



GRAND-DUCHÉ DE LUXEMBOURG

Ministère du Développement durable  
et des Infrastructures  
Département des Transports

L-2938 Luxembourg

SOCIÉTÉ NATIONALE DE  
CERTIFICATION ET D'HOMOLOGATION  
s.à r.l.

Registre de Commerce: B 27180

L-5201 Sandweiler



Référence: E13\*112R00\*112R00\*14356\*00

Annexes: - Rapport technique  
- Fiche de renseignements du constructeur

Sandweiler, le 11 septembre 2014

## COMMUNICATION



concernant 2/: - DELIVRANCE D'UNE HOMOLOGATION  
concerning 2/: APPROVAL GRANTED  
- EXTENSION D'HOMOLOGATION  
APPROVAL EXTENDED  
- REFUS D'HOMOLOGATION  
APPROVAL REFUSED  
- RETRAIT D'HOMOLOGATION  
APPROVAL WITHDRAWN  
- ARRET DEFINITIF DE LA PRODUCTION  
PRODUCTION DEFINITELY DISCONTINUED

d'un type de projecteur en application du Règlement N° 112  
of a type of headlamp pursuant to Regulation N° 112

Numéro d'homologation: E13\*112R00\*112R00\*14356\*00  
Approval number:

Marque d'homologation: refer to the manufacturer's information document  
Approval mark:

1. Marque de fabrique ou de commerce du dispositif: RG  
Trade name or mark of the device:
2. Désignation du type de dispositif par le fabricant: RG-5100-HLB  
Manufacturer's name for the type of device:
3. Nom et adresse du fabricant: Foshan Ruiguang Auto Lighting & Electrical Co., Ltd.  
Manufacturer's name and address: 2F, Block B, Tangtuo Science Industrial Park, Shishan Town, Nanhai District, Foshan City, Guangdong Province, P.R. China
4. Nom et adresse du mandataire du fabricant (le cas échéant): not applicable  
If applicable, name and address of the manufacturer's representative:
5. Soumis à l'homologation le: 22.08.2014  
Submitted for approval on:

6. **Autorité déléguée:**  
*Assigned authority:* *Société Nationale de Certification et d'Homologation*  
*L-5201 Sandweiler*
- Service technique chargé des essais:**  
Technical service responsible for conducting approval tests: ATE EL s.à r.l.  
14, op Huefdreich  
L-6871 Wecker
7. **Date du procès-verbal d'essai:**  
Date of report issued by that service: 25.08.2014
8. **Numéro du procès-verbal d'essai:**  
Number of report issued by that service: 65RGA0002A
9. **Description sommaire:**  
Brief description:
- **Catégorie indiquée par le marquage pertinent 3/:**  
Category as described by the relevant marking 3/: Driving beam and passing beam: HC/R PL
  - **Nombre et catégorie(s) de la (des) lampe(s) à incandescence:**  
Number and category(ies) of filament lamp(s): Driving beam: LEDs\*8  
Passing beam: LEDs\*4
  - **Mesures au titre du paragraphe 5.8 du présent Règlement:**  
Measures according to paragraph 5.8 of this Regulation: Downward movement of the beam,  
Horizontal movement is allowed
  - **Nombre de modules DEL et code(s) d'identification propre(s) à ce(s) module(s):**  
Number and specific identification code(s) of LED module(s): not applicable
  - **Nombre de dispositifs de régulation électronique de source lumineuse et code(s) d'identification propre(s) à ce(s) dispositif(s):**  
Number and specific identification code(s) of electronic light source control gear(s): not applicable
  - **Le flux lumineux normal total tel qu'il est décrit au paragraphe 5.9 est supérieur à 2 000 lumens 2/:**  
Total objective luminous flux as described in paragraph 5.9 exceeds 2,000 lumen 2/: yes / no
  - **La détermination du réglage de la ligne de coupure a été effectuée à 2/:**  
The adjustment of the cut-off has been determined at 2/: 40m / 25m
  - **La détermination de la netteté minimale de la ligne de coupure a été effectuée à 2/:**  
The determination of the minimum sharpness of the "cut-off" has been carried out at 2/: 40m / 25m





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Annexes: - Rapport technique  
- Fiche de renseignements du constructeur

Sandweiler, le 11 septembre 2014

### Index du dossier d'homologation

Index to type-approval report

<b>Numéro d'homologation:</b> Approval number:	E13*112R00*112R00*14356*00
<b>Révision:</b> Revision:	00
<b>Marque de fabrication ou de commerce:</b> Trade name or mark:	RG
<b>Type:</b> Type:	RG-5100-HLB
<b>1. Procès-verbal d'essai:</b> Test report:	N° 65RGA0002A
- Technical report:	Page(s) 1, 2
- Index:	Annex(es) II - Page(s) 1
- General test report:	Annex(es) T - Page(s) 1 to 7
- General information:	Annex(es) GI1 - Page(s) 1, 2
<b>2. Dossier du constructeur:</b> Report of the manufacturer:	N° RG-5100-HLB-00
- Manufacturer's information document:	Page(s) 1 to 3
<b>3. Autres documents annexés:</b> Other documents annexed:	not applicable
<b>4. Date de délivrance de l'homologation initiale:</b> Date of issue of initial type approval:	11.09.2014
<b>5. Date de la dernière délivrance de pages révisées:</b> Date of last issue of revised pages:	not applicable
<b>6. Date de la dernière délivrance d'une homologation révisée:</b> Date of last extension:	not applicable



Tests and inspection concerning

**Motor vehicle headlamps emitting an asymmetrical passing beam or a driving beam or both and equipped with filament lamps and/or LED modules**

according to the ECE Regulation No. 112 including all amendments up to Series 00, Supplement 12 of 19.08.2010

**Manufacturer:** Foshan Ruiguang Auto Lighting & Electrical Co., Ltd.  
2F, Block B, Tangtou Science  
Industrial Park, Shishan Town,  
Nanhai District, Foshan City,  
Guangdong Province, P.R. China

**Type:** RG-5100-HLB

Type of Approval:	Type Approval No.:	Manufacturer:
ECE	E13*112R00*112R00*14356*00	Foshan Ruiguang Auto Lighting & Electrical Co., Ltd.

**Conclusion:** The tests and checks carried out have shown the compliance of the type described in this report and the attached annexes with the Regulation mentioned above.

Wecker, 25.08.2014

p.o. Mengting Xu  
Ingénieur Inspecteur

E13\*112R00\*112R00\*14356\*00  
Société Nationale de Certification et d'Homologation  
L-5201 SANDWEILER (Luxembourg)  
Organisme accrédité OLAS EN 45011  
Accréditation N° 5/001 (Portée communiquée sur demande)

**Index:** see Annex I1

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## 1 Tests and inspection results

Refer to Annex T

## 2 Type and variants

The tests and inspections carried out and described in this technical report have been selected in order to include the following variants and versions of the type and its equipments, as far as these are relevant for the topic of this report, into the judgement:

As stated in Annex MID (Manufacturer's Information Document):	Item
None.	

## 3 Remark

### 3.1 General

This report describes test results of the driving beam and passing beam headlamp.

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Société Nationale de Certification et d'Homologation  
L-5201 SANDWEILER (Luxembourg)  
Organisme accrédité OLAS EN 45011  
Accréditation N° 5/001 (Portée communiquée sur demande)



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**Compilation of Dossier No.: 65RGA0002**

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**Extension 00**

Technical Report no.: 65RGA0002A page 1 and 2

Composition of Annex:

I1:	Index	page 1
T:	General Test Report	page 1 to 7
GI1:	General Information	page 1 to 2
MID:	Manufacturer's Information Document	page 1 to 3
	Index of the Manufacturer's Information Document:	
	Information Document	page 1
	Drawings	page 2 to 3



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## General Test Report

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The data in this section refer only to the items submitted to testing or inspection.

### 0 Abstract

0.1 Denomination RG-5100-HLB

### 1 Dates and resources

1.1 Date of receipt of test item 19.08.2014

1.2 Date of test 19.08.2014 - 22.08.2014

1.3 Place of test SHANGHAI MOTOR VEHICLE INSPECTION CENTER(SMVIC);  
Anting, Jiading District, Shanghai, China

1.4 Testing site and testing equipment:

All measuring and test equipment used to carry out the inspections are in accordance with ISO 17025 and the regulatory act(s) applied.

### 2 Test object

The tests were conducted with a test component which is representative of the component type to be approved.

Type: RG-5100-HLB

Description: Driving beam and passing beam headlamp/Class B  
ID: Sample 1, Sample 2, Sample 3

### 3 Tests and inspections

#### 3.0 General specifications

Markings: The trade name is marked clearly legible and indelible on the lens of the lamp.  
The rated voltage and wattage is marked clearly legible and indelible on the housing of the lamp.  
Space for the approval mark and for additional symbols is provided on the lens of the lamp.

Vibration endurance: The lamp is designed and constructed that in normal use despite the vibrations to which they may be subjected, their satisfactory operation is assured and they retain the required characteristics.

Adjusting device: Requirement fulfilled.



**General Test Report**

Replaceable filament lamp(s): Not applicable. The headlamps is equipped with LEDs.  
Annex 10 of the Regulation are fulfilled.

Only two different and clearly distinct settings(Right-hand, left-hand traffic): Not applicable.

Illumination requirements for different traffic conditions: Requirement fulfilled.

Design requirement of headlamp provide alternately a driving beam and a passing beam headlamp: Not applicable.

**3.1 Test and performance requirements**

**3.1.1 LED or LED MODULES test**

**3.1.1.1 Red content of LED or LED MODULES**

Red content $k_{red}$	Required illumination	Sample 1
	$\geq 0.05$	0.08

**3.1.1.2 UV-radiation of LED or LED MODULES**

UV-radiation $k_{uv}$	Required illumination	Sample 1
	$< 10^{-5} W/lm$	$0.58 \times 10^{-7}$

**3.1.1.3 Temperature stability test of LED or LED MODULES**

**Passing beam**

Photometric test result (lux)			
	Value after 1 minute	Value after Photometric stability	Ratio
	$E_{1\text{ minute}}$	$E_{\text{stabilization}}$	$E_{1\text{ minute}}/E_{\text{stabilization}}$
50V	19.19	17.30	1.11

**Driving beam**

Photometric test result (lux)			
	Value after 1 minute	Value after Photometric stability	Ratio
	$E_{1\text{ minute}}$	$E_{\text{stabilization}}$	$E_{1\text{ minute}}/E_{\text{stabilization}}$
HV	65.43	62.39	1.05

**3.1.1.4 Colorimetric test of LED or LED MODULES**

Trichromatic coordinates-reference axis	Value after 1 minute	Value after Photometric stability
x	0.428	0.427
y	0.408	0.407

The samples tested fulfil with the colorimetric specifications in regulation.

**3.1.1.5 Measurement of objective luminous flux of LED module(s) producing the principal passing beam**

Measurement of objective luminous flux	Luminous flux(Lumen)
Average of the measurements of the three samples	1720



**General Test Report**

3.1.2 Bending lighting design requirement  
Not applicable.

3.1.3 Colorimetric test

Trichromatic coordinates-reference axis	Sample 1	Sample 2
x	0.427	0.427
y	0.407	0.407

The samples tested fulfil with the colorimetric specifications in regulation.

3.1.4 Photometric test

3.1.4.1 Passing beam(Class B)

Cut-off aiming	Result
For right hand traffic beams: The "cut-off" shall provide: a straight "horizontal part" towards the left and a raised "elbow - shoulder" part towards the right. The "cut-off" enables the headlamp to be adjusted correctly for the photometric measurements and for the aiming on the vehicle.	Fulfilled

Principal and additional light sources	Result
Only ONE PRINCIPAL light source or one or more LED module(s) is permitted for the principal passing beam headlamp	Fulfilled
A maximum of TWO ADDITIONAL light sources (ECE R-37) or one or more additional LED modules may be used inside the passing beam headlamp are permitted	Not applicable

3.1.4.1.3 Passing beam illuminance values measured after photometric stabilization

Illumination measured on screen(lux)			
	Required illumination	Sample 1	Sample 2
Point HV	$\leq 0.7$	0.55	0.52
Point B50L	$\leq 0.4$	0.32	0.30
Point 75R	$\geq 12.0$	18.90	17.80
Point 75L	$\leq 12.0$	8.52	8.21
Point 50L	$\leq 15.0$	11.90	11.80
Point 50R	$\geq 12.0$	17.60	17.40
Point 50V	$\geq 6.0$	17.30	16.90
Point 25L	$\geq 2.0$	12.52	11.14
Point 25R	$\geq 2.0$	11.89	10.01
Any point in Zone III	$\leq 0.7$	0.58	0.54
Any point in Zone IV	$\geq 3.0$	12.18	11.13
Any point in Zone I	$\leq 2 \times E_{c,0.05}$	28.40	27.70

Requirement	Result
There shall be no lateral variations detrimental to good visibility in any of the zones I, II, III and IV	Fulfilled



**General Test Report**

Illumination measured on screen(lux)			
	Required illumination	Sample 1	Sample 2
Point 1	$\leq 0.7$	0.46	0.39
Point 2	$\leq 0.7$	0.49	0.48
Point 3	$\leq 0.7$	0.46	0.44
Point 4	$\leq 0.7$	0.57	0.55
Point 5	$\leq 0.7$	0.51	0.49
Point 6	$\leq 0.7$	0.35	0.34
Point 7	$0.1 \leq \text{Point 7} \leq 0.7$	0.28	0.27
Point 8	$0.2 \leq \text{Point 8} \leq 0.7$	0.39	0.39
Point 1+2+3	$\geq 0.3$	1.41	1.31
Point 4+5+6	$\geq 0.6$	1.43	1.38

3.1.4.1.4 Passing beam illuminance values measured after photometric stabilization  
Illuminance values measured after one minute(LED or LED MODULES)

Illumination measured on screen(lux)			
	Required illumination	Sample 1	Sample 2
Point HV	$\leq 0.7$	0.61	0.60
Point B50L	$\leq 0.4$	0.35	0.35
Point 75R	$\geq 12.0$	20.96	20.54
Point 75L	$\leq 12.0$	9.45	9.47
Point 50L	$\leq 15.0$	13.20	13.62
Point 50R	$\geq 12.0$	19.52	20.08
Point 50V	$\geq 6.0$	19.19	19.50
Point 25L	$\geq 2.0$	13.89	12.85
Point 25R	$\geq 2.0$	13.19	11.55
Any point in Zone III	$\leq 0.7$	0.64	0.62
Any point in Zone IV	$\geq 3.0$	13.51	12.84
Any point in Zone I	$\leq 2 \times E_{\text{min}}$	31.50	31.96

Illumination measured on screen(lux)			
	Required illumination	Sample 1	Sample 2
Point 1	$\leq 0.7$	0.51	0.45
Point 2	$\leq 0.7$	0.54	0.55
Point 3	$\leq 0.7$	0.51	0.51
Point 4	$\leq 0.7$	0.63	0.63
Point 5	$\leq 0.7$	0.57	0.57
Point 6	$\leq 0.7$	0.39	0.39
Point 7	$0.1 \leq \text{Point 7} \leq 0.7$	0.31	0.31
Point 8	$0.2 \leq \text{Point 8} \leq 0.7$	0.43	0.45
Point 1+2+3	$\geq 0.3$	1.56	1.51
Point 4+5+6	$\geq 0.6$	1.59	1.59

3.1.4.2 Bending lighting  
Not applicable.



**General Test Report**

3.1.4.3 Driving beam(Class B)

3.1.4.3.1 Driving beam illuminance values measured after photometric stabilization

Illumination measured on screen(lux)			
	Required illumination	Sample 1	Sample 2
Maximum Luminance ( $E_M$ )	$48 \leq E_M \leq 240$ $*E_M \leq 16xE_{75R}$	68.16	67.81
Luminance at the point HV	$\geq 0.8xE_M$	62.39	61.83
Minimum Luminance on line 1125L-1125R	$\geq 24$	29.92	28.21
Minimum Luminance on line 2250L-2250R	$\geq 6$	11.24	10.72

\* In the case of a combined passing and driving headlamp.

Reference mark

	Calculation the formula	Sample 1	Sample 2
$I_M$ shall be rounded off to the value 7.5-10-12.5-17.5-20-25-27.5-30-37.5-40-45-50	$I_M = 0.208xE_M$	14.18	14.10
Reference mark 12.5			

Illuminance values measured after one minute(LED or LED MODULES)

Illumination measured on screen(lux)			
	Required illumination	Sample 1	Sample 2
Maximum Luminance ( $E_M$ )	$48 \leq E_M \leq 240$ $*E_M \leq 16xE_{75R}$	71.48	71.09
Luminance at the point HV	$\geq 0.8xE_M$	65.43	64.82
Minimum Luminance on line 1125L-1125R	$\geq 24$	31.38	29.57
Minimum Luminance on line 2250L-2250R	$\geq 6$	11.79	11.24

\* In the case of a combined passing and driving headlamp.

3.1.4.4 Additional tests in the case of headlamps with an adjustable reflector  
Not applicable.

3.1.5 Tests for stability of photometric performance of headlamps in operation

3.1.5.1 Clean headlamp

The headlamp has been operated for 12 hours in accordance with item 1.1.1 of Annex 4.

3.1.5.1.1 Test results

The visual inspection after the test did not show any distortion, deformation, cracking or change in colour of either the headlamp lens or the external lens.

Passing beam

	Photometric test result (lux)			
	Initial of test	End of test	Difference(%)	Allowable difference(%)
B 50L	0.32	0.31	3.13	10
50R	17.60	17.02	3.30	10
HV	0.55	0.53	3.64	10



**General Test Report**

Driving beam

Photometric test result (lux)				
	Initial of test	End of test	Difference(%)	Allowable difference(%)
E <sub>M</sub>	68.16	66.60	2.29	10

3.1.5.2 Dirty headlamp  
The headlamp has been prepared in accordance with item 1.2.1 of Annex 4.

3.1.5.2.1 Test results  
The visual inspection after the test did not show any distortion, deformation, cracking or change in colour of either the headlamp lens or the external lens.

Passing beam

Photometric test result (lux)				
	Initial of test	End of test	Difference(%)	Allowable difference(%)
B 50L	0.31	0.29	6.45	10
50R	17.02	15.78	7.29	10
HV	0.53	0.49	7.55	10

Driving beam

Photometric test result (lux)				
	Initial of test	End of test	Difference(%)	Allowable difference(%)
E <sub>M</sub>	66.6	61.8	7.21	10

3.1.5.3 Test for change in vertical position of the "cut-off" line under the influence of heat  
The test procedure is in accordance with item 2.1 of Annex 4

3.1.5.3.1 Test results(Unit mrad)

	Sample 1	Sample 2	Maximum permissible
$\Delta r_1 =  r_3 - r_{60} $	0.77	---	$\Delta r_1 \leq 1.0 \text{ mrad}$

3.1.6 Requirements for lamps incorporating lenses of plastic material - Testing of lens or material samples and of complete lamps  
The lamp manufacturer can prove that the product has already passed the tests prescribed in item 2.1. to 2.5. of annex 6, those tests need not be repeated; only the tests prescribed in Appendix 1, table B, shall be mandatory.

3.1.6.1 Resistance to mechanical deterioration of the lens surface  
The lens of lamp sample No. 1 shall be subjected to the test described in item 2.4.1. of Annex 6



**General Test Report**

3.1.6.1.1 Test results

Illumination measured on screen(lux)		
	Sample 1	Required illumination
B 50L	0.21	$\leq 0.52$
HV	0.46	$\leq 0.91$
75R	14.12	$\geq 10.8$

3.1.6.2 Test of adherence of coatings, if any  
The lens of lamp sample No. 2 shall be subjected to the test described in item 2.5 of Annex 6.

3.1.6.2.1 Test results  
After the test, there is no appreciable impairment of the gridded area.  
Impairments at the intersections between squares or at the edges of the cuts does not exceed 15 per cent of the gridded surface.



**General Information**

<b>[1]</b>	<b>Numbering according to annex 1 of the ECE Regulation No.112</b>	
[1.]	Trade name or mark of device:	RG
[2.]	Manufacturer's name for the type of device:	RG-5100-HLB
[3.]	Manufacturer's name and address:	Foshan Ruiguang Auto Lighting & Electrical Co., Ltd. 2F, Block B, Tangtou Science Industrial Park, Shishan Town, Nanhai District, Foshan City, Guangdong Province, P.R. China
[4.]	If applicable, name and address of the manufacturer's representative:	Not applicable
[5.]	Submitted for approval on:	22.08.2014
[6.]	Technical service responsible for conducting approval tests:	ATE EL s.à r.l. 14, op Huefdreisch L-6871 Wecker
[7.]	Date of report issued by that service:	25.08.2014
[8.]	Number of report issued by that service:	65RGA0002A
[9.]	Brief description:	
	Category as described by the relevant marking:	Driving beam and passing beam: HC/R PL
	Number and category(ies) of filament lamp(s):	Driving beam: LEDs*8 Passing beam: LEDs*4
	Measures according to paragraph 5.8. of this Regulation:	Downward movement of the beam, Horizontal movement is allowed
	Number and specific identification code(s) of LED module(s)	Not applicable
	Number and specific identification code(s) of electronic light source control gear(s)	Not applicable
	Total objective luminous flux as described in paragraph 5.9. exceeds 2,000 lumen: yes/no	No
	The adjustment of the cut-off has been determined at: 10 m/25 m	25 m



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**General Information**

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	The determination of the minimum sharpness of the "cut-off" has been carried out at: 10 m/25 m	25 m
[10.]	Approval mark position:	On the lens
[11.]	Reason(s) for extension of approval:	Not applicable
[12.]		
[13.]		
[14.]		
[15.]		
[16.]		

First application date : 08 August, 2014

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Information folder No. : RG-5100-HLB-00

## 1. Specification data

Type		RG-5100-HLB	
Function		Headlamp	
		Passing beam	Driving beam
Rated	Voltage	12V	12V
	Wattage	35W	40W
Applicable Regulation (ECE)		R112.00 class B	
Location of marking	Filament Lamp category	4LEDs, non-replaceable light source	8LEDs, non-replaceable light source
		Marked on Housing	
	Trade mark	RG	
		Marked on Lens	

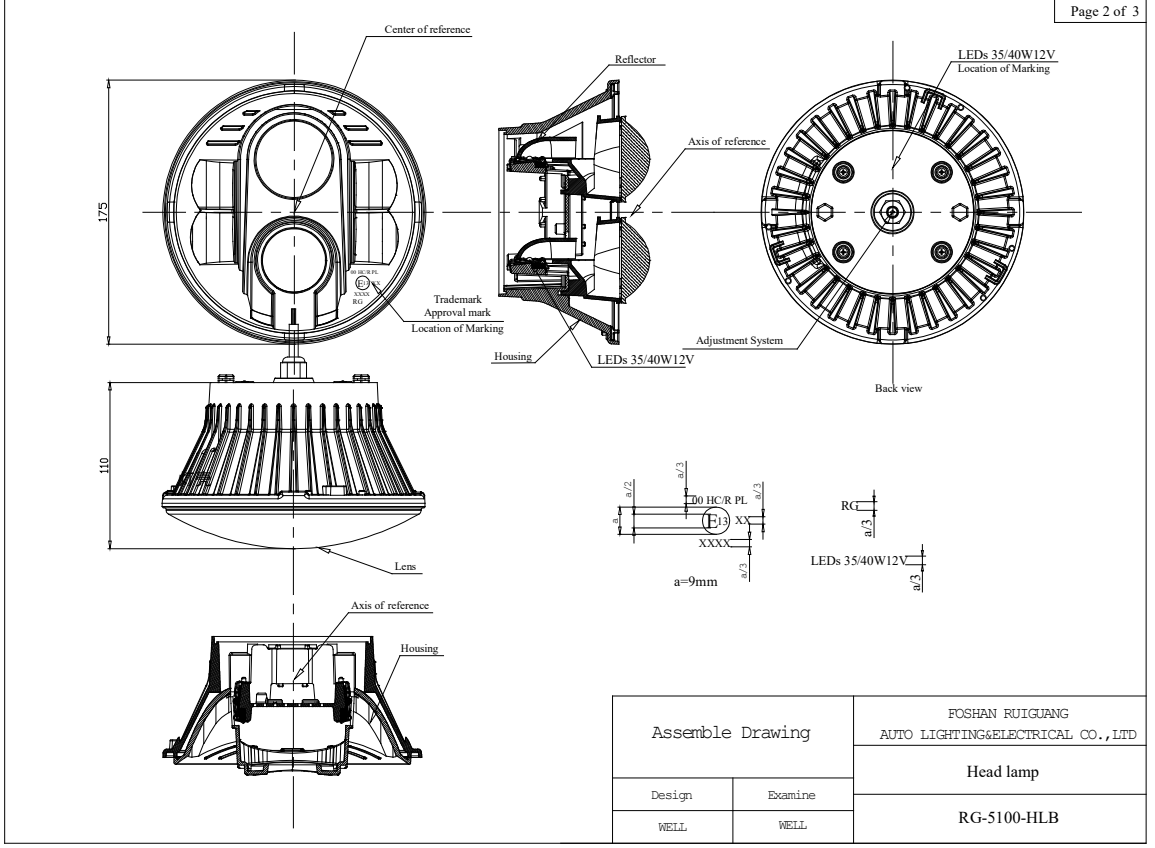
## 2. Construction and material

Construction	Material	Remarks
Lens	Plastic(PC) Trade name: Makrolon AL2647 Manufacturer: Bayer Material Science Ltd.	Color: Clear Coating: Trade name: UVT 200 Q1 Manufacturer: Red Spot Paint & Varnish Co., Inc
Reflector	Plastic(PC)	---
Housing	Aluminum alloy	---

3. Name and address of manufacturer : FOSHAN RUIGUANG AUTO LIGHTING&ELECTRICAL CO.,LTD.  
2F,Block B, Tangtuo Science Industrial Park, Shishan Town,  
Nanhai District, Foshan City, Guangdong Province, P.R.China

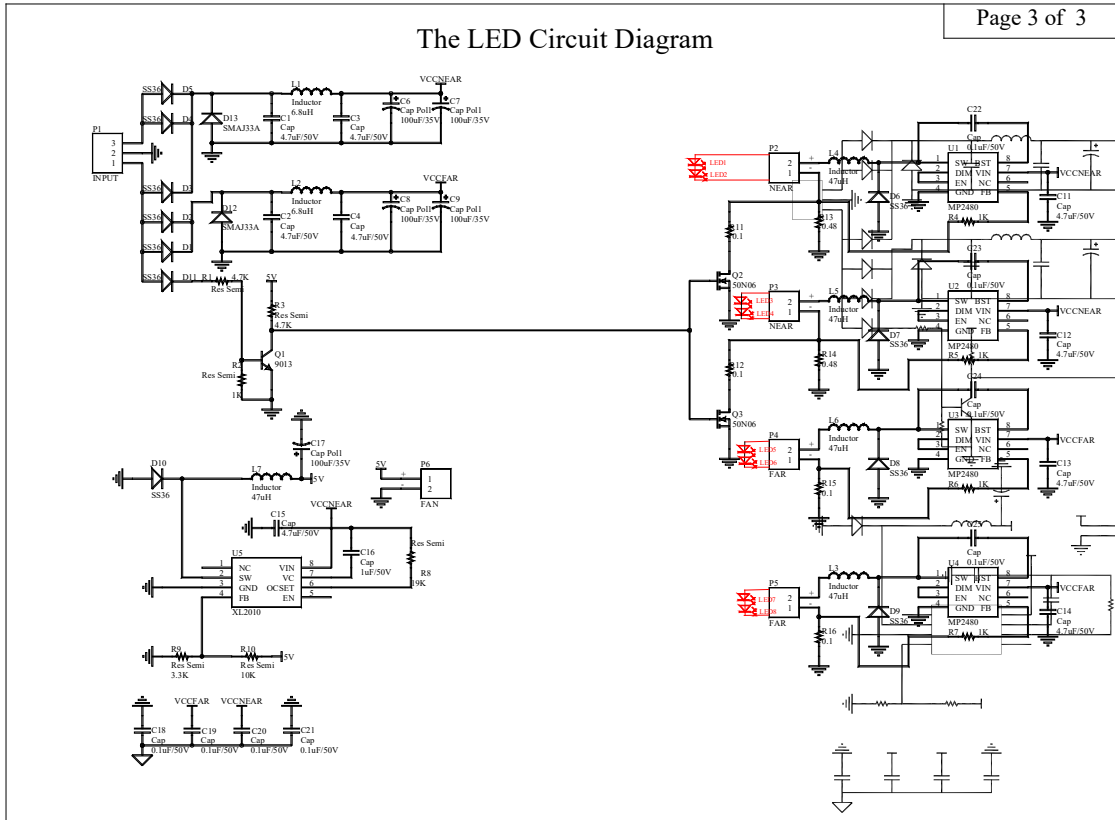
4. Name and address of representative of manufacturer : Not applicable

This information document consists of 3 pages



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The LED Circuit Diagram



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