

2159097-PHO 12-256

Extensional approval testing of a side combination lamp marked Hella, type 2XS 340 418 consisting of a front /rear position and side marker lamp

Arnhem , 28 November 2012

Author H.M. van der Kolk

DEKRA Certification B.V. - Photometry

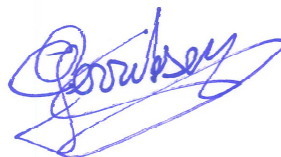
By order of Hella KGaA Hueck & Co. in Lippstadt, Germany

author : H.M. van der Kolk
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28-11-2012
HVDK

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28-11-2012



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SUMMARY

The tested samples of a combined front/rear position and side marker lamp marked Hella, type 2XS 234 418 were found to continue to comply with the relevant requirements in ECE Regulations Nos. 7-02 and 91-00.

REMARK

The tested samples of a combined front/rear position and side marker lamp marked Hella, type 2XS 234 418 were found to continue comply with the relevant clauses of the latest version of the Taiwan Vehicle Safety Type Approval Management Regulations.

The tests of the original devices are described in our report 2100240-QUA/PHO 06-239 dated 28 November 2006.

1 APPLICATION FOR APPROVAL TESTING

On 28 November 2012, Hella KGaA Hueck & Co. in Lippstadt, Germany submitted six samples of a combined front/rear position and side marker lamp type 2SX 340 418.

The device is operated at a nominal voltage of 24 V, 1.8 W. The rear position, end-outline marker lamp, emitting red light, uses 1 non-replaceable LED. The front position, end outline marker, emitting white light, uses 2 non-replaceable LEDs, connected in series. The side marker lamp, emitting amber light, uses 2 non-replaceable LEDs connected in series.

The samples submitted for extensional approval are the same as the original, except for the optimization of outer lenses, and two additional types of rubber housing having a height of 176.7 mm and 182.5 mm.

Regarding the symmetry, the lamp can be mounted on the right side or the left side of the vehicle, as clarified in the mounting instructions see Annex 2.

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

The samples were mounted on a test fixture simulating the mounting position on the vehicle.

The applicant desired an examination to check whether this model complies with the requirements of the ECE Regulations No. 7-02 and 91-00.

2 EXAMINATION

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

The samples submitted for extensional approval are the same as the original, except for the optimization of outer lenses, and two additional forms of rubber housing having a height of 176.7 mm and 182.5 mm.

Because the outer lenses were optimized, photometry and colorimetry of all functions was tested. Samples which were used, were of the straight rubber housing of a height of 133.4mm. The type of housing, has no effect on the photometric or colorimetric results.

The tests were performed taking into consideration the manufacturer's information concerning centre and axis of reference.

The photometric tests were performed at a test voltage of 28V. The photometric measurements were performed after 1 minute and a 30 minutes stabilization period of the LED light sources.

The distance of measurement was 3.16 m and the diameter of the sensitive area of the receiver was 30 mm. The chromaticity co-ordinates of the light emitted were measured by means of a trichromatic colorimeter.

3 RESULTS OF EXAMINATION

The results of the tests are summarised in Annex 3. Detailed results of the examination are presented in tables 1 up to and including 7 of Annex 4.

- table 1, 2: rear position lamp
- table 3 ,4: front position lamp
- table 5 ,6: side-marker lamp
- table 7 : colorimetry of signal lamps

4 SUPPLEMENTARY REMARKS

The approval having been granted, the product shall continue bear, besides other markings prescribed, the approval mark as indicated in the technical description.

The vertical and horizontal outlines of the illuminating surfaces, in accordance with ECE Regulation No. 48, are shown on page 5 of Annex 2 of this report.

Various versions of the device*Ausführungsformen für das Gerät*

HELLA KGaA Hueck & Co.

Type: **2XS 340 418**
Typ:Hella Part-No.: (2XS 011 744-XX)
Hella Bestell-Nr.LI-K Ke
31 485
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-
- With or without attachment components,**
Mit Befestigungsmitteln oder ohne solche,
 - with various components to attach the lamp to the vehicle and connect the different parts of the lamp without hindering its efficient function,**
mit unterschiedlichen Mitteln zur Befestigung der Leuchte am Fahrzeug und zur Verbindung einzelner Leuchtenteile miteinander ohne Beeinträchtigung der Wirkung der Leuchte,
 - with different design and shape of the parts of the lamp that do not contribute to the illumination function, using the same basic device type,**
mit geringfügig unterschiedlicher Ausbildung und Formgebung der lichttechnisch unwirksamen Leuchtenteile bei grundsätzlich gleicher Bauart,
 - with different cable looms, guides and connections,**
mit unterschiedlichen Kabelsätzen, -zuführungen und -anschlüssen,
 - with different surface treatments and colours of the parts of the lamp that do not contribute to the illumination function, without reducing the corrosion resistance of the device,**
mit unterschiedlicher Oberflächenbehandlung und Farbe der lichttechnisch unwirksamen Leuchtenteile ohne Beeinträchtigung der Korrosionsbeständigkeit,
 - with a patterned lens showing insignificant differences in the transitions between the differently profiled zones,**
mit einer Abschluss-Scheibe, bei der die Übergänge zwischen den Zonen unterschiedlicher Profilierung unbedeutende Unterschiede aufweisen,
 - with different bulb holders, but without modification to the bulb position,**
mit unterschiedlichen Glühlampenhalterungen, jedoch ohne Änderung der Glühlampenlage,
 - with alternative light-emitting diodes of equivalent characteristics,**
mit unterschiedlichen Leuchtdioden, jedoch gleicher optischer Wirkung,
 - with different material for the parts of the lamp that do not contribute to the illumination function, but maintaining the same quality,**
mit unterschiedlich metallischem Werkstoff für die lichttechnisch nicht wirksamen Teile bei gleicher Güte,
 - with different contact patterns,**
mit unterschiedlicher Kontaktgebung,
 - with sealing differing in form, colour and material, but of the same quality and with the same effect,**
mit in Form, Farbe und Werkstoff unterschiedlicher Dichtung gleicher Güte und Wirkung,
 - with additional and differing attachment of foreign approval markings and other company markings without hindering the illuminating effect,**
mit zusätzlicher und unterschiedlicher Anbringung ausländischer Zulassungszeichen und fremder Firmenzeichen ohne Beeinträchtigung der lichttechnischen Wirkung,
 - with slightly different training of optical reflectors effective marginal districts.**
mit geringfügig unterschiedlicher Ausbildung der optisch wirksamen Rückstrahlerrandbezirke.



HELLA KGaA Hueck & Co.

Technical Description

Technische Beschreibung

Type: **2XS 340 418**
Typ:

HellaPart-No.: (2XS 011 744-XX)
HellaBestell-Nr.

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Function(s): <i>Beantragte Funktion(en):</i>	Rear Position-End-Outline Marker Lamp, Front Position- End-Outline Marker Lamp with Side Marker Lamp for Automobile. <i>Schluss-Umrissleuchte, Begrenzungs-Umrissleuchte mit Seitenmarkierungsleuchte für Kraftfahrzeuge.</i>
Shape of device: <i>Form des Gerätes:</i>	Rectangular with different versions of rubber arms. (Examples see mounting instruction page 4). <i>Rechteckig mit verschiedenen Ausführungen von Gummiarmlen. (Beispiele siehe Anbauanweisung Seite 4).</i>
Remark: <i>Bemerkung:</i>	For left- and right hand mounting <i>Für links- und rechtsseitigen Einbau</i>

Description of the lens(es):

Beschreibung der Abschluss-Scheibe(n):

<u>Function</u> <i>Funktion</i>	<u>Material</u> <i>Material</i>	<u>Colour</u> <i>Farbe</i>	<u>Optical system</u> <i>Optisches System</i>	<u>Light source</u> <i>Lichtquelle</i>
------------------------------------	------------------------------------	-------------------------------	--	---

Rear Position-End-Outline Marker Lamp <i>Schluss-Umrissleuchte</i>	PMMA	Colourless <i>Glasklar</i>	Horizontal and vertical prisms <i>Horizontale und vertikale Prismen</i>	1 LED
Front Position-End-Outline Marker Lamp* <i>Begrenzungs-Umrissleuchte *</i>	PMMA	Colourless <i>Glasklar</i>	Horizontal and vertical prisms <i>Horizontale und vertikale Prismen</i>	2 LEDs
Side Marker Lamp* <i>Seitenmarkierungsleuchte *</i>	PMMA	Colourless <i>Glasklar</i>	Outer optic: Pillow Inner optic: Fresnel <i>Aussenoptik: Kissenoptik</i> <i>Innenoptik: Fresneloptik</i>	2 LEDs

* **If one LED fails, than the whole function stops working.**
Beim Ausfall einer LED fällt die ganze Funktion aus.

Technical features:

Technische Merkmale:

Rubber arm / holder, material: <i>Gummiaarm / Halter, Material:</i>	Rubber black <i>Gummi schwarz</i>
Lens housing glued with a base plate: <i>Abschluss-Scheibe / Lichtgehäuse verklebt mit einer Grundplatte:</i>	PMMA / ABS <i>PMMA / ABS</i>
Circuit boards, material: <i>Leiterplatten, Material:</i>	FR4 TG
Gasket between housing and holder: <i>Abdichtung zwischen Gehäuse und Halterung:</i>	Rubber <i>Gummi</i>
Fastening the device to the automobile: <i>Befestigungsart der Leuchte an die Karosserie:</i>	With two screws <i>Mit zwei Schrauben</i>



HELLA KGaA Hueck & Co.

Mounting instruction

Anbauanweisung

Type: **2XS 340 418**
Typ:

Hella Part-No.: (2XS 011 744-XX)
Hella Bestell-Nr.

LI-IST
28.11.2012

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Belongs to approval no.: **E4 11392**
Gehört zu Gen.-Nr.:

Rear Position-End-Outline Marker Lamp, Front Position-End-Outline Marker Lamp with Side Marker Lamp for Automobile.

Schluss-Umrissleuchte, Begrenzungs-Umrissleuchte mit Seitenmarkierungsleuchte für Kraftfahrzeuge.

Light source(s):

Lichtquelle(n):

Rear Position-	
1. End-Outline Marker Lamp	1 LED
<i>Schluss-Umrissleuchte</i>	
Front Position-	
2. End-Outline Marker Lamp	2 LEDs
<i>Begrenzungs-Umrissleuchte</i>	
3. Side Marker Lamp	2 LEDs
<i>Seitenmarkierungsleuchte</i>	

Nominal voltage: 24.0V
Nennspannung:

Test voltage: 28.0V
Prüfspannung:

Nominal wattage: 1.8W
Nennleistung:

✧ = **Centre of reference in accordance with the ECE-Regulations-No. 7 and 91.**
Bezugspunkt nach den ECE-Regelungen-Nr. 7 und 91.

✧ = **Centre of reference for the definition for illuminating surface in accordance with the Council Directive 76/756 EEC or ECE-Regulation No. 48 (see Annex A).**
Bezugspunkt zur Bestimmung der Grenzen der leuchtenden Fläche nach 76/756 EWG bzw. ECE-Regelung Nr. 48. Markierung s. auf der Abschluss-Scheibe. Maße s. Anlage A.

Axis of reference: Parallel to the car centre line and parallel to the road.
Bezugsachse: Parallel zur Fahrzeuglängsachse und parallel zur Fahrbahn.

Only for Side Marker Lamp:
Nur für Seitenmarkierungsleuchte:

Axis of reference: Perpendicular to the car centre line and parallel to the road.
Bezugsachse: Senkrecht zur Fahrzeuglängsachse.

Mounting of the left hand unit is illustrated. Right hand unit to be mounted mirror inverted.
Einbau des linken Gerätes dargestellt. Der Einbau des rechten Gerätes erfolgt spiegelbildlich.

The lamp can be rotated 180° around the reference axis.
Die Leuchte darf auch um 180° gedreht um die Bezugsachse angebaut werden.



HELLA KGaA Hueck & Co.

Mounting instruction

Anbauanweisung

Type: 2XS 340 418
Typ: 2XS 340 418

Hella Part-No.: (2XS 011 744-XX)
Hella Bestell-Nr. (2XS 011 744-XX)

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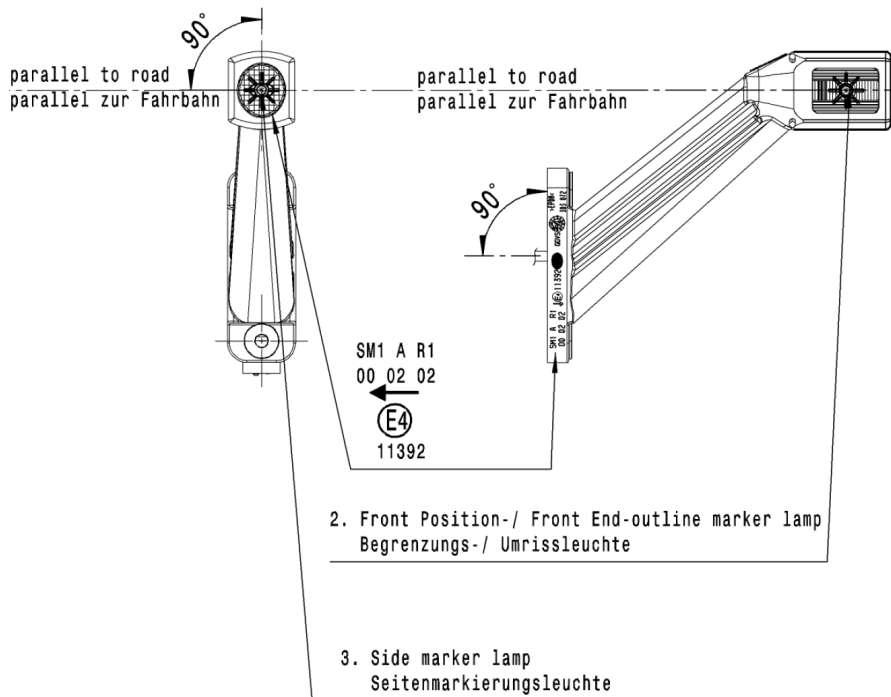
Belongs to approval no.: E4 11392
Gehört zu Gen.-Nr.: E4 11392

Rear Position-End-Outline Marker Lamp, Front Position-End-Outline Marker Lamp with Side Marker Lamp for Automobile.

Schluss-Umrissleuchte, Begrenzungs-Umrissleuchte mit Seitenmarkierungsleuchte für Kraftfahrzeuge.

Side View
(Ansicht von der Seite)

Front View
(Ansicht von vorn)





HELLA KGaA Hueck & Co.

Mounting instruction

Anbauanweisung

Type: 2XS 340 418
Typ:

Hella Part-No.: (2XS 011 744-XX)
Hella Bestell-Nr.

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Belongs to approval no.: E4 11392

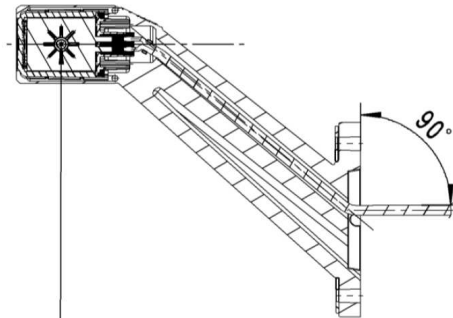
Gehört zu Gen.-Nr.:

Rear Position-End-Outline Marker Lamp, Front Position-End-Outline Marker Lamp with Side Marker Lamp for Automobile.

Schluss-Umrissleuchte, Begrenzungs-Umrissleuchte mit Seitenmarkierungsleuchte für Kraftfahrzeuge.

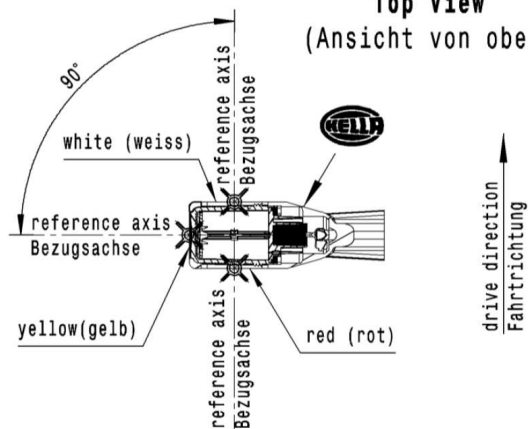
Rear View

(Ansicht von hinten)



1. Rear Position- / Rear End -outline marker lamp
Schluss- / Umrissleuchte

Top View (Ansicht von oben)



The device must be mounted according to the enclosed fitting documents (e. g. sketch + Annex A).
Der An- bzw. Einbau der Geräte hat nach anliegenden An- bzw. Einbauunterlagen (z. B. Skizze und Anlage A) zu erfolgen.



HELLA KGaA Hueck & Co.

Mounting instruction

Anbauanweisung

Type: 2XS 340 418
Typ:

Hella Part-No.: (2XS 011 744-XX)
Hella Bestell-Nr.

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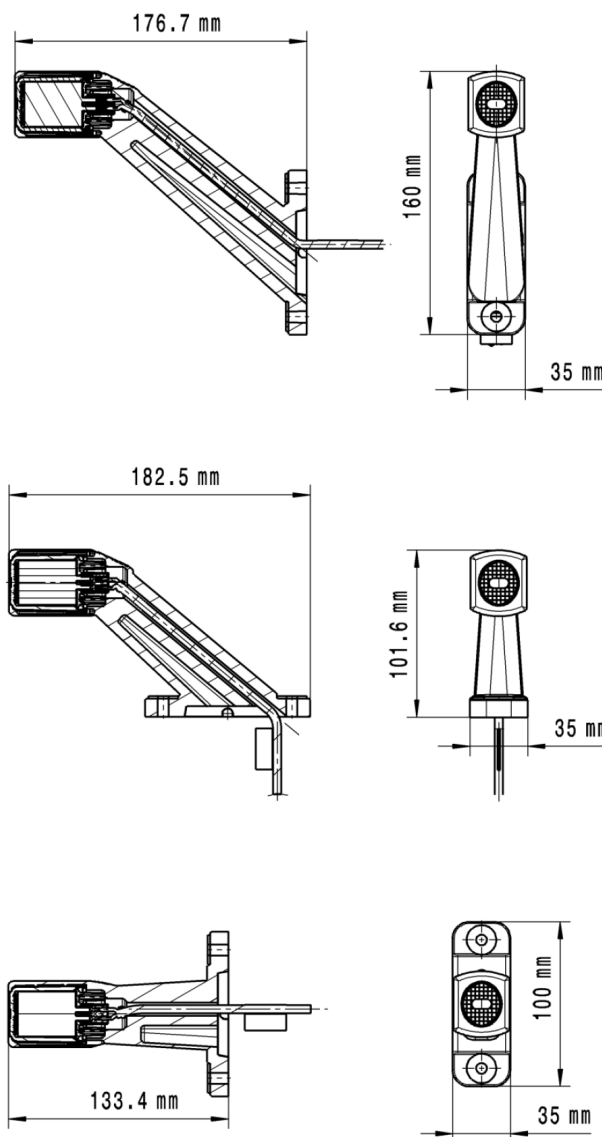
Page / Seite 4 / 4

Belongs to approval no.: E4 11392

Gehört zu Gen.-Nr.:

Rear Position-End-Outline Marker Lamp, Front Position-End-Outline Marker Lamp with Side Marker Lamp for Automobile.

Schluss-Umrissleuchte, Begrenzungs-Umrissleuchte mit Seitenmarkierungsleuchte für Kraftfahrzeuge.



The device must be mounted according to the enclosed fitting documents (e. g. sketch + Annex A).

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



HELLA KGaA Hueck & Co.

Annex A

Anlage A

Type: 2XS 340 418
Typ:

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Hella Part-No.: (2XS 011 744-XX)
Hella Bestell-Nr.

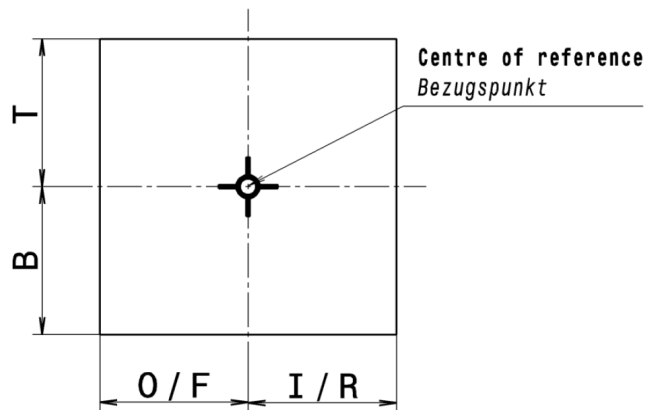
Belongs to approval no.: E4 11392
Gehört zu Gen.-Nr.:

Rear Position-End-Outline Marker Lamp, Front Position-End-Outline Marker Lamp with Side Marker Lamp for Automobile.

Schluss-Umrissleuchte, Begrenzungs-Umrissleuchte mit Seitenmarkierungsleuchte für Kraftfahrzeuge.

Determining the borders of the illuminated area of lamp in accordance with the Directives of the Council of the European Community on "Mounting of lamps and light signalling equipment" 76/756 EEC and ECE-Regulation No. 48, sub-section 2.9.

Bestimmung der Grenzen der leuchtenden Fläche einer Leuchte gem. den Richtlinien des Rates der Europäischen Gemeinschaften "Anbau von Beleuchtungs- und Lichtsignaleinrichtung" nach 76/756/EWG, bzw. ECE-Regelung Nr. 48, Absatz 2.9.



Category of Lamp Gerätebezeichnung	Top edge Obere Grenze (T) mm	Bottom edge Untere Grenze (B) mm	Outer edge Äußere Grenze (O) mm	Inner edge Innere Grenze (I) mm
Rear Position-End-Outline Marker Lamp Schluss-Umrissleuchte	7	9	15	13
Front Position-End-Outline Marker Lamp Begrenzungs-Umrissleuchte	8	6	10	8
Category of Lamp Gerätebezeichnung	Top edge Obere Grenze (T) mm	Bottom edge Untere Grenze (B) mm	Front edge Vordere Grenze (F) mm	Rear edge Hintere Grenze (R) mm
Side Marker Lamp Seitenmarkierungsleuchte	5	4	5	4

The device must be mounted according to the enclosed fitting documents (e. g. sketch + Annex A).
Der An- bzw. Einbau der Geräte hat nach anliegenden An- bzw. Einbauunterlagen (z. B. Skizze und Anlage A) zu erfolgen.



HELLA KGaA Hueck & Co.

Photo

Foto

Type: **2XS 340 418**
Typ:

Hella Part-No.: (2XS 011 744-XX)
Hella Bestell-Nr.

LI-ST
28.11.2012

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Belongs to approval no.: **E4 11392**
Gehört zu Gen.-Nr.:



The device must be mounted according to the enclosed fitting documents (e. g. sketch + Annex A).
Der An- bzw. Einbau der Geräte hat nach anliegenden An- bzw. Einbauunterlagen (z. B. Skizze und Anlage A) zu erfolgen.



HELLA KGaA Hueck & Co.

Circuit diagram

Schaltplan

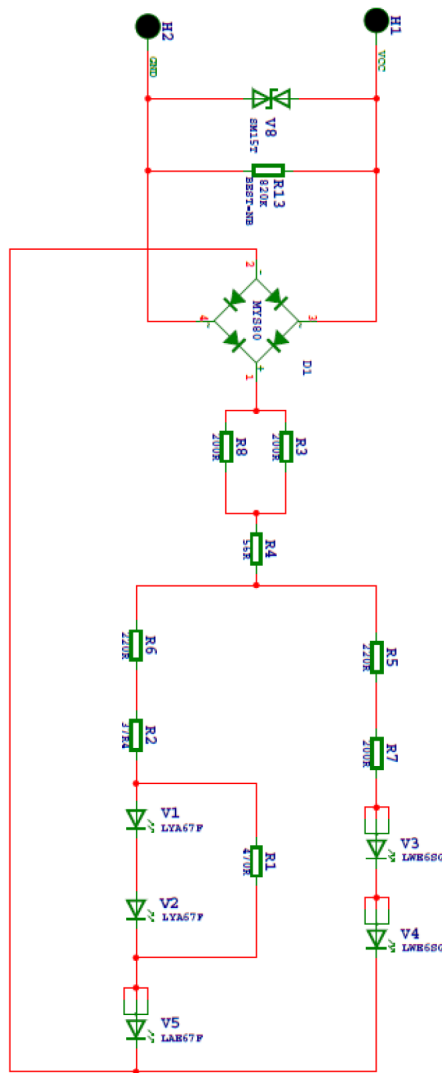
Type: 2XS 340 418
Typ:

Hella Part-No.: (2XS 011 744-XX)
Hella Bestell-Nr.

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28.11.2012

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Belongs to approval no.: E4 11392
Gehört zu Gen.-Nr.:



The device must be mounted according to the enclosed fitting documents (e. g. sketch + Annex A).
Der An- bzw. Einbau der Geräte hat nach anliegenden An- bzw. Einbauunterlagen (z. B. Skizze und Anlage A) zu erfolgen.

Examination of a combined front/rear position and side marker lamp marked Hella, type 2XS 234 418, carried out in accordance with the relevant clauses of ECE Regulations No. 7-02 and 91-00.

Clause No.	Subject of the relevant clause	Judgement of the device	Remark
3	Markings: a trade name or mark b indication of the recommended lamp type c space reserved for the approval mark, including number and symbol	complies complies complies	
5	General specifications: a intensity and colour of the light emitted b maintenance of satisfactory operation and of photometric characteristics	complies complies	see below under 6 and 8 by inspection only
6	Intensity of the light emitted	complies	see Annex 4
8	Colour of the light emitted	complies	see Annex 4

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Test	12-256 Hella 2XS 340 418 rear pos 1			Date	28-11-2012 10:01:56		
Project	2159097-PHO 12-256			Operator	Henk van der Kolk		
Program	R007-02 Rr pos R1 RM LED			Distance	3.157 m		
Current1	0.050 A						
Voltage1	27.982 V						
Version	supp 19			Equipment	LMT GO-H 1400		
Comment							
Function	Min	Max	I in cd	H	V	Reaim	N.O.K.
HV at 1 minute	4.0	17	6.5	0.00°	0.00°		
HV at 30 minutes	4.0	17	5.9	0.00°	0.00°		
10U - 5L	0.8	17	1.9	-5.00°	10.00°		
10U - 5R	0.8	17	1.5	5.00°	10.00°		
5U - 20L	0.4	17	0.8	-20.00°	5.00°		
5U - 10L	0.8	17	3.1	-10.00°	5.00°		
5U - V	2.8	17	5.1	0.00°	5.00°		
5U - 10R	0.8	17	1.9	10.00°	5.00°		
5U - 20R	0.4	17	0.6	20.00°	5.00°		
H - 10L	1.4	17	4.3	-10.00°	0.00°		
H - 5L	3.6	17	4.9	-5.00°	0.00°		
H - V	4.0	17	5.9	0.00°	0.00°		
H - 5R	3.6	17	4.2	5.00°	0.00°		
H - 10R	1.4	17	4.0	10.00°	0.00°		
5D - 20L	0.4	17	0.8	-20.00°	-5.00°		
5D - 10L	0.8	17	2.3	-10.00°	-5.00°		
5D - V	2.8	17	4.3	0.00°	-5.00°		
5D - 10R	0.8	17	1.5	10.00°	-5.00°		
5D - 20R	0.4	17	0.6	20.00°	-5.00°		
10D - 5L	0.8	17	1.2	-5.00°	-10.00°		
10D - 5R	0.8	17	1.2	5.00°	-10.00°		
Visibility (80L-45R,15D-15U)	0.05	17	(0.05) 6.5	(-80.00°) -2.00°	(15.00°) -8.00°		

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Test	12-256 Hella 2XS 340 418 rear pos 2			Date	28-11-2012 10:32:31		
Project	2159097-PHO 12-256			Operator	Henk van der Kolk		
Program	R007-02 Rr pos R1 RM LED			Distance	3.157 m		
Current1	0.050 A						
Voltage1	27.983 V						
Version	supp 19			Equipment	LMT GO-H 1400		
Comment							
Function	Min	Max	I in cd	H	V	Reaim	N.O.K.
HV at 1 minute	4.0	17	6.5	0.00°	0.00°		
HV at 30 minutes	4.0	17	5.9	0.00°	0.00°		
10U - 5L	0.8	17	2.0	-5.00°	10.00°		
10U - 5R	0.8	17	1.5	5.00°	10.00°		
5U - 20L	0.4	17	0.7	-20.00°	5.00°		
5U - 10L	0.8	17	2.9	-10.00°	5.00°		
5U - V	2.8	17	5.5	0.00°	5.00°		
5U - 10R	0.8	17	1.7	10.00°	5.00°		
5U - 20R	0.4	17	0.7	20.00°	5.00°		
H - 10L	1.4	17	5.2	-10.00°	0.00°		
H - 5L	3.6	17	5.2	-5.00°	0.00°		
H - V	4.0	17	5.8	0.00°	0.00°		
H - 5R	3.6	17	4.9	5.00°	0.00°		
H - 10R	1.4	17	3.1	10.00°	0.00°		
5D - 20L	0.4	17	0.6	-20.00°	-5.00°		
5D - 10L	0.8	17	2.7	-10.00°	-5.00°		
5D - V	2.8	17	5.6	0.00°	-5.00°		
5D - 10R	0.8	17	1.7	10.00°	-5.00°		
5D - 20R	0.4	17	0.7	20.00°	-5.00°		
10D - 5L	0.8	17	1.8	-5.00°	-10.00°		
10D - 5R	0.8	17	1.6	5.00°	-10.00°		
Visibility (80L-45R,15D-15U)	0.05	17	(0.05) 5.8	(-80.00°) 0.00°	(-15.00°) 9.00°		

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Test	12-256 Hella 2xs 340 418 pos 3		Date	28-11-2012 12:32:08			
Project	2159097-PHO 12-256		Operator	Henk van der Kolk			
Program	R007-02 Fr pos LM LED		Distance	3.157 m			
Current1	0.028 A						
Voltage1	27.994 V						
Version	supp 19		Equipment	LMT GO-H 1400			
Comment							
Function	Min	Max	I in cd	H	V	Reaim	N.O.K.
HV at 1 minute	4.0	140	7.4	0.00°	0.00°		
HV at 30 minutes	4.0	140	7.4	0.00°	0.00°		
10U - 5L	0.8	140	6.8	-5.00°	10.00°		
10U - 5R	0.8	140	6.2	5.00°	10.00°		
5U - 20L	0.4	140	1.7	-20.00°	5.00°		
5U - 10L	0.8	140	4.6	-10.00°	5.00°		
5U - V	2.8	140	7.4	0.00°	5.00°		
5U - 10R	0.8	140	4.1	10.00°	5.00°		
5U - 20R	0.4	140	1.8	20.00°	5.00°		
H - 10L	1.4	140	2.9	-10.00°	0.00°		
H - 5L	3.6	140	5.9	-5.00°	0.00°		
H - V	4.0	140	7.4	0.00°	0.00°		
H - 5R	3.6	140	5.6	5.00°	0.00°		
H - 10R	1.4	140	2.4	10.00°	0.00°		
5D - 20L	0.4	140	1.8	-20.00°	-5.00°		
5D - 10L	0.8	140	3.9	-10.00°	-5.00°		
5D - V	2.8	140	6.6	0.00°	-5.00°		
5D - 10R	0.8	140	3.4	10.00°	-5.00°		
5D - 20R	0.4	140	1.8	20.00°	-5.00°		
10D - 5L	0.8	140	6.7	-5.00°	-10.00°		
10D - 5R	0.8	140	5.9	5.00°	-10.00°		
Visibility (80L-45R,15D-15U)	0.05	140	(0.2) 8.1	(-67.00°) -1.50°	(-15.00°) 9.00°		

DEKRA Certification B.V. - Photometry

Test	12-256 Hella 2xs 340 418 pos 4		Date	28-11-2012 13:43:00			
Project	2159097-PHO 12-256		Operator	Henk van der Kolk			
Program	R007-02 Fr pos LM LED		Distance	3.157 m			
Current1	0.027 A						
Voltage1	27.994 V						
Version	supp 19		Equipment	LMT GO-H 1400			
Comment							
Function	Min	Max	I in cd	H	V	Reaim	N.O.K.
HV at 1 minute	4.0	140	7.1	0.00°	0.00°		
HV at 30 minutes	4.0	140	7.0	0.00°	0.00°		
10U - 5L	0.8	140	6.6	-5.00°	10.00°		
10U - 5R	0.8	140	5.7	5.00°	10.00°		
5U - 20L	0.4	140	1.7	-20.00°	5.00°		
5U - 10L	0.8	140	4.6	-10.00°	5.00°		
5U - V	2.8	140	7.0	0.00°	5.00°		
5U - 10R	0.8	140	3.7	10.00°	5.00°		
5U - 20R	0.4	140	1.8	20.00°	5.00°		
H - 10L	1.4	140	3.0	-10.00°	0.00°		
H - 5L	3.6	140	5.6	-5.00°	0.00°		
H - V	4.0	140	7.0	0.00°	0.00°		
H - 5R	3.6	140	5.3	5.00°	0.00°		
H - 10R	1.4	140	2.4	10.00°	0.00°		
5D - 20L	0.4	140	1.8	-20.00°	-5.00°		
5D - 10L	0.8	140	3.7	-10.00°	-5.00°		
5D - V	2.8	140	6.2	0.00°	-5.00°		
5D - 10R	0.8	140	3.5	10.00°	-5.00°		
5D - 20R	0.4	140	1.9	20.00°	-5.00°		
10D - 5L	0.8	140	6.3	-5.00°	-10.00°		
10D - 5R	0.8	140	5.8	5.00°	-10.00°		
Visibility (80L-45R,15D-15U)	0.05	140	(0.2) 7.8	(-80.00°) -1.00°	(-13.00°) -11.00°		

DEKRA Certification B.V. - Photometry

Test	12-256 Hella 2xs 340 418 SM 5	Date	28-11-2012 11:26:22
Project	2159097-PHO 12-256	Operator	Henk van der Kolk
Program	R091-00 SM1 YELLOW LED	Distance	3.157 m
Current1	0.036 A		
Voltage1	27.990 V		
Version	Supp13	Equipment	LMT GO-H 1400
Comment			

Function	Min	Max	I in cd	H	V	Reaim	N.O.K.
HV at 1 minute	4	25	9.3	0.00°	0.00°		
HV at 30 minutes	4	25	7.4	0.00°	0.00°		
Max (45L 45R 10U 10D)	-	25	7.5	0.50°	-0.50°		
10U - 45L	0.6	25	0.9	-45.00°	10.00°		
10U - V	0.6	25	2.1	0.00°	10.00°		
10U - 45R	0.6	25	0.9	45.00°	10.00°		
H - 45L	0.6	25	0.9	-45.00°	0.00°		
H - V	4	25	7.4	0.00°	0.00°		
H - 45R	0.6	25	0.8	45.00°	0.00°		
10D - 45L	0.6	25	0.9	-45.00°	-10.00°		
10D - V	0.6	25	2.0	0.00°	-10.00°		
10D - 45R	0.6	25	0.9	45.00°	-10.00°		

DEKRA Certification B.V. - Photometry

Test	12-256 Hella 2xs 340 418 SM 6	Date	28-11-2012 11:54:59
Project	2159097-PHO 12-256	Operator	Henk van der Kolk
Program	R091-00 SM1 YELLOW LED	Distance	3.157 m
Current1	0.036 A		
Voltage1	27.990 V		
Version	Supp13	Equipment	LMT GO-H 1400
Comment			

Function	Min	Max	I in cd	H	V	Reaim	N.O.K.
HV at 1 minute	4	25	11.2	0.00°	0.00°		
HV at 30 minutes	4	25	8.6	0.00°	0.00°		
Max (45L 45R 10U 10D)	-	25	8.6	0.00°	0.00°		
10U - 45L	0.6	25	0.9	-45.00°	10.00°		
10U - V	0.6	25	2.1	0.00°	10.00°		
10U - 45R	0.6	25	1.0	45.00°	10.00°		
H - 45L	0.6	25	0.9	-45.00°	0.00°		
H - V	4	25	8.6	0.00°	0.00°		
H - 45R	0.6	25	0.9	45.00°	0.00°		
10D - 45L	0.6	25	0.9	-45.00°	-10.00°		
10D - V	0.6	25	1.9	0.00°	-10.00°		
10D - 45R	0.6	25	1.0	45.00°	-10.00°		

Colorimetry of light emitted, measurement date 28 November 2012

Item	x	Y
1. rear position RED 1min	0.691	0.307
1. rear position RED 30min	0.693	0.306
2. rear position RED 1min	0.688	0.310
2. rear position RED 30min	0.690	0.308
1. front position WHITE 1min	0.358	0.367
1. rear position WHITE 30min	0.358	0.367
2. rear position WHITE 1min	0.360	0.366
2. rear position WHITE 30min	0.358	0.368
1. side marker AMBER 1min	0.595	0.403
1. side marker AMBER 30min	0.599	0.399
2. side marker AMBER 1min	0.585	0.414
2. side marker AMBER 30min	0.591	0.407

Color of emitted light complies to ECE requirements