



NSAI

ECE TYPE-APPROVAL CERTIFICATE

	Issued by:	Name of Administration: National Standard Authority of Ireland 1 Swift Square, Northwood, Santry, Dublin 9, Ireland D09 A0E4	
	Concerning ² :	Approval granted Approval extended Approval refused Approval withdrawn Production definitely discontinued	
Of a type of lamp pursuant to UN Regulation No. 148			
Lamp: ²	Rear registration plate illuminating lamp Direction indicator lamp Stop lamp Position lamp End-outline marker lamp Reversing lamp Manoeuvring lamp Rear fog lamp Parking lamp Daytime running lamp Side marker lamp		
Category of the lamp:	2aY, S1, R1Y, AR, F1	Change index:	0
Approval No:	E24*148R01/00*0543*00	Unique Identifier (UI) (If applicable)	

¹ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in this Regulation).

² Strike out what does not apply.



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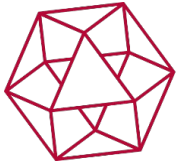
1. Trade name or mark of the lamp: **Zhier**
2. Manufacturer's name for the type of lamp: **LSK-001**
3. Manufacturer's name and address: **: Changzhou Zhier Vehicle Technology Co., Ltd. 234-1 Huanzhen North Road, Menghe Town, Xinbei District, Changzhou City, Jiangsu Province**
4. If applicable, name and address of manufacturer's representative: **N/A**
5. Submitted for approval on: **25.05.2023**
6. Technical service responsible for conducting approval tests: **TÜV NORD (Hangzhou) Co., Ltd. Building 5, No 1 Lane 1377 Jiang Chang Road, Jing'an District, Shanghai, China, ZIP 200072**
7. Date of test report issued by that service: **16.05.2023**
8. Number of report issued by that service: **CS148-A0-2023-01233**
9. Concise description:
 - 9.1. In case of
 - 9.1.1. A rear-registration plate illuminating lamp:

Geometrical conditions of installation (position(s) and inclination(s) of the device in relation to the space to be occupied by the registration plate and/or different inclinations of this space): **N/A**
 - 9.1.2. A direction indicator:

Sequential activation of light sources: yes/~~no~~² **Yes**
 - 9.1.3. A reversing lamp:

The lamp shall be installed on a vehicle only as part of a pair of lamps: yes/~~no~~ **Yes**
 - 9.1.4. A manoeuvring lamp:

The maximum mounting height: **N/A**



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9.1.5. A daytime running lamp

Maximum luminous intensity does not exceed 700 cd: *N/A*

9.2. By light signalling function and category:

*Rear direction indicator category 2aY,
stop lamp S1, rear position lamp R1Y,
reversing lamp AR, rear fog lamp F1*

For mounting either outside or ~~inside or both~~² *Outside*

Colour of light emitted: *red/white/amber/colourless²*

Number, category and kind of light source(s): *See test report for details*

Lamp approved for LED substitute light source(s): *No*

If yes, category of LED substitute light source(s)

Voltage and Wattage: *See test report for details*

Light source module: ~~yes~~/no² *No*

Light source module specific identification code: *N/A*

Only for limited mounting height of equal to or less than
750 mm above the ground, if applicable: ~~yes~~/no² *No*

Geometrical conditions of installation and relating
variations (if any): *See the drawing of information document*

Application of an electronic light source control gear/
variable intensity control: *N/A*

(a) being part of the lamp: ~~yes~~/no² *N/A*

(b) being not part of the lamp: ~~yes~~/no² *N/A*


Input voltage(s) supplied by an electronic light source
control gear/variable intensity control: *See test report for details*

Electronic light source control gear/variable intensity
control manufacturer and identification number
(when the light source control gear is part of the
lamp but is not included into the lamp body): *N/A*

Variable luminous intensity if applicable: ~~yes~~/no *No*

Function(s) produced by an interdependent lamp forming
part of an interdependent lamp system, if applicable: *Rear direction indicator category 2aY,
Rear position lamp R1Y*

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- 9.3 The ~~front position lamp~~², rear position lamp², stop lamp², ~~end-outline marker lamp~~², ~~daytime running lamp~~² is only for use on a vehicle fitted with a tell-tale indicating failure: *yes/no*² *No*
10. Position of the approval mark: *On the lens*
11. Reason(s) for extension (if applicable): *N/A*
12. Approval granted/~~extended~~/~~refused~~/~~withdrawn~~² *Granted*
13. Approval granted for devices to be used on vehicles already in use only, *yes/no*² *No*
14. Place: *Dublin*
15. Date: *08th June, 2023*
16. Signature:  
17. The list of documents deposited with the Type Approval Authority which has granted approval is annexed to this communication and may be obtained on request.



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Index to the Information Package

Date of issue:	<i>08th June, 2023</i>
Date of latest amendment:	<i>N/A</i>
Reason for extension/revision:	<i>N/A</i>
1. Additional conditions, and advisory notes on legal alternatives	
2. Test report(s)	
- numbers(s):	<i>CS148-A0-2023-01233</i>
- date of issue:	<i>16.05.2023</i>
- date of latest amendment:	<i>N/A</i>
3. Information document	
- number(s):	<i>LSK-001-00</i>
- date of issue:	<i>15.03.2023</i>
- date of latest amendment:	<i>N/A</i>
Documentation:	<i>26 pages</i>



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Appendix: Additional conditions, and advisory notes on legal alternatives

A: Additional conditions:

1. The lamp, Type *LSK-001* shall be marked as prescribed by the regulation.
2. Fitting instructions shall be supplied with each lamp, giving details of any limitations in the use of the lamp.
3. The lamp should be fitted in accordance with the fitting instructions.
4. The attached technical report, with any of its attachments, forms part of this Type Approval certificate.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. The duties imposed by the issuing of this certificate are not transferable. The legal protection of third parties is not affected by this certificate.
11. 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

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Test Report

Agreement concerning the adoption of uniform technical prescriptions for the wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions

Uniform provisions concerning the approval of light-signalling devices (lamps) for power-driven vehicles and their trailers

ECE-R148
as last amended

Supplement 04 to the 00 series of amendments

Approval status	
ECE	Number of approval
	E24*148R00/04*0543*00

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

0. General information

- 0.1. Trademark or trade name of the lamp : Zhier
- 0.2. Manufacturer's name for the type of the lamp : LSK-001
Variant : ---
- 0.3. Name and address of the manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.
234-1, Huanzhen North Road, Menghe Town, Xinbei District, Changzhou City, Jiangsu Province
- 0.4. Name and address of manufacturer's authorized representative : ---
- 0.5. No. of information folder : LSK-001-00
Date of issue : March 15, 2023
Date of last amendment : ---

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

1. Test object(s) and general test information

1.1. Test object(s)

identification number : ---

version : LSK-001

Remark : Rear direction indicator category 2aY, stop lamp S1,
rear position lamp R1Y, reversing lamp AR, rear fog
lamp F1
light source: non-replaceable light source

24*LEDs, 12V, 16W for rear direction indicator
category 2aY,
36*LEDs, 12V, 30W for stop lamp S1,
138*LEDs, 12V, 3W for rear position lamp R1Y
9*LEDs, 12V, 20W for reversing lamp AR,
8*LEDs, 12V, 40W for rear fog lamp F1

1.2. Worse case : not applicable

1.3. General test information

1.3.1. Order issued by : ---
(if different from manufacturer)

1.3.2. Test object / ~~test vehicle~~ received on : March 15, 2023

1.3.3. Test date : April 11, 2023

1.3.4. Test site : Vehicle Products Laboratory of Jiangsu University
No.301, Xuefu Road, Zhenjiang, Jiangsu, China

1.3.5. Remark : The results of the test refer exclusively to the object(s)
mentioned under point 1.1 of this report.

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

2. Test minutes

2.1. Test facilities : The test facilities are in compliance with the requirements of the regulation.

2.2. Test results : ~~The type has been examined according to the amendments mentioned in appendix 0.~~

~~An actual test of the type was not required. The results of the previous tests are still valid.~~

Markings : The trade mark is marked clearly legible and indelible on the housing of the lamp.

~~The filament lamp type / rated voltage and wattage is clearly legible and indelible marked on the housing of the lamp.~~

Space for the approval mark and for additional symbols is provided on lens of the lamp.

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

2.3. General specifications : The lamps are designed and made that under normal use their satisfactory operation is ensured and they retain the required characteristics.

Rear direction indicator lamp: The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2. of Annex 3 is **AMBER**.

Stop lamp, rear position lamp, rear fog lamp: The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2 of Annex 3 is within the limits of the coordinates for **RED**.

Reversing lamp: The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2 of Annex 3 is **WHITE**.

Outside this field, no sharp variation of colour is observed. To check these colorimetric characteristics, the test procedure described in paragraph 4.7, 4.8. and 4.9. of this Regulation is applied.

2.4. Photometric tests : ~~The light emitted was obtained by means of an uncoloured or a coloured standard lamp of the category stated in item 1.1, producing the required luminous flux.~~

The light emitted was obtained by means of non-replaceable light sources at 13.5V.

The light distribution angles and levels of intensity have been measured in accordance with Annex 3 of the Regulation, based on the manufacturer's indication of the centre of reference and axis of reference.

The rear position lamp is reciprocally incorporated with the stop lamp. The ratio between the luminous intensities of the two lamps when turned on simultaneously and the intensity of the position lamp when turned on alone is greater than 5 : 1 in the field required.

Rear fog lamp: The apparent surface in the direction of reference axis is **19.05** cm² which does not exceed 140 cm².

The light intensity was measured after 1 minute burning period and after 30 minutes burning in reference axis. The distribution of the light intensity after 1 minute burning period was calculated using the ratio of the two

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

described measurements. The light intensity and its distribution are in compliance with the requirement after 1 minute burning period and after 30 minutes burning period.

The single lamp containing more than one light source complies with the minimum intensity required when anyone light source has failed.

~~The single lamp containing more than one light source, but all light sources which are connected in series are considered to be one light source.~~

2.5. Explanatory note

: This report describes the examination of the Rear direction indicator category 2aY, stop lamp S1, rear position lamp R1Y, reversing lamp AR, rear fog lamp F1 as a part of a lamp device.

For the examination of the other lamp of the device, refer to the following report:

Type of lamp	Test report No.
---	---

2.6. Variants and components

: not applicable

2.7. Test conclusion

: Passed /~~failed~~

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

3. Remark concerning tested object(s)

All versions of the lamps as stated in the information document are covered with the tested version(s) and test object(s) respectively.

4. Appendices

- 0 List of modifications
- 1 Test minutes
- 2 Communication concerning the type approval

Information folder no. : LSK-001-00

5. Statement of conformity

The type described in this test report and the appendices attached are in compliance with the Test Specification mentioned above.

The samples / ~~test vehicles~~ used were representative in terms of the type to be approved.

The Test Report comprises pages 1 to 21.

The Test Report shall be reproduced and published in full only and by the client only. It shall be reproduced partially with the written permission of the Test Laboratory only.

TEST LABORATORY

TÜV NORD Mobilität GmbH & Co. KG
IFM - Institut für Fahrzeugtechnik und Mobilität,
Schönscheidtstr. 28, D-45307 Essen

Designated Technical Service
Technical Service Number for NSAI: 115

Guangzhou, May 16, 2023
CZ / RT



B.S.M.E. C.Zong



Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

List of modifications

Appendix 0

More details for application of : **Date** : -

Correction of : -

Modification of : -

Addition of : -

Deletion of : -

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Test minutes

Appendix 1

Direction indicator lamp Category 2aY

1.1. Sequential activation of light sources : ~~Passed~~ / ~~Failed~~ / Not applicable

~~Tested according to Paragraph 5.6 / Not applicable~~

	Tested in flashing mode	Result
a)	Each light source, after its activation, shall remain lit until the end of the ON cycle	Ok / Not Ok
b)	The sequence of activation of the light sources shall produce a signal which proceeds in a uniform progressive manner from inboard towards the outboard edge of the light emitting surface	Ok / Not Ok
c1)	It shall be one signal with no interruption and no vertical oscillations (e.g. not more than one change of direction along the vertical axis).	Ok / Not Ok
c2)	The distance between two adjacent/tangential distinct parts of the light emitting surface of the sequential direction indicator shall not exceed 50mm, when measured perpendicularly to the reference axis.	Ok / Not Ok
c3)	The interruptions of the signal shall not create any overlap in the vertical axis between the different parts, from inboard towards the outboard of the vehicle	Ok / Not Ok
c4)	No other lighting or light signaling functions are intended.	Ok / Not Ok
d)	The variation shall finish no more than 200 ms after the beginning of the ON cycle	Ok / Not Ok
e)	The orthogonal projection of the light emitting surfaces of the direction indicator in the direction of the axis of reference shall be circumscribed by a rectangle on a plane normal to the axis of reference and having its longer sides parallel to the H-plane. The ratio of the horizontal to the vertical sides shall not be less than 1.7.	Ok / Not Ok

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Direction indicator lamp 2aY

1.2. Results of photometric tests - **Lamp A + B**
Measured after 1 minute burning period when all light sources lit

Light intensity of the lamps in reference axis [cd]		Allowable maximum	Required minimum
Sample No. 1	Sample No. 2		
98.6	113.0	500	50

Measured after 30 minute burning period when all light sources lit

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20°	L10°	L5°	V	R5°	R10°	R20°
vertical angle Required minimum intensity	U10°	-	-	10	-	10	-	-
	U5°	5	10	-	35	-	10	5
	H	-	17.5	45	50	45	17.5	-
	D5°	5	10	-	35	-	10	5
	D10°	-	-	10	-	10	-	-
vertical angle sample 1 (left side)	U10°	-	-	89.4	-	81.8	-	-
	U5°	87.1	90.1	-	89.7	-	79.0	66.4
	H	-	91.1	90.5	94.7	83.1	77.7	-
	D5°	79.7	84.1	-	81.1	-	71.1	59.5
	D10°	-	-	75.9	-	70.6	-	-
vertical angle sample 2 (right side)	U10°	-	-	85.6	-	94.4	-	-
	U5°	77.5	92.2	-	100.6	-	106.5	99.9
	H	-	93.6	101.3	109.8	115.1	116.4	-
	D5°	81.3	96.2	-	113.0	-	116.0	108.3
	D10°	-	-	97.1	-	107.4	-	-

	sample 1	sample 2	allowable maximum	required minimum
maximum intensity [cd]	94.7	110.2	500	----
minimum intensity in the fields defined in annex 2 of the regulation [cd]	0.75	0.87	----	0.3

Test results : **Passed / failed**

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

1.3. Results of photometric tests - **Lamp A**
Measured after 1 minute burning period when all light sources lit

Light intensity of the lamps in reference axis [cd]		Allowable maximum	Required minimum
Sample No. 1	Sample No. 2		
75.2	84.3	500	50

Measured after 30 minute burning period when all light sources lit

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20°	L10°	L5°	V	R5°	R10°	R20°
vertical angle Required minimum intensity	U10°	-	-	10	-	10	-	-
	U5°	5	10	-	35	-	10	5
	H	-	17.5	45	50	45	17.5	-
	D5°	5	10	-	35	-	10	5
	D10°	-	-	10	-	10	-	-
vertical angle sample 1 (left side)	U10°	-	-	53.5	-	54.9	-	-
	U5°	49.3	59.1	-	63.6	-	62.3	56.9
	H	-	65.7	68.8	70.1	69.9	68.5	-
	D5°	53.3	62.8	-	67.2	-	66.0	61.3
	D10°	-	-	57.5	-	59.7	-	-
vertical angle sample 2 (right side)	U10°	-	-	67.6	-	63.6	-	-
	U5°	72.9	79.7	-	80.2	-	72.3	58.5
	H	-	81.4	82.1	81.1	78.0	72.7	-
	D5°	66.9	71.7	-	70.8	-	62.8	50.2
	D10°	-	-	57.2	-	52.9	-	-

	sample 1	sample 2	allowable maximum	required minimum
maximum intensity [cd]	70.2	82.3	500	----
minimum intensity in the fields defined in annex 2 of the regulation [cd]	1.98	2.08	----	0.3

Test results : **Passed / failed**

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Stop lamp category S1

1.1. Results of photometric tests
Measured after 1 minute burning period when all light sources lit

Light intensity of the lamps in reference axis [cd]		Allowable maximum	Required minimum
Sample No. 1	Sample No. 2		
84.6	84.1	260	60

Measured after 30 minute burning period when all light sources lit

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20°	L10°	L5°	V	R5°	R10°	R20°
vertical angle Required minimum intensity	U10°	-	-	12	-	12	-	-
	U5°	6	12	-	42	-	12	6
	H	-	21	54	60	54	21	-
	D5°	6	12	-	42	-	12	6
	D10°	-	-	12	-	12	-	-
vertical angle sample 1 (left side)	U10°	-	-	75.2	-	75.8	-	-
	U5°	70.7	77.1	-	78.3	-	75.8	68.7
	H	-	77.6	79.6	80.8	80.6	79.1	-
	D5°	72.1	78.6	-	79.4	-	76.7	69.3
	D10°	-	-	77.4	-	77.9	-	-
vertical angle sample 2 (right side)	U10°	-	-	68.9	-	68.3	-	-
	U5°	70.3	74.5	-	74.6	-	70.3	62.5
	H	-	78.2	79.8	80.3	79.7	77.9	-
	D5°	81.3	86.4	-	86.2	-	81.1	71.9
	D10°	-	-	88.6	-	88.1	-	-

	sample 1	sample 2	allowable maximum	required minimum
maximum intensity [cd]	82.9	85.3	260	----
minimum intensity in the fields defined in annex 2 of the regulation [cd]	1.89	1.83	----	0.3

Test results : **passed / failed**

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Rear position lamp category R1Y

1.1. Results of photometric tests – **Lamp A+B**

Measured after 1 minute burning period when all light sources lit

Light intensity of the lamps in reference axis [cd]		Allowable maximum	Required minimum
Sample No. 1	Sample No. 2		
9.1	11.2	17	4

Measured after 30 minute burning period when all light sources lit

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20°	L10°	L5°	V	R5°	R10°	R20°
vertical angle	U10°	-	-	0.8	-	0.8	-	-
Required minimum intensity	U5°	0.4	0.8	-	2.8	-	0.8	0.4
	H	-	1.4	3.6	4	3.6	1.4	-
	D5°	0.4	0.8	-	2.8	-	0.8	0.4
	D10°	-	-	0.8	-	0.8	-	-
	vertical angle	U10°	-	-	8.2	-	8.0	-
sample 1 (left side)	U5°	8.0	8.4	-	8.4	-	8.0	7.2
	H	-	8.6	8.6	8.6	8.4	8.1	-
	D5°	8.1	8.4	-	8.6	-	8.2	7.4
	D10°	-	-	8.4	-	8.3	-	-
	vertical angle	U10°	-	-	9.2	-	8.5	-
sample 2 (right side)	U5°	8.5	9.6	-	9.6	-	8.7	9.4
	H	-	9.8	9.5	10.5	9.4	9.6	-
	D5°	8.7	9.1	-	9.5	-	9.1	8.9
	D10°	-	-	8.4	-	8.5	-	-

	sample 1	sample 2	allowable maximum	required minimum
maximum intensity [cd]	9.2	10.6	17	----
minimum intensity in the fields defined in annex 2 of the regulation [cd]	0.42	0.43	----	0.05

Test results : **passed / failed**

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Rear position lamp category R1Y

1.2. Results of photometric tests – **Lamp A**
Measured after 1 minute burning period when all light sources lit

Light intensity of the lamps in reference axis [cd]		Allowable maximum	Required minimum
Sample No. 1	Sample No. 2		
7.9	9.2	17	4

Measured after 30 minute burning period when all light sources lit

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20°	L10°	L5°	V	R5°	R10°	R20°
vertical angle	U10°	-	-	0.8	-	0.8	-	-
Required minimum intensity	U5°	0.4	0.8	-	2.8	-	0.8	0.4
	H	-	1.4	3.6	4	3.6	1.4	-
	D5°	0.4	0.8	-	2.8	-	0.8	0.4
	D10°	-	-	0.8	-	0.8	-	-
	vertical angle	U10°	-	-	7.6	-	7.9	-
sample 1 (left side)	U5°	6.3	7.2	-	7.7	-	7.7	7.3
	H	-	6.9	7.1	7.3	7.4	7.3	-
	D5°	5.6	6.4	-	6.8	-	6.8	6.5
	D10°	-	-	6.1	-	6.2	-	-
	vertical angle	U10°	-	-	8.2	-	7.5	-
sample 2 (right side)	U5°	7.5	8.6	-	8.6	-	7.7	8.4
	H	-	8.8	8.5	8.7	8.4	8.6	-
	D5°	8.7	8.1	-	8.5	-	8.1	7.9
	D10°	-	-	8.4	-	8.5	-	-

	sample 1	sample 2	allowable maximum	required minimum
maximum intensity [cd]	8.6	9.0	17	----
minimum intensity in the fields defined in annex 2 of the regulation [cd]	0.14	0.23	----	0.05

Test results : **passed / failed**

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Reversing lamp

1.1 Results of photometric tests

Measured after 1 minute burning period when all light sources lit

Light intensity of the lamps in reference axis [cd]		Allowable maximum	Required minimum
Sample No. 1	Sample No. 2		
248.3	260.4	300	80

Measured after 10 minute burning period when all light sources lit

Light intensity of the lamps in reference axis [cd]		Allowable maximum	Required minimum
Sample No. 1	Sample No. 2		
246.0	258.6	300	80

Measured after 30 minute burning period when all light sources lit

distribution of the intensity of the lamps [cd]								
horizontal angle		L45°	L30°	L10°	V	R10°	R30°	R45°
vertical angle required minimum intensity	U10°	--	--	10	15	10	--	--
	U5°	15	--	20	25	20	--	15
	H	15	25	50	80	50	25	15
	D5°	15	25	50	80	50	25	15
vertical angle sample no. 1	U10°	--	--	73.8	70.0	54.4	--	--
	U5°	55.4	--	164.3	176.7	145.5	--	---
	H	73.8	152.2	213.7	241.3	243.4	112.9	---
	D5°	87.9	144.5	228.5	242.4	254.4	160.0	---
vertical angle sample no. 2	U10°	--	--	87.3	81.8	61.5	--	--
	U5°	---	--	181.3	192.4	163.6	--	26.9
	H	---	165.1	231.9	253.5	256.8	116.3	43.6
	D5°	---	152.1	236.2	266.1	270.0	161.6	69.0

	sample 1	Sample 2	allowable maximum
maximum intensity [cd] in or above the horizontal plane	252.1	262.9	300
maximum intensity [cd] between the horizontal plane and 5°D	268.7	280.9	600
maximum intensity [cd] below 5°D	270.1	281.4	8000

Test results : Passed / failed

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Rear fog lamp

1.1 Results of photometric tests
Measured after 1 minute burning period when all light sources lit

Light intensity of the lamps in reference axis [cd]		Allowable maximum	Required minimum
Sample No. 1	Sample No. 2		
294.7	293.0	300	150

Measured after 30 minute burning period when all light sources lit

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	272.9	276.0	300	-
minimum intensity along the H axes [cd]	167.0	174.8	-	150
minimum intensity along the V axes [cd]	206.6	209.0	-	150
minimum intensity in the fields defined in Annex 3 of the Regulation [cd]	146.5	174.7	-	75

The light distribution is substantially uniform. The light intensity is within the limits in the fields described in Annex 3 of the Regulation

Heat resistance test : The lamp was subjected to the heat resistance test according to Annex 6 of the Regulation.

After the lamp had been stabilized at the ambient temperature, no distortion, deformation, cracking or colour modification was perceptible.

Test results : Passed /-failed

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Color of light emitted : The CIE trichromatic coordinates of the light emitted by the lamp are within the limits of Regulation.

Required white boundary:	Required amber boundary:	Required red boundary:
W12 green boundary: $y=0.150+0.640x$	A12 green boundary: $y=x-0.120$	R12 yellow boundary: $y=0.335$
W23 yellowish green boundary: $y=0.440$	A23 the spectral locus	R23 the spectral locus
W34 yellow boundary: $x=0.500$	A34 red boundary: $y=0.390$	R34 the purple line
W45 reddish purple boundary: $y=0.382$	A41 white boundary: $y=0.790-0.670x$	R41 purple boundary: $y=0.980-x$
W56 purple boundary: $y=0.050+0.750x$	With intersection points:	With intersection points:
W61 blue boundary: $x=0.310$		
With intersection points:		
	x y	x y
W1 0.310 0.348	A1 0.545 0.425	R1 0.645 0.335
W2 0.453 0.440	A2 0.560 0.440	R2 0.665 0.335
W3 0.500 0.440	A3 0.609 0.390	R3 0.735 0.265
W4 0.500 0.382	A4 0.597 0.390	R4 0.721 0.259
W5 0.443 0.382		
W6 0.310 0.283		

1.1. Rear direction indicator - amber

Chromaticity coordinates	Sample no.	
	1	2
x	0.5817	0.5842
y	0.4178	0.4153

1.2. Stop lamp - red

Chromaticity coordinates	Sample no.	
	1	2
x	0.7147	0.7147
y	0.2846	0.2846

1.3. Rear position lamp - red

Chromaticity coordinates	Sample no.	
	1	2
x	0.7143	0.7148
y	0.2848	0.2848

1.4. Rear fog lamp - red

Chromaticity coordinates	Sample no.	
	1	2
x	0.6864	0.6868
y	0.3129	0.3127

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

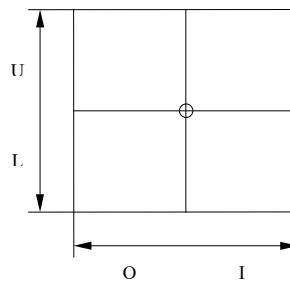
1.5. Reversing lamp - white

Chromaticity coordinates	Sample no.	
	1	2
x	0.3371	0.3369
y	0.3475	0.3472

Test results : **passed / failed**

Apparent surface : Vertical and horizontal outlines of the illuminating surface of the light-signalling device in relation to the centre of reference and in accordance with Annex 3 of Regulation No. 48.

Definition of the illuminating surface of the device
⊕ centre of reference



function	upper boundary (U) [mm]	lower boundary (L) [mm]	outer boundary (O) [mm]	inner boundary (I) [mm]
Rear direction indicator lamp (Lamp A+B)	58	53	65	65
Stop lamp (Lamp A+B)	72	72	80	105
Rear position lamp (Lamp A+B)	60	45	502	702
Reversing lamp	24	24	45	45
Rear fog lamp	24	24	45	45

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

Communication concerning the type approval

Appendix 2

- Class of the device : Rear direction indicator category 2aY, stop lamp S1, rear position lamp R1Y, reversing lamp AR, rear fog lamp F1
1. Trade name or mark of the device : Zhier
 2. Manufacturer's name for the type of device : LSK-001
 3. Manufacturer's name and address : Changzhou Zhier Vehicle Technology Co., Ltd.
234-1 Huanzhen North Road, Menghe Town, Xinbei District, Changzhou City, Jiangsu Province
 4. If applicable, name and address of the manufacturer's representative : ---
 5. Submitted for approval on : March 15, 2023
 6. Technical service responsible for conducting approval tests : TÜV NORD Mobilität GmbH & Co. KG
IFM - Institut für Fahrzeugtechnik und Mobilität
Schönscheidtstr. 28
D-45307 Essen
 7. Date of test report issued by that service : May 16, 2023
 8. Number of report issued by that service : CS148-A0-2023-01233
 9. Concise description
 - 9.1. In case of
 - 9.1.1. A rear-registration plate illuminating lamp : Not applicable
Geometrical conditions of installation (position(s) and inclination(s) of the device in relation to the space to be occupied by the registration plate and/or different inclinations of this space) : Not applicable
 - 9.1.2. A direction indicator : Direction indicator lamp 2aY
Sequential activation of light sources : yes/æ
 - 9.1.3. A reversing lamp : Reversing lamp AR
The lamp shall be installed on a vehicle only as part of a pair of lamps : yes/æ
 - 9.1.4. A manoeuvring lamp : Not applicable
The maximum mounting height : Not applicable
 - 9.1.5. A daytime running lamp : Not applicable
Maximum luminous intensity does not exceed 700 cd : ~~yes/æ~~

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

- 9.2. By light signalling function and category : Rear direction indicator category 2aY, stop lamp S1, rear position lamp R1Y, reversing lamp AR, rear fog lamp F1
- For mounting either : outside ~~or inside or both~~
- Colour of light emitted : Rear direction indicator: ~~red/white/amber/colourless~~
Rear position lamp: ~~red/white/amber/colourless~~
Stop lamp: ~~red/white/amber/colourless~~
Rear fog lamp: ~~red/white/amber/colourless~~
Reversing lamp: ~~red/white/amber/colourless~~
- Number, category and kind of light source(s) : Non-replaceable light source:
24*LEDs, 12V, 16W for rear direction indicator category 2aY,
36*LEDs, 12V, 30W for stop lamp S1,
138*LEDs, 12V, 3W for rear position lamp R1Y,
9*LEDs, 12V, 20W for reversing lamp AR,
8*LEDs, 12V, 40W for rear fog lamp F1
- Lamp approved for LED substitute light source(s) : ~~yes/no~~
- If yes, category of LED substitute light source(s) : Not applicable
- Voltage and wattage : 12V, 16W for rear direction indicator category 2aY,
12V, 30W for stop lamp S1,
12V, 3W for rear position lamp R1Y
12V, 20W for reversing lamp AR,
12V, 40W for rear fog lamp F1
- Light source module : ~~yes/no~~
- Light source module specific identification code : Not applicable
- Only for limited mounting height of equal to or less than 750 mm above the ground, if applicable : ~~yes/no~~
- Geometrical conditions of installation and relating variations, if any : See the drawing of information document
- Application of an electronic light source control gear/variable intensity control: Not applicable
- (a) Being part of the lamp : ~~yes/no~~
- (b) Being not part of the lamp : ~~yes/no~~
- Input voltage(s) supplied by an electronic light source control gear/variable intensity control : Not applicable

Type : LSK-001
Manufacturer : Changzhou Zhier Vehicle Technology Co., Ltd.

- Electronic light source control gear/variable intensity control manufacturer and identification number (when the light source control gear is part of the lamp but is not included into the lamp body) : Not applicable
- Variable luminous intensity, if applicable : ~~yes~~/no
- Function(s) produced by an interdependent lamp forming part of an interdependent lamp system, if applicable : Rear direction indicator category 2aY, Rear position lamp R1Y
- 9.3. The ~~front position lamp~~, rear position lamp, stop lamp, ~~end-outline marker lamp~~, ~~daytime running lamp~~ is only for use on a vehicle fitted with a tell-tale indicating failure : ~~yes~~/no
10. Position of the approval mark : On the lens
11. Reason(s) for extension (if applicable) : Not applicable
12. Approval : granted/~~extended/refused/withdrawn~~
13. Approval granted for devices to be used on vehicles already in use only : ~~yes~~/no

Information folder No. : LSK-001-00

First application date : March 15, 2023

1. Specification data

Type		LSK-001				
Function		Rear group lamp				
		Reversing lamp AR	Rear fog lamp F1	Stop lamp S1	Rear position lamp R1Y	Direction indicator lamp 2aY
Color		white	red	red	red	amber
Rated	Voltage	12V	12V	12V	12V	12V
	Wattage	20W	40W	30W	20W	16W
Application Regulation ECE		R148.00				
Location of marking	Number and category of light source	9*LEDs	8*LEDs	36*LEDs	138*LEDs	24*LEDs
		Non-replaceable light source				
	Marked on housing					
	Trade mark	Zhier				
		Marked on housing				
Approval mark	Marked on lens					

The apparent surface of rear fog lamp in the direction of reference axis is 19.05 cm²

2. Construction and material

Construction	Material	Remarks
Outer lens	PC	Colour: transparent black Without patterns
Inner lens	PC	Colour: Stop lamp, Rear fog lamp, Rear position lamp: Red Reversing lamp, Direction indicator lamp: Milk white Without patterns
Housing	ABS	Colour: Black

Changzhou Zhier Vehicle Technology Co., Ltd.

3. Name and address of manufacturer : 234-1, Huanzhen North Road, Menghe Town, Xinbei District, Changzhou City, Jiangsu Province

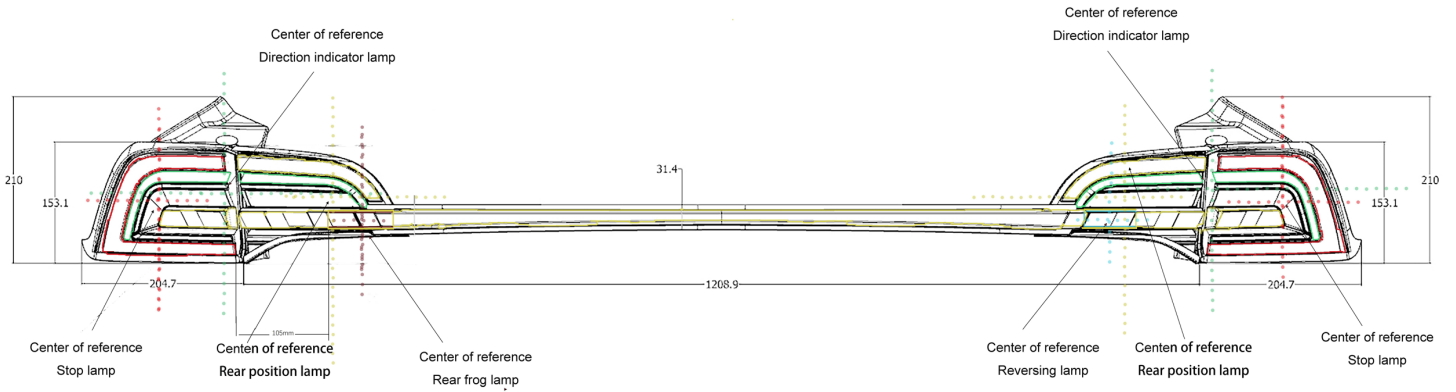
4. Name and address of the assembly plant : See 3.

Information folder No. :

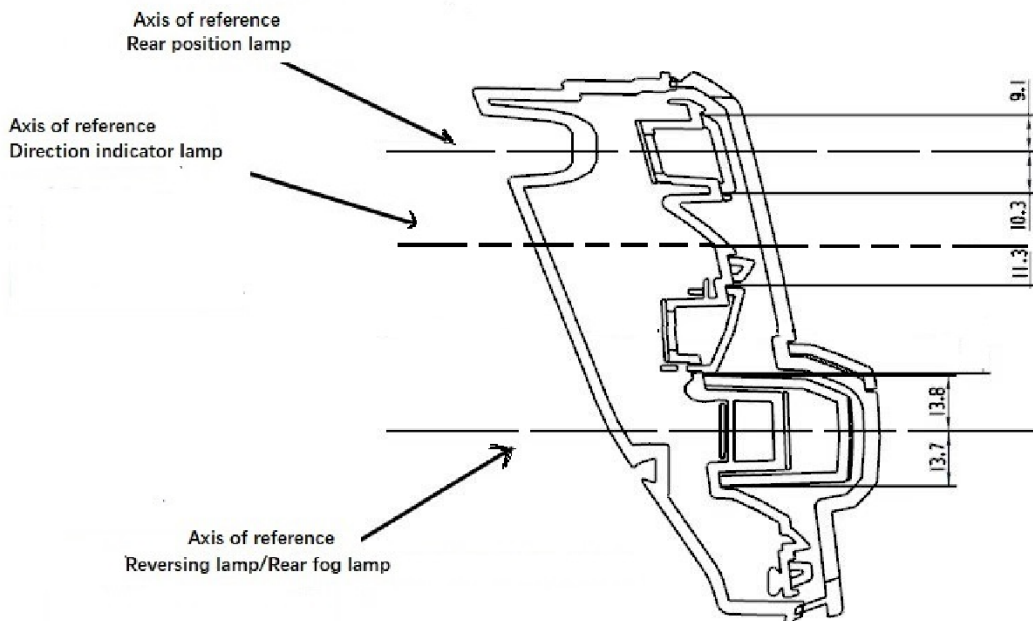
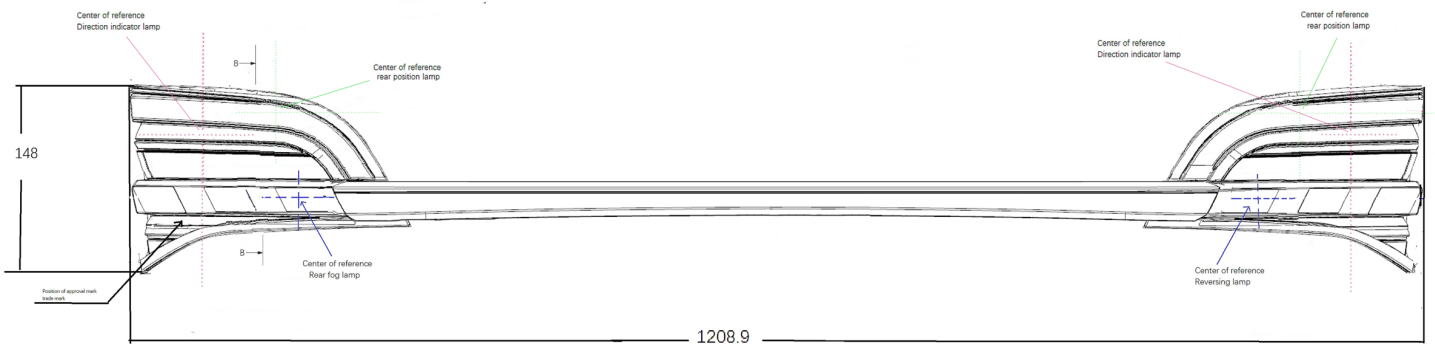
LSK-001-00

First application date :

March 15, 2023



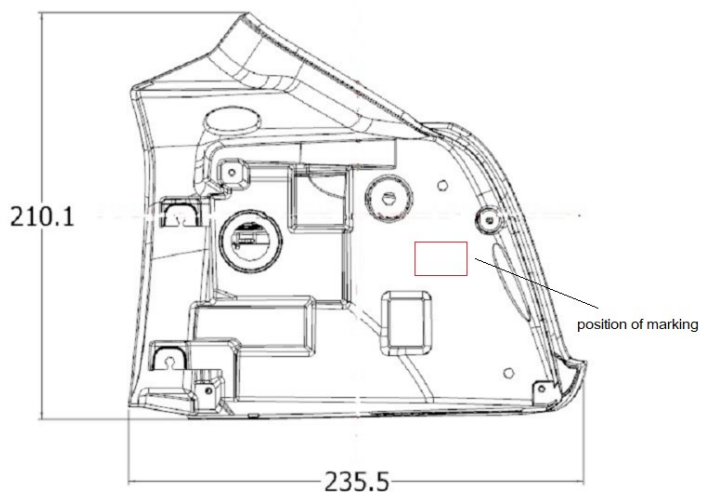
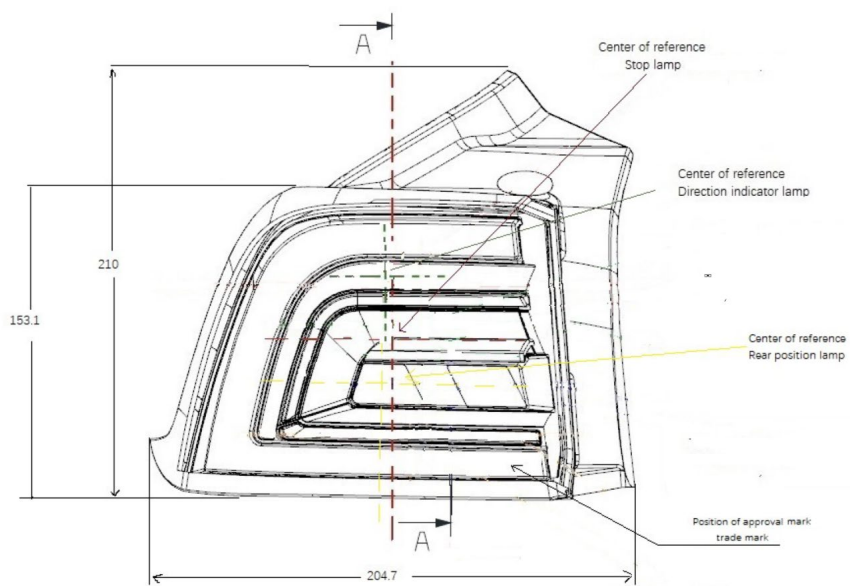
1. The red framed registration area is the shared area of stop lamp and rear position lamp
2. The edge distance between the rear fog lamp and the stop lamp is 105mm
3. The area marked by the brown frame is the light-emitting area of the rear fog lamp
4. The area marked by the yellow frame is the light-emitting area of the rear position lamp
5. The area marked by the green frame is the light-emitting area of the Direction indicator lamp
6. The area marked by the blue box is the luminous area of the reversing lamp



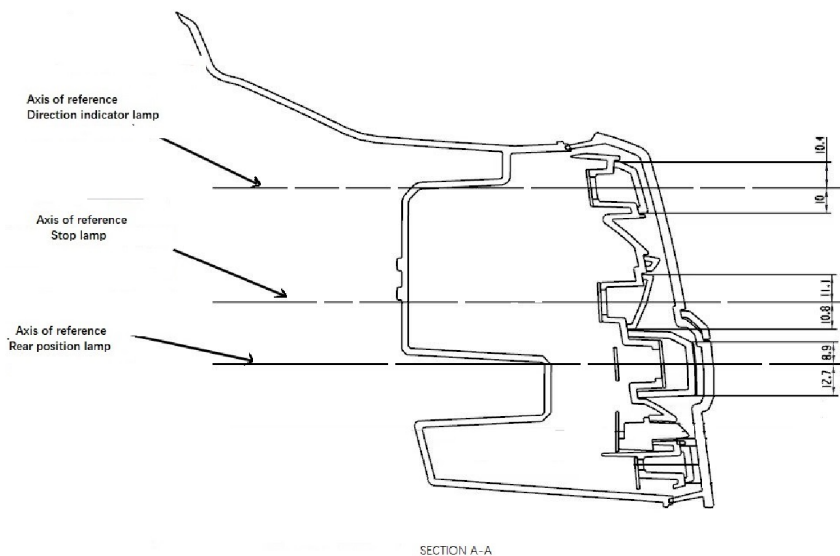
SECTION B-B

Information folder No. : LSK-001-00

First application date : March 15, 2023

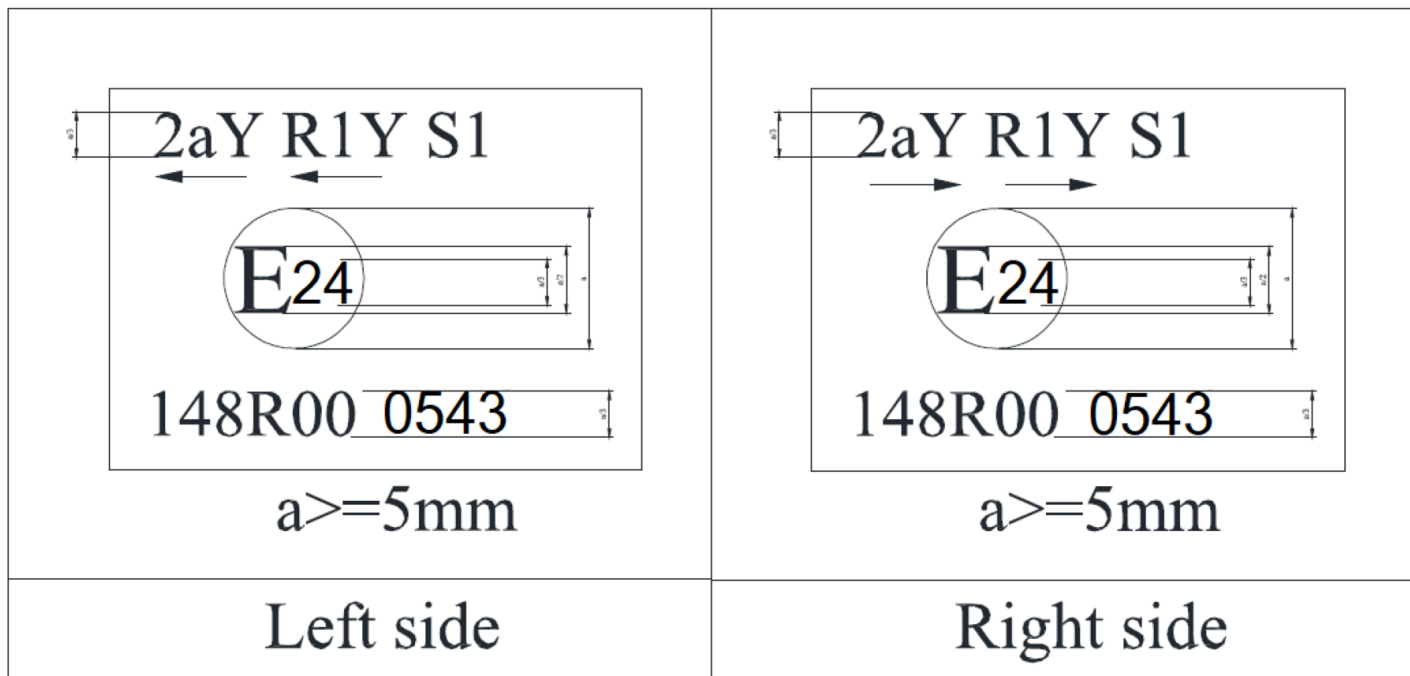


NOTE: THIS DRAWING SHALL BE APPLIED FOR LEFT HAND ONLY AND RIGHT HAND SHALL BE SYMMETRIC EXCEPT FOR MARKINGS.

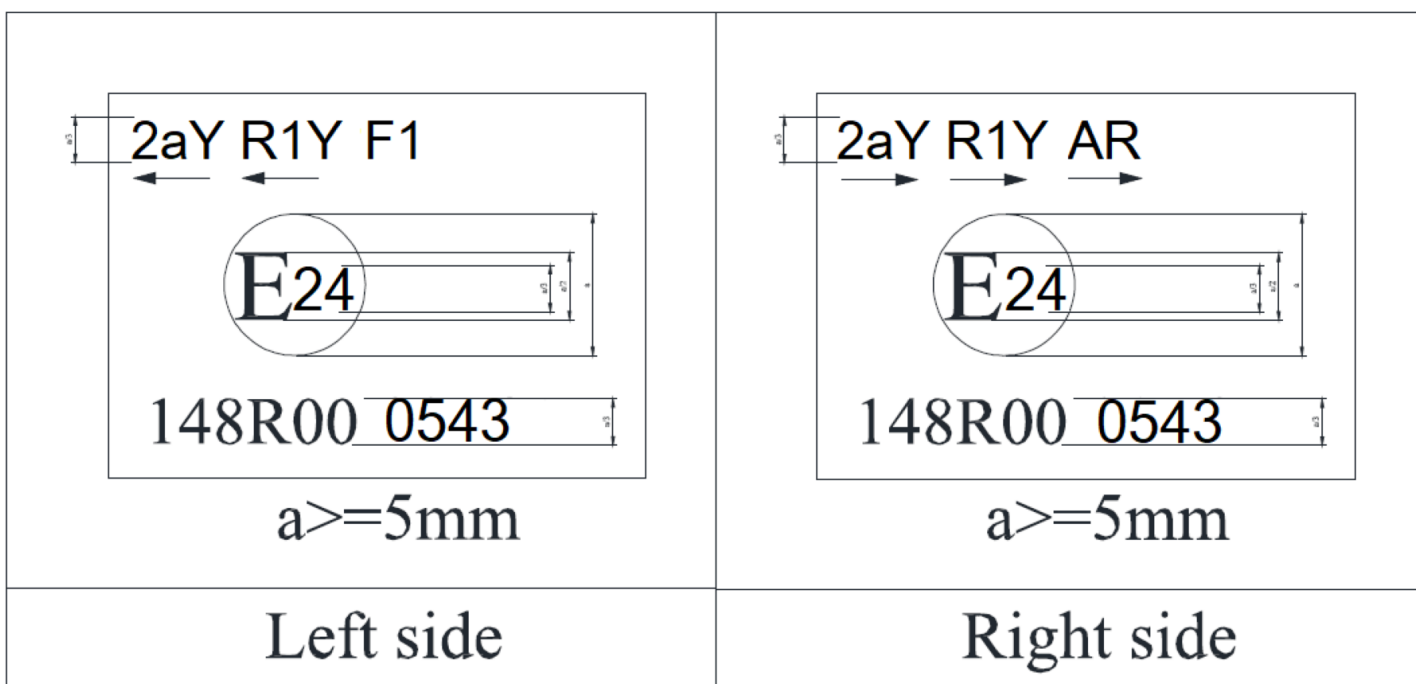


Approval Mark

Fixed part



Movable part



LED circuit diagram

