>13</b>	FSM-13-E-GX24q=1 GX24d=1	FSM-13-I- GX24d=1	<b>13</b>	<b>12.5</b>	<b>91.7 %</b>	<b>89.3 %</b>	<b>78.1 %</b>	<b>72.6 %</b>	<b>65.0 %</b>
<b>TC-T / TE</b>	<b>18</b>	FSM-18-E-GX24q=2 GX24d=2	FSM-18-I- GX24d=2	<b>18</b>	<b>16.5</b>	<b>89.8 %</b>	<b>86.8 %</b>	<b>78.6 %</b>	<b>71.3 %</b>	<b>65.8 %</b>
<b>TC-T / TC-TE</b>	<b>26</b>	FSM-26-E-GX24q=3 GX24d=3	FSM-26-I- GX24d=3	<b>26.5</b>	<b>24</b>	<b>91.4 %</b>	<b>88.9 %</b>	<b>82.8 %</b>	<b>77.5 %</b>	<b>73.0 %</b>
<b>TC-DD / DDE</b>	<b>10</b>	FSS-10-E-GR10q	FSS-10-L/P/H- GR10q	<b>10.5</b>	<b>9.5</b>	<b>86.4 %</b>	<b>82.6 %</b>	<b>70.4 %</b>	<b>68.8 %</b>	<b>60.5 %</b>
<b>TC-DD / DDE</b>	<b>16</b>	FSS-16-E-GR10q	FSS-16-I-GR8 FSS-16-L/P/H-GR10q	<b>16</b>	<b>15</b>	<b>87.0 %</b>	<b>83.3 %</b>	<b>75.0 %</b>	<b>72.4 %</b>	<b>66.1 %</b>
<b>TC-DD / DDE</b>	<b>21</b>	FSS-21-E-GR10q	FSS-21-L/P/H-GR10q	<b>21</b>	<b>19.5</b>	<b>89.7 %</b>	<b>86.7 %</b>	<b>78.0 %</b>	<b>73.9 %</b>	<b>68.8 %</b>
<b>TC-DD / DDE</b>	<b>28</b>	FSS-28-E-GR10q	FSS-28-I-GR8 FSS-28-L/P/H-GR10q	<b>28</b>	<b>24.5</b>	<b>89.1 %</b>	<b>86.0 %</b>	<b>80.3 %</b>	<b>78.2 %</b>	<b>73.9 %</b>
<b>TC-DD / DDE</b>	<b>38</b>	FSS-38-E-GR10q	FSS-38-L/P/H- GR10q	<b>38.5</b>	<b>34.5</b>	<b>92.0 %</b>	<b>89.6 %</b>	<b>85.2 %</b>	<b>84.1 %</b>	<b>80.4 %</b>
<b>TC</b>	<b>5</b>	FSD-5-I-G23	FSD-5-E-2G7	<b>5.4</b>	<b>5</b>	<b>72.7 %</b>	<b>66.7 %</b>	<b>58.8 %</b>	<b>49.3 %</b>	<b>41.4 %</b>
<b>TC</b>	<b>7</b>	FSD-7-I-G23	FSD-7-E-2G7	<b>7.1</b>	<b>6.5</b>	<b>77.6 %</b>	<b>72.2 %</b>	<b>65.0 %</b>	<b>55.7 %</b>	<b>47.8 %</b>
<b>TC</b>	<b>9</b>	FSD-9-I-G23	FSD-9-E-2G7	<b>8.7</b>	<b>8</b>	<b>78.0 %</b>	<b>72.7 %</b>	<b>66.7 %</b>	<b>60.3 %</b>	<b>52.6 %</b>
<b>TC</b>	<b>11</b>	FSD-11-I-G23	FSD-11-E-2G7	<b>11.8</b>	<b>11</b>	<b>83.0 %</b>	<b>78.6 %</b>	<b>73.3 %</b>	<b>66.7 %</b>	<b>59.6 %</b>

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 %		

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(4) 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."