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TEST REPORT 210304-1228862

Report Date: March 3, 2021
Test Component: ABC 1228862 18 LED Stop/Turn and Tail Lamp
Devices Tested: Three (3) each submitted February 23, 2021

Test Summary (FMVSS-108)

Photometric Tests – Stop/Turn and Tail Lamp

FMVSS 108 – Table IX – 3-Section Stop Lamp	PASSED
FMVSS 108 – Table VIII – 3-Section Tail Lamp	PASSED

Mechanical Tests per SAE J575e

Vibration	PASSED
Moisture	PASSED
Thermal	PASSED
Impact	PASSED
Durability	PASSED
LED Life	PASSED
Color (SAE J578c)	PASSED
Dimensional Tests	PASSED
Socket Tests per SAE J567b	Not Applicable

Signature of responsible engineer:

Gary I. Robin

DESCRIPTION SHEET

Test Component: ABC 1228862 18 LED Stop/Turn and Tail Lamp

Markings:

Lens: SAE DOT STI 20
Housing: None

Lens Information:

Material: Polycarbonate (red transparent)
Coating: None
Shape/Dimensions: 12-inch long strip
Method of attachment to housing: Vibration weld
Gasket: None

Housing:

Material: Polycarbonate (black)
Shape/Dimensions: 12-inch long strip
Method of attachment to lens: Vibration weld
Gasket: None

SOURCE	FUNCTION	QUANTITY	VOLTAGE
LED	I S T	18	12.8/14V

Note: lens complies with SAE J576 JUL 91 requirements as specified in FMVSS 108.

TEST RESULT SHEET

Test Component: ABC 1228862 18 LED Stop/Turn and Tail Lamp

MECHANICAL TESTS: SAE J575e

Sample: 2

Vibration test (Shock test).

There was no evidence of material physical weakness,
lens rotation, displacement or rupture of components.

LEDs were not damaged.

PASSED

Moisture Test:

Lamp had 0cc of moisture accumulation inside of its cavity
(≤ 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

Color Test:

PASSED

Impact Test:

PASSED

LED Life Test:

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

PASSED

FMVSS 108 – Table IX – 3-Section Stop Lamp

PASSED

FMVSS 108 – Table VIII – 3-Section Tail Lamp

PASSED

Tests reviewed by: Gary I. Robin

TEST RESULT SHEET

Test Component: ABC 1228862 18 LED Stop/Turn and Tail Lamp

PHOTOMETRIC TESTS

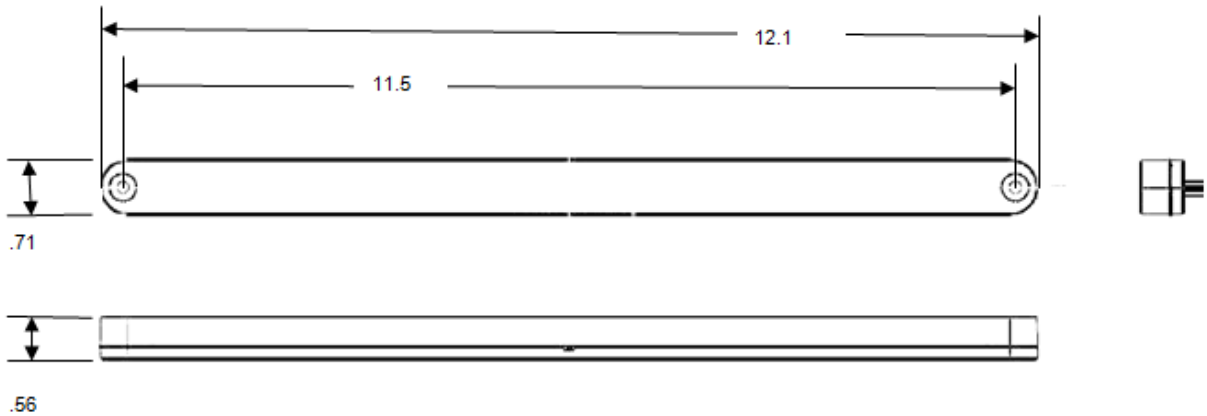
Specification(s): FMVSS 108 – Table IX – 3-Section Stop Lamp
FMVSS 108 – Table VIII – 3-Section Tail Lamp
SAE J578C chroma test.

Tests reviewed by: Gary I. Robin

Results: Meets requirements at all points and passes chroma test.

Note: The bulb socket requirements are not applicable because the lamp is a sealed unit.

OUTLINE DRAWING



PHOTOMETRIC TEST DATA SHEET

Test Component: ABC 1228862 18 LED Stop/Turn and Tail Lamp
Sample: 3
Specification: FMVSS 108-Table IX, 3 section Stop Lamp
Test Distance: 25M
Units: cd
Test Voltage: 12.80 Volts
Test Current: 280 mAmps
Test Power: 3.58 Watts
Aim: Lamp mounted perpendicular to HV

LUMINOUS INTENSITY, CANDELLA

<u>TEST POINT</u>	<u>MIN</u>	<u>MAX</u>	<u>MEASURED</u>
10U-5L	22	420	45.1
10U-5R	22	420	46.8
5U-20L	15	420	40.6
5U-10L	40	420	83.8
5U-V	95	420	88.1
5U-10R	40	420	90.6
5U-20R	15	420	36.4
H-10L	55	420	81.4
H-5L	110	420	148.7
HV	110	420	148.7
H-5R	110	420	142.3
H-10R	55	420	88.5
5D-20R	15	420	37.7
5D-10R	40	420	90.4
5D-V	95	420	156.5
5D-10L	40	420	89.2
5D-20L	15	420	47.3
10D-5L	22	420	65.6
10D-5R	22	420	62.0
GROUP 1	74		198.6
GROUP 2	135		254.4
GROUP 3	520		686.4
GROUP 4	135		269.5
GROUP 5	74		183.9

Device meets requirements at all points.

PHOTOMETRIC TEST DATA SHEET

Test Component: ABC 1228862 18 LED Stop/Turn and Tail Lamp
Sample: 1
Specification: FMVSS 108 – Table VIII – Tail Lamp
Test Distance: 3.16M
Units: cd
Test Voltage: 14.00 Volts
Test Current: 30 mAmps
Test Power: 0.420 Watts
Aim: Lamp mounted perpendicular to HV

LUMINOUS INTENSITY, CANDELLA

<u>TEST POINT</u>	<u>MIN</u>	<u>MAX</u>	<u>MEASURED</u>
10U-5L	1	25	3.9
10U-5R	1	25	4.3
5U-20L	0.7	25	3.6
5U-10L	2	25	7.4
5U-V	4.5	25	8.7
5U-10R	2	25	7.4
5U-20R	0.7	25	1.7
H-10L	2	25	7.4
H-5L	5	25	13.6
HV	5	25	13.7
H-5R	5	25	12.9
H-10R	2	25	8.1
5D-20R	0.7		3.5
5D-10R	2		8.3
5D-V	4.5		14.3
5D-10L	2		8.0
5D-20L	0.7		4.3
10D-5L	1		5.8
10D-5R	1		6.0
GROUP 1	3.4		17.6
GROUP 2	6		22.8
GROUP 3	24		62.5
GROUP 4	6		24.5
GROUP 5	3.4		17.1

Device meets requirements at all points.

Reviewed and approved for submittal by:

A handwritten signature in black ink that reads "Gary I. Robin". The signature is written in a cursive style with a large initial "G".

Gary I. Robin
Responsible Engineer

March 3, 2021