United Nations ECE/TRANS/WP.29/GRE/2025/15

Economic and Social Council

Distr.: General
6 August 2025

Original: English

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Lighting and Light-Signalling

Ninety-third session
Geneva, 21–23 October 2025
Item 5 of the provisional agenda
UN Regulations on Light Sources and the Consolidated Resolution on the Common Specification of Light Source Categories

Proposal for Amendment [xx] to the Consolidated Resolution on the Common Specification of Light Source Categories (R.E.5)

Submitted by the expert from the International Automotive Lighting and Light-Signalling Expert Group (GTB)*

The text reproduced below was prepared by the expert from GTB with the aim to amend the Consolidated Resolution on the common specification of light source categories (R.E.5) (ECE/TRANS/WP.29/2016/111) and its subsequent amendments 1 through 11. There are no associated amendments to UN Regulation Nos. 37, 99 or 128. The modifications to the existing text of the Resolution are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2025 as outlined in proposed programme budget for 2025 (A/79/6 (Sect. 20), table 20.6), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

Please recycle

I. Proposal

The Status table, amend to read:

"**Status table**

This consolidated version of this Resolution contains all provisions and amendments adopted so far by the World Forum for Harmonization of Vehicle Regulations (WP.29) and is valid from the date as indicated in the following table until the date on which the next revision of this Resolution becomes valid:

Version of the Resolution	*Date * as from which the version is valid*	*Adopted by WP.29*		*Clarification*
		Session No.	*Amendment document No.*	
1 **(**Original**)**	22.06.2017	170	ECE/TRANS/WP.29/2016/111	Based upon Annexes 1 of Regulations: • No. 37, up to and including Supplement 44 • No. 99, up to and including Supplement 11 • No. 128, up to and including Supplement 5
[xx]	**[xx.xx.2026]**	**[xxx]**	**[ECE/TRANS/WP.29/2026/xx]**	**Amended details in paragraph 3.1, group 1, group 2, and group 3, concerning phase out of certain light source categories** **Introduction of new LED light source categories LRR8A and LRR8B**

* This date is the date of adoption of the amendment to the Resolution by WP.29 or the date of entering into force of an amendment to UN Regulation No. 37, 99 or 128 adopted by AC.1 as a package with the amendment to the Resolution in the same session of WP.29.

"

Paragraph 3.1.,

Group 1, amend to read:

"

Group 1				
Filament light source categories (or types within these categories) without general restrictions:				
	Category	*Note(s)*	*Sheet number(s)*	
	H1	*[6]	H1/1 to 3	
	H3	*[6]	H3/1 to 4	
	H4		H4/1 to 5	
	H7		H7/1 to 4	
	H8		H8/1 to 4	
	~~H8B~~		~~H8/1 to 4~~	
	H9	*[3]	H9/1 to 4	
	~~H9B~~	~~*[3]~~	~~H9/1 to 4~~	
	H10		H10/1 to 3	
	H11		H11/1 to 4	
	~~H11B~~		~~H11/1 to 4~~	
	H13		H13/1 to 4	
	H15		H15/1 to 5	
	H16		H16/1 to 4	
	~~H16B~~		~~H16/1 to 4~~	
	H17		H17/1 to 6	

Group 1				
Filament light source categories (or types within these categories) without general restrictions:				
	Category	*Note(s)*	*Sheet number(s)*	
	H18		H18/1 to 4	
	H19		H19/1 to 5	
	~~H20~~		~~H20/1 to 4~~	
	H21W	*[2]	H21W/1 to 2	
	~~H27W/1~~		~~H27W/1 to 3~~	
	~~H27W/2~~		~~H27W/1 to 3~~	
	HB3		HB3/1 to 4	
	HB4		HB4/1 to 4	
	HIR2		HIR2/1 to 3	
	HS1	*[6]	HS1/1 to 5	
	~~HS5~~	~~*[5]~~	~~HS5/1 to 4~~	
	~~PSX24W~~	~~*[2]~~	~~P24W/1 to 3~~	
	~~PSX26W~~	~~*[2]~~	~~PSX26W1 to 3~~	
	S2	*[5],*[6]	S1/S2/1 to 2	

"

Group 2, amend to read:

"

Group 2				
Filament light source categories (or types within these categories) only for use in signalling lamps, cornering lamps, reversing lamps and rear registration plate lamps:				
	Category	*Note(s)*	*Sheet number(s)*	
	C5W	*[6]	C5W/1	
	H6W		H6W/1	
	~~H10W/1~~		~~H10W/1 to 2~~	
	HY6W		H6W/1	
	~~HY10W~~		~~H10W/1 to 2~~	
	HY21W		H21W/1 to 2	
	P13W		P13W/1 to 3	
	P21W	*[6]	P21W/1 to 2	
	P21/4W		P21/4W/1	(P21/5W/2 to 3)
	P21/5W	*[6]	P21/5W/1 to 3	
	P27W		P27W/1 to 2	
	P27/7W		P27/7W/1 to 3	
	PR21W		PR21W/1	(P21W/2)
	PR21/5W		PR21/5W/1	(P21/5W/2 to 3)
	~~PS19W~~		~~P19W/1 to 3~~	
	~~PS24W~~		~~P24W/1 to 3~~	
	~~PSY19W~~		~~P19W/1 to 3~~	
	~~PSY24W~~		~~P24W/1 to 3~~	
	~~PW13W~~		~~P13W/1 to 3~~	
	~~PW16W~~		~~PC16W/1 to 3~~	

Group 2				
Filament light source categories (or types within these categories) only for use in signalling lamps, cornering lamps, reversing lamps and rear registration plate lamps:				
	Category	*Note(s)*	*Sheet number(s)*	
	~~PWR16W~~		~~PC16W/1 to 3~~	
	~~PWY16W~~		~~PC16W/1 to 3~~	
	~~PW19W~~		~~P19W/1 to 3~~	
	~~PWR19W~~		~~P19W/1 to 3~~	
	~~PWY19W~~		~~P19W/1 to 3~~	
	~~PW24W~~		~~P24W/1 to 3~~	
	~~PWR24W~~		~~P24W/1 to 3~~	
	~~PWY24W~~		~~P24W/1 to 3~~	
	PY21W		PY21W/1	(P21W/2)
	~~PY21/5W~~		~~PY21/5W/1 to 3~~	
	~~PY24W~~		~~P24W/1 to 3~~	
	PY27/7W		PY27/7W/1	(P27/7W/2 to 3)
	R5W	*6	R5W/1	
	R10W	*6	R10W/1	
	RR5W		R5W/1	
	RR10W		R10W/1	
	RY10W	*6	R10W/1	
	~~T4W~~	~~*6~~	~~T4W/1~~	
	W2.3W		W2.3W/1	
	W3W	*6	W3W/1	
	W5W	*6	W5W/1	
	W10W	*6	W10W/1	
	W15/5W		W15/5W/1 to 3	
	W16W		W16W/1	
	W21W		W21W/1 to 2	
	W21/5W		W21/5W/1 to 3	
	WR5W		W5W/1	
	WR21/5W		WR21/5W/1	(W21/5W/2 to 3)
	WT21W		WT21W/1 to 2	
	WT21/7W		WT21/7W/1 to 3	
	WTY21W		WT21W/1 to 2	
	WTY21/7W		WT21/7W/1 to 3	
	WY5W	*6	W5W/1	
	WY10W	*6	W10W/1	
	WY16W		W16W/1	
	WY21W		WY21W/1 to 2	

"

Group 3, amend to read:

"

Group 3				
Filament light source categories (or types within these categories) only for use in lamps as replacement parts for lamps on vehicles in use originally equipped with such lamps:				
	Category	*Note(s)*	*Sheet number(s)*	*From date onwards***
	C5W	*7, *8	C5W/1	26 July 2013
	C21W	*8	C21W/1 to 2	11 June 2008
	H1	*7	H1/1 to 3	26 July 2013
	H3	*7	H3/1 to 4	26 July 2013
	H8B		**H8/1 to 4**	**1 April 2028**
	H9B	***3**	**H9/1 to 4**	**1 April 2028**
	H10W/1	***8**	**H10W/1 to 2**	**1 April 2028**
	H11B		**H11/1 to 4**	**1 April 2028**
	H12		H12/1 to 3	15 July 2015
	H13A		H13/1 to 4	15 July 2015
	H14		H14/1 to 4	26 July 2013
	H16B		**H16/1 to 4**	**1 April 2028**
	H20		**H20/1 to 4**	**1 April 2028**
	H27W/1		**H27W/1 to 3**	**1 April 2028**
	H27W/2		**H27W/1 to 3**	**1 April 2028**
	HB3A		HB3/1 to 4	15 July 2018
	HB4A		HB4/1 to 4	15 July 2018
	HIR1	*3	HIR1/1 to 3	15 July 2015
	HS1	*7	HS1/1 to 5	26 July 2013
	HS2	*7 *6	HS2/1 to 3	26 July 2013 1 September 2018
	HS5	***5**	**HS5/1 to 4**	**1 April 2028**
	HS5A	*5	HS5A/1 to 3	1 September 2018
	HS6	*4	HS6/1 to 4	15 July 2018
	HY10W/1	***8**	**H10W/1 to 2**	**1 April 2028**
	P19W	*8	P19W/1 to 3	28 October 2016
	P21W	*7, *8	P21W/1 to 2	26 July 2013
	P21/5W	*7, *8	P21/5W/1 to 3	26 July 2013
	P24W	*8	P24W/1 to 3	1 September 2018
	PC16W	*8	PC16W/1 to 3	28 October 2016
	PCR16W	*8	PC16W/1 to 3	28 October 2012
	PCY16W	*8	PC16W/1 to 3	28 October 2016
	PR19W	*8	P19W/1 to 3	28 October 2012
	PR21/4W	*8	PR21/4W/1 ; (P21/5W/2 to 3)	15 July 2015
	PR24W	*8	P24W/1 to 3	28 October 2012
	PR27/7W	*8	PR27/7W/1 ;	15 July 2015

Group 3				
Filament light source categories (or types within these categories) only for use in lamps as replacement parts for lamps on vehicles in use originally equipped with such lamps:				
	Category	*Note(s)*	*Sheet number(s)*	*From date onwards***
			(P27/7W/2 to 3)	
	PS19W	***8**	**P19W/1 to 3**	**1 April 2028**
	PS24W	***8**	**P24W/1 to 3**	**1 April 2028**
	PSR19W	*8	P19W/1 to 3	28 October 2012
	PSR24W	*8	P24W/1 to 3	28 October 2012
	PSX24W	***2**	**P24W/1 to 3**	**1 April 2028**
	PSX26W	***2**	**PSX26W/1 to 3**	**1 April 2028**
	PSY19W	***8**	**P19W/1 to 3**	**1 April 2028**
	PSY24W	***8**	**P24W/1 to 3**	**1 April 2028**
	PW13W	***8**	**P13W/1 to 3**	**1 April 2028**
	PW16W	***8**	**PC16W/1 to 3**	**1 April 2028**
	PW19W	***8**	**P19W/1 to 3**	**1 April 2028**
	PW24W	***8**	**P24W/1 to 3**	**1 April 2028**
	PWR16W	***8**	**PC16W/1 to 3**	**1 April 2028**
	PWR19W	***8**	**P19W/1 to 3**	**1 April 2028**
	PWR24W	***8**	**P24W/1 to 3**	**1 April 2028**
	PWY16W	***8**	**PC16W/1 to 3**	**1 April 2028**
	PWY19W	***8**	**P19W/1 to 3**	**1 April 2028**
	PWY24W	***8**	**P24W/1 to 3**	**1 April 2028**
	PX24W	*2	P24W/1 to 3	1 September 2018
	PY19W	*8	P19W/1 to 3	28 October 2016
	PY21/5W	***8**	**PY21/5W/1 to 3**	**1 April 2028**
	PY24W	***8**	**P24W/1 to 3**	**1 April 2028**
	R2		R2/1 to 3	11 June 2008
	R5W	*7, *8	R5W/1	26 July 2013
	R10W	*7, *8	R10W/1	26 July 2013
	RY10W	*7, *8	R10W/1	26 July 2013
	S1		S1/S2/1 to 2	11 June 2008
	S2	*7	S1/S2/1 to 2	26 July 2013
	S3		S3/1	26 July 2013
	T1.4W	*8	T1.4W/1	15 July 2015
	T4W	*7, *8 ***6, *8**	T4W/1	26 July 2013 **1 April 2028**
	W3W	*7, *8	W3W/1	26 July 2013
	W5W	*7, *8	W5W/1	26 July 2013
	W10W	*7, *8	W10W/1	26 July 2013
	WP21W	*8	WP21W/1 to 2	1 September 2018
	WPY21W	*8	WP21W/1 to 2	1 September 2018
	WY2.3W	*8	WY2.3W/1	15 July 2015
	WY5W	*7, *8	W5W/1	15 July 2014

Group 3				
Filament light source categories (or types within these categories) only for use in lamps as replacement parts for lamps on vehicles in use originally equipped with such lamps:				
	Category	*Note(s)*	*Sheet number(s)*	*From date onwards***
	WY10W	*[7], *[8]	W10W/1	26 July 2013

"

Paragraph 3.3.,

Group 2, amend to read:

"

Group 2				
LED light source categories only for use in signalling lamps, cornering lamps, reversing lamps and rear registration plate lamps:				
	Category		*Sheet number(s)*	
	LR1		LR1/1 to 5	
	LW2	2	LW2/1 to 5	
	LR3A		Lx3/1 to 6	
	LR3B		Lx3/1 to 6	
	LW3A	2	Lx3/1 to 6	
	LW3B	2	Lx3/1 to 6	
	LY3A		Lx3/1 to 6	
	LY3B		Lx3/1 to 6	
	LR4A		LR4/1 to 5	
	LR4B		LR4/1 to 5	
	LR5A		Lx5/1 to 6	
	LR5B		Lx5/1 to 6	
	LW5A	2	Lx5/1 to 6	
	LW5B	2	Lx5/1 to 6	
	LY5A		Lx5/1 to 6	
	LY5B		Lx5/1 to 6	
	LR6A		Lx6/1 to 6	
	LR6B		Lx6/1 to 6	
	LW6A	2	Lx6/1 to 6	
	LW6B	2	Lx6/1 to 6	
	LY6A		Lx6/1 to 6	
	LY6B		Lx6/1 to 6	
	LW7A	2	Lx7/1 to 6	
	LW7B	2	Lx7/1 to 6	
	LRR8A		**LRR8/1 to 6**	
	LRR8B		**LRR8/1 to 6**	

[1] Not for use in conformity of production control of lamps.

[2] Not for use behind red and amber lenses"

Annex 3,

List of sheets for LED light sources and their sequence, amend to read:

"

Sheet number(s)
C5W/LED/1 to 4
H11/LED/1 to 7
L1/1 to 5
LR1/1 to 5
LW2/1 to 5
Lx3/1 to 6
LR4/1 to 5
Lx5/1 to 6
Lx6/1 to 6
Lx7/1 to 6
LRR8/1 to 6
PY21W/LED/1 to 4
R5W/LED/1 to 4
W5W/LED/1 to 4

"

After sheet Lx7/6, insert new sheets LRR8/1 to 6, to read:
(see following pages; one page per sheet)

" **Categories LRR8A, LRR8B** **Sheet LRR8/1**

The drawings are intended only to illustrate the essential dimensions of the LED light source.

Figure 1*
Main Drawing

LRR8A

LRR8B

* Projection method:

For the notes see sheet LRR8/2

Categories LRR8A, LRR8B **Sheet LRR8/2**

Table 1
Essential dimensional, electrical and photometric characteristics of the LED light source

Dimensions		*Production LED light sources*		*Standard LED light sources*	
a	mm	6.0 max.			
b	mm	c + 10.0 min. 38.0 max.			
c	mm	18.5 ± 0.1			
d	mm	28.0 max.			
e [8/]	mm	3.0 ± 0.30		3.0 ± 0.15	
Cap LRR8A, LRR8B PGJ18.5t-1 in accordance with IEC Publication 60061 (sheet 7004-185-3)					
Electrical and photometric characteristics					
		Minor function	*Major function*	*Minor function*	*Major function*
Rated values	Volts	12		12	
	Watts	1.0	4.0	1.0	4.0
Test voltage	Volts (DC)	13.5		13.5	
Objective Values [6]	Watts (at test voltage)	1.0 max.	4.5 max.	1.0 max	4.5 max
	Luminous flux (in lm at test voltage) [5, 10, 11]	10 ± 30%	120 ± 20 % [7]	10 ± 20% [9]	120 ± 10 % [7]
	Luminous flux (in lm at 9 V DC) [5]	2 min	28 min		

1/ The reference plane is the plane defined by the contact points of the cap-holder fit.
2/ The reference axis is perpendicular to the reference plane and passing through the centre of the bayonet core.
3/ Light emitting area: to be checked by means of the box system in Figure 2
4/ A minimum free air space of 5 mm around the light source shall be respected for convection; the connector interface can be neglected.
5/ The emitted light shall be red.
6/ After continuous operation for 30 minutes at 23 ± 2.5° C.
7/ The measured value shall be in between 100 per cent and 70 per cent of the value measured after 1 minute.
8/ Light centre length; the major function is operated during the measurement; for the method of measurement, see Annex K of IEC 60809, Edition 4.
9/ The measured value shall be in between 110 per cent and 90 per cent of the value measured after 1 minute.
10/ When minor and major functions are powered at the same time, the luminous flux shall not be less than the minimum objective value of the major function (96 lm) and shall not be more than the maximum objective value given by the sum of both functions (157 lm).
11/ No light shall be emitted in the case the light source LRR8A is powered with a connector counterpart having the pin assignment of the light source LRR8B, and vice versa

Electrical characteristics

In case of LED light source failure (no light emitted) the max. electrical current draw, when operated between 12 V and 14 V, shall be less than 20 mA (open circuit condition).

Screen projection requirements

The following test is intended to define the requirements for the light emitting area of the LED light source and to determine whether the light emitting area is correctly positioned relative to the reference axis and reference plane in order to check compliance with the requirements.
The position of the light emitting area is checked by the box system defined in Figure 2, which is aligned to the planes C_{90} and C_{180} and shows the projection when viewing along direction γ = 0º at e = 3.0 mm (C, γ as defined in Figure 3).
The luminous flux Φ emitted into the viewing direction shall be calculated as given below:

$$\Phi = L \cdot S \cdot \Omega$$

with
S = area to be considered
L = luminance average of area S
Ω = solid angle defined by the entrance aperture of the measurement system

The distribution of luminous flux originating from the LEA as shown in Figure 2 shall fulfil the requirements given in Table 3. All numbers shall be given in % of the total luminous flux emitted into the viewing direction from the bayonet core area, i.e. a circular area with diameter c = 18.5 mm (see Figure 1).

Note: When evaluating the luminous flux distribution emitted from the LEA, reflections and stray light within the measurement equipment shall be reduced as much as possible and if necessary, corrected. More details regarding measurement of light-emitting areas can be found in the publication describing general photometry accuracy guidelines currently prepared by CIE TC2-67

Figure 2
Box definition of the light emitting area with dimensions as specified in Table 2

Table 2
Dimensions of the box system in Figure 2

Dimensions in mm	*f*
LED light sources of normal production	4.5
Standard LED light sources	4.5

Table 3
Proportion of the total luminous flux emitted into the viewing direction from the areas specified in Figure 2

Area(s)	*LED light sources of normal production for minor function and major function*	*Standard LED light sources for minor function and major function*
Each B individually	≥10%	≥15%
Each A, B individually	< 40%	< 30%
All B together	≥ 60%	≥ 65%
Each C individually	-	< 10%
All A, B and C together	≥ 90%	≥ 90%

Normalized luminous intensity distribution

The following test is intended to determine the normalized luminous intensity distribution of the light source in an arbitrary plane containing the reference axis. The intersection of the reference axis and the parallel plane to the reference plane in distance e = 3.0 mm is used as the coordinate system origin.

The light source is mounted on a flat plate with the corresponding mounting lug features. The plate is mounted to the goniometer table by a bracket, so that the reference axis of the light source lines up with one of the rotating axes of the goniometer. The corresponding measurement set-up is described in Figure 3.

Luminous intensity data is recorded with a standard photo-goniometer. The measurement distance should be chosen appropriately, to make sure that the detector is located in the far field of the light distribution.

The measurements shall be performed in C-planes C_0, C_{90}, C_{180} and C_{270}, which contain the reference axis of the light source. The test points for each plane for multiple polar angles γ are specified in Table 4.

The measured luminous intensity values, normalised to the measured luminous flux of the individual light source under test, shall be converted to normalised luminous intensity values of a 1,000 lm light source. The data shall comply with the tolerance band as defined in Table 4.

The drawings are intended only to illustrate the essential set-up for measurement of the LED light source.

Figure 3
Set-up to measure the luminous intensity distribution

LRR8A

LRR8B

The light pattern as described in Table 4 shall be substantially uniform, i.e. in between two adjacent grid points the relative luminous intensity requirement is calculated by linear interpolation using the two adjacent grid points. In case of doubt this may be checked in addition to verification of the grid points given in Table 4.

Table 4
Test point values of normalized intensities

	LED light sources of normal production for minor function and major function		*Standard LED light sources for minor function and major function*	
Angle γ	*Minimum Intensity in cd /1000 lm*	*Maximum Intensity in cd/1000 lm*	*Minimum Intensity in cd /1000 lm*	*Maximum Intensity in cd /1000 lm*
0°	200	425	250	390
15°	190	415	240	370
30°	170	380	220	335
45°	145	310	180	275
60°	85	245	105	220
75°	0	160	0	150
90°	0	70	0	65

"

II. Justification

1. This document is a consolidation of proposed amendments by experts in GTB to the Consolidated Resolution on the common specification of light source categories (R.E.5) (ECE/TRANS/WP.29/1127) and its subsequent amendments 1 through 11. The amendments cover two topics and for clarity the justification for the document is structured to provide the justifications by topic under their respective topic headers.

A. Amendment to introduce new light emitting diode (LED) light source categories LRR8A and LRR8B

2. This proposal introduces new LED light source categories for signalling to accommodate an increasing market demand for LED light sources according to UN Regulation No. 128. The ongoing trends towards style driven rear combination lamps requires light sources with higher luminous output to compensate the lower efficiency of the corresponding optical designs.

3. In general, standardized and replaceable UN Regulation No. 128 LED light sources can serve individual signalling lamp designs with limited development efforts. The proposed categories of a high luminous flux dual level red light source are based on an established cap concept with an increased and more precise light output, applying an improved dual level specification of the Light-Emitting-Area, that was previously introduced for the LR4 dual level category.

4. The category designation of LRR8 is established as follows. The proposed category name establishes a convention with two colour designation letters “R” for each of the red functions, anticipating future development of UN Regulation No. 128 light sources with dual functions, such as a potential white-amber combination for a combined front position and direction indicator application (for such a future category the designation LWYn, containing the colour designation letters “W” and “Y” would be considered to indicate the use for dual function in white (W) and amber (Y) colours). The number “8” in the category name signifies the next available sequential numerical designation of a UN Regulation No. 128 category, following LW7.

5. The cap/holder system for the new dual level red emitting light source is based on the IEC PGJ18.5d fit, a family of cap/holders that has already been successfully employed in existing LED light sources in UN Regulation No. 128. Keys from the PGJ18.5d fit that are not in use so far have been assigned to the newly proposed categories. Following established LED light source categories, the new dual level red emitting light source is proposed with an elbow connector at the side – the A version – as well as with a straight connector at the bottom – the B version. The assigned category designations are LRR8A and LRR8B respectively.

B. Amendment of details in paragraph 3.1, group 1, group 2, and group 3, concerning phase out of certain light source categories

6. With the introduction of new light source categories, GTB regularly evaluates which light source categories could be phased out based upon technological progress and our evaluation of the need to keep these categories in the regulation. This proposal is the outcome of such an evaluation.

7. The proposal is not aimed at completely deleting categories of light sources from the Consolidated Resolution on the common specification of light source categories (R.E.5), but at moving some categories or types of categories from group 1 and group 2 to group 3 of paragraph 3.1. In this way, these categories of light sources can still be approved and used as replacement parts. However, they can no longer be used for type approval of new lamps, unless these lamps are intended as replacement parts for vehicles in use.