KEMA

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Extensional approval testing of a device for the illumination of a wide rear registration plate, marked Hella type 2KA 959 640

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QUA/LTL

By order of Hella Leuchten-Systeme GmbH in Paderborn, Germany

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SUMMARY

The tested samples of a device for the illumination of a rear registration plate marked Hella, type 2KA 959 640, were found to comply with the requirements of ECE Regulation No. 4-00.

1 APPLICATION FOR APPROVAL TESTING

On 15 September 2005, Hella-New Zealand Limited, in Pakuranga, New Zealand, sent in through Hella Leuchten-Systeme GmbH, Paderborn in Germany, two samples of a device for the illumination of a wide rear registration plate, marked HELLA, type 2KA 959 640. The device for the illumination of a wide rear registration plate is designed for use with three lamps containing two non-replaceable LED light sources each, emitting a white coloured light. The design voltage is 10 – 33 VDC and the device has been approved at a rated voltage of 12 and 24 V.

The sample has been modified as follows:

- The use of three instead of using two lamps for illumination of the registration plate.
- The addition of a mounting tolerance.

The samples were accompanied by a brief technical description (Annex 1) and a drawing (Annex 2), which are sufficiently detailed to permit identification of the models.

The applicant desired an examination to check whether this device for the illumination of a wide rear registration plate is in compliance with the requirements of the ECE Regulation No. 4-00.

2 EXAMINATION

The examination was carried out in accordance with the relevant clauses of the regulation concerned.

The photometric tests were performed at a test voltage of 13.5 V DC (sample No. 1) or 28.0 V DC (sample No. 2), taking into consideration the manufacturer's information concerning centre and axis of reference.

For the luminance measurements the registration plate was covered with clean white blotting paper. The measurements were carried out with a luminance meter in perpendicular direction to the surface of the registration plate. The circular sensitive area of the luminance meter had a diameter of 25 mm with the considered measuring position at its centre. The measured luminance was corrected for the diffuse reflection factor 1.0.

3 RESULTS OF EXAMINATION

The results of the tests are summarised in Annex 3. Detailed results of the photometric tests are presented in table 1 to 4 of Annex 4.

The luminance measurements were performed with the lamps in four different positions in relation to the registration plate according to the drawing in annex 2:

Annex 4, Table No.	Dimension of H (mm)	Dimension of A (mm)
1	15	100
2	20	100
3	15	120
4	20	120

4 SUPPLEMENTARY REMARKS

The approval having been granted, the product shall continue to bear, besides other markings prescribed, the approval mark as indicated below.

L - 00 E4 4068

These markings must be indicated on the device, in the space detailed in the drawing.

Hella New Zealand

Technische Beschreibung für Gerät: 2KA 959 640

HLS-TLLTP Ha/PS
34 134

Beantragte Funktion(en): Kennzeichenleuchte

Form des Gerätes: Rechteckig, an den Ecken gerundet.

Bemerkung: Es werden 3 Kennzeichenleuchten zur Beleuchtung eines einzeiligen Schildes in den Abmessungen bis 520 mm x 120 mm verwendet.

Beschreibung der Abschluss-Scheibe(n):

Funktion	Material	Farbe	Optisches System	Lampentyp
Kennzeichenleuchte	Kunststoff	Glasklar	runde Prismenoptik	LED*

* 2 LED's in Reihe geschaltet

Versorgungsspannung: 10 – 33 V / Leistung: 0,5 W

Beschreibung der Reflexeinrichtung(en):

Funktion	Art	Material	Optisch wirksame Fläche

Technische Merkmale:

Gehäuse, Material: Kunststoff
Gehäuse, Oberfläche: Unbehandelt

Die Grundplatte wird mit dem Lichtgehäuse verklebt.

Das Gehäuse wird mit 2 Schrauben befestigt.

2005-10-06

Hella Leuchten-Systeme GmbH

Blatt 2
Empfänger KEMA
Unser Zeichen HLS-TLLTP Ha/Jö
59552 Lippstadt 05.08.2004
Betreff: ***Ausführungsformen für die Geräte Typ 2KA 959 640***

- Mit Befestigungsmitteln oder ohne solche,
- mit unterschiedlichen Mitteln zur Befestigung der Leuchte am Fahrzeug und zur Verbindung einzelner Leuchtenteile miteinander ohne Beeinträchtigung der Wirkung der Leuchte,
- mit geringfügig unterschiedlicher Ausbildung und Formgebung der lichttechnisch unwirksamen Leuchtenteile bei grundsätzlich gleicher Bauart,
- mit unterschiedlichen Kabelsätzen, -zuführungen und –anschlüssen,
- mit unterschiedlicher Oberflächenbehandlung und Farbe der lichttechnisch unwirksamen Leuchtenteile ohne Beeinträchtigung der Korrosionsbeständigkeit,
- mit einer Abschluss-Scheibe, bei der die Übergänge zwischen den Zonen unterschiedlicher Profilierung unbedeutende Unterschiede aufweisen,
- mit unterschiedlichen Leuchtdioden jedoch gleicher optischer Wirkung,
- mit unterschiedlichem metallischen Werkstoff für die lichttechnisch nicht wirksamen Teile bei gleicher Güte,
- mit unterschiedlicher Kontaktgebung
- mit in Form, Farbe und Werkstoff unterschiedlicher Dichtung gleicher Güte und Wirkung,
- mit zusätzlicher und unterschiedlicher Anbringung ausländischer Zulassungszeichen und fremder Firmenzeichen ohne Beeinträchtigung der lichttechnischen Wirkung,
- mit unterschiedlich eingefärbten Gehäusen

Hella New Zealand Ltd.	**Typbezeichnung: 2KA 959 640** Beleuchtungseinrichtung für das hintere Kennzeichenschild	**Blatt 2**

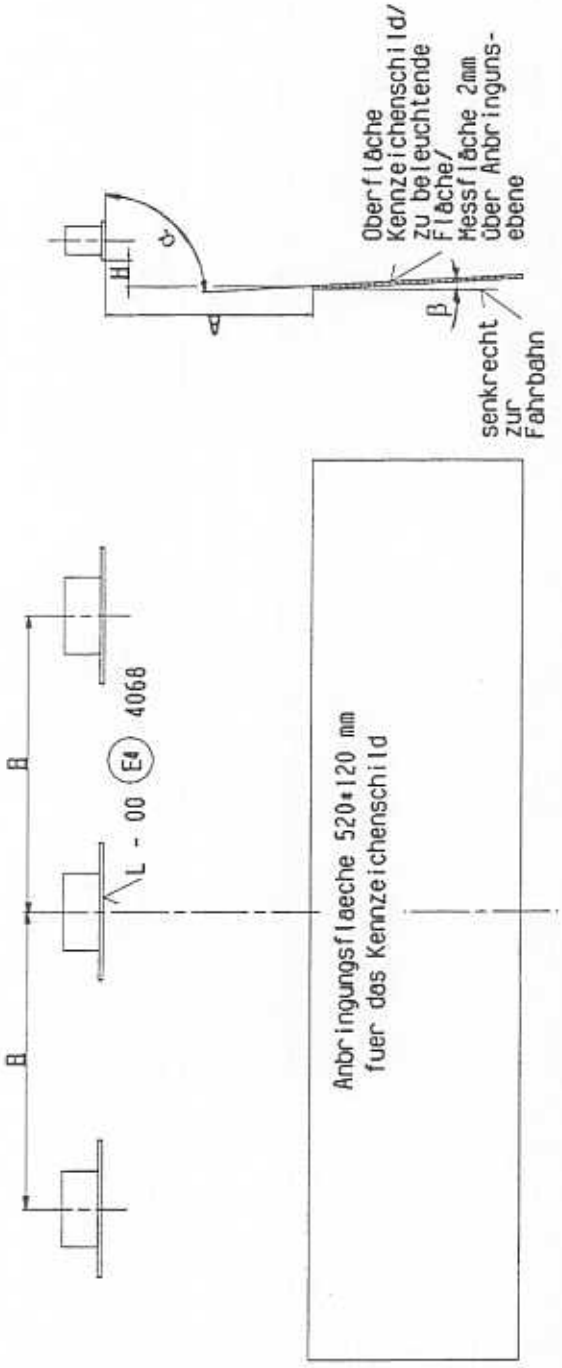
Gehört zur G. Nr.: E4 4068 **Einbauanweisung-Nr.**

Kennzeichenbeleuchtungsanordnung für Kraftfahrzeuge

Lichtquelle: 2LED'S je Leuchte in Reihe geschaltet

Prüfspannung:* 13,5 Volt bzw. 28 Volt / *Versorgungsspannung:* 10 bis 33 Volt / *Nennleistung: 2 x 0,5 Watt

Das Kennzeichenschild darf nur innerhalb der Anbringungsfläche angebracht werden, wobei die Auflageebene des Kennzeichenschildes in der Anbringungsebene liegen muss.
Grenzwerte für Abstandsmaße und Winkel ohne Toleranzangabe ± 1mm bzw. ± 1° vom angegebenen Nennwert.
H = 15 mm – 20 mm A = 100 mm – 120 mm B = 170 mm α = 87° β = 3°



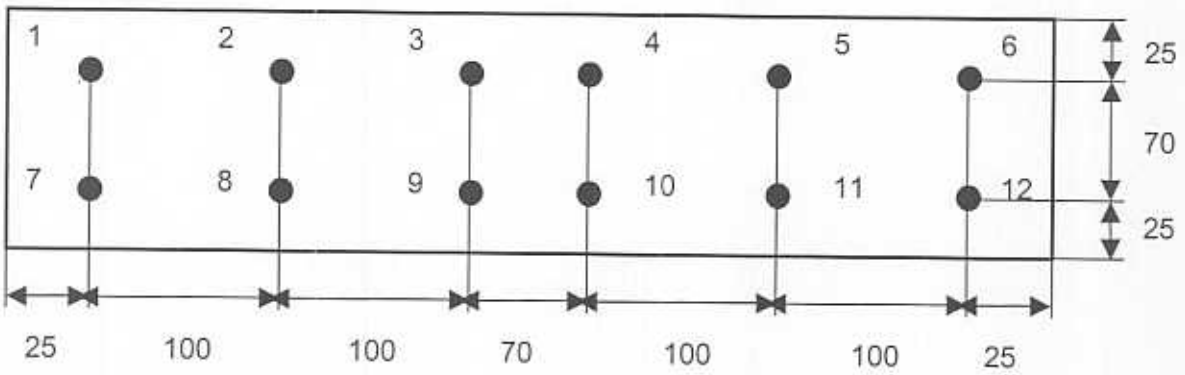
2005-09-15

Der An- bzw. Einbau der Geräte hat nach anliegenden An- bzw. Einbauunterlagen (z. B. Skizze und Anlage A) zu erfolgen.

Examination of a device for the illumination of a wide rear registration plate marked Hella 2KA 959 640 carried out in accordance with the relevant clauses of Regulation No. 4-00.

Clause No.	Subject of the relevant clause	Judgement of the device	Remark
3	Markings:		
	a trade name or mark	complies	
	b space reserved for the approval mark	complies	
5	General specifications:		
	Field of visibility		
	a horizontal	complies	
	b vertical	complies	
6	Colour of the light emitted	complies	by visual inspection only
7	Angle of incidence	complies	
9	Photometric characteristics	complies	see Annex 4, table 1 to 4

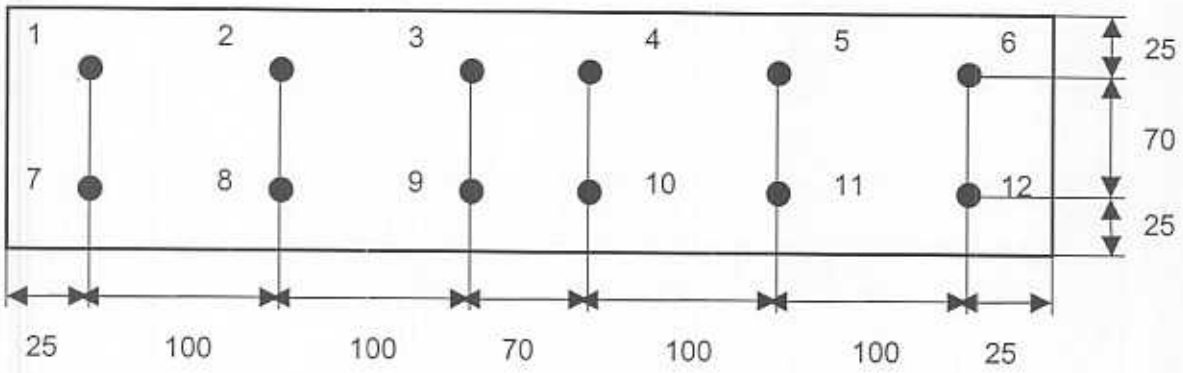
Points for testing the luminance distribution on a wide registration plate (520 x 120 mm²).



Values of luminance (in cd/m²) in the points, indicated in the figure above.		
Measuring point	device no. 1	device no. 2
1	3.1	2.5
2	5.0	4.4
3	5.8	8.6
4	3.8	6.6
5	6.8	7.7
6	3.3	3.5
7	8.3	5.8
8	10	6.7
9	7.8	11
10	6.4	11
11	9.1	13
12	6.2	6.9

The minimum luminance (Bo) was 3.1 and 2.5 cd/m² resp. for No. 1 and 2 (required value 2.5 cd/m² min).
The maximum gradient of luminance appeared to be 0.8 and 0.7 cd/m²/cm (permissible value: 2 Bo/cm max, consequently 6.2 and 5.0 cd/m²/cm).

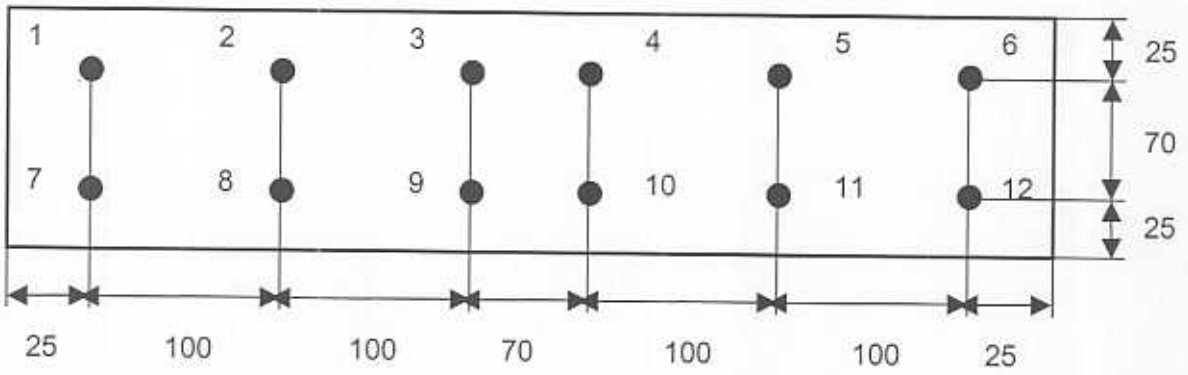
Points for testing the luminance distribution on a wide registration plate (520 x 120 mm²).



Values of luminance (in cd/m²) in the points, indicated in the figure above.		
Measuring point	device no. 1	device no. 2
1	2.6	2.7
2	3.9	4.5
3	4.4	7.7
4	3.2	5.8
5	5.3	7.1
6	3.0	2.8
7	5.5	5.0
8	7.4	5.9
9	5.8	10
10	5.2	10
11	7.2	11
12	6.1	5.7

The minimum luminance (Bo) was 2.6 and 2.7 cd/m² resp. for No. 1 and 2 (required value 2.5 cd/m² min).
The maximum gradient of luminance appeared to be 0.5 and 0.7 cd/m²/cm (permissible value: 2 Bo/cm max, consequently 5.2 and 5.4 cd/m²/cm).

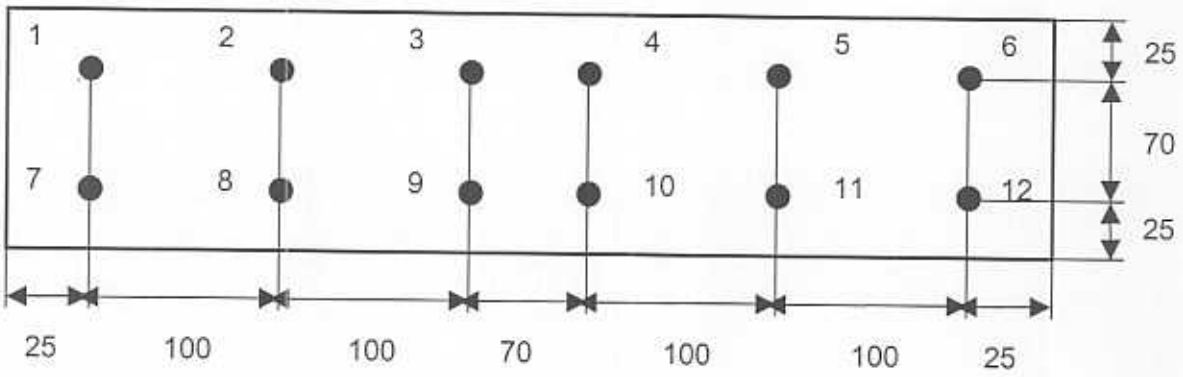
Points for testing the luminance distribution on a wide registration plate (520 x 120 mm²).



Values of luminance (in cd/m²) in the points, indicated in the figure above.		
Measuring point	device no. 1	device no. 2
1	2.8	3.2
2	4.9	4.8
3	5.2	11
4	3.5	8.4
5	5.6	9.8
6	3.4	4.7
7	5.6	5.4
8	8.4	5.6
9	5.9	9.2
10	5.3	10
11	6.6	10
12	6.3	6.4

The minimum luminance (Bo) was 2.8 and 3.2 cd/m² resp. for No. 1 and 2 (required value 2.5 cd/m² min).
The maximum gradient of luminance appeared to be 0.5 and 0.6 cd/m²/cm (permissible value: 2 Bo/cm max, consequently 5.7 and 6.4 cd/m²/cm).

Points for testing the luminance distribution on a wide registration plate (520 x 120 mm²).



Values of luminance (in cd/m²) in the points, indicated in the figure above.		
Measuring point	device no. 1	device no. 2
1	2.7	2.5
2	3.5	3.5
3	3.5	8.1
4	2.9	6.4
5	4.8	7.4
6	4.6	3.5
7	5.2	6.6
8	7.2	6.4
9	6.1	11
10	5.3	11
11	7.1	10
12	6.4	6.5

The minimum luminance (Bo) was 2.7 and 2.5 cd/m² resp. for No. 1 and 2 (required value 2.5 cd/m² min).
The maximum gradient of luminance appeared to be 0.5 and 0.7 cd/m²/cm (permissible value: 2 Bo/cm max, consequently 5.4 and 5.0 cd/m²/cm).