



AUTOMOTIVE MANUFACTURERS EQUIPMENT  
COMPLIANCE AGENCY, INC.

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Notification Number: 230640

Test Report Date: April 26, 2023

Expiration Date: July 1, 2026

Applicant: Morimoto Lighting  
2281 Defoor Hills Rd.  
Atlanta GA 30318

Item: "LF732/LF733" - Combination Stop, Tail, Turn Signal, Backup And Side Marker Lamp With Side And Rear Reflex Reflectors - Red, White Or Yellow In Colour

Use: On 1999-2016 Model Years Ford SuperDuty Motor Vehicles

Jurisdictional Compliance Standard(S) Identical To: United States FMVSS 571.108

Markings	
Lens	Housing
DOT SAE A2(2)I6P3R(2)S2(2)T2 23	MORIMOTO LF732 (Or LF733)

Light Source: Side Marker/Tail Lamp: 48 LED's, 13.5V  
Stop/ Turn Signal Lamp: 48 LED's, 13.5V  
Backup Lamp: 6 LED's, 12V

Test Lab: Zhejiang ATTC Automobile  
Technology Service Co., Ltd.  
Report Number: AT23XX1D66621

  
Executive Director



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**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

# **COMPLIANCE TEST REPORT**

**ACCORDING TO U.S. FMVSS 108**

**COVER PAGE**





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

## TEST DETAILS

APPLICANT'S NAME : Morimoto Lighting  
ADDRESS : 2281 Defoor Hills Rd Atlanta GA 30318, United States

NO. OF DEVICES TESTED : 4 PCS  
PART NUMBER : LF732; LF733  
DESCRIPTION : Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)  
LIGHT SOURCE : LED

TEST LABORATORY : Zhejiang ATTC Automobile Technology Service Co., Ltd.  
TEST PLACE : Building 3, Essence Adream of Space, No.350, Jinhua Road, Hi-tech Zone, Ningbo City, Zhejiang Province, P.R. China  
TEST DATE: : April 19, 2023 – April 26, 2023

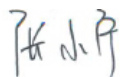
## SUMMARY

TEST DESCRIPTION	TEST RESULTS	
	NUMBER PASSED	NUMBER FAILED
Physical Inspection	4	-
Photometric Test	4	-
Color Test	4	-
Vibration Test	2	-
Moisture Test	2	-
Dust Test	2	-
Corrosion Test	2	-
Plastic Optical Material Test	Not tested*	-

### REMARKS:

\*: Plastic optical material test is not carried out for this application because the applicant used the material already listed in "AMECA-List-of-Acceptable-Plastics-for-Optical-Lenses-and-Reflex-Reflectors- March-10-2023"

NAME AND SIGNATURE : Zhang Xiaoning



TITLE : Test Engineer

DATE : April 26, 2023



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

## SECTION 1) PHYSICAL INSPECTION

TEST COMPONENT : LF732; LF733

MANUFACTURED BY : Zhejiang Hongguan Lighting Technology Co., Ltd.

MARKINGS :

- LENS : "DOT SAE A2(2)I6P3R(2)S2(2)T2 23"
- HOUSING : "MORIMOTO", "LF732; LF733"  
"Tail/SML:13.5V 3.6W", "Turn/Stop:13.5V 27W",  
"Backup:13.5V 2.9W"

OUTER LENS :

- MATERIAL : LF732 Red lens:  
Chimei Corporation Zhenjiang China ACRYREX CM-205 Polymethyl Methacrylate Clear+Red  
LF733 Smoke lens:  
Chimei Corporation Zhenjiang China ACRYREX CM-205 Polymethyl Methacrylate Clear+Smoke
- COATING : ---
- METHOD OF MOUNTING TO HOUSING : Glue

HOUSING :

- MATERIAL : ABS
- METHOD OF MOUNTING TO VEHICLE : Screw
- GASKET : None

### LIGHT SOURCE USED:

FUNCTION	QTY	TRADE NO.	RATED VOLTAGE
Tail/SML Lamp	48 pcs	LED	13.5V
Stop Lamp /Rear Turn Signal Lamp	48 pcs	LED	13.5V
Backup Lamp	6 pcs	LED	13.5V

INSPECTION PERFORMED BY: Cao Wei

DATE: April 19, 2023



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

## SECTION 2) COLOR OF LIGHT

TEST COMPONENT : LF732 (Red lens) (Stop lamp)

COLOR REQUIREMENT : RED (CIE 1931)

the color of light emitted must fall within the following boundaries:

$y = 0.335$  (yellow boundary)

$y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS

TEST PERFORMED BY : Cao Wei

DATE : April 19, 2023

LAMP VOLTAGE : 12.8V

TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
Stop 01#	0.7044	0.2955
Stop 02#	0.7053	0.2946



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF733(Smoke Lens) (Stop lamp)

COLOR REQUIREMENT : RED (CIE 1931)

the color of light emitted must fall within the following boundaries:

$y = 0.335$  (yellow boundary)

$y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS

TEST PERFORMED BY : Cao Wei

DATE : April 20, 2023

LAMP VOLTAGE : 12.8V

TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
Stop 03#	0.7047	0.2952
Stop 04#	0.7041	0.2955



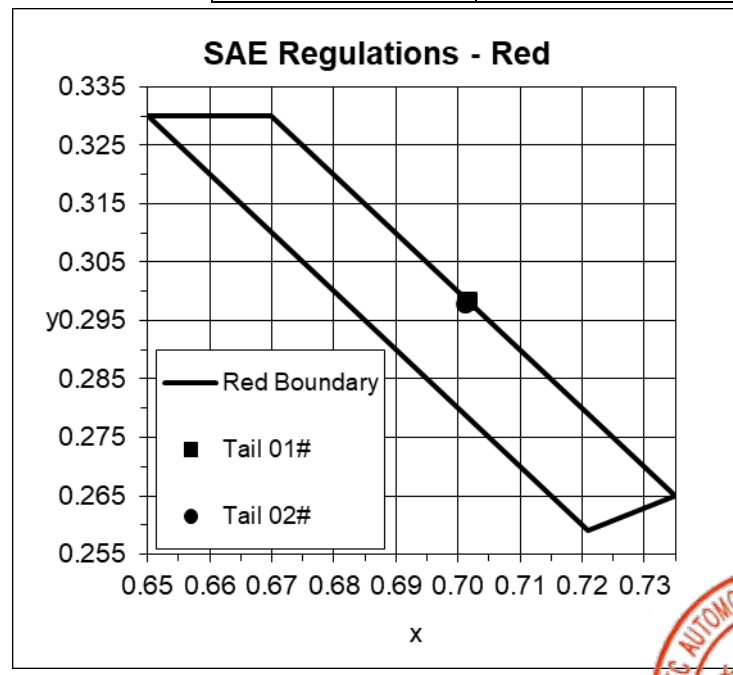
**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF732(Red lens) (Tail Lamp)  
 COLOR REQUIREMENT : RED (CIE 1931)  
 the color of light emitted must fall within the following boundaries:  
 $y = 0.335$  (yellow boundary)  
 $y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS  
 TEST PERFORMED BY : Cao Wei  
 DATE : April 19, 2023

LAMP VOLTAGE : 12.8V  
 TEST DISTANCE : 3.236m

RESULTS	HV point	Coordinate x	Coordinate y
	Tail 01#	0.7016	0.2983
	Tail 02#	0.7011	0.2979



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF733(Smoke Lens) (Tail Lamp)

COLOR REQUIREMENT : RED (CIE 1931)

the color of light emitted must fall within the following boundaries:

$y = 0.335$  (yellow boundary)

$y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS

TEST PERFORMED BY : Cao Wei

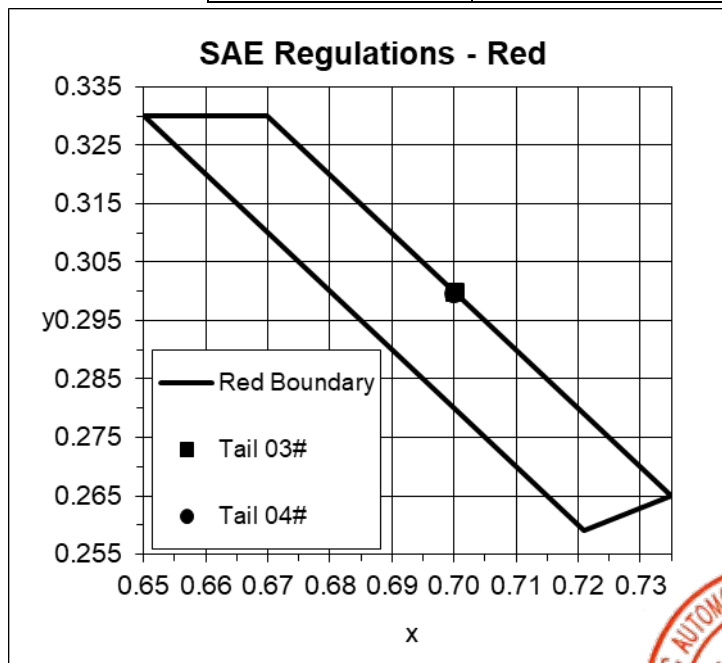
DATE : April 20, 2023

LAMP VOLTAGE : 12.8V

TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
Tail 03#	0.7001	0.2999
Tail 04#	0.7000	0.2996





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

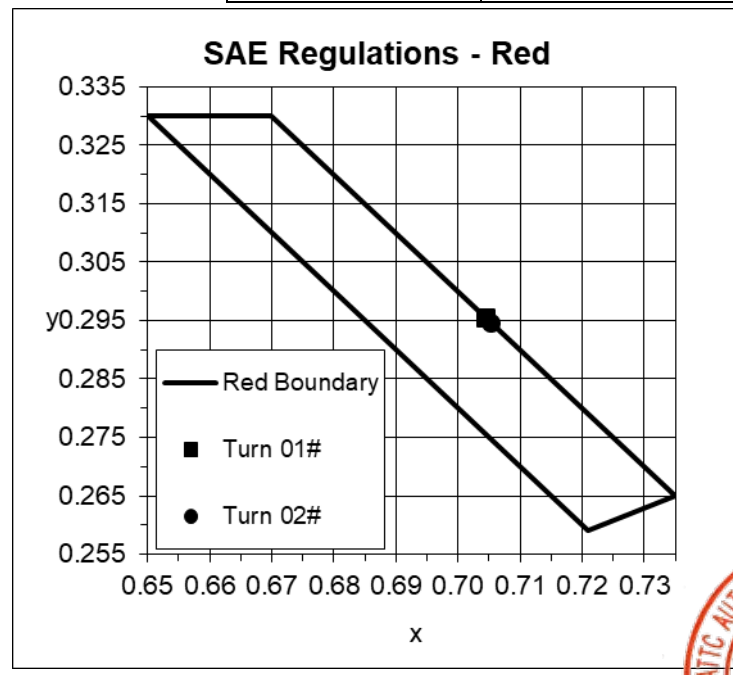
TEST COMPONENT : LF732(Red lens) (Rear turn signal lamp)  
 COLOR REQUIREMENT : RED (CIE 1931)  
 the color of light emitted must fall within the following boundaries:  
 $y = 0.335$  (yellow boundary)  
 $y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS  
 TEST PERFORMED BY : Cao Wei  
 DATE : April 19, 2023

LAMP VOLTAGE : 12.8V  
 TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
Turn 01#	0.7044	0.2955
Turn 02#	0.7053	0.2946



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF733(Smoke Lens) (Rear turn signal lamp)

COLOR REQUIREMENT : RED (CIE 1931)

the color of light emitted must fall within the following boundaries:

$y = 0.335$  (yellow boundary)

$y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS

TEST PERFORMED BY : Cao Wei

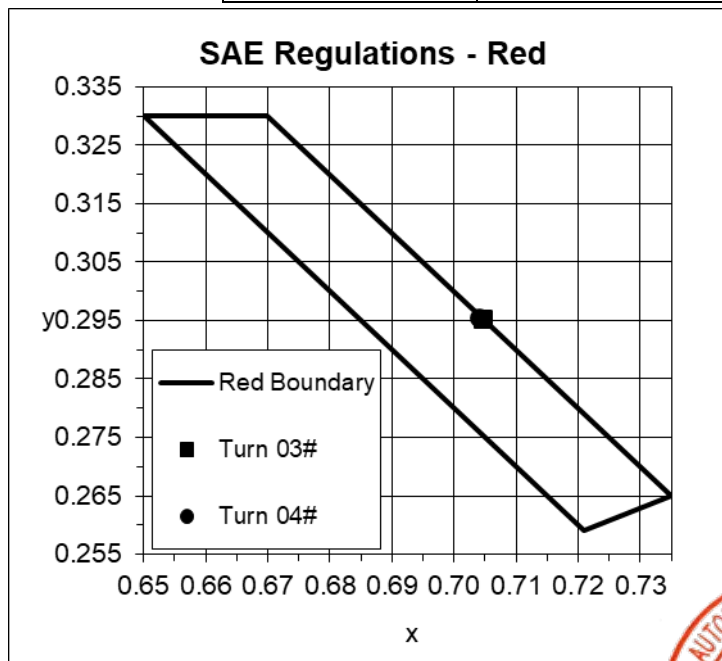
DATE : April 20, 2023

LAMP VOLTAGE : 12.8V

TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
Turn 03#	0.7047	0.2952
Turn 04#	0.7041	0.2955



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF732(Red lens) (Backup Lamp)

COLOR REQUIREMENT : WHITE (CIE 1931)

the color of light emitted must fall within the following boundaries:

$x = 0.310$  (blue boundary)

$x = 0.500$  (yellow boundary)

$y = 0.150 + 0.640x$  (green boundary)

$y = 0.050 + 0.750x$  (purple boundary)

$y = 0.440$  (green boundary)

$y = 0.380$  (red boundary)

TEST METHOD : TRISTIMULOUS

TEST PERFORMED BY : Cao Wei

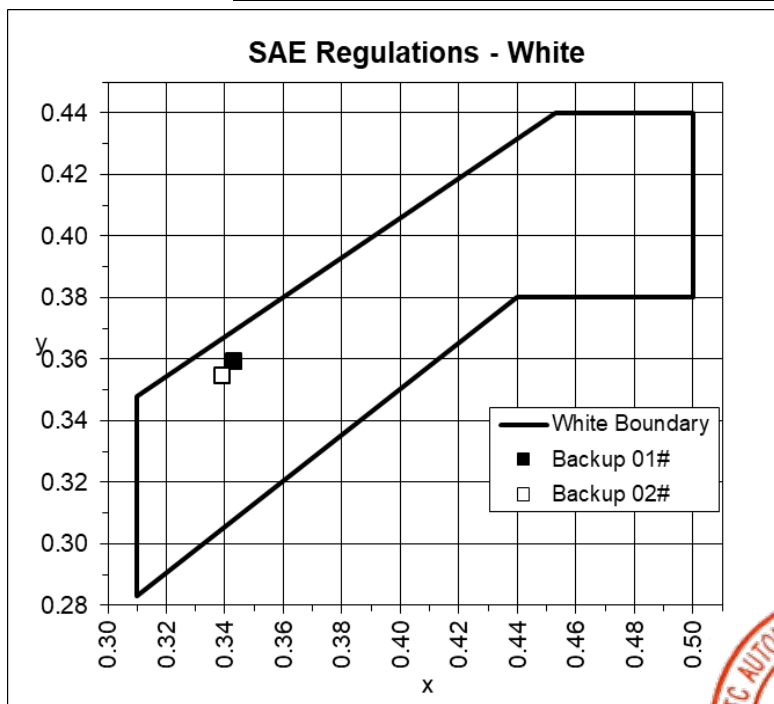
DATE : April 19, 2023

LAMP VOLTAGE : 12.8V

TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
Backup 01#	0.3429	0.3594
Backup 02#	0.3391	0.3549



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

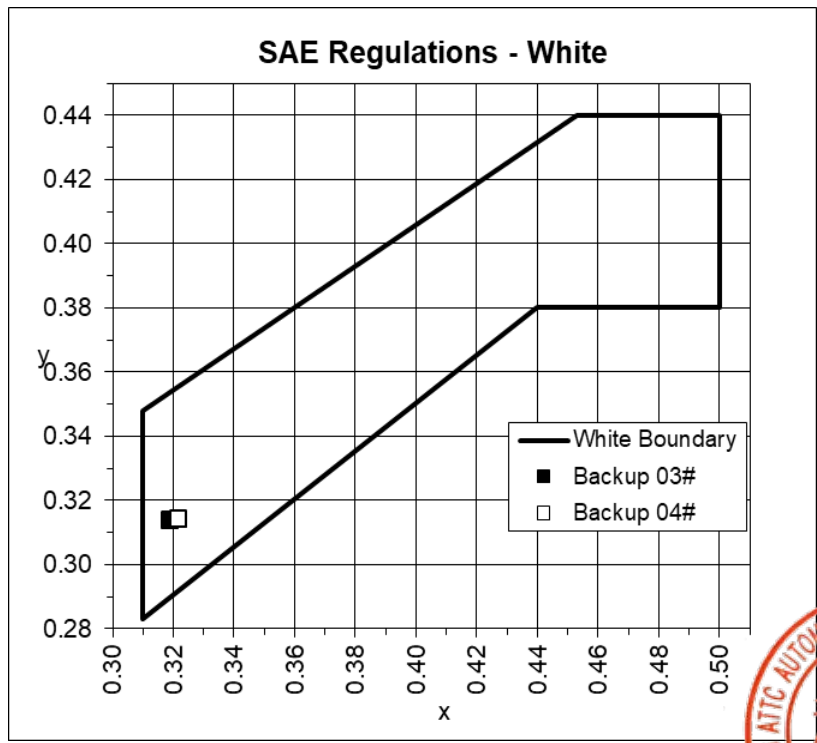
TEST COMPONENT : LF733(Smoke Lens) (Backup Lamp)  
 COLOR REQUIREMENT : WHITE (CIE 1931)  
 the color of light emitted must fall within the following boundaries:  
 $x = 0.310$  (blue boundary)  
 $x = 0.500$  (yellow boundary)  
 $y = 0.150 + 0.640x$  (green boundary)  
 $y = 0.050 + 0.750x$  (purple boundary)  
 $y = 0.440$  (green boundary)  
 $y = 0.380$  (red boundary)

TEST METHOD : TRISTIMULOUS  
 TEST PERFORMED BY : Cao Wei  
 DATE : April 20, 2023

LAMP VOLTAGE : 12.8V  
 TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
Backup 03#	0.3187	0.3140
Backup 04#	0.3217	0.3145



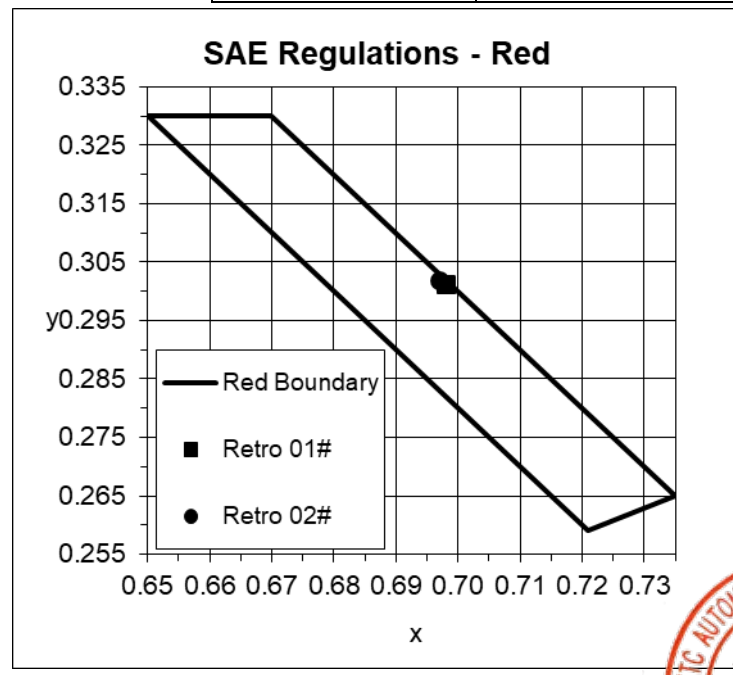
**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF732(Red lens) (Side Reflex Reflectors)  
 COLOR REQUIREMENT : RED (CIE 1931)  
 the color of light emitted must fall within the following boundaries:  
 $y = 0.335$  (yellow boundary)  
 $y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS  
 TEST PERFORMED BY : Cao Wei  
 DATE : April 19, 2023

LAMP VOLTAGE : ---  
 TEST DISTANCE : 2m

RESULTS	HV point	Coordinate x	Coordinate y
	Retro 01#	0.6982	0.3011
	Retro 02#	0.6971	0.3019





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

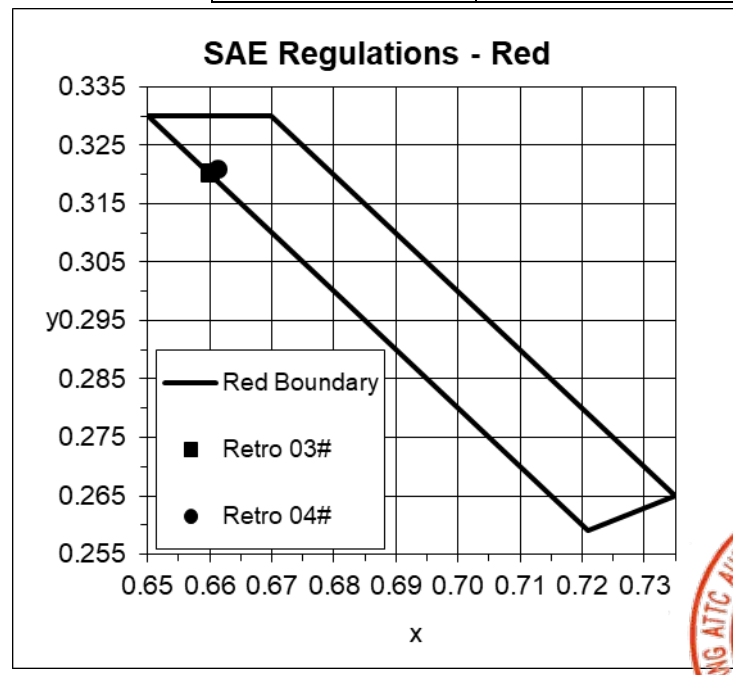
TEST COMPONENT : LF733(Smoke Lens) (Side Reflex Reflectors)  
 COLOR REQUIREMENT : RED (CIE 1931)  
 the color of light emitted must fall within the following boundaries:  
 $y = 0.335$  (yellow boundary)  
 $y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS  
 TEST PERFORMED BY : Cao Wei  
 DATE : April 20, 2023

LAMP VOLTAGE : ---  
 TEST DISTANCE : 2m

RESULTS :

HV point	Coordinate x	Coordinate y
Retro 03#	0.6600	0.3203
Retro 04#	0.6613	0.3209



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF732(Red lens) (Rear Reflex Reflectors)

COLOR REQUIREMENT : RED (CIE 1931)

the color of light emitted must fall within the following boundaries:

$y = 0.335$  (yellow boundary)

$y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS

TEST PERFORMED BY : Cao Wei

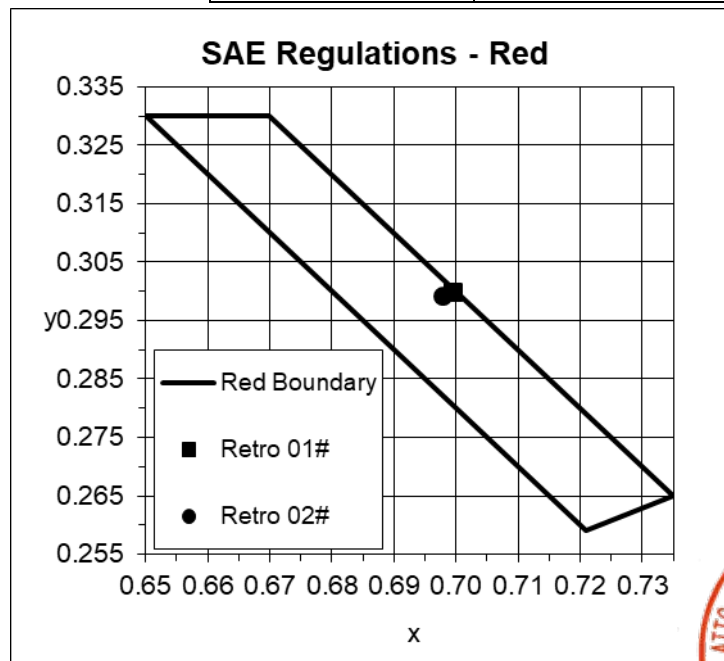
DATE : April 19, 2023

LAMP VOLTAGE : ---

TEST DISTANCE : 2m

RESULTS :

HV point	Coordinate x	Coordinate y
Retro 01#	0.6995	0.2998
Retro 02#	0.6978	0.2991



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

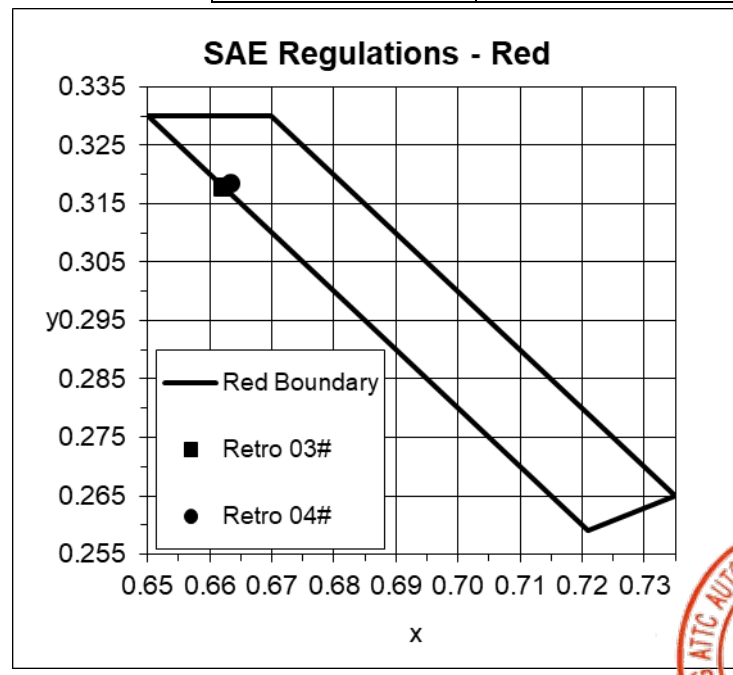
TEST COMPONENT : LF733(Smoke Lens) (Rear Reflex Reflectors)  
 COLOR REQUIREMENT : RED (CIE 1931)  
 the color of light emitted must fall within the following boundaries:  
 $y = 0.335$  (yellow boundary)  
 $y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS  
 TEST PERFORMED BY : Cao Wei  
 DATE : April 20, 2023

LAMP VOLTAGE : ---  
 TEST DISTANCE : 2m

RESULTS :

HV point	Coordinate x	Coordinate y
Retro 03#	0.6622	0.3179
Retro 04#	0.6634	0.3186



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF732 (Red Lens) (Side Marker Lamp)

COLOR REQUIREMENT : RED (CIE 1931)

the color of light emitted must fall within the following boundaries:

$y = 0.335$  (yellow boundary)

$y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS

TEST PERFORMED BY : Cao Wei

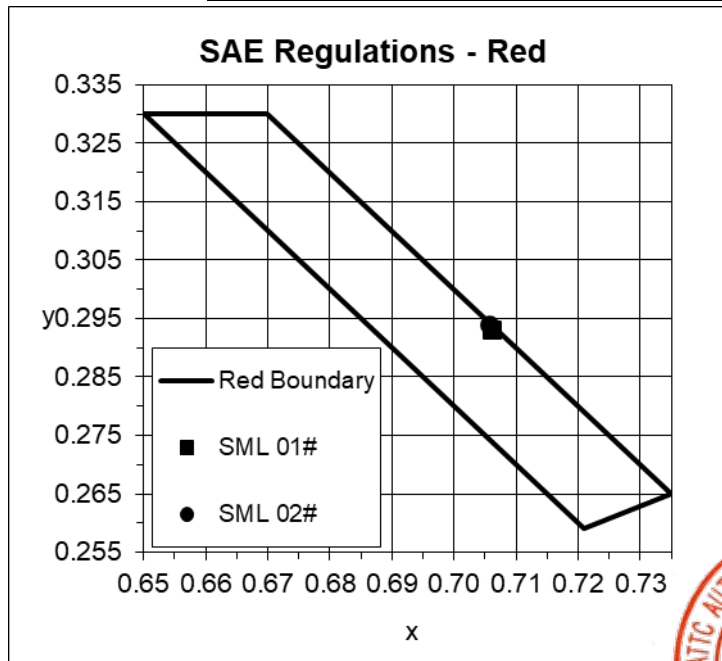
DATE : April 19, 2023

LAMP VOLTAGE : 12.8V

TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
SML 01#	0.7062	0.2931
SML 02#	0.7058	0.2938



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

TEST COMPONENT : LF733 (Smoke Lens) (Side Marker Lamp)

COLOR REQUIREMENT : RED (CIE 1931)

the color of light emitted must fall within the following boundaries:

$y = 0.335$  (yellow boundary)

$y = 0.980 - x$  (purple boundary)

TEST METHOD : TRISTIMULOUS

TEST PERFORMED BY : Cao Wei

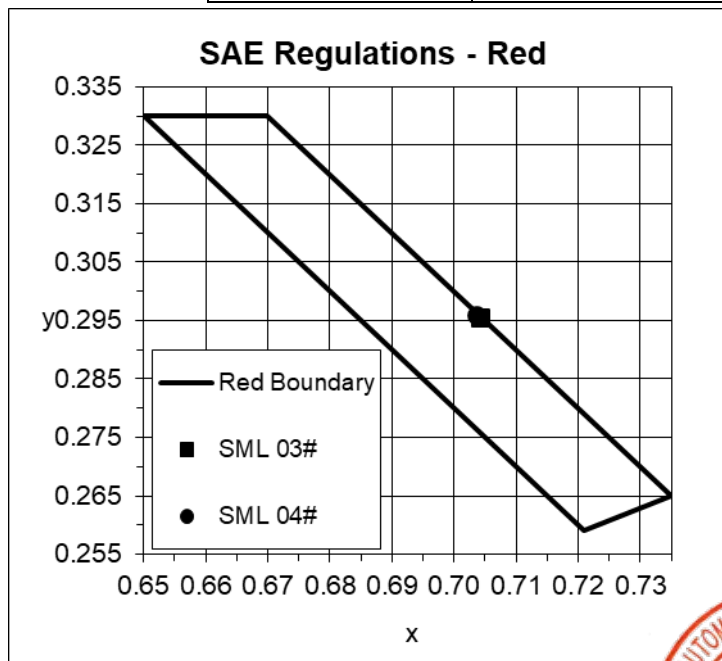
DATE : April 20, 2023

LAMP VOLTAGE : 12.8V

TEST DISTANCE : 3.236m

RESULTS :

HV point	Coordinate x	Coordinate y
SML 03#	0.7042	0.2954
SML 04#	0.7036	0.2959





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

### SECTION 3) EFFECTIVE PROJECTED LUMINOUS LENS AREA

TABLE IV-a.—EFFECTIVE PROJECTED LUMINOUS LENS AREA REQUIREMENTS

Lighting device	Passenger cars, multipurpose passenger vehicles, trucks, trailers, and buses of less than 2032 MM in overall width—Minimum effective projected luminous lens area (sq mm)			Multipurpose passenger vehicles, trucks, trailers, and buses 2032mm or more in overall width— Minimum effective projected luminous lens area each lamp (sq mm)	Motorcycles— Minimum effective projected luminous lens area (sq mm)
	Single compartment lamp	Multiple compartment lamp or multiple lamps			
		Each compartment or lamp	Combined compartments or lamps		
Front turn signal	2200	---	2200	7500	2258
Rear turn signal	5000	2200	5000	7500	2258
Stop lamp	5000	2200	5000	7500	<sup>(1)</sup> 5000

(1) A motor driven cycle whose speed attainable in 1 mile is 30 mph or less may be equipped with a stop lamp whose minimum effective projected luminous lens area is not less than 2258 sq mm.

TEST COMPONENT : LF732/LF733  
 REQUIREMENTS : Rear turn signal: 7500mm<sup>2</sup>, Stop lamp: 7500mm<sup>2</sup>  
 EPLLA : Rear turn signal: 8739mm<sup>2</sup>, Stop lamp: 8739mm<sup>2</sup>  
 :  
 INSPECTION PERFORMED BY : Cao Wei  
 DATE : April 19, 2023



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

## **SECTION 4) PHOTOMETRY**

TEST COMPONENT : LF732(Red lens) (Stop lamp)  
SAMPLE No : 01#, 02#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE : Ford SuperDuty 99-16  
- NUMBER OF COMPARTMENTS : 2  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : 2

TEST PERFORMED BY : Cao Wei  
DATE : April 19, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m  
BULB TRADE NO. :  
TEST VOLTAGE : 12.8V  
AIM NOTES : Reference center refer to the drawing on last page  
OTHER NOTES : ---  
RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

STOP LAMP PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
01#	164.0	158.2	1.037	
02#	163.3	155.7	1.049	

STOP LAMP PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE IX of FMVSS No. 108)												
GROUP NUMBER	TEST POINT (degrees)		MIN. RATIO COMBINED WITH TAIL LAMP	MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(2)</sup> (cd)					GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)			
				Lighted Sections	Measurements				Required Minimum	Measured		
					2	Sample 01#		Sample 02#		01#	02#	
						Ratio	Value	Ratio				Value
1	20L	5U	3	12	6.8	110.6	7.9	119.5	60	509.2	530.3	
		5D	3	12	6.5	108.7	7.6	119.5				
	5L	10U	3	19	8.5	145.9	9.1	144.4				
		10D <sup>(4)</sup>	3	19	8.2	144.0	8.7	146.9				
2	10L	5U	3	35	8.5	143.8	8.9	146.6	115	432.6	444.7	
		H	3	47	9.5	146.4	9.4	150.6				
		5D	3	35	8.6	142.4	9.9	147.5				
3	V	5U	5	82	9.2	160.4	8.7	158.0	445	803.4	797.9	
	5L	H	3/5 <sup>(6)</sup>	95	8.6	158.0	8.6	159.6				
	V		5	95	8.5	164.0	8.6	163.3				
	5R		5	95	9.2	161.4	8.2	157.8				
	V		5D	3	82	9.3	159.6	8.6				159.2
4	10R	5U	3	35	8.7	150.2	8.7	142.5	115	452.7	432.4	
		H	3	47	9.6	153.0	8.6	146.6				
		5D	3	35	10.1	149.5	9.1	143.3				
5	5R	10U	3	19	8.2	147.6	8.8	141.7	60	540.2	502.1	
		10D <sup>(4)</sup>	3	19	8.4	146.4	9.5	143.7				
	20R	5U	3	12	8.7	123.9	7.6	108.6				
		5D	3	12	8.9	122.3	8.5	108.1				
MAXIMUM PHOTOMETRIC INTENSITY <sup>(3)</sup>				360	--	170.2	--	167.9				



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

STOP LAMP PHOTOMETRY RESULT AFTER 30 MINUTE OF OPERATION

(TABLE IX of FMVSS No. 108)

GROUP NUMBER	TEST POINT (degrees)		MIN. RATIO COMBINED WITH TAIL LAMP	MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(2)</sup> (cd)					GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)			
				Lighted Sections	Measurements				Required Minimum	Measured		
					2	Sample 01#		Sample 02#		01#	02#	
						Ratio	Value	Ratio				Value
1	20L	5U	3	12	6.8	106.7	7.8	113.9	60	491.2	505.6	
		5D	3	12	6.5	104.9	7.5	113.9				
	5L	10U	3	19	8.5	140.7	9.1	137.7				
		10D <sup>(4)</sup>	3	19	8.2	138.9	8.7	140.1				
2	10L	5U	3	35	8.5	138.7	8.9	139.8	115	417.3	424.0	
		H	3	47	9.4	141.2	9.4	143.6				
		5D	3	35	8.6	137.4	9.9	140.6				
3	V	5U	5	82	9.1	154.7	8.7	150.6	445	775.0	760.8	
	5L	H	3/5 <sup>(6)</sup>	95	8.6	152.4	8.5	152.2				
	V		5	95	8.5	158.2	8.6	155.7				
	5R		5	95	9.2	155.7	8.2	150.5				
	V		5D	3	82	9.3	154.0	8.6				151.8
4	10R	5U	3	35	8.7	144.9	8.7	135.9	115	436.7	412.3	
		H	3	47	9.6	147.6	8.6	139.8				
		5D	3	35	10.1	144.2	9.0	136.6				
5	5R	10U	3	19	8.2	142.4	8.7	135.1	60	521.1	478.7	
		10D <sup>(4)</sup>	3	19	8.4	141.2	9.5	137.0				
	20R	5U	3	12	8.7	119.5	7.6	103.5				
		5D	3	12	8.9	118.0	8.5	103.1				
MAXIMUM PHOTOMETRIC INTENSITY <sup>(3)</sup>				360	--	164.2	--	160.1				



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY (CONTINUED)**

TEST COMPONENT : LF733(Smoke Lens) (Stop lamp)  
SAMPLE No : 03#, 04#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE :  
- NUMBER OF COMPARTMENTS : 2  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : 2

TEST PERFORMED BY : Cao Wei  
DATE : April 20, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m  
BULB TRADE NO. :  
TEST VOLTAGE : 12.8V  
AIM NOTES : Reference center refer to the drawing on last page  
OTHER NOTES : ---  
RESULTS : PASS





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

STOP LAMP PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
03#	120.82	115.70	1.044	
04#	139.72	132.92	1.051	

STOP LAMP PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE IX of FMVSS No. 108)												
GROUP NUMBER	TEST POINT (degrees)		MIN. RATIO COMBINED WITH TAIL LAMP	MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(2)</sup> (cd)					GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)			
				Lighted Sections	Measurements				Required Minimum	Measured		
					2	Sample 03#		Sample 04#		03#	04#	
						Ratio	Value	Ratio				Value
1	20L	5U	3	12	3.94	61.14	3.95	56.07	60	267.93	268.31	
		5D	3	12	3.96	60.18	4.02	56.29				
	5L	10U	3	19	4.38	74.33	4.80	76.96				
		10D <sup>(4)</sup>	3	19	4.45	72.28	5.06	78.99				
2	10L	5U	3	35	4.44	76.46	4.52	75.93	115	229.94	230.44	
		H	3	47	4.19	78.03	4.86	78.04				
		5D	3	35	4.22	75.45	4.35	76.47				
3	V	5U	5	82	5.35	98.66	6.74	118.90	445	544.50	627.51	
	5L	H	3/5 <sup>(6)</sup>	95	5.96	112.08	7.07	128.13				
	V		5	95	6.41	120.82	7.63	139.72				
	5R		5	95	6.90	115.81	7.19	131.72				
	V		5D	3	82	5.70	97.13	6.05				109.04
4	10R	5U	3	35	3.46	64.77	4.63	81.59	115	193.92	248.21	
		H	3	47	3.66	65.57	4.97	84.21				
		5D	3	35	3.47	63.58	4.75	82.41				
5	5R	10U	3	19	3.93	67.85	4.51	78.57	60	226.32	281.11	
		10D <sup>(4)</sup>	3	19	3.99	65.81	5.06	80.86				
	20R	5U	3	12	3.39	46.87	4.16	60.68				
		5D	3	12	3.41	45.79	4.26	61.00				
MAXIMUM PHOTOMETRIC INTENSITY <sup>(3)</sup>				360	--	128.55	--	142.44				



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

STOP LAMP PHOTOMETRY RESULT AFTER 30 MINUTE OF OPERATION

(TABLE IX of FMVSS No. 108)

GROUP NUMBER	TEST POINT (degrees)		MIN. RATIO COMBINED WITH TAIL LAMP	MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(2)</sup> (cd)					GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)			
				Lighted Sections	Measurements				Required Minimum	Measured		
					2	Sample 03#		Sample 04#		03#	04#	
						Ratio	Value	Ratio				Value
1	20L	5U	3	12	3.91	58.55	3.88	53.34	60	256.58	255.25	
		5D	3	12	3.93	57.63	3.95	53.55				
	5L	10U	3	19	4.35	71.18	4.73	73.21				
		10D <sup>(4)</sup>	3	19	4.41	69.22	4.98	75.15				
2	10L	5U	3	35	4.41	73.22	4.45	72.23	115	220.19	219.22	
		H	3	47	4.16	74.72	4.78	74.24				
		5D	3	35	4.19	72.25	4.28	72.75				
3	V	5U	5	82	5.31	94.48	6.63	113.11	445	521.42	596.96	
	5L	H	3/5 <sup>(6)</sup>	95	5.91	107.33	6.96	121.89				
	V		5	95	6.36	115.70	7.51	132.92				
	5R		5	95	6.84	110.90	7.07	125.31				
	V		5D	3	82	5.66	93.01	5.95				103.73
4	10R	5U	3	35	3.43	62.03	4.55	77.62	115	185.71	236.13	
		H	3	47	3.63	62.79	4.89	80.11				
		5D	3	35	3.44	60.89	4.67	78.40				
5	5R	10U	3	19	3.90	64.97	4.43	74.75	60	216.72	267.43	
		10D <sup>(4)</sup>	3	19	3.96	63.02	4.98	76.92				
	20R	5U	3	12	3.36	44.88	4.09	57.73				
		5D	3	12	3.38	43.85	4.19	58.03				
MAXIMUM PHOTOMETRIC INTENSITY <sup>(3)</sup>				360	--	123.10	--	135.51				



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY(CONTINUED)**

TEST COMPONENT : LF732(Red lens) (Tail lamp)  
SAMPLE No : 01#, 02#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE :  
- NUMBER OF COMPARTMENTS : 2  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : 2

TEST PERFORMED BY : Cao Wei  
DATE : April 19, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m  
BULB TRADE NO. :  
TEST VOLTAGE : 12.8V  
AIM NOTES : Reference center refer to the drawing on last page  
OTHER NOTES : ---  
RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

TAIL LAMP PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
01#	19.38	18.72	1.035	
02#	18.91	18.09	1.045	

TAIL LAMP PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE VIII of FMVSS No. 108)									
GROUP NUMBER	TEST POINT (degrees)		MINIMUM PHOTOMETRIC INTENSITY(cd)				GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
			Lighted Sections		Calculated result		Required Minimum	Measured	
			2		Sample 01#	Sample 02#		01#	02#
			MINIMUM	MAXIMUM					
1	20L	5U	0.5	20	16.21	15.20	2.4	67.59	63.70
		5D	0.5	-	16.67	15.79			
	5L	10U	0.7	20	17.21	15.81			
		10D	0.7	-	17.50	16.90			
2	10L	5U	1.4	20	16.95	16.48	4.2	48.96	47.36
		H	1.4	20	15.48	16.00			
		5D	1.4	-	16.53	14.88			
3	V	5U	3.1	20	17.51	18.06	16.8	89.86	93.33
	5L	H	3.5	20	18.27	18.63			
			3.5	20	19.38	18.91			
			3.5	20	17.60	19.19			
			V	5D	3.1	-			
4	10R	5U	1.4	20	17.21	16.42	4.2	47.92	49.24
		H	1.4	20	15.89	17.01			
		5D	1.4	-	14.82	15.81			
5	5R	10U	0.7	20	18.09	16.19	2.4	63.50	58.21
		10D	0.7	-	17.48	15.05			
	20R	5U	0.5	20	14.21	14.29			
		5D	0.5	-	13.72	12.68			



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

TAIL LAMP PHOTOMETRY RESULT AFTER 30 MINUTES OF OPERATION

(TABLE VIII of FMVSS No. 108)

GROUP NUMBER	TEST POINT (degrees)		MINIMUM PHOTOMETRIC INTENSITY(cd)				GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
			Lighted Sections		Measurements		Required Minimum	Measured	
			2		Sample 01#	Sample 02#		01#	02#
			MINIMUM	MAXIMUM					
1	20L	5U	0.5	20	15.66	14.54	2.4	65.28	60.94
		5D	0.5	-	16.10	15.11			
	5L	10U	0.7	20	16.62	15.12			
		10D	0.7	-	16.90	16.17			
2	10L	5U	1.4	20	16.37	15.77	4.2	47.29	45.31
		H	1.4	20	14.95	15.31			
		5D	1.4	-	15.97	14.23			
3	V	5U	3.1	20	16.91	17.28	16.8	86.80	89.29
	5L		3.5	20	17.65	17.82			
	V	H	3.5	20	18.72	18.09			
	5R		3.5	20	17.00	18.36			
	V	5D	3.1	-	16.52	17.74			
4	10R	5U	1.4	20	16.62	15.71	4.2	46.29	47.10
		H	1.4	20	15.35	16.27			
		5D	1.4	-	14.32	15.12			
5	5R	10U	0.7	20	17.47	15.49	2.4	61.33	55.69
		10D	0.7	-	16.88	14.40			
	20R	5U	0.5	20	13.73	13.67			
		5D	0.5	-	13.25	12.13			





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY (CONTINUED)**

TEST COMPONENT : LF733 (Smoke Lens) (Tail lamp)  
SAMPLE No : 03#, 04#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE :  
- NUMBER OF COMPARTMENTS : 2  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : 2

TEST PERFORMED BY : Cao Wei  
DATE : April 20, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m  
BULB TRADE NO. :  
TEST VOLTAGE : 12.8V  
AIM NOTES : Reference center refer to the drawing on last page  
OTHER NOTES : ---  
RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

TAIL LAMP PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
03#	18.84	18.19	1.036	
04#	18.72	18.10	1.034	

TAIL LAMP PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE VIII of FMVSS No. 108)									
GROUP NUMBER	TEST POINT (degrees)		MINIMUM PHOTOMETRIC INTENSITY(cd)				GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
			Lighted Sections		Calculated result		Required Minimum	Measured	
			2		Sample 03#	Sample 04#		03#	04#
			MINIMUM	MAXIMUM					
1	20L	5U	0.5	20	15.53	14.20	2.4	63.95	59.84
		5D	0.5	-	15.20	14.00			
	5L	10U	0.7	20	16.97	16.02			
		10D	0.7	-	16.25	15.62			
2	10L	5U	1.4	20	17.21	16.80	4.2	53.70	50.44
		H	1.4	20	18.61	16.07			
		5D	1.4	-	17.88	17.57			
3	V	5U	3.1	20	18.43	17.63	16.8	89.89	90.84
	5L	H	3.5	20	18.80	18.12			
			3.5	20	18.84	18.72			
			3.5	20	16.79	18.33			
			V	5D	3.1	-			
4	10R	5U	1.4	20	18.72	17.63	4.2	54.95	51.93
		H	1.4	20	17.91	16.95			
		5D	1.4	-	18.32	17.35			
5	5R	10U	0.7	20	17.26	17.44	2.4	61.02	62.33
		10D	0.7	-	16.50	15.99			
	20R	5U	0.5	20	13.82	14.59			
		5D	0.5	-	13.44	14.31			



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

TAIL LAMP PHOTOMETRY RESULT AFTER 30 MINUTES OF OPERATION

(TABLE VIII of FMVSS No. 108)

GROUP NUMBER	TEST POINT (degrees)		MINIMUM PHOTOMETRIC INTENSITY(cd)				GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
			Lighted Sections		Measurements		Required Minimum	Measured	
			2		Sample 03#	Sample 04#		03#	04#
			MINIMUM	MAXIMUM					
1	20L	5U	0.5	20	14.99	13.73	2.4	61.74	57.86
		5D	0.5	-	14.68	13.54			
	5L	10U	0.7	20	16.38	15.49			
		10D	0.7	-	15.69	15.10			
2	10L	5U	1.4	20	16.62	16.24	4.2	51.85	48.77
		H	1.4	20	17.97	15.54			
		5D	1.4	-	17.26	16.99			
3	V	5U	3.1	20	17.79	17.05	16.8	86.78	87.83
	5L		3.5	20	18.15	17.52			
	V	H	3.5	20	18.19	18.10			
	5R		3.5	20	16.21	17.72			
	V	5D	3.1	-	16.44	17.44			
4	10R	5U	1.4	20	18.07	17.05	4.2	53.05	50.22
		H	1.4	20	17.29	16.39			
		5D	1.4	-	17.69	16.78			
5	5R	10U	0.7	20	16.66	16.86	2.4	58.91	60.27
		10D	0.7	-	15.93	15.46			
	20R	5U	0.5	20	13.34	14.11			
		5D	0.5	-	12.98	13.84			



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY (CONTINUED)**

TEST COMPONENT : LF732 (Red lens) (Rear turn signal lamp)

SAMPLE No : 01#, 02#

FMVSS No. 108 REQUIREMENT :

VEHICLE TYPE/SIZE :

- NUMBER OF COMPARTMENTS : 2

- NUMBER OF LAMPS : 1

- NUMBER OF LIGHTED SECTIONS : 2

TEST PERFORMED BY : Cao Wei

DATE : April 19, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m

BULB TRADE NO. :

TEST VOLTAGE : 12.8V

AIM NOTES : Reference center refer to the drawing on last page

OTHER NOTES : ---

RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

REAR (RED) TURN SIGNAL LAMP PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
01#	164.0	158.2	1.037	
02#	163.3	155.7	1.049	

S REAR (RED) TURN SIGNAL LAMP PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE IX of FMVSS No. 108)											
GROUP NUMBER	TEST POINT (degrees)		MIN. RATIO COMBINED WITH TAIL LAMP	MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(2)</sup> (cd)					GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
				Lighted Sections	Measurements				Required Minimum	Measured	
					2	Sample 01#		Sample 02#		01#	02#
				Ratio		Value	Ratio	Value			
1	20L	5U	3	12	6.8	110.6	7.9	119.5	60	509.2	530.3
		5D	3	12	6.5	108.7	7.6	119.5			
	5L	10U	3	19	8.5	145.9	9.1	144.4			
		10D <sup>(4)</sup>	3	19	8.2	144.0	8.7	146.9			
2	10L	5U	3	35	8.5	143.8	8.9	146.6	115	432.6	444.7
		H	3	47	9.5	146.4	9.4	150.6			
		5D	3	35	8.6	142.4	9.9	147.5			
3	V	5U	5	82	9.2	160.4	8.7	158.0	445	803.4	797.9
	5L	H	3/5 <sup>(6)</sup>	95	8.6	158.0	8.6	159.6			
	V		5	95	8.5	164.0	8.6	163.3			
	5R		5	95	9.2	161.4	8.2	157.8			
	V		5D	3	82	9.3	159.6	8.6			
4	10R	5U	3	35	8.7	150.2	8.7	142.5	115	452.7	432.4
		H	3	47	9.6	153.0	8.6	146.6			
		5D	3	35	10.1	149.5	9.1	143.3			
5	5R	10U	3	19	8.2	147.6	8.8	141.7	60	540.2	502.1
		10D <sup>(4)</sup>	3	19	8.4	146.4	9.5	143.7			
	20R	5U	3	12	8.7	123.9	7.6	108.6			
		5D	3	12	8.9	122.3	8.5	108.1			
MAXIMUM PHOTOMETRIC INTENSITY <sup>(3)</sup>				360	--	170.2	--	167.9			



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

REAR (RED) TURN SIGNAL LAMP PHOTOMETRY RESULT AFTER 30 MINUTE OF OPERATION

(TABLE IX of FMVSS No. 108)

GROUP NUMBER	TEST POINT (degrees)		MIN. RATIO COMBINED WITH TAIL LAMP	MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(2)</sup> (cd)					GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)			
				Lighted Sections	Measurements				Required Minimum	Measured		
					2	Sample 01#		Sample 02#		01#	02#	
						Ratio	Value	Ratio				Value
1	20L	5U	3	12	6.8	106.7	7.8	113.9	60	491.2	505.6	
		5D	3	12	6.5	104.9	7.5	113.9				
	5L	10U	3	19	8.5	140.7	9.1	137.7				
		10D <sup>(4)</sup>	3	19	8.2	138.9	8.7	140.1				
2	10L	5U	3	35	8.5	138.7	8.9	139.8	115	417.3	424.0	
		H	3	47	9.4	141.2	9.4	143.6				
		5D	3	35	8.6	137.4	9.9	140.6				
3	V	5U	5	82	9.1	154.7	8.7	150.6	445	775.0	760.8	
	5L	H	3/5 <sup>(6)</sup>	95	8.6	152.4	8.5	152.2				
	V		5	95	8.5	158.2	8.6	155.7				
	5R		5	95	9.2	155.7	8.2	150.5				
	V		5D	3	82	9.3	154.0	8.6				151.8
4	10R	5U	3	35	8.7	144.9	8.7	135.9	115	436.7	412.3	
		H	3	47	9.6	147.6	8.6	139.8				
		5D	3	35	10.1	144.2	9.0	136.6				
5	5R	10U	3	19	8.2	142.4	8.7	135.1	60	521.1	478.7	
		10D <sup>(4)</sup>	3	19	8.4	141.2	9.5	137.0				
	20R	5U	3	12	8.7	119.5	7.6	103.5				
		5D	3	12	8.9	118.0	8.5	103.1				
MAXIMUM PHOTOMETRIC INTENSITY <sup>(3)</sup>				360	--	164.2	--	160.1				





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

## **SECTION 4) PHOTOMETRY(CONTINUED)**

TEST COMPONENT : LF733(Smoke Lens)  
(Rear turn signal lamp)

SAMPLE No : 03#, 04#

FMVSS No. 108 REQUIREMENT :

VEHICLE TYPE/SIZE :

- NUMBER OF COMPARTMENTS : 2
- NUMBER OF LAMPS : 1
- NUMBER OF LIGHTED SECTIONS : 2

TEST PERFORMED BY : Cao Wei

DATE : April 20, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m

BULB TRADE NO. :

TEST VOLTAGE : 12.8V

AIM NOTES : Reference center refer to the drawing on last page

OTHER NOTES : ---

RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

REAR (RED) TURN SIGNAL LAMP PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
03#	120.82	115.70	1.044	
04#	139.72	132.92	1.051	

REAR (RED) TURN SIGNAL LAMP PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE IX of FMVSS No. 108)												
GROUP NUMBER	TEST POINT (degrees)		MIN. RATIO COMBINED WITH TAIL LAMP	MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(2)</sup> (cd)					GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)			
				Lighted Sections	Measurements				Required Minimum	Measured		
					2	Sample 03#		Sample 04#		03#	04#	
						Ratio	Value	Ratio				Value
1	20L	5U	3	12	3.94	61.14	3.95	56.07	60	267.93	268.31	
		5D	3	12	3.96	60.18	4.02	56.29				
	5L	10U	3	19	4.38	74.33	4.80	76.96				
		10D <sup>(4)</sup>	3	19	4.45	72.28	5.06	78.99				
2	10L	5U	3	35	4.44	76.46	4.52	75.93	115	229.94	230.44	
		H	3	47	4.19	78.03	4.86	78.04				
		5D	3	35	4.22	75.45	4.35	76.47				
3	V	5U	5	82	5.35	98.66	6.74	118.90	445	544.50	627.51	
	5L	H	3/5 <sup>(6)</sup>	95	5.96	112.08	7.07	128.13				
	V		5	95	6.41	120.82	7.63	139.72				
	5R		5	95	6.90	115.81	7.19	131.72				
	V		5D	3	82	5.70	97.13	6.05				109.04
4	10R	5U	3	35	3.46	64.77	4.63	81.59	115	193.92	248.21	
		H	3	47	3.66	65.57	4.97	84.21				
		5D	3	35	3.47	63.58	4.75	82.41				
5	5R	10U	3	19	3.93	67.85	4.51	78.57	60	226.32	281.11	
		10D <sup>(4)</sup>	3	19	3.99	65.81	5.06	80.86				
	20R	5U	3	12	3.39	46.87	4.16	60.68				
		5D	3	12	3.41	45.79	4.26	61.00				
MAXIMUM PHOTOMETRIC INTENSITY <sup>(3)</sup>				360	--	128.55	--	142.44				



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

REAR (RED) TURN SIGNAL LAMP PHOTOMETRY RESULT AFTER 30 MINUTE OF OPERATION

(TABLE IX of FMVSS No. 108)

GROUP NUMBER	TEST POINT (degrees)		MIN. RATIO COMBINED WITH TAIL LAMP	MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(2)</sup> (cd)					GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)			
				Lighted Sections	Measurements				Required Minimum	Measured		
					2	Sample 03#		Sample 04#		03#	04#	
						Ratio	Value	Ratio				Value
1	20L	5U	3	12	3.91	58.55	3.88	53.34	60	256.58	255.25	
		5D	3	12	3.93	57.63	3.95	53.55				
	5L	10U	3	19	4.35	71.18	4.73	73.21				
		10D <sup>(4)</sup>	3	19	4.41	69.22	4.98	75.15				
2	10L	5U	3	35	4.41	73.22	4.45	72.23	115	220.19	219.22	
		H	3	47	4.16	74.72	4.78	74.24				
		5D	3	35	4.19	72.25	4.28	72.75				
3	V	5U	5	82	5.31	94.48	6.63	113.11	445	521.42	596.96	
	5L		3/5 <sup>(6)</sup>	95	5.91	107.33	6.96	121.89				
	V	H	5	95	6.36	115.70	7.51	132.92				
	5R		5	95	6.84	110.90	7.07	125.31				
	V	5D	3	82	5.66	93.01	5.95	103.73				
4	10R	5U	3	35	3.43	62.03	4.55	77.62	115	185.71	236.13	
		H	3	47	3.63	62.79	4.89	80.11				
		5D	3	35	3.44	60.89	4.67	78.40				
5	5R	10U	3	19	3.90	64.97	4.43	74.75	60	216.72	267.43	
		10D <sup>(4)</sup>	3	19	3.96	63.02	4.98	76.92				
	20R	5U	3	12	3.36	44.88	4.09	57.73				
		5D	3	12	3.38	43.85	4.19	58.03				
MAXIMUM PHOTOMETRIC INTENSITY <sup>(3)</sup>				360	--	123.10	--	135.51				



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY(CONTINUED)**

TEST COMPONENT : LF732(Red lens) (Backup lamp)  
SAMPLE No : 01#, 02#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE :  
- NUMBER OF COMPARTMENTS : 1  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : N/A

TEST PERFORMED BY : Cao Wei  
DATE : April 19, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m  
BULB TRADE NO. :  
TEST VOLTAGE : 12.8V  
AIM NOTES : Reference center refer to the drawing on last page  
OTHER NOTES : ---  
RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

BACKUP LAMP PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
01#	286.7	274.0	1.046	
02#	260.9	248.5	1.050	

BACKUP LAMP PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE XII of FMVSS No. 108)									
GROUP NUMBER	TEST POINT (degrees)		MAXIMUM PHOTOMETRIC INTENSITY (cd)  ANY SINGLE LAMP	TWO LAMP SYSTEM -EACH LAMP			MEASURED		
				MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(4)</sup> (cd)			GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
				Required Minimum	Measured		Required Minimum	Measured	
					01#	02#		01#	02#
1 <sup>(2)(3)</sup>	45L	5U	300	15	25.26	37.16	45	88.36	110.39
		H	300	15	27.16	36.87			
		5D	-	15	35.94	36.36			
2 <sup>(2)(3)</sup>	30L	H	300	25	47.78	42.15	50	104.63	83.81
		5D	-	25	56.85	41.66			
3	10L	10U	300	10	219.84	182.58	100	1517.21	1241.39
		5U	300	20	246.21	226.04			
	V	10U	300	15	257.09	193.60			
		5U	300	25	262.63	249.14			
	10R	10U	300	10	261.38	172.39			
		5U	300	20	270.06	217.64			
4	10L	H	300	50	280.74	231.19	360	1635.13	1403.83
		5D	-	50	273.83	228.46			
	V	H	300	80	286.70	260.90			
		5D	-	80	269.12	241.48			
	10R	H	300	50	255.41	228.88			
		5D	-	50	269.33	212.92			
5 <sup>(2)(3)</sup>	30R	H	300	25	86.39	53.19	50	173.09	94.41
		5D	-	25	86.70	41.22			
6 <sup>(2)(3)</sup>	45R	5U	300	15	39.97	29.83	45	119.76	89.68
		H	300	15	40.12	31.00			
		5D	-	15	39.67	28.85			



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

BACKUP LAMP PHOTOMETRIY RESULT AFTER 30 MINUTES OF OPERATION(TABLE XII of FMVSS No. 108)

GROUP NUMBER	TEST POINT (degrees)		MAXIMUM PHOTOMETRIC INTENSITY (cd) ANY SINGLE LAMP	TWO LAMP SYSTEM -EACH LAMP			MEASURED		
				MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(4)</sup> (cd)			GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
				Required Minimum	Measured		Required Minimum	Measured	
					01#	02#		01#	02#
1 <sup>(2)(3)</sup>	45L	5U	300	15	24.14	35.39	45	84.45	105.14
		H	300	15	25.96	35.12			
		5D	-	15	34.35	34.63			
2 <sup>(2)(3)</sup>	30L	H	300	25	45.66	40.15	50	99.99	79.83
		5D	-	25	54.33	39.68			
3	10L	10U	300	10	210.10	173.90	100	1450.00	1182.40
		5U	300	20	235.30	215.30			
	V	10U	300	15	245.70	184.40			
		5U	300	25	251.00	237.30			
	10R	10U	300	10	249.80	164.20			
		5U	300	20	258.10	207.30			
4	10L	H	300	50	268.30	220.20	360	1562.70	1337.10
		5D	-	50	261.70	217.60			
	V	H	300	80	274.00	248.50			
		5D	-	80	257.20	230.00			
	10R	H	300	50	244.10	218.00			
		5D	-	50	257.40	202.80			
5 <sup>(2)(3)</sup>	30R	H	300	25	82.56	50.66	50	165.42	89.92
		5D	-	25	82.86	39.26			
6 <sup>(2)(3)</sup>	45R	5U	300	15	38.20	28.41	45	114.45	85.42
		H	300	15	38.34	29.53			
		5D	-	15	37.91	27.48			



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

## **SECTION 4) PHOTOMETRY(CONTINUED)**

TEST COMPONENT : LF733(Smoke Lens) (Backup lamp)  
SAMPLE No : 03#, 04#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE :  
- NUMBER OF COMPARTMENTS : 1  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : N/A

TEST PERFORMED BY : Cao Wei  
DATE : April 20, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m  
BULB TRADE NO. :  
TEST VOLTAGE : 12.8V  
AIM NOTES : Reference center refer to the drawing on last page  
OTHER NOTES : ---  
RESULTS : PASS





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

BACKUP LAMP PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
03#	250.7	239.0	1.049	
04#	204.3	194.0	1.053	

BACKUP LAMP PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE XII of FMVSS No. 108)									
GROUP NUMBER	TEST POINT (degrees)		MAXIMUM PHOTOMETRIC INTENSITY (cd) ANY SINGLE LAMP	TWO LAMP SYSTEM -EACH LAMP			MEASURED		
				MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(4)</sup> (cd)			GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
				Required Minimum	Measured		Required Minimum	Measured	
					03#	04#		03#	04#
1 <sup>(2)(3)</sup>	45L	5U	300	15	21.33	17.92	45	63.82	53.79
		H	300	15	22.22	18.16			
		5D	-	15	20.27	17.71			
2 <sup>(2)(3)</sup>	30L	H	300	25	62.54	48.11	50	118.22	94.70
		5D	-	25	55.68	46.59			
3	10L	10U	300	10	171.29	120.47	100	1256.64	823.29
		5U	300	20	238.43	149.22			
	V	10U	300	15	202.66	123.21			
		5U	300	25	219.86	168.28			
	10R	10U	300	10	186.08	109.10			
		5U	300	20	238.32	153.01			
4	10L	H	300	50	246.92	150.17	360	1457.10	1015.71
		5D	-	50	234.55	177.13			
	V	H	300	80	250.70	204.30			
		5D	-	80	238.53	175.66			
	10R	H	300	50	245.46	157.12			
		5D	-	50	240.94	151.33			
5 <sup>(2)(3)</sup>	30R	H	300	25	66.34	56.57	50	132.77	111.60
		5D	-	25	66.43	55.03			
6 <sup>(2)(3)</sup>	45R	5U	300	15	19.81	19.20	45	60.12	58.43
		H	300	15	20.33	19.64			
		5D	-	15	19.98	19.59			



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

BACKUP LAMP PHOTOMETRIY RESULT AFTER 30 MINUTES OF OPERATION(TABLE XII of FMVSS No. 108)

GROUP NUMBER	TEST POINT (degrees)		MAXIMUM PHOTOMETRIC INTENSITY (cd) ANY SINGLE LAMP	TWO LAMP SYSTEM -EACH LAMP			MEASURED		
				MINIMUM PHOTOMETRIC INTENSITY <sup>(1)(4)</sup> (cd)			GROUP MINIMUM PHOTOMETRIC INTENSITY (cd)		
				Required Minimum	Measured		Required Minimum	Measured	
					03#	04#		03#	04#
1 <sup>(2)(3)</sup>	45L	5U	300	15	20.33	17.02	45	60.83	51.08
		H	300	15	21.18	17.24			
		5D	-	15	19.32	16.82			
2 <sup>(2)(3)</sup>	30L	H	300	25	59.62	45.68	50	112.70	89.92
		5D	-	25	53.08	44.24			
3	10L	10U	300	10	163.30	114.40	100	1198.00	781.80
		5U	300	20	227.30	141.70			
	V	10U	300	15	193.20	117.00			
		5U	300	25	209.60	159.80			
	10R	10U	300	10	177.40	103.60			
		5U	300	20	227.20	145.30			
4	10L	H	300	50	235.40	142.60	360	1389.10	964.50
		5D	-	50	223.60	168.20			
	V	H	300	80	239.00	194.00			
		5D	-	80	227.40	166.80			
	10R	H	300	50	234.00	149.20			
		5D	-	50	229.70	143.70			
5 <sup>(2)(3)</sup>	30R	H	300	25	63.24	53.72	50	126.57	105.98
		5D	-	25	63.33	52.26			
6 <sup>(2)(3)</sup>	45R	5U	300	15	18.89	18.23	45	57.32	55.48
		H	300	15	19.38	18.65			
		5D	-	15	19.05	18.60			



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY (CONTINUED)**

TEST COMPONENT : LF732 (Red lens) (Side Reflex Reflectors)  
SAMPLE No : 01#, 02#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE :  
- NUMBER OF COMPARTMENTS : ---  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : ---  
  
TEST PERFORMED BY : Cao Wei  
DATE : April 19, 2023  
  
PHOTOMETRIC TEST DISTANCE : 30.5 m  
BULB TRADE NO. : ---  
TEST VOLTAGE : ---  
AIM NOTES : Reference center refer to the drawing on last page  
OTHER NOTES : ---  
RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

**REFLEX REFLECTOR PHOTOMETRY REQUIREMENTS**  
 (TABLE XVI-a of FMVSS No. 108)

OBSERVATION ANGLE (degrees)	ENTRANCE ANGLE (degrees)	MINIMUM PHOTOMETRIC INTENSITY	Measurements	
		RED		
		(mcd/lx)	Sample 01#	Sample 02#
0.2	0	420	466.49	453.85
	10U	280	336.41	311.19
	10D <sup>(1)</sup>	280	320.32	313.26
	20L	140	179.89	160.63
	20R	140	185.38	175.21
1.5	0	6	30.79	28.34
	10U	5	5.29	9.17
	10D <sup>(1)</sup>	5	9.87	8.12
	20L	3	8.47	4.94
	20R	3	4.67	7.94

(1) Where reflex reflectors are mounted with their axis of reference less than 750 mm. above the road surface photometry requirements below 5° down may be met at 5° down rather than at the required specified downward angle.



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY(CONTINUED)**

TEST COMPONENT : LF733(Smoke Lens) (Side Reflex Reflectors)

SAMPLE No : 03#, 04#

FMVSS No. 108 REQUIREMENT :

VEHICLE TYPE/SIZE :

- NUMBER OF COMPARTMENTS : ---

- NUMBER OF LAMPS : 1

- NUMBER OF LIGHTED SECTIONS : ---

TEST PERFORMED BY : Cao Wei

DATE : April 20, 2023

PHOTOMETRIC TEST DISTANCE : 30.5 m

BULB TRADE NO. : ---

TEST VOLTAGE : ---

AIM NOTES : Reference center refer to the drawing on last page

OTHER NOTES : ---

RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

**REFLEX REFLECTOR PHOTOMETRY REQUIREMENTS**  
 (TABLE XVI-a of FMVSS No. 108)

OBSERVATION ANGLE (degrees)	ENTRANCE ANGLE (degrees)	MINIMUM PHOTOMETRIC INTENSITY	Measurements	
		RED		
		(mcd/lx)	Sample 03#	Sample 04#
0.2	0	420	441.20	457.70
	10U	280	308.10	306.45
	10D <sup>(1)</sup>	280	310.35	308.34
	20L	140	156.00	166.17
	20R	140	160.42	170.66
1.5	0	6	30.50	23.83
	10U	5	8.36	5.29
	10D <sup>(1)</sup>	5	9.98	7.89
	20L	3	5.29	5.03
	20R	3	6.30	8.03

(1) Where reflex reflectors are mounted with their axis of reference less than 750 mm. above the road surface photometry requirements below 5° down may be met at 5° down rather than at the required specified downward angle.



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY(CONTINUED)**

TEST COMPONENT : LF732(Red lens) (Rear Reflex Reflectors)

SAMPLE No : 01#, 02#

FMVSS No. 108 REQUIREMENT :

VEHICLE TYPE/SIZE :

- NUMBER OF COMPARTMENTS : ---

- NUMBER OF LAMPS : 1

- NUMBER OF LIGHTED SECTIONS : ---

TEST PERFORMED BY : Cao Wei

DATE : April 19, 2023

PHOTOMETRIC TEST DISTANCE : 30.5 m

BULB TRADE NO. : ---

TEST VOLTAGE : ---

AIM NOTES : Reference center refer to the drawing on last page

OTHER NOTES : ---

RESULTS : PASS





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

**REFLEX REFLECTOR PHOTOMETRY REQUIREMENTS**

(TABLE XVI-a of FMVSS No. 108)

OBSERVATION ANGLE (degrees)	ENTRANCE ANGLE (degrees)	MINIMUM PHOTOMETRIC INTENSITY	Measurements	
		RED	Sample 01#	Sample 02#
		(mcd/lx)		
0.2	0	420	459.20	463.84
	10U	280	322.36	317.77
	10D <sup>(1)</sup>	280	317.07	316.94
	20L	140	176.51	167.41
	20R	140	167.91	165.96
1.5	0	6	44.83	31.18
	10U	5	8.77	7.03
	10D <sup>(1)</sup>	5	6.68	6.49
	20L	3	5.87	6.65
	20R	3	6.51	5.10

(1) Where reflex reflectors are mounted with their axis of reference less than 750 mm. above the road surface photometry requirements below 5° down may be met at 5° down rather than at the required specified downward angle.



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY (CONTINUED)**

TEST COMPONENT : LF733(Smoke Lens) (Rear Reflex Reflectors)  
SAMPLE No : 03#, 04#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE :  
- NUMBER OF COMPARTMENTS : ---  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : ---  
  
TEST PERFORMED BY : Cao Wei  
DATE : April 20, 2023  
  
PHOTOMETRIC TEST DISTANCE : 30.5 m  
BULB TRADE NO. : ---  
TEST VOLTAGE : ---  
AIM NOTES : Reference center refer to the drawing on last  
page  
OTHER NOTES : ---  
RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

**REFLEX REFLECTOR PHOTOMETRY REQUIREMENTS**  
 (TABLE XVI-a of FMVSS No. 108)

OBSERVATION ANGLE (degrees)	ENTRANCE ANGLE (degrees)	MINIMUM PHOTOMETRIC INTENSITY	Measurements	
		RED		
		(mcd/lx)	Sample 03#	Sample 04#
0.2	0	420	446.47	445.23
	10U	280	308.05	307.77
	10D <sup>(1)</sup>	280	306.83	306.99
	20L	140	166.32	157.13
	20R	140	157.17	156.12
1.5	0	6	35.38	35.54
	10U	5	7.34	6.82
	10D <sup>(1)</sup>	5	6.55	6.19
	20L	3	5.70	7.35
	20R	3	6.42	4.85

(1) Where reflex reflectors are mounted with their axis of reference less than 750 mm. above the road surface photometry requirements below 5° down may be met at 5° down rather than at the required specified downward angle.



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

## **SECTION 4) PHOTOMETRY(CONTINUED)**

TEST COMPONENT : LF732 (Red Lens) (Side Marker Lamp)

SAMPLE No : 01#, 02#

FMVSS No. 108 REQUIREMENT :

VEHICLE TYPE/SIZE :

- NUMBER OF COMPARTMENTS : ---

- NUMBER OF LAMPS : 1

- NUMBER OF LIGHTED SECTIONS : ---

TEST PERFORMED BY : Cao Wei

DATE : April 19, 2023

PHOTOMETRIC TEST DISTANCE : 3.16 m

BULB TRADE NO. : ---

TEST VOLTAGE : 12.8V

AIM NOTES : Reference center refer to the drawing on last page

OTHER NOTES : ---

RESULTS : PASS



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

SIDE MARKER LAMPS PHOTOMETRY TEST RESULT UPON TIME ( AT H=0/V=0 POINT)				
SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
01#	3.594	3.455	1.040	
02#	3.023	2.871	1.053	

SIDE MARKER LAMPS PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION (TABLE X OF FMVSS No. 108)				
TEST POINT (degrees)		MINIMUM PHOTOMETRIC INTENSITY <sup>(2)</sup> (cd)	Measurements	
		RED LAMPS	Sample 01#	Sample 02#
10U	45L <sup>(1)</sup>	0.25	13.107	1.107
	V	0.25	4.060	3.386
	45R <sup>(1)</sup>	0.25	1.752	17.205
H	45L <sup>(1)</sup>	0.25	12.389	1.189
	V	0.25	3.594	3.023
	45R <sup>(1)</sup>	0.25	1.794	15.215
10D <sup>(3)</sup>	45L <sup>(1)</sup>	0.25	11.931	1.165
	V	0.25	3.901	3.447
	45R <sup>(1)</sup>	0.25	1.752	13.278



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

**SIDE MARKER LAMPS PHOTOMETRY RESULT AFTER 30 MINUTES OF OPERATION  
(TABLE X OF FMVSS No. 108)**

TEST POINT (degrees)		MINIMUM PHOTOMETRIC INTENSITY <sup>(2)</sup> (cd)	Measurements	
			RED LAMPS	Sample 01#
10U	45L <sup>(1)</sup>	0.25	12.600	1.051
	V	0.25	3.903	3.216
	45R <sup>(1)</sup>	0.25	1.684	16.340
H	45L <sup>(1)</sup>	0.25	11.910	1.129
	V	0.25	3.455	2.871
	45R <sup>(1)</sup>	0.25	1.725	14.450
10D <sup>(3)</sup>	45L <sup>(1)</sup>	0.25	11.470	1.106
	V	0.25	3.750	3.274
	45R <sup>(1)</sup>	0.25	1.684	12.610



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

#### **SECTION 4) PHOTOMETRY (CONTINUED)**

TEST COMPONENT : LF733 (Smoke Lens) (Side Marker Lamp)  
SAMPLE No : 03#, 04#  
FMVSS No. 108 REQUIREMENT :  
VEHICLE TYPE/SIZE :  
- NUMBER OF COMPARTMENTS : ---  
- NUMBER OF LAMPS : 1  
- NUMBER OF LIGHTED SECTIONS : ---  
  
TEST PERFORMED BY : Cao Wei  
DATE : April 20, 2023  
  
PHOTOMETRIC TEST DISTANCE : 3.16 m  
BULB TRADE NO. : ---  
TEST VOLTAGE : 12.8V  
AIM NOTES : Reference center refer to the drawing on last  
page  
OTHER NOTES : ---  
RESULTS : PASS





**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

**SIDE MARKER LAMPS PHOTOMETRY TEST RESULT UPON TIME  
( AT H=0/V=0 POINT)**

SAMPLE NO.	TEST RESULT (unit: cd)		RATIO	REMARK
	1 MIN	30 MIN	1MIN/30MIN	
03#	3.729	3.547	1.051	
04#	2.816	2.669	1.055	

**SIDE MARKER LAMPS PHOTOMETRY RESULT AFTER 1 MINUTE OF OPERATION  
(TABLE X OF FMVSS No. 108)**

TEST POINT (degrees)		MINIMUM PHOTOMETRIC INTENSITY <sup>(2)</sup> (cd)	Measurements	
		RED LAMPS	Sample 03#	Sample 04#
10U	45L <sup>(1)</sup>	0.25	13.709	1.226
	V	0.25	1.790	1.825
	45R <sup>(1)</sup>	0.25	1.181	16.164
H	45L <sup>(1)</sup>	0.25	13.488	2.311
	V	0.25	3.729	2.816
	45R <sup>(1)</sup>	0.25	2.256	15.615
10D <sup>(3)</sup>	45L <sup>(1)</sup>	0.25	13.572	2.275
	V	0.25	2.652	1.770
	45R <sup>(1)</sup>	0.25	1.197	15.552



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

**SIDE MARKER LAMPS PHOTOMETRY RESULT AFTER 30 MINUTES OF OPERATION  
(TABLE X OF FMVSS No. 108)**

TEST POINT (degrees)		MINIMUM PHOTOMETRIC INTENSITY <sup>(2)</sup> (cd)	Measurements	
			RED LAMPS	Sample 03#
10U	45L <sup>(1)</sup>	0.25	13.040	1.162
	V	0.25	1.703	1.730
	45R <sup>(1)</sup>	0.25	1.123	15.320
H	45L <sup>(1)</sup>	0.25	12.830	2.190
	V	0.25	3.547	2.669
	45R <sup>(1)</sup>	0.25	2.146	14.800
10D <sup>(3)</sup>	45L <sup>(1)</sup>	0.25	12.910	2.156
	V	0.25	2.523	1.678
	45R <sup>(1)</sup>	0.25	1.139	14.740



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**  
**Reference standard: FMVSS 571.108**  
**Report number: AT23XX1D66621, Date: April 26, 2023**

## SECTION 5) PHYSICAL TESTS

### VIBRATION TEST

	YES	NO
Devices completed test without evidence of material physical weakness or failure of parts which affects proper function	✓	
No evidence of lens or reflector rotation which affects proper function	✓	
Necessary to rephotometer test		✓
Additional photometric Data Sheet added to report		✓

### MOISTURE TEST

	YES	NO
Devices accumulated less than 2 cc of Moisture	✓	

### DUST TEST

	YES	NO
At completion of test, Max Candlepower Readings of Devices were within 10% of those prior to Dust Test	✓	
Necessary to rephotometer test		✓
Additional photometric Data Sheet added to report		✓

### CORROSION TEST

	YES	NO
Device completed test without evidence of Corrosion	✓	
Necessary to rephotometer test		✓
Additional photometric Data Sheet added to report		✓

### PLASTIC OPTICAL MATERIAL TEST

	YES	NO
Device completed test and meets applicable performance requirements specified in Appendix H of this test procedure		✓



**Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)**

**Reference standard: FMVSS 571.108**

**Report number: AT23XX1D66621, Date: April 26, 2023**

## **SECTION 6) PHOTOGRAPHS OF TEST SAMPLE**

Variant A: LF732 (Red Lens)

**FRONT VIEW**



**SIDE VIEW**



**REAR VIEW**



## SECTION 6) PHOTOGRAPHS OF TEST SAMPLE (CONTINUED)

Variant B: LF733 (Smoke Lens)

FRONT VIEW



SIDE VIEW



REAR VIEW



Subjects: Rear Group Lamp (Stop, Tail, Rear Turn Signal Lamp, Backup Lamp, Side Marker Lamp, Side Reflex Reflectors, Rear Reflex Reflectors)

Reference standard: FMVSS 571.108

Report number: AT23XX1D66621, Date: April 26, 2023

## SECTION 7) DRAWINGS

