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## TEST REPORT 160217-3212891

Report Date: 17 February 2016

Test Component: ABC Marketing 3212891 Amber 4-LED  
Clearance/Sidemarkers/ID lamp (P2) with reflex (A)

Devices Tested: Three (3) each submitted 03 February 2016

### Test Summary (FMVSS-108)

#### Photometric Tests - Marker Lamp

SAE J592e (Marker Lamp - P2)	PASSED
SAE J594f (Reflector-A)	PASSED

Mechanical Tests per SAE J575e	PASSED
Color Tests per SAE J578c	PASSED
Socket Tests per SAE J567b	Not Applicable
Dimensional Tests	Not Applicable

Signature of responsible engineer:

Gary I. Robin

## DESCRIPTION SHEET

Device Name: ABC Marketing 3212891 Amber 4-LED  
Clearance/Sidemarker/ID lamp (P2) with reflex (A)

### Markings:

Lens: "DOT SAE AP298"  
Housing: None

### Lens:

Material: PMMA (Amber)

### Housing:

Material: ABS (White)

BULB	FUNCTION	QUANTITY	VOLTAGE
LED	P2 (Amber)	4	14V

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Lens complies with SAE J576 JUL 91 requirements as specified in FMVSS 108.

## TEST RESULT SHEET

Device Name: ABC Marketing 3212891 Amber 4-LED  
Clearance/Sidemarker/ID lamp (P2) with reflex (A)

### Photometric Tests:

Specification(s): FMVSS-108 (SAE J592e)  
Tests performed by: Gary I. Robin

Results: Meets requirements at all points for:

SAE J592e (Marker Lamp – P2)  
SAE J594f (Reflector-A)

Test distance: 3.16 M

Photometry test voltage: 14.0V

### Lens area requirements:

Lamp is a marker lamp.  
Lens Area requirements are not applicable.

### Bulb socket requirements – SAE J567b:

The bulb socket requirements are not applicable because the lamp is a sealed unit with LEDs.

## TEST RESULT SHEET

Device Name: ABC Marketing 3212891 Amber 4-LED  
Clearance/Sidemarkers/ID lamp (P2) with reflex (A)

Mechanical tests: SAE J575e  
Test performed by: Gary I. Robin  
Sample: 2

### Vibration test (Shock test).

There was no evidence of material physical weakness, lens or reflector rotation, displacement or rupture of components.  
LEDs were not damaged.

PASSED

### Moisture Test:

Lamp had 0cc of moisture accumulation inside of its cavity ( $\leq 2$ cc required).

PASSED

### Dust Test:

No dust was found on the interior surfaces of the device.  
The maximum candlepower after external cleaning was at least 100% of the HV candlepower prior to exposure.

NOT REQUIRED

### Corrosion Test:

There was no evidence of excessive corrosion which would affect the proper functioning of the device.

NOT REQUIRED

### Thermal Test:

There was no evidence of reduced function from temperature or humidity.

PASSED

PASSED

### Durability Test:

PASSED

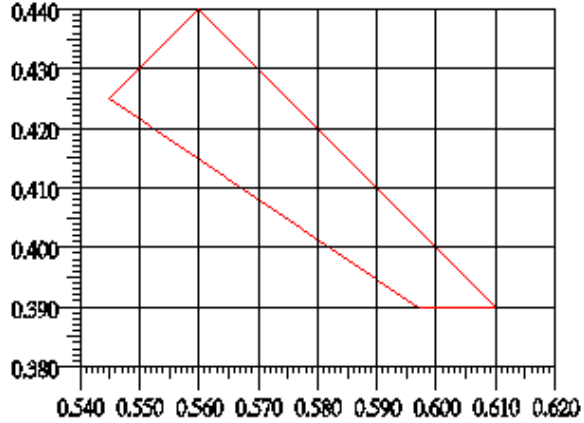
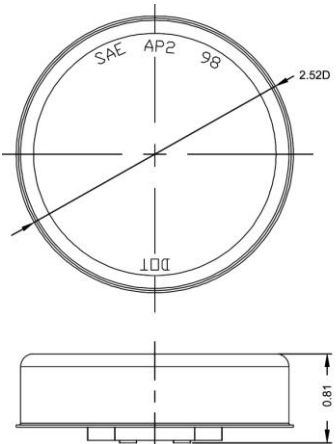
### LED Life Test:

Lamp is not blinking, blackening or shutting off after 1000 hrs.

PASSED

## TEST DATA SHEET

Device Name: ABC Marketing 3212891 Amber 4-LED  
Clearance/Sidemarkers/ID lamp (P2) with reflex (A)

Test Item	Chroma Test per SAE J578C
Test Date	17 February 2016
Equipment	power Supply, chroma Meter
<p>Test Condition :</p> <p>1. 23~28° C</p> <p>2. Voltage: 14.00 V.</p>	
<p>Test Method :</p> <p>Mount specimen on tooling, chroma test at a distance of 1.5 m using CIE fixture.</p>	
<p>Determined Standard :</p> <p><math>Y \geq 0.39</math> ( red boundary )</p> <p><math>Y \geq 0.79 - 0.67X</math> (white boundary)</p> <p><math>Y \leq X - 0.12</math> ( green boundary )</p>	
<p>Test Result :</p> <p>1. <math>X=0.577</math> <math>Y=0.422</math></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;">   </div>	

Result: PASSED SAE J578C color test

By:

*Say / Parbini*

## PHOTOMETRIC TEST DATA SHEET

Device Name: ABC Marketing 3212891 Amber 4-LED  
Clearance/Sidemarkers/ID lamp (P2) with reflex (A)

Sample number: 1

Specification :  
SAE J592e (Amber Clearance, ID or Sidemarkers Lamp (P2))

Location	Measured CP	Required Min CP
10U 45L	4.15	0.62
10U V	1.81	0.62
10U 45R	3.66	0.62
H 45R	3.89	0.62
H V	1.93	0.62
H 45L	3.87	0.62
10D 45L	3.77	0.62
10D V	2.04	0.62
10D 45R	3.64	0.62

Device meets SAE J592e P2 requirements at all points.

Voltage: 14.0 V (Device tested after 30 minute warm-up)  
Current: 30 mA

Aim: Lamp mounted perpendicular to HV

By:



## REFLECTOR TEST DATA SHEET

Device Name: ABC Marketing 3212891 Amber 4-LED  
Clearance/Sidemarkers/ID lamp (P2) with reflex (A)

Sample number: 1

Specification :  
SAE J594 Jan 77 Amber Automotive Reflector

OBS ANGLE (DEGREES)	ENTRANCE ANGLE (DEGREES)		CANDELLA PER FOOTCANDLE MEASURED	REQUIRED MIN
0.2	H	V	25.23	11.25
	10U	V	20.87	7.5
	10D	V	22.20	7.5
	H	20L	9.64	3.75
	H	20R	10.41	3.75
1.5	H	V	0.639	0.175
	10U	V	0.365	0.125
	10D	V	0.338	0.125
	H	20L	0.179	0.075
	H	20R	0.242	0.075

Device meets SAE J594 automotive reflector requirements at all points.

Reviewed and approved for submittal by:



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**Gary I. Robin**  
*Responsible Engineer*

February 17, 2016