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**ECONOMIC COMMISSION FOR EUROPE**

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Working Party on Lighting and Light-Signalling (GRE)

(Fifty-sixth session, 4-7 April 2006,  
agenda item 5.3.)

**PROPOSAL FOR DRAFT COLLECTIVE AMENDMENTS TO REGULATIONS  
Nos. 5, 6, 7, 19, 23, 31, 37, 38, 48, 50, 53, 74, 77, 86, 87, 91, 98, 99, 112, 113, 119, AND TO  
NEW DRAFT REGULATION ON "AFS"**

Transmitted by the expert from the United Kingdom

Note: The text reproduced below was prepared by the expert from the United Kingdom in order to introduce into the Regulations collective amendments regarding colour specifications. It is based on TRANS/WP.29/GRE/2004/25 and a document without a symbol (informal document No. GRE-52-14), distributed at the fifty-second GRE session (TRANS/WP.29/GRE/52, para. 39). The modifications to the current texts of the Regulations are marked in **bold** characters.

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Note: This document is distributed to the Experts on Lighting and Light-Signalling only.

GE.06-20329

**A.1. PROPOSAL**

REGULATION No. 5 – (Sealed beam headlamps)

(The following text is based upon Supplement 5 to the 02 series of amendments)

Insert a new paragraph 2.5., to read:

**"2.5. The definitions of the colour of the light emitted, given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation."**

**A.2. PROPOSAL**

REGULATION No. 6 – (Direction indicators)

(The following text is based upon Supplement 13 to the 01 series of amendments)

Paragraph 8., amend to read:

**"8. COLOUR OF LIGHT EMITTED**

The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2. of Annex 4 shall be **amber**. **For testing see** Annex 5 to this Regulation. Outside this field, no sharp variation of colour shall be observed."

Annex 5, amend to read (all colour coordinates should be deleted):

"Annex 5

COLOUR OF AMBER LIGHTS: TRICHROMATIC CO-ORDINATES

For checking these colorimetric characteristics .... "

Annex 6, paragraph 2.4., amend to read:

**"2.4. Measured and recorded photometric characteristics**

The sampled **lamp** shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4, and the chromaticity coordinates, **provided for in the Regulation.**"

### A.3. PROPOSAL

REGULATION No. 7 – (Front and rear position lamps, stop-lamps and end-outline marker lamps). (The following text is based upon Supplement 10 to the 02 series of amendments)

Paragraph 8., amend to read:

#### "8. COLOUR OF LIGHT EMITTED

The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2. of Annex 4 shall be **red or white**. **For testing see Annex 5** to this Regulation. Outside this field, no sharp variation of colour shall be observed."

Annex 5, amend to read (all colour coordinates should be deleted):

#### "Annex 5

#### COLOURS OF LIGHTS: TRICHROMATIC CO-ORDINATES

For checking these colorimetric characteristics .... "

Annex 6, paragraph 2.4., amend to read:

#### "2.4. Measured and recorded photometric characteristics

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4 and the chromaticity **coordinates, provided** for in the Regulation."

### A.4. PROPOSAL

REGULATION No. 19 – (Front fog lamps)  
(The following text is based upon Supplement 10 to the 02 series of amendments)

Insert a new paragraph 1.5., to read:

"1.5. **The definitions of the colour of the light emitted, given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation.**"

Paragraph 7., amend to read (all colour coordinates and pertaining sentence should be deleted):

"7. COLOUR

Approval may be obtained for a type of front fog lamp emitting either white or selective yellow light. The colouring, if any, of the beam may be obtained either through the filament lamp bulb or through the lens of the front fog lamp or by any other suitable means."

#### A.5. PROPOSAL

REGULATION No. 23 – (Reversing lamps)

(The following text is based upon Supplement 12 to the Regulation)

Paragraph 8., amend to read:

"8. COLOUR OF LIGHT EMITTED

The colour of the light emitted inside the field of the light distribution grid defined at paragraph 2. of Annex 3 shall be white. **For testing see** Annex 4 to this Regulation. Outside this field no sharp variation of colour shall be observed."

Annex 4., amend to read (all colour coordinates should be deleted):

#### "Annex 4

#### COLOUR OF WHITE LIGHT: TRICHROMATIC COORDINATES

For checking these colorimetric characteristics .... "

Annex 5, paragraph 2.4., amend to read:

"2.4. Measured and recorded photometric characteristics

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 3 and the chromaticity **coordinates, provided** for in the Regulation."

**A.6. PROPOSAL**

REGULATION No. 31 – (Halogen sealed-beam headlamps)

(The following text is based upon Supplement 5 of the 02 series of amendments)

Insert a new paragraph 2.5., to read:

**"2.5. The definitions of the colour of the light emitted, given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation."**

**A.7. PROPOSAL**

REGULATION No. 37 – (Filament lamps)

(The following text is based upon draft Supplement 27 to the 03 series of amendments)

Paragraph 3.6.2., amend to read:

**"3.6.2. The definitions of the colour of the light emitted, given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation."**

**A.8. PROPOSAL**

REGULATION No. 38 – (Rear fog lamps)

(The following text is based upon Supplement 11 to the Regulation)

Paragraph 9., amend to read (all colour coordinates should be deleted):

"9. COLOUR OF LIGHT EMITTED

The colour of the light emitted inside the field of the light distribution grid defined at paragraph 3. of Annex 3 **shall be red**, which shall be measured by using a source of light at a colour temperature of **2,856 K**.

**However**, for lamps equipped with non-replaceable light sources (filament lamps and other), the colorimetric characteristics should be verified with the light sources present in the lamp, in accordance with paragraph 7.1. of this Regulation."

Annex 4, paragraph 2.4., amend to read:

"2.4. Measured and recorded photometric characteristics

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 3 and for the chromaticity coordinates provided **for in the Regulation.**"

**A.9. PROPOSAL**

REGULATION No. 48 – (Installation of lighting and light-signalling devices)  
(The following text is based upon Supplement 13 to the 02 series of amendments)

Insert a new paragraph 2.27. and the respective footnote \*/ to read:

**"2.27. Colour of the light emitted from a device**

**2.27.1. "White" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:**

<b>W<sub>12</sub></b>	<b>green boundary:</b>	<b><math>y = 0.150 + 0.640 x</math></b>
<b>W<sub>23</sub></b>	<b>yellowish green boundary:</b>	<b><math>y = 0.440</math></b>
<b>W<sub>34</sub></b>	<b>yellow boundary:</b>	<b><math>x = 0.500</math></b>
<b>W<sub>45</sub></b>	<b>reddish purple boundary:</b>	<b><math>y = 0.382</math></b>
<b>W<sub>56</sub></b>	<b>purple boundary:</b>	<b><math>y = 0.050 + 0.750 x</math></b>
<b>W<sub>61</sub></b>	<b>blue boundary:</b>	<b><math>x = 0.310</math></b>

**with intersection points:**

	<b>x</b>	<b>y</b>
<b>W<sub>1</sub>:</b>	<b>0.310</b>	<b>0.348</b>
<b>W<sub>2</sub>:</b>	<b>0.453</b>	<b>0.440</b>
<b>W<sub>3</sub>:</b>	<b>0.500</b>	<b>0.440</b>
<b>W<sub>4</sub>:</b>	<b>0.500</b>	<b>0.382</b>
<b>W<sub>5</sub>:</b>	<b>0.443</b>	<b>0.382</b>
<b>W<sub>6</sub>:</b>	<b>0.310</b>	<b>0.283</b>

**2.27.2. "Selective-yellow" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:**

<b>SY<sub>12</sub></b>	<b>green boundary:</b>	<b><math>y = 1.290 x - 0.100</math></b>
<b>SY<sub>23</sub></b>	<b>the spectral locus</b>	
<b>SY<sub>34</sub></b>	<b>red boundary:</b>	<b><math>y = 0.138 + 0.580 x</math></b>
<b>SY<sub>45</sub></b>	<b>yellowish white boundary:</b>	<b><math>y = 0.440</math></b>
<b>SY<sub>51</sub></b>	<b>white boundary:</b>	<b><math>y = 0.940 - x</math></b>

**with intersection points:**

	<b>x</b>	<b>y</b>
<b>SY<sub>1</sub>:</b>	<b>0.454</b>	<b>0.486</b>
<b>SY<sub>2</sub>:</b>	<b>0.480</b>	<b>0.519</b>
<b>SY<sub>3</sub>:</b>	<b>0.545</b>	<b>0.454</b>
<b>SY<sub>4</sub>:</b>	<b>0.521</b>	<b>0.440</b>
<b>SY<sub>5</sub>:</b>	<b>0.500</b>	<b>0.440</b>

2.27.3. "**Amber**" means the chromaticity coordinates  $(x,y)$  <sup>\*/</sup> of the light emitted lie inside the chromaticity areas defined by the boundaries:

A <sub>12</sub>	green boundary:	$y = x - 0.120$
A <sub>23</sub>	the spectral locus	
A <sub>34</sub>	red boundary:	$y = 0.390$
A <sub>41</sub>	white boundary:	$y = 0.790 - 0.670 x$

with intersection points:

	x	y
A <sub>1</sub> :	0.545	0.425
A <sub>2</sub> :	0.557	0.442
A <sub>3</sub> :	0.609	0.390
A <sub>4</sub> :	0.597	0.390

2.27.4. "**Red**" means the chromaticity coordinates  $(x,y)$  <sup>\*/</sup> of the light emitted lie inside the chromaticity areas defined by the boundaries:

R <sub>12</sub>	yellow boundary:	$y = 0.335$
R <sub>23</sub>	the spectral locus	
R <sub>34</sub>	the purple line	(its linear extension across the purple range of colours between the red and the blue extremities of the spectral locus).
R <sub>41</sub>	purple boundary:	$y = 0.980 - x$

with intersection points:

	x	y
R <sub>1</sub> :	0.645	0.335
R <sub>2</sub> :	0.665	0.335
R <sub>3</sub> :	0.735	0.265
R <sub>4</sub> :	0.721	0.259

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<sup>\*/</sup> CIE Publication 15.2, 1986, Colorimetry, the CIE 1931 standard colorimetric observer."

**A.10. PROPOSAL**

ECE REGULATION No. 50 – (Position, stop and direction indicator lamps for mopeds and motorcycles). (The following text is based upon Supplement 9 to the Regulation)

Paragraph 9., amend to read:

**"9. COLOUR OF LIGHT EMITTED**

Stop lamps and rear position lamps shall emit red light, front position lamps shall emit white light, direction indicators shall emit amber light. The colour of the light emitted inside the field of the light distribution grid defined at paragraph 2. of Annex 4, **shall be measured using a light source having a colour temperature of 2,856 K, 3/ in accordance with Annex 5 to this Regulation.** Outside this field no sharp variation of colour shall be observed.

However, for lamps equipped with non-replaceable light sources, the colorimetric characteristics should be verified with the light sources present in the lamps at a voltage of 6.75 V, 13.5 V or 28.0 V."

Annex 5, amend to read (all colour coordinates should be deleted):

**"Annex 5****COLOURS OF LAMPS TRICHROMATIC CO-ORDINATES**

For verifying the limits a source of light .... "

**A.11. PROPOSAL**

REGULATION No. 53 – (Installation of lighting and light-signalling devices for L<sub>3</sub> category vehicles). (The following text is based upon Supplement 6 of the 01 series of amendments)

Insert a new paragraph 2.21. and the respective footnote \*/, to read:

**"2.21. Colour of the light emitted from a device:**

**2.21.1. "White" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:**

<b>W<sub>12</sub></b>	<b>green boundary:</b>	<b>y = 0.150 + 0.640 x</b>
<b>W<sub>23</sub></b>	<b>yellowish green boundary:</b>	<b>y = 0.440</b>
<b>W<sub>34</sub></b>	<b>yellow boundary:</b>	<b>x = 0.500</b>
<b>W<sub>45</sub></b>	<b>reddish purple boundary:</b>	<b>y = 0.382</b>
<b>W<sub>56</sub></b>	<b>purple boundary:</b>	<b>y = 0.050 + 0.750 x</b>
<b>W<sub>61</sub></b>	<b>blue boundary:</b>	<b>x = 0.310</b>



with intersection points:

	x	y
<b>W<sub>1</sub>:</b>	<b>0.310</b>	<b>0.348</b>
<b>W<sub>2</sub>:</b>	<b>0.453</b>	<b>0.440</b>
<b>W<sub>3</sub>:</b>	<b>0.500</b>	<b>0.440</b>
<b>W<sub>4</sub>:</b>	<b>0.500</b>	<b>0.382</b>
<b>W<sub>5</sub>:</b>	<b>0.443</b>	<b>0.382</b>
<b>W<sub>6</sub>:</b>	<b>0.310</b>	<b>0.283</b>

2.21.2. "Selective-yellow" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

<b>SY<sub>12</sub></b>	<b>green boundary:</b>	<b>y = 1.290 x - 0.100</b>
<b>SY<sub>23</sub></b>	<b>the spectral locus</b>	
<b>SY<sub>34</sub></b>	<b>red boundary:</b>	<b>y = 0.138 + 0.580 x</b>
<b>SY<sub>45</sub></b>	<b>yellowish white boundary:</b>	<b>y = 0.440</b>
<b>SY<sub>51</sub></b>	<b>white boundary:</b>	<b>y = 0.940 - x</b>

with intersection points:

	x	y
<b>SY<sub>1</sub>:</b>	<b>0.454</b>	<b>0.486</b>
<b>SY<sub>2</sub>:</b>	<b>0.480</b>	<b>0.519</b>
<b>SY<sub>3</sub>:</b>	<b>0.545</b>	<b>0.454</b>
<b>SY<sub>4</sub>:</b>	<b>0.521</b>	<b>0.440</b>
<b>SY<sub>5</sub>:</b>	<b>0.500</b>	<b>0.440</b>

2.21.3. "Amber" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

<b>A<sub>12</sub></b>	<b>green boundary:</b>	<b>y = x - 0.120</b>
<b>A<sub>23</sub></b>	<b>the spectral locus</b>	
<b>A<sub>34</sub></b>	<b>red boundary:</b>	<b>y = 0.390</b>
<b>A<sub>41</sub></b>	<b>white boundary:</b>	<b>y = 0.790 - 0.670 x</b>

with intersection points:

	x	y
<b>A<sub>1</sub>:</b>	<b>0.545</b>	<b>0.425</b>
<b>A<sub>2</sub>:</b>	<b>0.557</b>	<b>0.442</b>
<b>A<sub>3</sub>:</b>	<b>0.609</b>	<b>0.390</b>
<b>A<sub>4</sub>:</b>	<b>0.597</b>	<b>0.390</b>

2.21.4. "Red" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

<b>R<sub>12</sub></b>	<b>yellow boundary:</b>	<b><math>y = 0.335</math></b>
<b>R<sub>23</sub></b>	<b>the spectral locus</b>	
<b>R<sub>34</sub></b>	<b>the purple line</b>	<b>(its linear extension across the purple range of colours between the red and the blue extremities of the spectral locus).</b>
<b>R<sub>41</sub></b>	<b>purple boundary:</b>	<b><math>y = 0.980 - x</math></b>

with intersection points:

	<b>x</b>	<b>y</b>
<b>R<sub>1</sub>:</b>	<b>0.645</b>	<b>0.335</b>
<b>R<sub>2</sub>:</b>	<b>0.665</b>	<b>0.335</b>
<b>R<sub>3</sub>:</b>	<b>0.735</b>	<b>0.265</b>
<b>R<sub>4</sub>:</b>	<b>0.721</b>	<b>0.259</b>

\*/ CIE Publication 15.2, 1986, Colorimetry, the CIE 1931 standard colorimetric observer."

#### **A.12. PROPOSAL**

REGULATION No. 74 – (Installation of lighting and light-signalling devices for mopeds)  
(The following text is based upon Supplement 3 to the 01 series of amendments)

Insert a new paragraph 2.21. and the respective footnote \*/, to read:

#### **"2.21. Colour of the light emitted from a device**

**2.21.1. "White" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:**

<b>W<sub>12</sub></b>	<b>green boundary:</b>	<b><math>y = 0.150 + 0.640 x</math></b>
<b>W<sub>23</sub></b>	<b>yellowish green boundary:</b>	<b><math>y = 0.440</math></b>
<b>W<sub>34</sub></b>	<b>yellow boundary:</b>	<b><math>x = 0.500</math></b>
<b>W<sub>45</sub></b>	<b>reddish purple boundary:</b>	<b><math>y = 0.382</math></b>
<b>W<sub>56</sub></b>	<b>purple boundary:</b>	<b><math>y = 0.050 + 0.750 x</math></b>
<b>W<sub>61</sub></b>	<b>blue boundary:</b>	<b><math>x = 0.310</math></b>

with intersection points:

	x	y
<b>W<sub>1</sub>:</b>	<b>0.310</b>	<b>0.348</b>
<b>W<sub>2</sub>:</b>	<b>0.453</b>	<b>0.440</b>
<b>W<sub>3</sub>:</b>	<b>0.500</b>	<b>0.440</b>
<b>W<sub>4</sub>:</b>	<b>0.500</b>	<b>0.382</b>
<b>W<sub>5</sub>:</b>	<b>0.443</b>	<b>0.382</b>
<b>W<sub>6</sub>:</b>	<b>0.310</b>	<b>0.283</b>

2.21.2. "Selective-yellow" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

<b>SY<sub>12</sub></b>	<b>green boundary:</b>	<b>y = 1.290 x - 0.100</b>
<b>SY<sub>23</sub></b>	<b>the spectral locus</b>	
<b>SY<sub>34</sub></b>	<b>red boundary:</b>	<b>y = 0.138 + 0.580 x</b>
<b>SY<sub>45</sub></b>	<b>yellowish white boundary:</b>	<b>y = 0.440</b>
<b>SY<sub>51</sub></b>	<b>white boundary:</b>	<b>y = 0.940 - x</b>

with intersection points:

	x	y
<b>SY<sub>1</sub>:</b>	<b>0.454</b>	<b>0.486</b>
<b>SY<sub>2</sub>:</b>	<b>0.480</b>	<b>0.519</b>
<b>SY<sub>3</sub>:</b>	<b>0.545</b>	<b>0.454</b>
<b>SY<sub>4</sub>:</b>	<b>0.521</b>	<b>0.440</b>
<b>SY<sub>5</sub>:</b>	<b>0.500</b>	<b>0.440</b>

2.21.3. "Amber" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

<b>A<sub>12</sub></b>	<b>green boundary:</b>	<b>y = x - 0.120</b>
<b>A<sub>23</sub></b>	<b>the spectral locus</b>	
<b>A<sub>34</sub></b>	<b>red boundary:</b>	<b>y = 0.390</b>
<b>A<sub>41</sub></b>	<b>white boundary:</b>	<b>y = 0.790 - 0.670 x</b>

with intersection points:

	x	y
<b>A<sub>1</sub>:</b>	<b>0.545</b>	<b>0.425</b>
<b>A<sub>2</sub>:</b>	<b>0.557</b>	<b>0.442</b>
<b>A<sub>3</sub>:</b>	<b>0.609</b>	<b>0.390</b>
<b>A<sub>4</sub>:</b>	<b>0.597</b>	<b>0.390</b>

2.21.4. "**Red**" means the chromaticity coordinates (x,y) <sup>\*/</sup> of the light emitted lie inside the chromaticity areas defined by the boundaries:

R <sub>12</sub>	yellow boundary:	$y = 0.335$
R <sub>23</sub>	the spectral locus	
R <sub>34</sub>	the purple line	(its linear extension across the purple range of colours between the red and the blue extremities of the spectral locus).
R <sub>41</sub>	purple boundary:	$y = 0.980 - x$

with intersection points:

	x	y
R <sub>1</sub> :	0.645	0.335
R <sub>2</sub> :	0.665	0.335
R <sub>3</sub> :	0.735	0.265
R <sub>4</sub> :	0.721	0.259

<sup>\*/</sup> CIE Publication 15.2, 1986, Colorimetry, the CIE 1931 standard colorimetric observer."

#### A.13. PROPOSAL

REGULATION No. 77 – (Parking lamps)

(The following text is based upon Supplement 9 to the Regulation)

Paragraph 9., amend to read:

#### "9. COLOUR OF LIGHT EMITTED

The colour of the light emitted inside the field of the light distribution grid defined at paragraph 2. of Annex 4, measured by using a source of light with a colour temperature of 2,856 K, corresponding to illuminant A of the International Commission on Illumination (CIE), shall be **red, white or amber**. For testing see Annex 5 to this Regulation. Outside this field no sharp variation of colour shall be observed.

However, for lamps equipped with non-replaceable light sources (filament lamps and other), the colorimetric characteristics should be verified with the light sources present in the lamp, in accordance with paragraph 8.1. of this Regulation."

Annex 5, amend to read (all colour coordinates should be deleted):

"Annex 5

COLOUR OF LIGHT EMITTED TRICHROMATIC CO-ORDINATES

For checking those colorimetric characteristics .... "

Annex 6, paragraph 2.4., amend to read:

"2.4. Measured and recorded photometric characteristics

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4 and the chromaticity **coordinates, provided** for in the Regulation."

**A.14. PROPOSAL**

REGULATION No. 86 – (Installation of lighting and light-signalling devices for agricultural tractors). (The following text is based upon Supplement 2 to the Regulation)

Insert a new paragraph 2.20. and the respective footnote \*/, to read:

"2.20. Colour of the light emitted from a device:

2.20.1. "White" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

<b>W<sub>12</sub></b>	<b>green boundary:</b>	<b>y = 0.150 + 0.640 x</b>
<b>W<sub>23</sub></b>	<b>yellowish green boundary:</b>	<b>y = 0.440</b>
<b>W<sub>34</sub></b>	<b>yellow boundary:</b>	<b>x = 0.500</b>
<b>W<sub>45</sub></b>	<b>reddish purple boundary:</b>	<b>y = 0.382</b>
<b>W<sub>56</sub></b>	<b>purple boundary:</b>	<b>y = 0.050 + 0.750 x</b>
<b>W<sub>61</sub></b>	<b>blue boundary:</b>	<b>x = 0.310</b>

**with intersection points:**

	<b>x</b>	<b>y</b>
<b>W<sub>1</sub>:</b>	<b>0.310</b>	<b>0.348</b>
<b>W<sub>2</sub>:</b>	<b>0.453</b>	<b>0.440</b>
<b>W<sub>3</sub>:</b>	<b>0.500</b>	<b>0.440</b>
<b>W<sub>4</sub>:</b>	<b>0.500</b>	<b>0.382</b>
<b>W<sub>5</sub>:</b>	<b>0.443</b>	<b>0.382</b>
<b>W<sub>6</sub>:</b>	<b>0.310</b>	<b>0.283</b>

2.20.2. "Selective-yellow" means the chromaticity coordinates  $(x,y)$   $\underline{*/}$  of the light emitted lie inside the chromaticity areas defined by the boundaries:

$SY_{12}$	green boundary:	$y = 1.290 x - 0.100$
$SY_{23}$	the spectral locus	
$SY_{34}$	red boundary:	$y = 0.138 + 0.580 x$
$SY_{45}$	yellowish white boundary:	$y = 0.440$
$SY_{51}$	white boundary:	$y = 0.940 - x$

with intersection points:

	x	y
$SY_1:$	0.454	0.486
$SY_2:$	0.480	0.519
$SY_3:$	0.545	0.454
$SY_4:$	0.521	0.440
$SY_5:$	0.500	0.440

2.20.3. "Amber" means the chromaticity coordinates  $(x,y)$   $\underline{*/}$  of the light emitted lie inside the chromaticity areas defined by the boundaries:

$A_{12}$	green boundary:	$y = x - 0.120$
$A_{23}$	the spectral locus	
$A_{34}$	red boundary:	$y = 0.390$
$A_{41}$	white boundary:	$y = 0.790 - 0.670 x$

with intersection points:

	x	y
$A_1:$	0.545	0.425
$A_2:$	0.557	0.442
$A_3:$	0.609	0.390
$A_4:$	0.597	0.390

2.20.4. "Red" means the chromaticity coordinates  $(x,y)$   $\underline{*/}$  of the light emitted lie inside the chromaticity areas defined by the boundaries:

$R_{12}$	yellow boundary:	$y = 0.335$
$R_{23}$	the spectral locus	
$R_{34}$	the purple line	(its linear extension across the purple range of colours between the red and the blue extremities of the spectral locus).
$R_{41}$	purple boundary:	$y = 0.980 - x$

**with intersection points:**

	x	y
R <sub>1</sub> :	0.645	0.335
R <sub>2</sub> :	0.665	0.335
R <sub>3</sub> :	0.735	0.265
R <sub>4</sub> :	0.721	0.259

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**\*/ CIE Publication 15.2, 1986, Colorimetry, the CIE 1931 standard colorimetric observer."**

#### **A.15. PROPOSAL**

REGULATION No. 87 – (Daytime running lamps)  
(The following text is based upon Supplement 7 to the Regulation)

Contents, "Annexes", Annex 4 should be deleted.

Paragraph 9., amend to read:

##### "9. COLOUR OF LIGHT

The colour of the light emitted inside the field of the light distribution grid defined at paragraph 3. of Annex 3 shall be white. It shall be measured by using a source of light at a colour temperature of 2.856 K (corresponding to illuminant A of the International Commission on Illumination, CIE). However, for lamps equipped with non-replaceable light sources (filament lamps and other), the colorimetric characteristics should be verified with the light sources present in the lamp, in accordance with paragraph 10.2. of this Regulation.

The colour of the light emitted inside the light distribution grid defined at paragraph 5. of Annex 3 must be **white**. **Outside** this field no sharp variation of colour shall be observed."

Annex 4, the text should be deleted (reserved for later purposes).

Annex 5, paragraph 2.4., amend to read:

##### "2.4. Measured and recorded photometric characteristics

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 3 and the chromaticity **coordinates, provided** for in the Regulation."

#### A.16. PROPOSAL

REGULATION No. 91 – (Side marker lamps)  
(The following text is based upon Supplement 8 to the Regulation)

Paragraph 8.2., amend to read:

"8.2. The colour of the light emitted inside the field of the light distribution grid defined at paragraph 2. of Annex 4 must be within the limits of the trichromatic co-ordinates prescribed for the colour in question **when measured in accordance with** Annex 5 to this Regulation. Outside this field no sharp variation of colour shall be observed."

Annex 5, amend to read (all colour coordinates should be deleted):

#### "Annex 5

#### COLOUR OF LIGHT EMITTED: LIGHTS FOR TRICHROMATIC CO-ORDINATES

For checking these colorimetric characteristics .... "

Annex 6, paragraph 2.4., amend to read:

"2.4. Measured and recorded photometric characteristics

The sampled **lamp** shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4 and the chromaticity **coordinates, provided** for in the Regulation."

#### A.17. PROPOSAL

REGULATION No. 98 – (Headlamps with gas-discharge light sources)  
(The following text is based upon Supplement 6 to the Regulation)

Paragraph 6.1.6., amend to read:

"6 1.6. **The colour** of the light of the beams emitted by headlamps using gas-discharge light sources **shall be white.**"

Annex 8, paragraph 1.4., amend to read:

"1.4. The chromaticity **coordinates shall** be complied with."

Annex 9, paragraph 1.4., amend to read:

"1.4. The chromaticity **coordinates shall** be complied with."



**A.18. PROPOSAL**

REGULATION No. 99 – (Gas-discharge light sources)  
(The following text is based upon Supplement 3 to the Regulation)

Paragraph 3.9.1., amend to read:

"3.9.1. The colour of the light emitted shall be white. **Moreover the colorimetric characteristics, expressed in CIE chromaticity coordinates, shall lie within the boundaries given on the relevant data sheet.**"

Paragraph 3.9.2., amend to read:

"3.9.2. **The definitions of the colour of the light emitted, given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation.**"

Annex 1, sheets DxR/4 and DxS/4, amend the bottom part of the both tables to read:

"...

Luminous flux	....	....	....	....
<b>Chromaticity co-ordinates</b>	Objective		$x = 0.375$	$y = 0.375$
	Tolerance area $\frac{3}{4}$	Boundaries	$x = 0.345$	$y = 0.150 + 0.640 x$
			$x = 0.405$	$y = 0.050 + 0.750 x$
	<b>Intersection points</b>		$x = 0.345$	$y = 0.371$
$x = 0.405$			$y = 0.409$	
$x = 0.405$			$y = 0.354$	
$x = 0.345$			$y = 0.309$	
Hot-restrike switch-off time	s	10	10	

..."

**A.19. PROPOSAL**

REGULATION No. 112 – (Headlamps emitting an asymmetrical passing beam)  
(The following text is based upon Supplement 4 to the Regulation)

Part B, paragraph 7.1., amend to read:

"7.1. The colour of the light emitted shall be **white**."

**A.20. PROPOSAL**

REGULATION No. 113 – (Headlamps emitting a symmetrical passing beam)  
(The following text is based upon Supplement 3 to the Regulation)

Part B, paragraph 7.1., amend to read:

"7.1. The colour of the light emitted shall be **white**."

## A.21. PROPOSAL

REGULATION No. 119 – (Cornering lamps)  
(The following text is based upon the original version of the Regulation)

Paragraphs 8. to 8.2., amend to read:

"8. COLOUR OF LIGHT EMITTED

8.1. The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2. of Annex 3 shall be **white**. **For testing see Annex 4** to this Regulation. Outside this field, no sharp variation of colour shall be observed."

Annex 4, amend to read (all colour coordinates should be deleted):

"Annex 4

COLOUR OF WHITE LIGHT

(Trichromatic coordinates)

1) For checking these colorimetric characteristics .... "

Annex 5, paragraph 2.4., amend to read:

"2.4. Measured and recorded photometric characteristics

The sampled lamp shall be subjected to photometric measurements for the minimum values at the points listed in Annex 4 and the chromaticity **coordinates, provided** for in the Regulation."

## A.22. PROPOSAL

REGULATION XXX -- ADAPTIVE FRONT-LIGHTING SYSTEMS (AFS)

(The following text is based upon TRANS/WP.29/2005/31 and Add.1 and Corr.1 to this document)

Paragraph 7.1., amend to read:

"7.1. The colour of the light emitted shall be **white**."

Annex 5, paragraph 1.4., amend to read:

"1.4. The chromaticity **co-ordinates shall be** conformed to."

## **B. JUSTIFICATION**

In many Regulations colour boundaries are specified for the same colours of light emitted by lighting and light signalling devices. This proposal is to define colour boundaries at "one" place. Reflective devices are not included since the colour boundaries for these devices are different and already specified in a similar manner as proposed here, though not concentrated at one place.

This proposal is based upon existing references in component Regulations to definitions in the installation regulations. In case where those references were missing, this proposal is introducing a reference in these component regulations to the colour definitions only since not all definitions in the installation regulations may apply to the respective component regulations. References to Regulations Nos. 48, 53, 77 and 86 should be checked carefully. An alternative is shown below, that is to introduce a priority in case of references.

### Examples

Alternative proposal for Regulation No. 37, paragraph 3.6.2.:

Insert a new Paragraph [2.1.3.] [3.1.10], to read:

**"[x.x.x] The definitions given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation [except from those definitions that do already appear in this Regulation]."**

Paragraph 3.6.2., should be deleted.

Paragraph 3.6.3., renumber as paragraph 3.6.2.

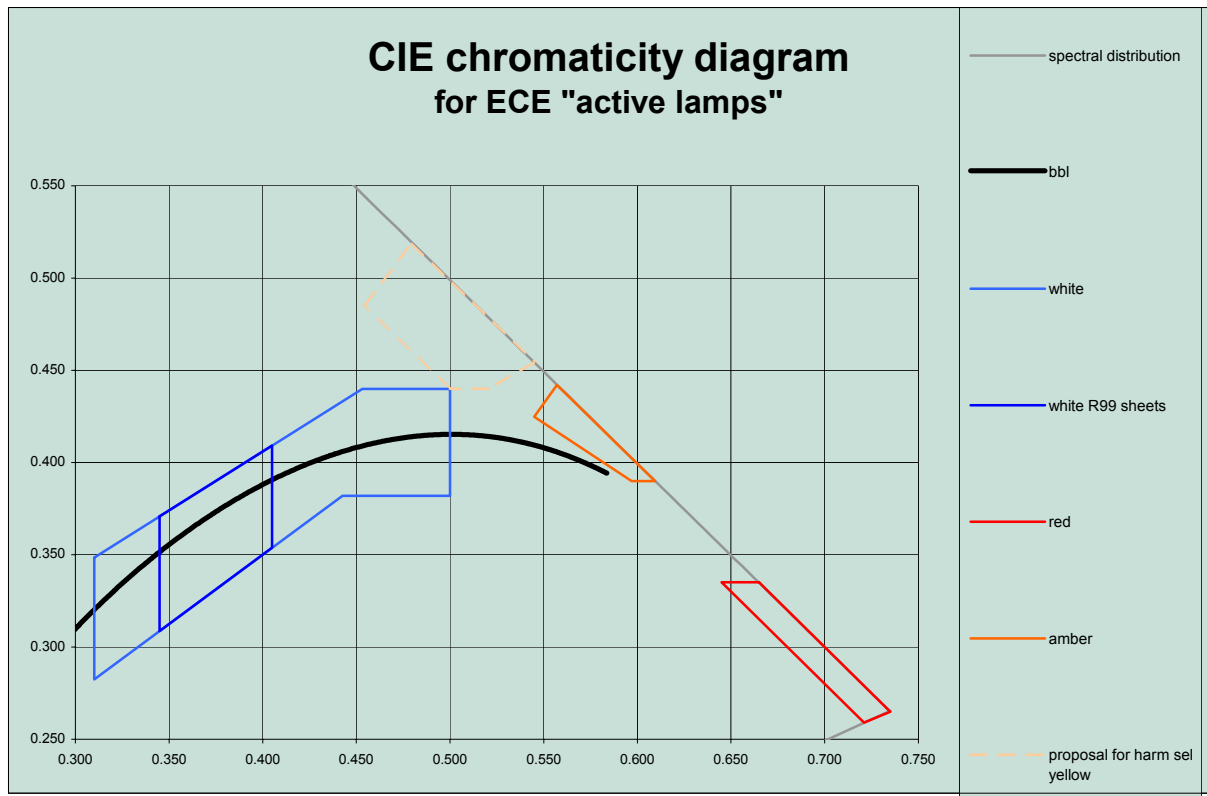
Alternative for Regulation No. 99 paragraph 3.9.2.:

Insert a new Paragraph [2.1.3.] [3.1.10], to read:

**"[x.x.x] The definitions given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this Regulation [except from those definitions that do already appear in this Regulation]."**

Paragraph 3.9.2., should be deleted.

Paragraphs 3.9.3. and 3.9.4., renumber as paragraphs 3.9.2 and 3.9.3.



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