



INDUSTRIAL TESTING LABORATORY

Report Number: 220207-01C

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TEST REPORT

Report Date: 23 February 2022

Project Name: Morimoto BAF005 LED Front Fog Lamp (SAE F)

Submitted by: Morimoto Lighting
Atlanta, GA 30318

Test Laboratory: Calcoast - ITL
San Leandro, CA 94577

Number of
Devices Submitted: Three (3) submitted 07 February 2022

SUMMARY

TESTS (SAE J583)

Lens Material (SAE J576 AUG2017).....Unknown

Photometric Tests -

SAE J583 MAY2020 Figure 1 (Type F)Passed

Mechanical Tests - SAE J575 AUG2018 (Referenced by SAE J583)

- 4.2 Vibration TestNot Tested
- 4.3 Impact TestNot Applicable
- 4.4 Abrasion Test of Plastic Lamp Lens MaterialNot Tested
- 4.6 Thermal Cycle TestNot Tested
- 4.7 Internal Heat TestNot Tested
- 4.9 Water Intrusion (Moisture) TestNot Tested
- 4.10 Humidity TestNot Tested
- 4.11 Dust Exposure TestNot Tested
- 4.12 Corrosion TestNot Tested
- 4.14 Chemical Resistance TestNot Tested

Mechanical Tests - SAE J1383 MAY2018 (Referenced by SAE J583)

5.4 Aiming Adjustment TestPassed

Aimability Test - Canada MVSR 108 MAR2018.....Passed

Color Tests - SAE J578 APR2020.....Passed

Prepared and Authorized by:

Mark A. Evans
Laboratory Director

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DESCRIPTION SHEET

Project Name: Morimoto BAF005 LED Front Fog Lamp (SAE F)

MARKINGS:

LENS: None
 REFLECTOR: N/A
 HOUSING: "M" logo

PARTS DESCRIPTION:

LENS:
 MATERIAL: Clear Polycarbonate
Lens material formulation, pigment, and coating must comply with SAE J576 AUG2017 3 year weathering requirements.

METHOD OF ATTACHMENT: Unknown

HOUSING:

MATERIAL: Metal
 METHOD OF MOUNTING: Swivel U-bracket to Vehicle Bracket P/N BAF046
 GASKET: N/A

BULB USED:	FUNCTION	QUANTITY	TRADE NO.	VOLTAGE	POWER	FLUX
	F	LED	Unknown	13.2V	15.6W	-

PHOTOMETRY SUMMARY SHEET

Project Name: Morimoto BAF005 LED Front Fog Lamp (SAE F)

PHOTOMETRIC TESTS

Specification(s): SAE J583 MAY2020

Tests performed by: MAE

Date: 21-22 February 2022

Meets requirements at all points for:
SAE J583 MAY2020 (Foglamp), Type F

Lamp mounted on CCITL universal test fixture with fixture placed on level goniometer such that the LED Array was located at the center of rotation and center of tilt.

Lens face aligned perpendicular to HV using a mirror and laser.

Reference detector control number: NIST P181-2

Test distance: 100 feet

Device uses LED source.

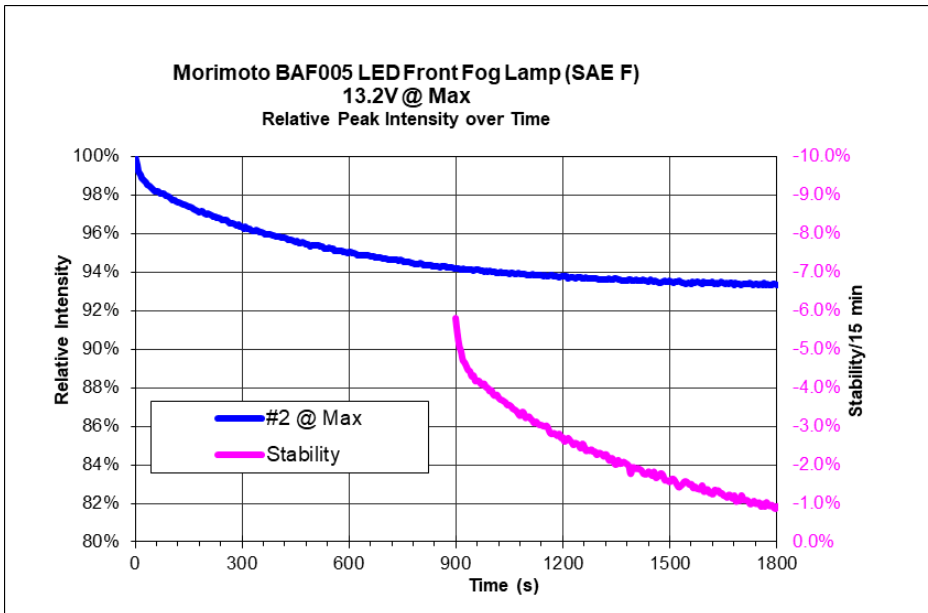
Initial photometry samples seasoned for 10 hours prior to testing.

Lamp is voltage insensitive from 12.0V - 14.0V.

Photometry tests performed at 13.2V.

The manufacturer specified that the lamp shall be mounted on a vehicle with a pitch of $\pm 4.0^\circ$.

TIMELOGS:



Sample required 20+ minute stabilization period (<3%/15 min).

TEST DATA SHEET

Project Name: Morimoto BAF005 LED Front Fog Lamp (SAE F)

COLOR TEST:

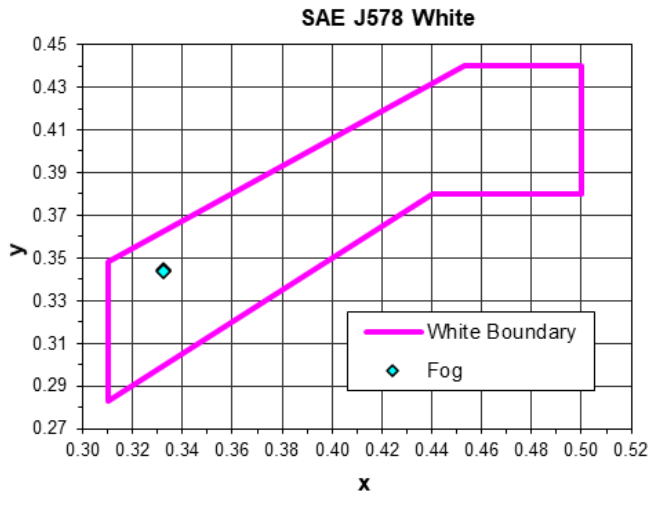
Requirement: SAE J578 APR2020

Test Method: Tristimulus Method (Average of 3 reads)

Instrument: Photo Research PR-655 Spectroradiometer with SRS-3 Target

Voltage: 13.2V

Location: 2.5°D/V

Measured (x,y)				Required & Chart
Fog 13.2V 2.5°D/V	#2, t=0	0.3323	0.3441	$0.31 \leq x \leq 0.50$ $0.38 \leq y \leq 0.44$ $y \geq 0.75x + 0.05$ $y \leq 0.64x + 0.15$
	#2, t=30	0.3323	0.3437	 <p>The chart, titled 'SAE J578 White', plots chromaticity coordinates x and y. The x-axis ranges from 0.30 to 0.52, and the y-axis ranges from 0.27 to 0.45. A magenta line represents the 'White Boundary', which is a closed polygon with vertices at approximately (0.31, 0.35), (0.31, 0.44), (0.50, 0.44), (0.50, 0.38), and (0.31, 0.38). A blue diamond represents the 'Fog' data point, located at approximately (0.3323, 0.3437). The fog point is clearly within the white boundary.</p>

The color of the light emitted through the clear lens falls within the acceptable limits for white at all times.

PHOTOMETRIC TEST DATA SHEET

Project Name: Morimoto BAF005 LED Front Fog Lamp (SAE F)

Sample Number: #2

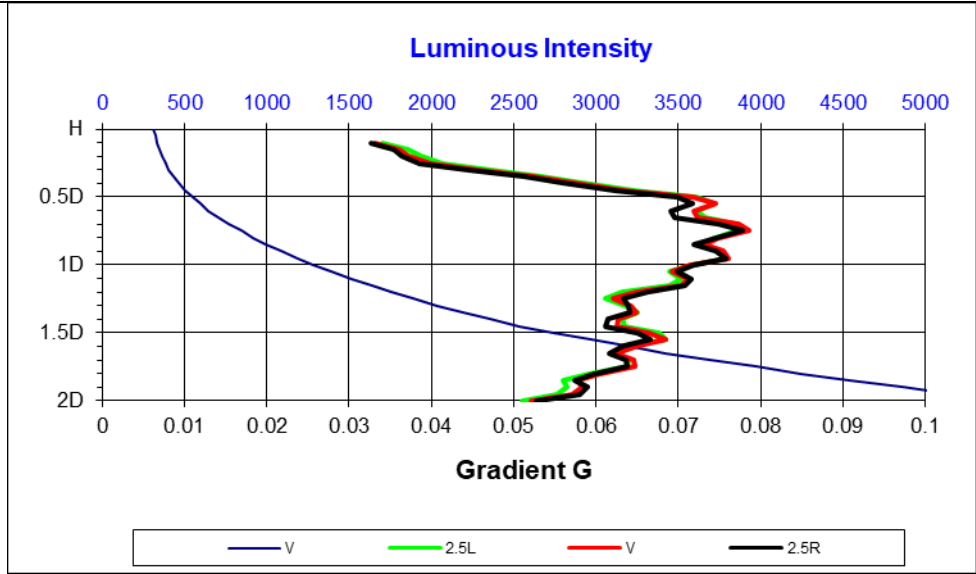
Aim (SAE J583 MAY2020)

#2		
Maximum Vertical Gradient		
Location	Value	Require
0.75D/2.5L	0.077	≥ 0.08
0.75D/V	0.079	
0.75D/2.5R	0.078	

Plot of Glog demonstrates a well-defined single peak.

Horizontal width of cutoff is greater than $\pm 2.5^\circ$ centered at V-V.

Maximum inclination of cutoff is within $\pm 0.2^\circ$.



PHOTOMETRIC TEST DATA SHEET

Project Name: Morimoto BAF005 LED Front Fog Lamp (SAE F)

Sample Number: #2 aimed 0.75°D

Specification: SAE J583 MAY2020 Figure 1 (Type F Front Fog Lamp)

Color: White

Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
2.0U 15.0L TO 15.0R	1.2R	160.89		-	295
1.0U 15.0L TO 15.0R	1.6R	200.90		-	435
H 10.0L TO 10.0R	1.7R	317.81		-	585
H V		315.15		-	-
1.5D 9.0L		2938.12		1200	-
1.5D 3.0L		2816.22		2400	12000
1.5D 3.0R		2693.70		2400	12000
1.5D 9.0R		2403.37		1200	-
3.0D 15.0L		9563.87		1200	-
3.0D 15.0R		8731.11		1200	-
MX(10U-60U/15L-15R)	17.5U 4.2L	80.57		-	150
MAXIMUM	4.0D 0.3L	14470.19		-	-

Sample meets test requirements at all points.

Applied Voltage: 13.20V / 1.183A after 30 minute warmup per SAE J1889

Multiply above values by 1.05 to acquire t = 1 minute values.

Aim: Sample mounted on CCITL universal fixture.

Fixture mounted on level goniometer with LED Array at goniometer center of rotation and tilt. Device aimed L/R using a laser and mirror over lens face.

Adjusted lamp aim hardware until max gradient Gmax located at 0.75°D/V (SAE J583 Type F Aim).

TEST DATA SHEET

Project Name: Morimoto BAF005 LED Front Fog Lamp (SAE F)

MECHANICAL TESTS (SAE J1383 MAY2018 & MVSR 108 JUL2018)

Tests performed by: MAE

Date: 22 February 2022

5.4 Aiming Adjustment Test: Passed
 Sample Numbers: #2

The manufacturer specified that the lamp shall be mounted on a vehicle with a pitch of $\pm 4.0^\circ$.

Calcoast-ITL test utilizes the Z-up vehicle axis system.

The lamp was mounted on the goniometer in 0° position and aimed using SAE J583 methodology.

The goniometer was then adjusted vertically $\pm 4^\circ$.

The lamp aim hardware was adjusted $\pm 4^\circ$ vertically to compensate goniometer shift.

The horizontal change in position of the maximum was recorded for each vertical extreme.

The change in horizontal position did not exceed 0.76° at the extreme aim positions.

Change in Horizontal Position		
	$+4^\circ$	-4°
Sample	Gonio Tilted Up Beam Aimed Down	Gonio Tilted Down Beam Aimed Up
#2	0°	0°

Aim Range Photometry

(MVSR 108 JUL2018) Passed
 Sample Numbers: #2

The foglamps allows aim adjustment of the vertical aim by one person to maintain the beam pattern of the lamp within the full range of vertical pitch of the vehicle, with the use of ordinarily available tools.

The housing and lens constitute a single unit that moves together for the full aim range without beam pattern modification.

Samples comply with SAE J1383 and Transport Canada aim adjustment test requirements.

PHOTOGRAPH SHEET

Project Name: Morimoto BAF005 LED Front Fog Lamp (SAE F)

