

ECE TYPE-APPROVAL CERTIFICATE



Communication concerning:²

~~Approval granted~~
~~Approval extended~~
~~Approval refused~~
~~Approval withdrawn~~
~~Production definitely discontinued~~

of a type of headlamp pursuant to Regulation No. 112

Approval No: **E24 112R-010027**

Extension No: **01**

Reason for extension:

*See Annex 1 of test report
16-00626-CX-SHA-01 for details*

1. Trade name or mark of the device: **SAMMOON**
2. Manufacturer's name for the type of device: **SM-131-090E**
3. Manufacturer's name and address: **Sammoon Lighting & Electrical Co., Ltd.
Floor 1 and 2, Building 2, Zone A
Guangdong New Lighting-Source Industry
Area, Langsha, Luocun, Shishan Town,
Nanhai District, Foshan City, Guangdong
Province, P.R. China**
4. If applicable, name and address of manufacturer's representative: **N/A**
5. Submitted for approval on: **As before and 25.04.2017**
6. Technical service responsible for conducting approval tests: **TÜV SÜD Auto Service GmbH
Westendstraße 199
D-80686 München
Germany**
7. Date of test report issued by that service: **As before and 01.04.2017**
8. Number of report issued by that service: **16-00626-CX-SHA-00 up to – 01**

¹ Distinguishing number of the country which has granted/refused/withdrawn approval (see the provisions of the Regulation concerning approval).

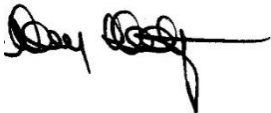
² Strike out which does not apply.

9. Brief description

| | |
|--|---|
| Category as described by the relevant marking ³ : | <i>HR PL</i> |
| Number and category(s) of filament lamp(s): | <i>N/A</i> |
| Reference luminous flux used for the principal passing beam (lm): | <i>N/A</i> |
| Principal passing beam operated at approximately (V): | <i>N/A</i> |
| Measures according to paragraph 5.8 of this Regulation: | <i>N/A</i> |
| Number and specific identification code(s) of LED module(s) and for each LED module a statement of whether it is replaceable or not: yes/ no ² | <i>1 LED module (contains 9 LEDs), is part of the lamp and not replaceable</i> |
| Number and specific identification code(s) of electronic light source control gear(s): | <i>N/A</i> |
| Total objective luminous flux as described in paragraph 5.9 exceeds 2000 lumens: yes/no /does not apply ² | <i>N/A</i> |
| The adjustment of the cut-off ² has been determined at: 10 m/25 m /does not apply ² | <i>N/A</i> |
| The determination of the minimum sharpness of “cut-off” has been carried out at: 10 m/25 m /does not apply ² | <i>N/A</i> |

Approval No: **E24 112R-010027**

Extension No: **01**

10. Approval mark position: ***On the lens***
11. Reason(s) for extension of approval: ***N/A***
12. Approval ~~granted~~/~~extended~~/~~refused~~/~~withdrawn~~²: ***Extended***
13. Place: ***Dublin***
14. Date: ***3rd May, 2017***
15. Signature: 



16. The list of documents deposited with the Administrative Service which has granted approval, is annexed and may be obtained on request.

³ Indicate the appropriate marking selected from the list below:

- C, C, C, R, R PL, CR, CR, CR, C/R, C/R, C/R, C/, C/, C/ ,
 → ↔ → ↔ → ↔ → ↔ → ↔ → ↔
- C, PL, C PL, C PL, CR PL, CR PL, CR PL, C/R PL, C/R PL, C/R PL,
 → ↔ → ↔ → ↔ → ↔ → ↔
- C/PL, C/PL, C/PL
 → ↔
- HC, HC, HC , HR, HR PL, HCR, HCR, HCR, HC/R, HC/R, HC/R, HC/, HC/, HC/
 → ↔ → ↔ → ↔ → ↔ → ↔ → ↔
- HC PL, HC PL, HC PL, HCR PL, HCR PL, HCR PL, HC/R PL, HC/R PL, HC/R PL,
 → ↔ → ↔ → ↔ → ↔
- HC/PL, HC/PL, HC/PL
 → ↔

Index to the Information Package

| | |
|---|--|
| Date of issue: | <i>20th June, 2016</i> |
| Date of latest amendment: | <i>3rd May, 2017</i> |
| Reason for extension/revision: | <i>See top of page 1 of certificate for details</i> |
| 1. Additional conditions, and advisory notes on legal alternatives. | |
| 2. Test report(s) | |
| - numbers(s): | <i>16-00626-CX-SHA-00 up to – 01</i> |
| - date of issue: | <i>30.05.2016</i> |
| - date of latest amendment: | <i>01.04.2017</i> |
| 3. Information document | |
| - number(s): | <i>SM-131-090E-00 up to – 01</i> |
| - date of issue: | <i>16.04.2016</i> |
| - date of latest amendment: | <i>01.04.2017</i> |
| Documentation: | <i>25 pages</i> |

Appendix: **Additional conditions, and advisory notes on legal alternatives.**

A: Additional conditions:

1. The device, Type SM-131-090E, shall be marked as prescribed in the regulation.
2. The attached technical report, with any of its attachments, forms part of this Type Approval certificate.
3. Each individual product from series production shall be to the measurements specified in the attached drawings, and shall be manufactured only from the materials specified in the Approval documents.
4. Changes in the product are permitted only with the explicit permission of NSAI. Breaches of this requirement will lead to a withdrawal of the Type Approval, and in addition may be subject to criminal prosecution.
5. This Type Approval will expire when it is surrendered by the holder, or withdrawn by NSAI, or when the approved type of product no longer conforms to legal requirements. The recall of the Type Approval can be issued by NSAI when the conditions required for the issuing or continuation of the Type Approval are no longer current, or when the Approval holder is in breach of the duties attached to the Type Approval, or when it is established that the approved type no longer meets the requirements of traffic safety.
6. NSAI may at any time check the correct performance of the duties imposed by the grant of this Type Approval, and in order to do so, may make tests, or have tests made.
7. Changes in the company name, address or manufacturing site, as well as in any of the sales or other agents specified in the issuing of the approval must immediately be notified to the NSAI.
8. The duties imposed by the issuing of this certificate are not transferable. The legal protection of third parties is not affected by this certificate.
9. When the manufacture or sale of the vehicle, system, component or separate technical unit has not been started within one year of the date of issue of this certificate, then NSAI is to be informed. This requirement also applies when the manufacture or sale has been halted for more than one year, or when it ought to have been halted for more than one year. The initial commencement of manufacture or sale, or the resumption of manufacture or sale, shall then be notified to NSAI within one month of commencement or resumption.

B : Legal Options

Any objection to the requirements set out in this certificate shall be made within one month of the date of issue. The objection shall be made, in writing, to NSAI in Dublin.



Technical Report No.: 16-00626-CX-SHA-01
Manufacturer: Sammoon Lighting & Electrical Co., Ltd.
Type: SM-131-090E

TECHNICAL REPORT

No.: 16-00626-CX-SHA-01

Test according to ECE regulation relating to

ECE Regulation No.: 112

Headlamps emitting an asymmetrical passing beam or a driving beam

including all amendments up to
supplement 06 to the 01 series of amendments

| Approvals granted up to now | | |
|-----------------------------|--------------------|------------|
| ECE | Number of approval | Date |
| | E24 112R-010027-00 | 2016-06-20 |

Technical Report No.: 16-00626-CX-SHA-01
Manufacturer: Sammoon Lighting & Electrical Co., Ltd.
Type: SM-131-090E

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I. Technical description

- 0.1. Make (trade name of manufacturer) : SAMMOON
- 0.2. Type : SM-131-090E
- 0.2.1. Variants : N/A
- 0.3. Means of identification of type : By digits and letters
- 0.4. Concise description
- Category as described by the relevant marking : HR PL
- Number and category(ies) of filament lamp(s) : N/A
- Reference luminous flux used for the principal passing beam (lm) : N/A
- Principal passing beam operated at approximately (V) : N/A
- Measures according to paragraph 5.8 of this Regulation : N/A
- Number and specific identification code(s) of LED module(s) and for each LED module a statement whether it is replaceable or not : 1 LED module(contain 9 LEDs), is part of the lamp and not replaceable
- Number and specific identification code(s) of electronic light source control gear(s) : N/A
- Total objective luminous flux as described in paragraph 5.9. exceeds 2,000 lumens : N/A
- The adjustment of the cut-off has been determined at : N/A

Technical Report No.: 16-00626-CX-SHA-01
Manufacturer: Sammoon Lighting & Electrical Co., Ltd.
Type: SM-131-090E

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The determination of the minimum sharpness of the 'cut-off' has been carried out at : N/A

0.5. Name and address of manufacturer : Sammoon Lighting & Electrical Co., Ltd.
Floor 1 and 2, Building 2, Zone A,
Guangdong New Lighting-Source Industry Area, Langsha, Luocun, Shishan Town, Nanhai District, Foshan City, Guangdong Province, P.R. China

0.6. Address of assembly plant : See 0.5.

0.7. Location of the approval mark : On the lens

0.8. If applicable, name and address of the manufacturer's representative : N/A

II. Test record

1. Test conditions : Due to the Reason(s) of extension stated in annex 1 no further tests are necessary except visual inspection.
There is no influence on the test results.

1.1. Technical data of the test samples : Two samples for visual inspection.

1.2. Test procedures used : According to ECE Regulation No. 112.01.

1.3. Measuring and test equipment : N/A (visual inspection don't need any test equipment)

2. Test results : Refer to Certificate No.: E24 112R-010027-00, Because of item 1., the test results remain still valid.

3. Place of test : Shanghai, P.R. China.

Date of test : 2017-04-01

III. Enclosures

Annex 1 : Reason(s) of extension

Manufacturer's information document No. : SM-131-090E-01

No.

Dated on : 2017-04-01



Technical Report No.: 16-00626-CX-SHA-01
 Manufacturer: Sammoon Lighting & Electrical Co., Ltd.
 Type: SM-131-090E

IV. Statement of conformity

The information folder as mentioned under No. III and the type described therein are in compliance with the test specification mentioned above. The worst-case was selected in accordance with document "Preparation of Test Reports".

The test report may be reproduced and published in full and by the client only. It can be reproduced partially with the written permission of the test laboratory only.

München, 2017-04-01
 (YYYY-MM-DD)



Joe Zhou

Test Laboratory / DIN EN ISO 17025

| Genehmigungsbehörde/ Approval authority | Land/Country | Registriernummer/ Registration-number | Aktueller Benennungsumfang/ Actual scope list |
|---|--|--|---|
| Kraftfahrt-Bundesamt (KBA) | Deutschland/ Germany | KBA-P 00100-10 | www.kba.de |
| Vehicle Certification Agency (VCA) | Vereintes Königreich/ United Kingdom | VCA-TS-006 | http://ec.europa.eu/enterprise/sectors/automotive/ap proval-authorities-technical-services/technical- services/index_en.htm |
| Approval Authority of the Netherlands (RDW) | Niederlande/ The Netherlands | RDWT-082-03 | |
| National Standards Au- thority of Ireland (NSAI) | Irland/ Ireland | Technical Service Num- ber: 49 | |
| Vehicle Safety Certifica- tion Center (VSCC) | Taiwan/ Taiwan | DE04-06-2 | http://www.vsc.org.tw/English/Default.aspx |



| | | |
|-----------------------|---|------------|
| Technical Report No.: | 16-00626-CX-SHA-01 | |
| Manufacturer: | Sammoon Lighting & Electrical Co., Ltd. | Annex 1 |
| Type: | SM-131-090E | Page 1 / 1 |

Reason(s) of extension

Added:

N/A

Modified:

N/A

Deleted:

N/A

Corrected:

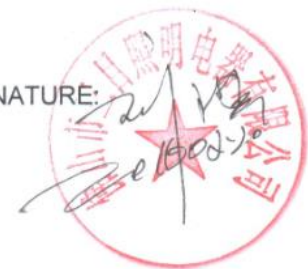
Headlamp Class A corrected to Class B

| | | |
|---------|---|--|
| SAMMOON | Sammoon Lighting & Electrical Co., Ltd. | Type: SM-131-090E |
| | | Information document No.: SM-131-090E-01 |
| | | Date: 2017-04-01 |
| | | Pages: Page 1 of 7 |

**Application for the first extension of
E24 112R-010027 approval pursuant to
ECE Regulation No. 112.01 uniform provisions
concerning the approval of
motor vehicle headlamps emitting an asymmetrical
passing-beam or a driving-beam or both and
equipped with filament lamps and/or light-emitting
diode(LED) modules of Sammoon Lighting &
Electrical Co., Ltd., type SM-131-090E**

Total Pages: 7 pages and 2 Attachments with 13 pages

SIGNATURE:



| | | |
|---------|---|--|
| SAMMOON | Sammoon Lighting & Electrical Co., Ltd. | Type: SM-131-090E |
| | | Information document No.: SM-131-090E-01 |
| | | Date: 2017-04-01 |
| | | Pages: Page 2 of 7 |

List of documentation

| | |
|---|------------|
| Reason(s) of extension | 3 |
| Confirmation | 4 |
| 0. General | 5 |
| 1. Technical description | 6 |
| 2. Illumination surface | 7 |
| 3. Attachment 1 - Drawings | (2 Pages) |
| 4. Attachment 2 - Test report of plastic lens | (11 Pages) |

| | | |
|---------|---|--|
| SAMMOON | Sammoon Lighting & Electrical Co., Ltd. | Type: SM-131-090E |
| | | Information document No.: SM-131-090E-01 |
| | | Date: 2017-04-01 |
| | | Pages: Page 3 of 7 |

Reason(s) of extension

Added:
N/A

Modified:
N/A

Deleted:
N/A

Corrected:
Headlamp Class A corrected to Class B

| | | |
|---------|---|--|
| SAMMOON | Sammoon Lighting & Electrical Co., Ltd. | Type: SM-131-090E |
| | | Information document No.: SM-131-090E-01 |
| | | Date: 2017-04-01 |
| | | Pages: Page 4 of 7 |

Confirmation

We declare hereby that the product of Sammoon Lighting & Electrical Co., Ltd., type SM-131-090E headlamp submitted for the type approval

1. Is compatible with the enclosed documentation.
2. It has been manufactured under condition of mass production.
3. The shape, color, material of housing, bezel and socket, which does not affect the performance of this lamp, may be modified for additional version of vehicle.
4. The change of the colour of the filament lamp of direction indicators or the color of any filter which doesn't change the type of the lamp, may be modified for additional version of vehicle.
5. This type of headlamp is designed to meet the requirements of traffic moving on right side of the road only; no additional measures need to prevent discomfort to road-users in a country where traffic moves on the side of the road opposite to that of the country for which the headlamp was designed.

| | | |
|---------|---|--|
| SAMMOON | Sammoon Lighting & Electrical Co., Ltd. | Type: SM-131-090E |
| | | Information document No.: SM-131-090E-01 |
| | | Date: 2017-04-01 |
| | | Pages: Page 5 of 7 |

0. GENERAL

- 0.1. Make (Trade mark of manufacturer) : SAMMOON
- 0.2. Type : SM-131-090E
- 0.2.1. Variants : N/A
- 0.2.3. Intended for : For vehicle of category M
- 0.3. Means of identification of type : By digits and letters
- 0.4. Name and address of manufacturer : Sammoon Lighting & Electrical Co., Ltd.
Floor 1 and 2, Building 2, Zone A,
Guangdong New Lighting-Source
Industry Area, Langsha, Luocun,
Shishan Town, Nanhai District, Foshan
City, Guangdong Province, P.R. China
- 0.5. Location and method of affixing of
the ECE approval mark : Moulded on lens, see drawing No. 1
- 0.5.1. Proposal of the approval mark : See drawing No. 1
- 0.6. Address of assembly plant : See 0.4.

| | | |
|---------|---|--|
| SAMMOON | Sammoon Lighting & Electrical Co., Ltd. | Type: SM-131-090E |
| | | Information document No.: SM-131-090E-01 |
| | | Date: 2017-04-01 |
| | | Pages: Page 6 of 7 |

1. TECHNICAL DESCRIPTION

1.1. Functions : Motor vehicle headlamp with an asymmetrical driving beam according to ECE Regulation No. 112.01.

1.2. Assembled : Independent lamp

1.3. Category : Class B for headlamp, suitability for both right-hand and left hand traffic system.

1.4. Optical characters

| Function | Light colour | Optical system | Reflector shape | Reflector size |
|--------------|--------------|----------------|-----------------|----------------|
| Driving beam | White | LED + Lens | N/A | N/A |

1.5. Light source

| | | |
|--|---|---|
| Number and category(s) of filament lamp(s) | : | N/A |
| Number and specific identification code(s) of LED module(s) and for each LED module a statement whether it is replaceable or not | : | 1 LED module(contain 9 LEDs), is part of the lamp and not replaceable |
| Number and specific identification code(s) of electronic light source control gear(s) | : | N/A |

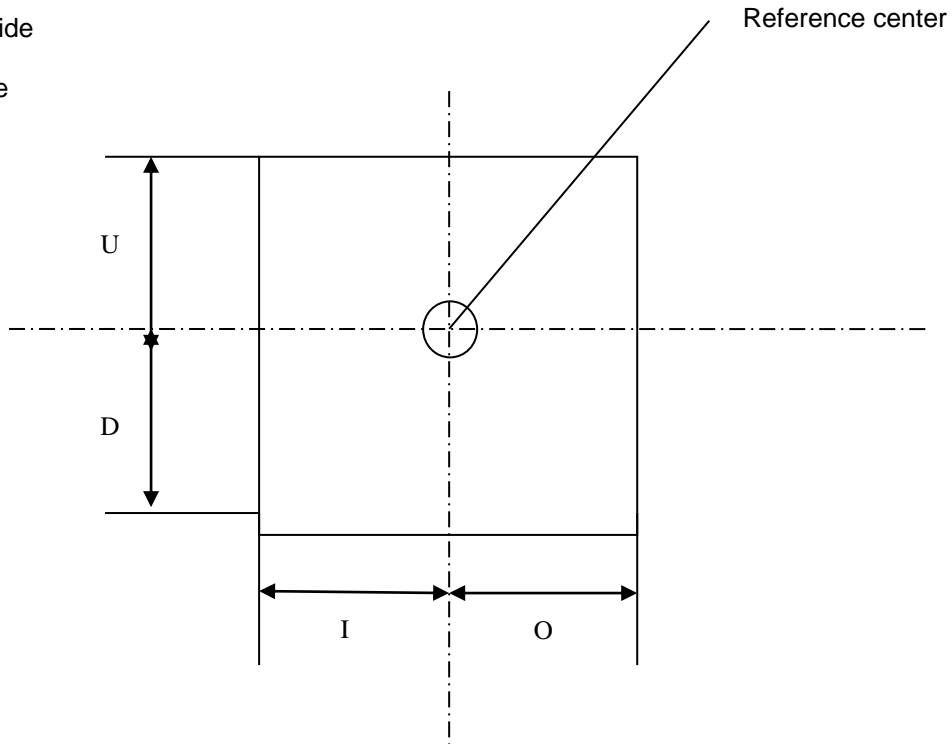
1.6. Materials

| Part | Material |
|---------|---|
| Lens | -Plastic (PC), colourless, -Manufacture: Bayer AG, 51368 Leverkusen, -Type: AL 2647-hue 55/396 - See the test report at Attachment |
| Coating | UVT 200 Q1 Manufacturer: Red Spot Paint & Varnish Co., Inc Evansvile, Ind. USA |

| | | |
|---------|---|--|
| SAMMOON | Sammoon Lighting & Electrical Co., Ltd. | Type: SM-131-090E |
| | | Information document No.: SM-131-090E-01 |
| | | Date: 2017-04-01 |
| | | Pages: Page 7 of 7 |

Illumination surface

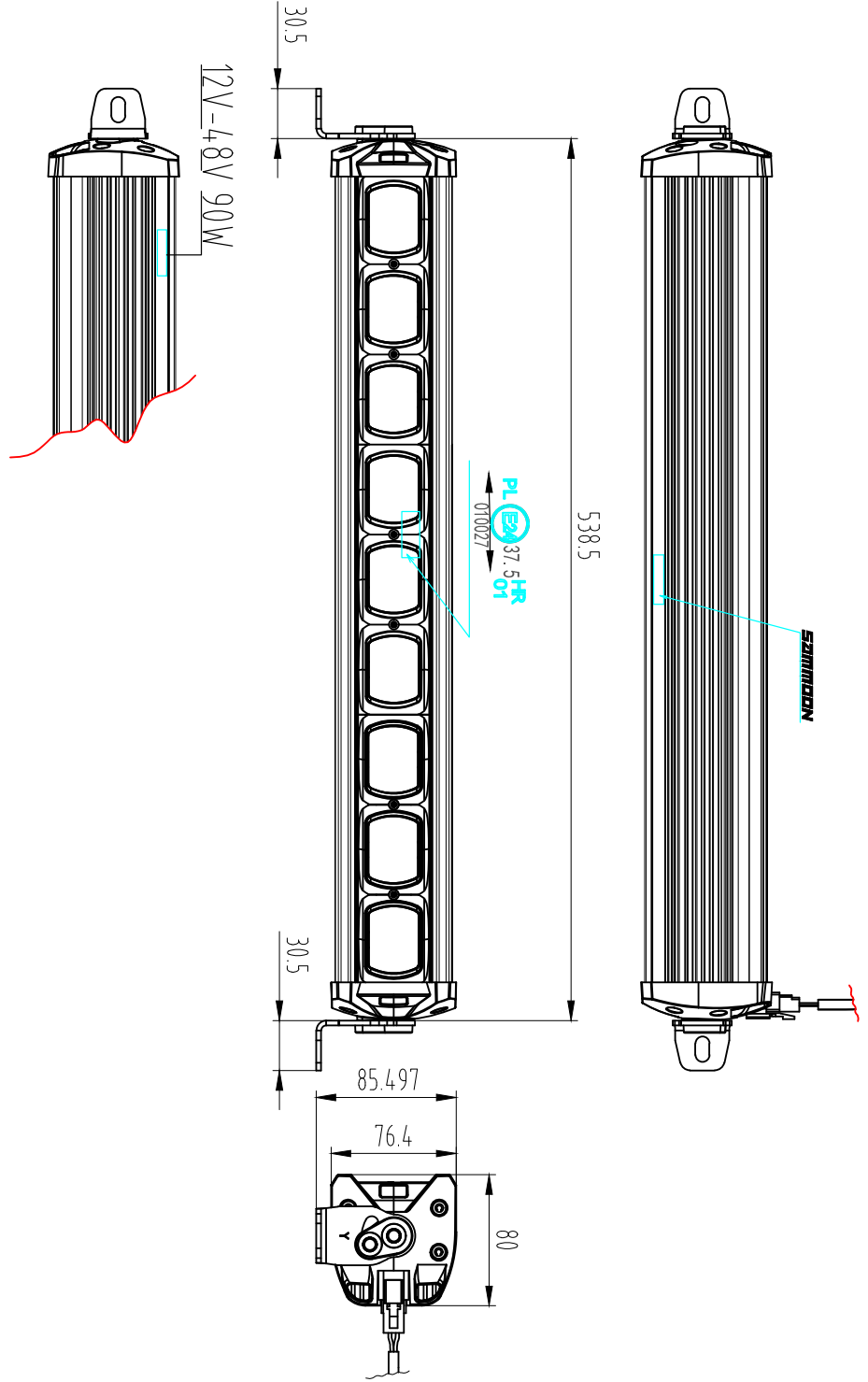
U-upside
D-downside
I-inside
O-outside



| Function | Limit(I) | Limit (O) | Limit (U) | Limit (D) |
|--------------|----------|-----------|-----------|-----------|
| Driving beam | 269 | 269 | 38 | 38 |

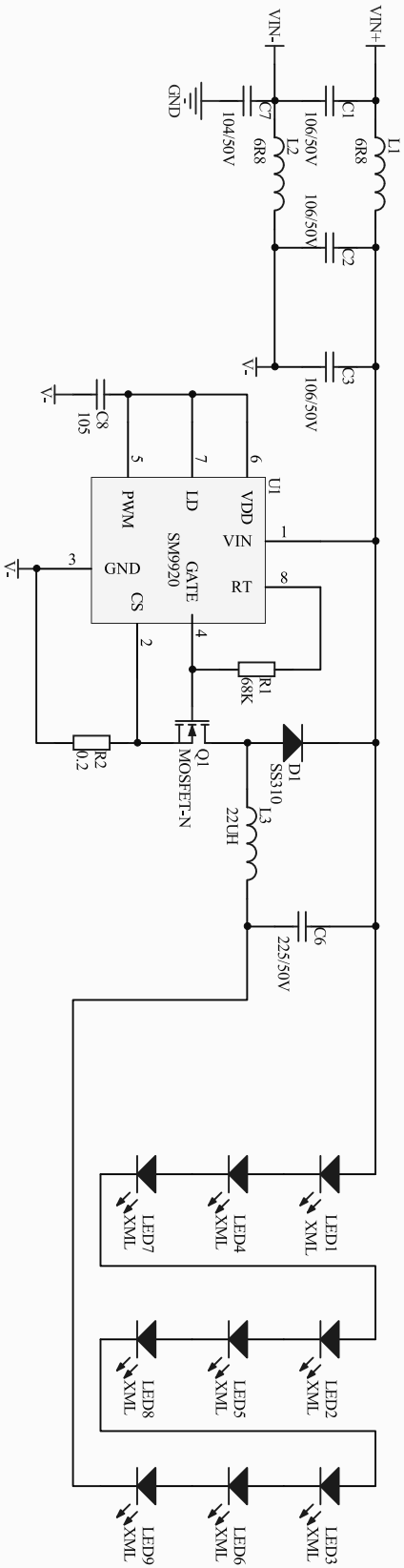
Dimension in mm

Drawing No. 1



| | | | | | | | | | |
|------|------|------|------|------|---------------|----|------|------------------|------------|
| 图号 | REP# | 变更记录 | 日期 | 零件名称 | 投影 PROJECT | 比例 | 版本 | 产品型号/名称 | 未注尺寸公差 |
| | | 变更日期 | 变更标记 | 比例 | 1:4 | 绘图 | 表面处理 | 131-090E | C. ±0.2 |
| | | 变更日期 | 变更标记 | 比例 | 1:4 | 绘图 | 表面处理 | | 0.0 ±0.1 |
| | | 变更日期 | 变更标记 | 比例 | 1:4 | 绘图 | 表面处理 | | 0.00 ±0.05 |
| 变更内容 | | | | 单位 | mm | 审核 | | 三目 (中国) 照明电器有限公司 | |
| 变更内容 | | | | 单位 | mm | 审核 | | SAMPOON | |

Drawing No. 2



| | | | |
|-------|----------------------------|--------------|--|
| Title | | SM-13X-E-90W | |
| Size | Number | Revision | |
| A4 | 2016/5/3 | Sheet of | |
| Date: | E:\2016\1\13X-E-90W.SchDoc | Drawn By: | |
| File: | | | |

Attachment 2 - Test report of plastic lens

L i c h t t e c h n i s c h e s I n s t i t u t
U n i v e r s i t ä t K a r l s r u h e
L T I K

Report No. PMT 046

Prüfstelle für lichttechnische Einrichtungen an Fahrzeugen

L i c h t t e c h n i s c h e s I n s t i t u t
U n i v e r s i t ä t K a r l s r u h e
L T I K

Prüfstelle für lichttechnische
Einrichtungen an Fahrzeugen

76128 Karlsruhe
Kaiserstraße 12
Telefon 0721 608 2551
Telefax 0721 66 19 01

Report

about tests fixed in several
ECE-Regulations for headlamps

Number of the report : PMT 046
Date of the report : March, 17. 1994
Subject : Test of coated plastic materials to be
used for lenses of headlamps
Applicant : Bayer AG, 51368 Leverkusen

Description of the materials declared by the applicant

| | |
|------------------|--|
| Basis-material | Makrolon, AL 2647-hue 55/396 |
| Typ | |
| Kind of material | Bayer AG, 51368 Leverkusen |
| Manufacturer | |
| | |
| Coating | UVT 200 Q1 |
| Type | |
| Kind of material | |
| Manufacturer | Red Spot Paint & Varnish Co. Inc Evansville, Ind. USA |

For the tests of the described materials to be used for lenses of headlamps for vehicles relating to the application the requirements were based on the relevant annex in the ECE-Regulations No. 1, 5, 8, 19, 20, 31, 57 and 72.

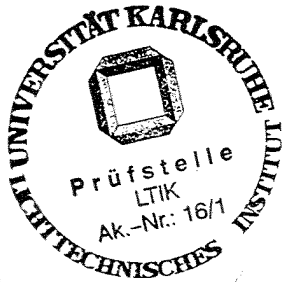
REQUIREMENTS FOR LAMPS INCORPORATING LENSES OF PLASTIC MATERIAL
- TESTING OF LENS OR MATERIAL SAMPLES AND OF COMPLETE LAMPS
(Technical annex)

(former document TRANS/SC1/WP29/306)

The devices necessary for the tests on flat samples were presented. The results of the tests are described in enclosures.

The requirements in accordance with the before-mentioned document are fulfilled.

This report consists of 8 pages.



Dr. Karl Manz

(Dr. K. Manz)

Tests

General: The mentioned paragraphs refer to the relevant annex in the ECE-Regulations No. 1, 5, 8, 19, 20, 31, 57 and 72:

REQUIREMENTS FOR LAMPS INCORPORATING LENSES OF PLASTIC MATERIAL - TESTING OF LENS OR MATERIAL SAMPLES AND OF COMPLETE LAMPS (Technical annex)

(former document TRANS/SC1/WP29/306)

Resistance to temperature changes

Three new lenses were subjected to the cycles of temperature changes referred to in 2.1.1.

Before and after this cycles the lenses were positioned to a headlamp *) provided for this test and tested photometrically in the measuring points required in 2.1.2.1.

The changes of the photometric values caused by the heat-test are summarized in the following table

| Measuring point | Change of the photometric values by the heat test according to 2.1.1. in % | | | permissible change |
|-----------------------|--|----------|----------|--------------------|
| | Sample 1 | Sample 2 | Sample 3 | |
| Dipped beam B 50 L | 2,5 | 5,7 | 2,5 | 10 % |
| 50 R | 3,4 | 1,5 | 0,8 | |
| Highbeam E max | 2,5 | 2,3 | 1,7 | 10 % |

The permissible limits are not exceeded.

*) Test-headlamps type similar Hella 1A8.099

Resistance to atmospheric agents

Three new samples of material were subjected to the weathering- test referred to in 2.2.1.

After that no damages could be perceived at the samples, the values of transmission, as certified by the procedure corresponding to Annex 2 are summarized in the following table.

| Measuring point | Sample | | |
|-----------------------|--------|------|------|
| | 1 | 2 | 3 |
| T2 | 88,4 | 88,4 | 88,3 |
| T3 | 88,3 | 88,6 | 85,5 |
| Δt | 0,001 | 0 | 0 |
| mean value Δt | 0 | | |
| Δt_{\max} | 0,020 | | |

The permissible limits are not exceeded.

Resistance to chemical agents

At the samples of material referred before after the weathering-test according to 2.2.1 and the measurement according to 2.2.3.1 the procedures according to 2.2.2.2 and 2.2.2 were realized.

After a suitable drying time no damages could be perceived at the samples, the values of diffusion ascertained by the procedure corresponding to Annex 2 are summarized in the following table:

| Measuring point | Sample | | |
|-----------------------|--------|-------|-------|
| | 1 | 2 | 3 |
| T2 | 88,4 | 88,4 | 88,3 |
| T4 | 0,1 | 0,2 | 0,2 |
| T5 | 1,0 | 0,6 | 0,7 |
| Δd | 0,010 | 0,005 | 0,006 |
| Mean value Δd | 0,007 | | |
| Δd_{\max} | 0,020 | | |

The permissible limits are not exceeded.

Resistance to detergents and hydrocarbons

Three new samples of material were subjected successively to the procedure described in 2.3.1 and 2.3.2.

The values of transmission ascertained by the procedure corresponding to Annex 2 are summarized in the following table.

| Measuring point | Sample | | |
|-----------------------|--------|-------|-------|
| | 1 | 2 | 3 |
| T2 | 88,4 | 88,5 | 88,4 |
| T3 | 88,3 | 88,4 | 88,3 |
| Δt | 0,001 | 0,001 | 0,001 |
| mean value Δt | 0,001 | | |
| Δt_{\max} | 0,010 | | |

The permissible limits are not exceeded.

Resistance to mechanical deterioration

Three new samples of material were subjected to the test of checking the resistance to mechanical deterioration according to Annex 3.

The values of transmission and diffusion ascertained by the procedure corresponding to Annex 2 are summarized in the following table.

| Measuring point | Sample | | |
|-----------------------|--------|-------|-------|
| | 1 | 2 | 3 |
| T2 | 88,2 | 88,3 | 88,1 |
| T3 | 87,6 | 87,7 | 87,6 |
| T4 | 0,2 | 0,3 | 0,3 |
| T5 | 0,7 | 0,8 | 0,8 |
| Δt | 0,007 | 0,007 | 0,006 |
| Δd | 0,006 | 0,006 | 0,006 |
| Mean value Δt | 0,007 | | |
| Δt_{\max} | 0,100 | | |
| Mean value Δd | 0,006 | | |
| Δd_{\max} | 0,050 | | |

The permissible limits are not exceeded.

Test of adherence of the coating

A lens was prepared corresponding to 2.5.1, after that the test of adherence of the coating according to 2.5.2 was realized.

After this test it was ascertained that the coating at no place removed from the basis material.

L i c h t t e c h n i s c h e s I n s t i t u t
U n i v e r s i t ä t K a r l s r u h e
L T I K

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PMT Reportextension AL 001

**Supplementary remarks to the reports No. PMT 001, PMT 002, PMT 003,
PMT 004, PMT 016, PMT 018, PMT 019, PMT 020, PMT 021, PMT 032, PMT 033,
PMT 038, PMT 039, PMT 040, PMT 041, PMT 042, PMT 043, PMT 044, PMT 045
und PMT 046.**

With the letter from 07.08.1993 Bayer AG applied to allow equal treatment of the following basis-materials

AL 2443 - hue 55/396
AL 2447 - hue 55/396
AL 2643 - hue 55/396
AL 2647 - hue 55/396

which are tested with several hardcoatings, registered in the above mentioned reports, and that these reports should be extended to these basis materials.

According to the manufacturer the difference between the basis material of the product group AL 2x43 to AL 2x47 is an additional release agent at AL 2x47 and the difference between the product group AL 24xx to AL26xx is a higher molecular weight of the product group AL 26xx.

As mentioned in the supplementary remarks of the reports no. PMT 001, PMT 002, PMT 003 and PMT 004 from 01.28.1993, there are no objections against equal treatment for the two materials AL 2443-hue 55/396 and AL 2447-hue 55/396.

To avoid the expenditure of a complete new approval, tests are made on special combinations of basis-materials and hardcoatings.

These combinations are as following

| Basis-material | hardcoat | report |
|--------------------|------------------|---------|
| AL 2647-hue 55/396 | Acryking K 101 | PMT 038 |
| AL 2443-hue 55/396 | SHP 401/AS 4000 | PMT 039 |
| AL 2647-hue 55/396 | | PMT 040 |
| AL 2447-hue 55/396 | SHP 401/SHC 4002 | PMT 041 |
| AL 2643-hue 55/396 | | PMT 042 |
| AL 2443-hue 55/396 | PH 328 | PMT 043 |
| AL 2443-hue 55/396 | PH 700 | PMT 044 |
| AL 2643-hue 55/396 | HH 9800 U-N6 | PMT 045 |
| AL 2647-hue 55/396 | UVT 200 Q1 | PMT 046 |

Tests are made in accordance to the supplement 6 of the concerning ECE-headlamp regulations:

Requirements for Lamps incorporating lenses of plastic material

-Testing of lens or material samples and of complete lamps. (e.g. ECE-regulation no.20).

Test no. 2.2 to 2.5 are carried out.

The test no. 2.1 was done on lenses of basic-material AL 2647-hue 55/396 with hardcoating UVT 200 Q1 (PMT 046).

After these tests there is no significant difference in the results located. It is supposed, that other combinations of basis material and hardcoating lead to equal results as the materials proved in this connection.

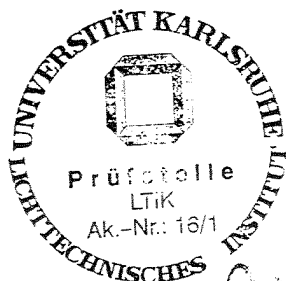
There are no objections against an extension of the above mentioned reports to the basis materials:

AL 2443 - hue 55/396

AL 2447 - hue 55/396

AL 2643 - hue 55/396

AL 2647 - hue 55/396



Der Prüfstellenleiter

(Dr. K. Manz)