

**ECE TYPE-APPROVAL CERTIFICATE**



Communication concerning:<sup>2</sup>

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~~Approval withdrawn~~  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

of a type of retro-reflecting device pursuant to Regulation No. 3

Approval No: **E24\*3R02/17\*0288\*00**

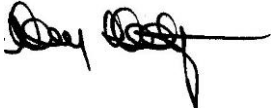


1. Trade name or mark of the device:
2. Manufacturer's name for the type of device:  
Variants :  
**ZK-01-009**  
**Two:**  
**Variant 1: ZK-01-009,**  
**Variant 2: ZK-01-008**
3. Manufacturer's name and address:  
**Changzhou Zhongkai Vehicle Parts Co., Ltd.**  
**Menghe Avenue, Henghe Town, Xinbei District, Changzhou City, Jiangsu Province**  
**P.C.: 213001**
4. If applicable, name and address of manufacturer's representative:  
**N/A**
5. Submitted for approval on:  
**10.01.2018**
6. Technical service responsible for conducting approval tests:  
**TÜV SÜD Auto Service GmbH**  
**Westendstraße 199**  
**D-80686 München**  
**Germany**
7. Date of test report:  
**04.01.2018**
8. Number of test report:  
**17-01930-CX-SHA-00**

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 Distinguishing number of the country which has granted/extended/ refused/withdrawn approval (see approval provisions in the Regulation).

<sup>2</sup> Strike out what does not apply.

Approval No: **E24\*3R02/17\*0288\*00**

- |     |  |   |
|-----|--|---|
| 9.  | Concise description:   | <b><i>Rear retro reflector category IB<br/>Side retro reflector category IB</i></b> |
|     | <del>In isolation</del> /part of an assembly of devices: <sup>2</sup>  | <b><i>Part of an assembly of devices</i></b>  |
|     | Colour of light emitted: ( <del>white</del> /red/amber): <sup>2</sup>  | <b><i>Rear retro reflector: Red;<br/>Side retro reflector: Amber</i></b>            |
|     | Installation as an integral part of a lamp which is integrated into the body of a vehicle: yes/ <del>no</del> <sup>2</sup> | <b><i>Yes</i></b>   |
|     | Geometric conditions of installation and relating variations (if any):   | <b><i>See manufacturer's information document</i></b>                               |
|     | Only for limited mounting height of equal to or less than 750 mm above the ground: yes/no <sup>2</sup>                     | <b><i>No</i></b>  |
| 10. | Position of the approval mark:   | <b><i>On the lens</i></b>   |
| 11. | Reason(s) for extension (if applicable):   | <b><i>N/A</i></b>   |
| 12. | Approval granted/ <del>extended/refused/withdrawn</del> : <sup>2</sup>   | <b><i>Granted</i></b>   |
| 13. | Place:   | <b><i>Dublin</i></b>  |
| 14. | Date:  | <b><i>29<sup>th</sup> January, 2018</i></b>   |
| 15. | Signature:                              |   |



16. The following documents, bearing the approval number shown above, are available on request:
- Technical report with annexes and drawings.
  - Annex I

## **Index to the Information Package**

Date of issue:	<b><i>29<sup>th</sup> January, 2018</i></b>
Date of latest amendment:	<b><i>N/A</i></b>
Reason for extension/revision:	<b><i>N/A</i></b>
1. Additional conditions, and advisory notes on legal alternatives.	
2. Test report(s)	
- numbers(s):	<b><i>17-01930-CX-SHA-00</i></b>
- date of issue:	<b><i>04.01.2018</i></b>
- date of latest amendment:	<b><i>N/A</i></b>
3. Information document	
- number(s):	<b><i>ZK-01-009-00</i></b>
- date of issue:	<b><i>14.12.2017</i></b>
- date of latest amendment:	<b><i>N/A</i></b>
Documentation:	<b><i>15 pages</i></b>



Approval No: E24\*3R02/17\*0288\*00

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

A: Additional conditions:

1. The retro reflector shall be marked as prescribed in the regulation.
2. Fitting instructions shall be supplied with each unit, giving details of any limitations in the use of the retro reflector.
3. The retro reflector 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.

## TECHNICAL REPORT

**No.: 17-01930-CX-SHA-00**

Test according to ECE regulation relating to

Retro reflector category IB

**ECE Regulation No.: 3**


supplement 17 to the 02 series of amendments

Approvals granted up to now		
ECE	Number of approval	Date
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Technical Report No.: 17-01930-CX-SHA-00  
Manufacturer: Changzhou Zhongkai Vehicle Parts Co., Ltd.  
Type: ZK-01-009

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## I. Technical description

- 0.1. Make (trade name of manufacturer) : 
- 0.2. Type : ZK-01-009
- 0.2.1. Variants : Variant 1: ZK-01-009;  
Variant 2: ZK-01-008
- 0.3. Means of identification of type : By digits and letters
- 0.4. Concise description
- Category : Rear retro reflector category IB and side retro reflector category IB
- In isolation/part of an assembly of devices : In part of an assembly
- Colour of light emitted : Rear retro reflector: Red;  
Side retro reflector: Amber
- Installation as an integral part of a lamp which is integrated into the body of a vehicle : Yes
- Geometrical conditions of installation and relating variations, if any : See manufacturer's information document
- Only for limited mounting height of equal to or less than 750 mm above the ground : No
- 0.5. Name and address of manufacturer : Changzhou Zhongkai Vehicle Parts Co., Ltd.  
Menghe Avenue, Henghe Town, Xinbei District, Changzhou City, Jiangsu Province  
P.C.: 213001
- 0.8. Address of assembly plant : See 0.5.
- 0.9. Location of the approval mark : On the lens
- 0.10. If applicable, name and address of the manufacturer's representative : N/A

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Technical Report No.: 17-01930-CX-SHA-00  
Manufacturer: Changzhou Zhongkai Vehicle Parts Co., Ltd.  
Type: ZK-01-009

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## II. Test record

### 1. Test conditions

- 1.1. Technical data of the test samples : Twenty samples were tested.  
For rear retro reflector:  
Sample No. 1 to No. 5, left side mounting.  
Sample No. 6 to No. 10, right side mounting.  
For side retro reflector:  
Sample No. 11 to No. 15, left side mounting.  
Sample No. 16 to No. 20, right side mounting.  
For information about the form of the lamp,  
the position of the reference point and the  
reference axis, see information document.
- 1.2. Test procedures used : According to ECE Regulation No.: 3.02.
- 1.3. Measuring and test equipment : Full automatic photometric test system for  
automobile lamps  
EVERFINE PHOTO-E-INFO CO.,LTD  
Type GO-HD5

## 2. Test results

### 2.1. Rear retro reflector

2.1.1.	Requirement	General specifications (Sample No. 1 to No. 10), visual inspection according to paragraph 6.1. of this regulation.
	Results	Retro-reflecting devices have been constructed that they function satisfactorily and continue to do so in normal use. In addition, they have not any defect in design or manufacture that is detrimental to their efficient operation or to their maintenance in good condition.
	Conclusion	Complies
2.1.2.	Requirement	Specification of shapes and dimensions (Sample No. 1 to No. 10), visual inspection according to Annex 5 of this regulation.
	Results	The shape of the illuminating surfaces are simple, and not easily confused at normal observation distances.
	Conclusion	Complies
2.1.3.	Requirement	Heat resistance-visual inspection (Sample No. 1 to No. 10), visual inspection according to Annex 10 of this regulation.
	Results	After this test, no cracking or appreciable distortion of the retro reflecting device.
	Conclusion	Complies

#### 2.1.4. Colour – Red

Sample	Measured values		Limits		Conclusion
	x	y	$y \leq 0.335$	$y \geq 0.980 - x$	
No. 1	0.6786	0.3123	Yes	Yes	Complies
No. 2	0.6790	0.3128	Yes	Yes	Complies



2.1.5. Photometry limited to 20' and V = H = 0°

Angle of divergence $\alpha$	H	V	CIL Measured values (Limits $\geq 300$ [mcd / lx])				
			1	2	3	4	5
20'	0°	0°	402.86	436.79	462.81	390.30	482.49
			6	7	8	9	10
			522.42	503.21	479.86	461.42	408.39

2.1.6. Complete photometry

$\alpha$	$\beta$		CIL Limits [mcd / lx]	Measured values [mcd / lx]	
			Minimum	Sample No. 4	Sample No. 6
20'	10U	V	200	246.03	259.03
	5U	20L	100	251.68	268.39
	5U	20R	100	242.43	262.10
	H	V	300	390.30	522.42
	5D	20L	100	216.05	240.78
	5D	20R	100	207.23	228.15
	10D	V	200	226.87	252.17
1°30'	10U	V	2.8	15.10	18.93
	5U	20L	2.5	16.40	19.29
	5U	20R	2.5	15.86	18.92
	H	V	5	32.11	42.52
	5D	20L	2.5	14.17	16.75
	5D	20R	2.5	14.09	15.87
	10D	V	2.8	16.50	18.96

Technical Report No.: 17-01930-CX-SHA-00  
 Manufacturer: Changzhou Zhongkai Vehicle Parts Co., Ltd.  
 Type: ZK-01-009

2.1.7. Test results of moisture test

Requirement	Sample No. 5	Sample No. 7
Visual inspection according to Annex 8 paragraphs 1.2.1. and 1.1.3.	No standing pool of water shall be allowed to be formed, or which can be formed by tapping or tilting the device.	
Photometry: limited to 20' and $V = H = 0^\circ$ , CIL $\geq$ 300 [mcd / lx]	472.93	492.85
Conclusion	Complies	Complies

2.1.8. Test results of dust exposure test

Requirement	Sample No. 5	Sample No. 7
Visual inspection according to Annex 8 paragraphs 1.2.1. and 1.1.3.	After test, the exterior of the device shall be cleaned and dried with a dry cotton cloth.	
Photometry: limited to 20' and $V = H = 0^\circ$ , CIL $\geq$ 300 [mcd / lx]	406.30	426.43
Conclusion	Complies	Complies

2.1.9. Test results of resistance to fuels

Requirement	Sample No. 5	Sample No. 7
Visual inspection according to Annex 8 paragraph 3.	After test, the surfaces were cleaned, there were no any apparent surface changes.	
Conclusion	Complies	Complies

2.1.10. Test results of resistance to lubricating oils

Requirement	Sample No. 5	Sample No. 7
Photometry: limited to 20' and $V = H = 0^\circ$ , CIL $\geq$ 300 [mcd / lx]	439.87	458.39
Conclusion	Complies	Complies

2.2. Side retro reflector

2.2.1.	Requirement	General specifications (Sample No. 11 to No. 20), visual inspection according to paragraph 6.1. of this regulation.
	Results	Retro-reflecting devices have been constructed that they function satisfactorily and continue to do so in normal use. In addition, they have not any defect in design or manufacture that is detrimental to their efficient operation or to their maintenance in good condition.
	Conclusion	Complies
2.2.2.	Requirement	Specification of shapes and dimensions (Sample No. 11 to No. 20), visual inspection according to Annex 5 of this regulation.
	Results	The shape of the illuminating surfaces are simple, and not easily confused at normal observation distances.
	Conclusion	Complies
2.2.3.	Requirement	Heat resistance-visual inspection (Sample No. 11 to No. 20), visual inspection according to Annex 10 of this regulation.
	Results	After this test, no cracking or appreciable distortion of the retro reflecting device.
	Conclusion	Complies

2.2.4. Colour – Amber

Sample	Measured values		Limits		
	x	y	$y \leq x - 0.120$	$y \geq 0.390$	$y \geq 0.790 - 0.670 x$
No. 1	0.5680	0.4238	Yes	Yes	Yes
No. 2	0.5686	0.4242	Yes	Yes	Yes

2.2.5. Photometry limited to 20' and V = H = 0°

Angle of divergence $\alpha$	H	V	CIL Measured values (Limits $\geq 750$ [mcd / lx])				
			11	12	13	14	15
20'	0°	0°	853.47	824.16	926.84	937.49	898.75
			16	17	18	19	20
			902.46	928.73	995.13	889.45	931.76

2.2.6. Complete photometry

$\alpha$	$\beta$		CIL Limits [mcd / lx]	Measured values [mcd / lx]	
			Minimum	Sample No. 12	Sample No. 18
20'	10U	V	500	584.09	656.47
	5U	20L	250	533.97	623.04
	5U	20R	250	518.59	602.69
	H	V	750	824.16	995.13
	5D	20L	250	522.23	637.51
	5D	20R	250	509.56	626.53
	10D	V	500	574.11	639.51
1°30'	10U	V	7	26.61	36.53
	5U	20L	6.25	22.41	31.32
	5U	20R	6.25	20.33	30.23
	H	V	12.5	36.31	46.19
	5D	20L	6.25	24.82	34.81
	5D	20R	6.25	23.83	32.42
	10D	V	7	27.49	35.94

Technical Report No.: 17-01930-CX-SHA-00  
 Manufacturer: Changzhou Zhongkai Vehicle Parts Co., Ltd.  
 Type: ZK-01-009

2.2.7. Test results of moisture test

Requirement	Sample No. 14	Sample No. 20
Visual inspection according to Annex 8 paragraphs 1.2.1. and 1.1.3.	No standing pool of water shall be allowed to be formed, or which can be formed by tapping or tilting the device.	
Photometry: limited to 20' and $V = H = 0^\circ$ , CIL $\geq 300$ [mcd / lx]	925.31	920.84
Conclusion	Complies	Complies

2.2.8. Test results of dust exposure test

Requirement	Sample No. 14	Sample No. 20
Visual inspection according to Annex 8 paragraphs 1.2.1. and 1.1.3.	After test, the exterior of the device shall be cleaned and dried with a dry cotton cloth.	
Photometry: limited to 20' and $V = H = 0^\circ$ , CIL $\geq 300$ [mcd / lx]	832.27	830.69
Conclusion	Complies	Complies

2.2.9. Test results of resistance to fuels

Requirement	Sample No. 14	Sample No. 20
Visual inspection according to Annex 8 paragraph 3.	After test, the surfaces were cleaned, there were no any apparent surface changes.	
Conclusion	Complies	Complies

2.2.10. Test results of resistance to lubricating oils

Requirement	Sample No. 14	Sample No. 20
Photometry: limited to 20' and $V = H = 0^\circ$ , CIL $\geq 300$ [mcd / lx]	893.45	888.98
Conclusion	Complies	Complies

3. Specimen submitted to test on : 2017-12-14 (YYYY-MM-DD)
4. Place of test : Jiangsu Huachen Vehicle Inspection Co., Ltd., Zhenjiang City, P.R. China
- Date of test : 2017-12-19 to 2017-12-21 (YYYY-MM-DD)

Technical Report No.: 17-01930-CX-SHA-00  
 Manufacturer: Changzhou Zhongkai Vehicle Parts Co., Ltd.  
 Type: ZK-01-009

**III. Enclosures**

Manufacturer's information document No. : ZK-01-009-00  
 Dated on : 2017-12-14 (YYYY-MM-DD)

**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".

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München, 2018-01-04  
 (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/approval-authorities-technical-services/technical-services/index_en.htm
Approval Authority of the Netherlands (RDW)	Niederlande/ The Netherlands	RDWT-082-XX	
National Standards Au- thority of Ireland (NSAI)	Irland/ Ireland	Technical Service Number: 49	
Vehicle Safety Certifica- tion Center (VSCC)	Taiwan/ Taiwan	DE04-06-2	<a href="http://www.vsc.org.tw/English/Default.aspx">http://www.vsc.org.tw/English/Default.aspx</a>

Information folder No. : ZK-01-009-00

First application date : December 14, 2017

1. Specification data

Type		ZK-01-009									
Variant		Variant 1: ZK-01-009 Variant 2: ZK-01-008									
Function		Rear group lamp									
		Rear retro-reflector Device	Side retro-reflector Device	License plate lamp	Rear direction indicator lamp	Stop lamp	Rear position lamp	Rear end -outline marker lamp	Reversing lamp	Rear fog lamp	Side marker lamp
Color		Red	Amber	Colorless	Amber	Red	Red	Red	White	Red	Amber
Rated	Voltage	--	--	24V	24V	24V	24V	24V	24V	24V	24V
	Wattage	--	--	10W	21W	21W	2*10W	10W	21W	21W	10W
Application Regulation ECE		R3.02 Class IB	R3.02 Class IB	R4.00 Cat. 1b	R6.01 Cat. 2a	R7.02 Cat. S1	R7.02 Cat. R1	R7.02 Cat. RM1	R23.00 AR	R38.00 Cat. F1	R91.00 Cat. SM1
Location of marking	Number and category of light source	--	--	R10W	P21W	P21W	2*R10W	R10W	P21W	P21W	R10W
	Trade mark	Marked on housing 									
	Approval mark	Marked on lens									
	Remark	Sequential activation of light sources: No The lamp is only for use on a vehicle fitted with a tell-tale indicating failure: No									

2. Construction and material

Construction	Material	Remarks
Lens	AS	L.P.L.+R.L.: Clear S.D.+R.D.L.+S.M.L.: Amber R.D.+S.L.+R.P.L.+R.E.L.+R.F.L.: Red
Reflector	PP	AL vacuum vapour coating Painting on the inside surface Colour: Metal silver
Housing	ABS	Colour: Black
Electrical Wiring	Copper covered with insulation	--

3. Name and address of manufacturer

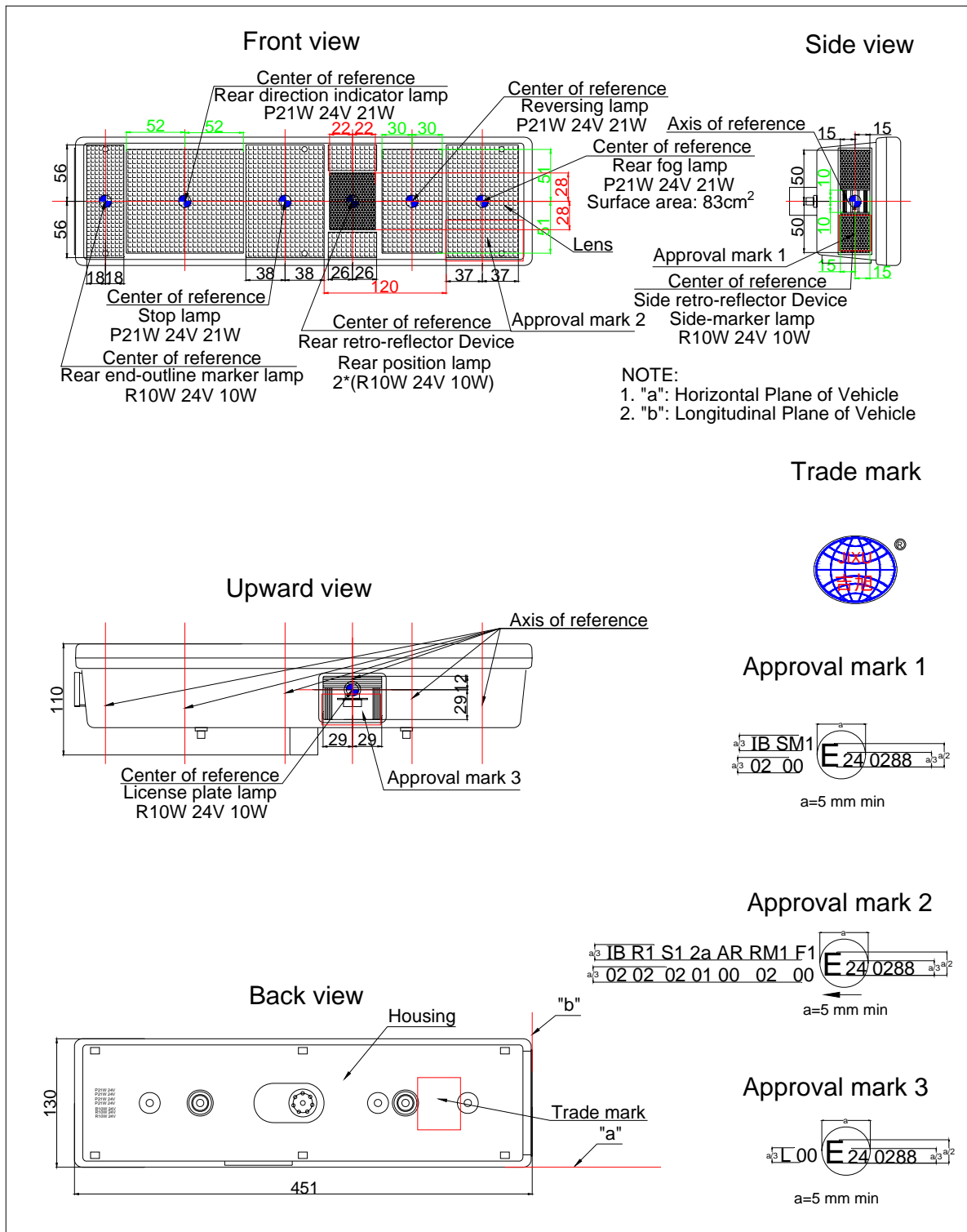
Changzhou Zhongkai Vehicle Parts Co., Ltd.  
: Menghe Avenue, Henghe Town, Xinbei District,  
Changzhou City, Jiangsu Province P.C.: 213001

4. Name and address of the assembly plant

: See 3.

5. Name and address of the manufacturer's representative

: N/A



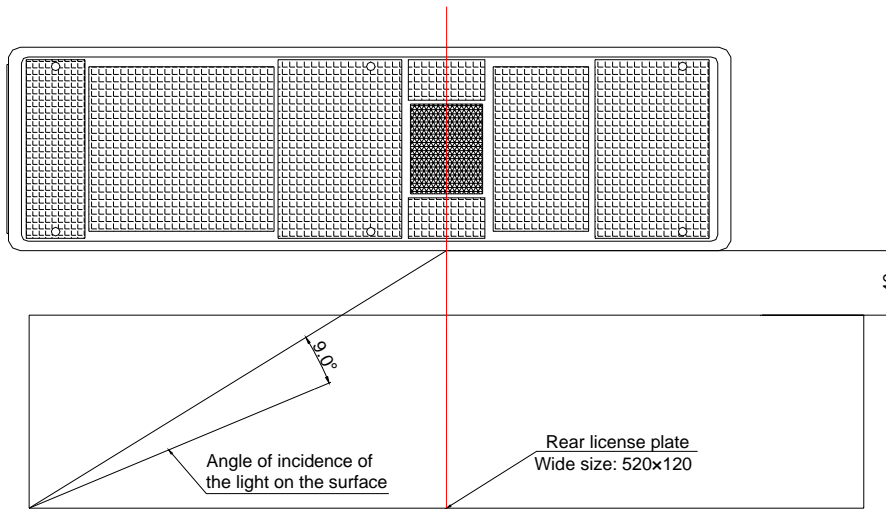
Product Type	ZK-01-009
General assembly drawing (Left side)	
Drawing No.	ZK-01-009-01



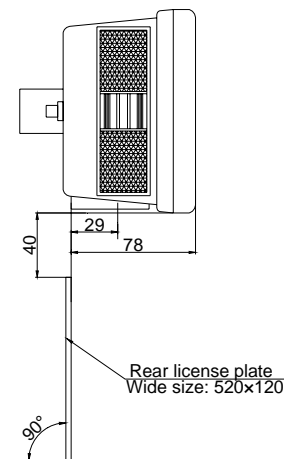


## Installation requirements of rear license plate

Front view



Side view



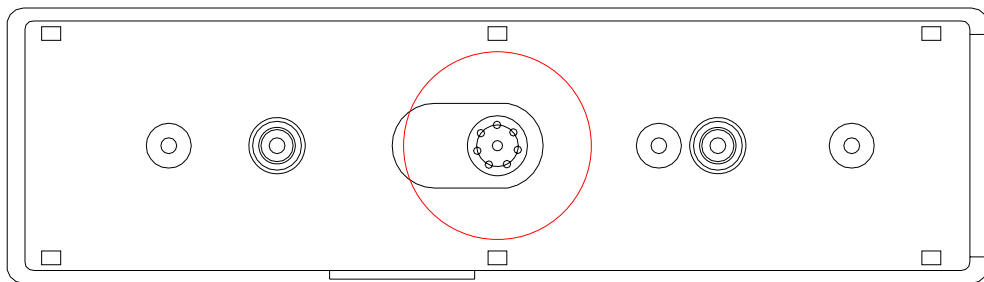
Product Type	ZK-01-009
Installation requirements of rear license plate	
Drawing No.	ZK-01-009-03

Information folder No. : ZK-01-009-00

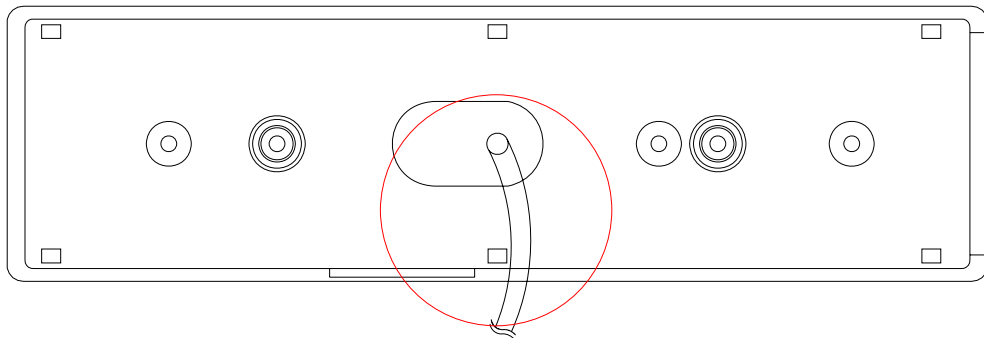
First application date : December 14, 2017

## Back view

Variant 1



Variant 2



Product Type	ZK-01-009
Variant	
Drawing No.	ZK-01-009-04