Report Number: 230405-09A

TEST REPORT

Report Date: 26 April 2023

Project Name: Morimoto BAF100(1 Chip) 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: One (1) submitted 05 April 2023

SUMMARY

TESTS (SAE J583)

Photometric Tests –
SAE J583 MAY2020 Cutoff Characteristics (6.2.5.1) .....**Failed**
SAE J583 MAY2020 Figure 1 (Type F) .....**Failed**

Color Tests - SAE J578 APR2020.....Passed
Lens Material - SAE J576 AUG2017.....Unknown
Mechanical Tests - SAE J575 APR2021.....Not Tested
Mechanical Tests - SAE J1383 MAY2018
5.4 Aiming Adjustment Test .....Not Tested
Aimability Test - Canada MVSR 108 MAR2018.....Not Tested

Prepared and Authorized by:

Mark A. Evans
Laboratory Director

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DESCRIPTION SHEET

Project Name: Morimoto BAF100(1 Chip) 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

GASKET: N/A

BULB USED:	FUNCTION	QUANTITY	TRADE NO.	VOLTAGE	MEASURED POWER	FLUX
	F	LED	Unknown	13.2V	14.5W	-

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PHOTOMETRY SUMMARY SHEET

Project Name: Morimoto BAF100(1 Chip) LED Front Fog Lamp (SAE F)

PHOTOMETRIC TESTS

Specification(s): SAE J583 MAY2020

Tests performed by: MAE Date: 24 April 2023

Does not meet cutoff characteristic requirements for:
SAE J583 MAY2020 (Foglamp)
Does not meet photometric 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.
Lamp face aligned perpendicular to HV using a mirror and laser prior to using aim hardware to adjust vertically.

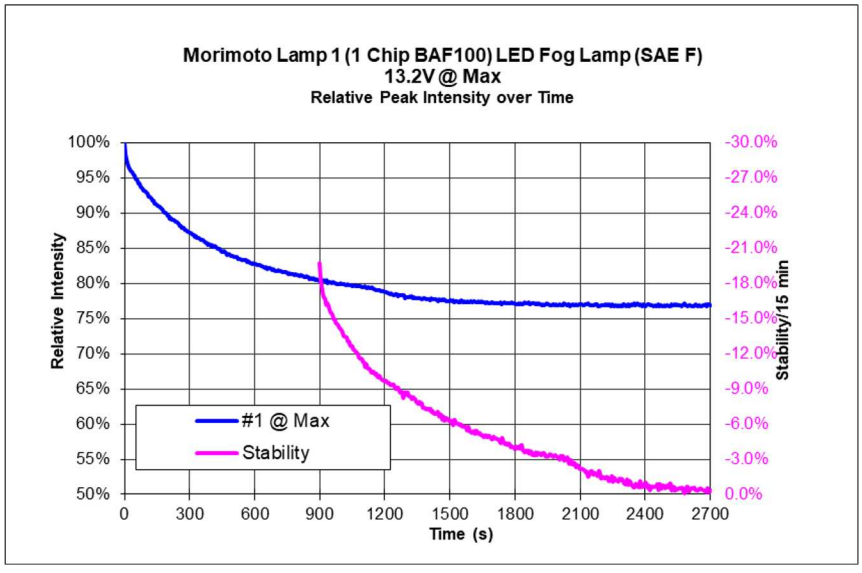
Reference detector control number: NIST P181-2

Test distance: 100 feet

Device uses LED source.
Initial photometry samples were seasoned by the manufacturer prior to testing.
Lamp is voltage insensitive from 12.0V – 14.0V.
Photometry tests performed at 13.2V.

The manufacturer did not specify whether the lamp shall be mounted on a vehicle with a pitch of ±4.0°.

TIMELOGS:



Sample required 30+ minute stabilization period (<3%/15 min).

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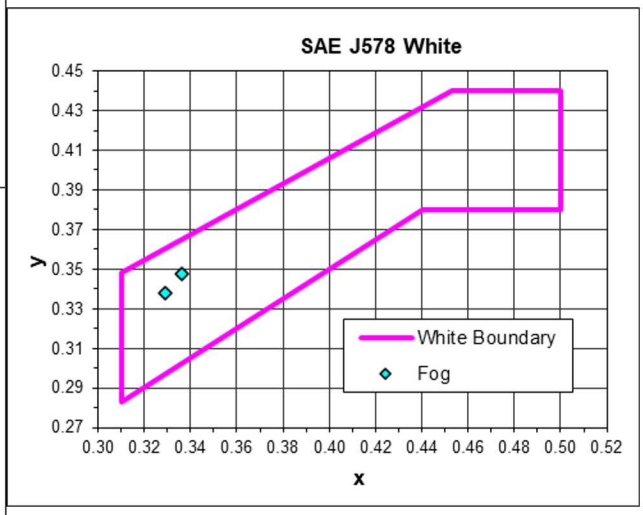
TEST DATA SHEET

Project Name: Morimoto BAF100(1 Chip) 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	#1, t=0	0.3291	0.3338	$0.31 \leq x \leq 0.50$ $0.38 \leq y \leq 0.44$ $y \geq 0.75x + 0.05$ $y \leq 0.64x + 0.15$
	#1, t=30	0.3365	0.3473	



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

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PHOTOMETRIC TEST DATA SHEET

Project Name: Morimoto BAF100(1 Chip) LED Front Fog Lamp (SAE F)

Sample Number: #1

Aim (SAE J583 MAY2020)

#1

Maximum Vertical Gradient

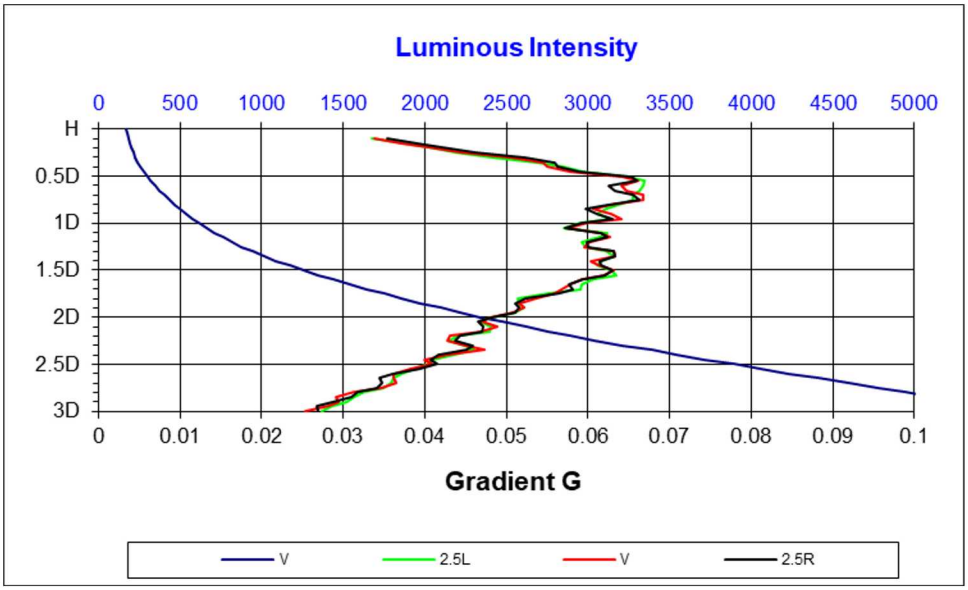
Location	Value	Require
0.55D/2.5L	0.067	≥ 0.08
0.75D/V	0.067	
0.75D/2.5R	0.066	

Maximum vertical gradient Glog is < 0.08 which constitutes a failure.

Plot of Glog **does not** demonstrates a well-defined single peak.

~~Horizontal width of cutoff is greater than ±2.5° centered at V-V.~~

~~Maximum inclination of cutoff is within ±0.2°.~~



SAE J583 MAY2020

6.2.5.1 Gradient - The lamp shall be designed to conform to the following requirements:

6.2.5.1.1 The maximum vertical gradient Glog along the V-V line as measured in Section 5.2.5.1 shall be ≥ 0.08.

6.2.5.1.2 The graphical plot of Glog vs. α in log10 units shall demonstrate a well-defined single peak.

6.2.5.1.3 The cutoff line shall be essentially flat from 2.5L to 2.5R. The vertical location of the highest gradient at the ends of the minimum width shall be within ± 0.2° of the vertical location of the maximum gradient measured at V-V.

Device **does not** meet 6.2.5.1 cutoff gradient criteria.

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PHOTOMETRIC TEST DATA SHEET

Project Name: Morimoto BAF100(1 Chip) LED Front Fog Lamp (SAE F)

Sample Number: 1 of 1, 0.75°D Aim

Specification: SAE J583 MAY2020 Figure 1 (Front Fog Lamp)
Color: White
Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
2.0U 15.0L TO 15.0R	1.8R	99.72		-	295
1.0U 15.0L TO 15.0R	2.0L	120.13		-	435
H 10.0L TO 10.0R	3.0R	165.61		-	585
H V		163.93		-	-
1.5D 9.0L		1054.45	1508.88	1200	-
1.5D 3.0L		1175.77	1651.36*	2400	12000
1.5D 3.0R		1201.99	1683.62*	2400	12000
1.5D 9.0R		1308.35		1200	-
3.0D 15.0L		4713.95		1200	-
3.0D 15.0R		5703.08		1200	-
MX(10U-60U/15L-15R)	10.0U 2.2R	35.17		-	150
MAXIMUM	4.4D 7.6R	8187.52		-	-
	4.5D 4.6L	8282.53		-	-

*** - Denotes Failure.**

Applied Voltage: 13.20V / 1.098A after stabilization warmup
Multiply above values by 1.231 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 housing Adjusted lamp aim hardware until max gradient Gmax located at 0.75°D/V

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PHOTOMETRIC TEST DATA SHEET

Project Name: Morimoto BAF100(1 Chip) LED Front Fog Lamp (SAE F)

Sample Number: 1 of 1, 0.50°D Aim

Specification: SAE J583 MAY2020 Figure 1 (Front Fog Lamp)
Color: White
Luminous Intensity, Candela

Test Point	Location	Measured	Reaim	Minimum	Maximum
2.0U 15.0L TO 15.0R	1.9R	104.66		-	295
1.0U 15.0L TO 15.0R	2.4R	127.92		-	435
H 10.0L TO 10.0R	10.0R	207.13		-	585
H V		204.02		-	-
1.5D 9.0L		1536.64		1200	-
1.5D 3.0L		1672.93	2254.86*	2400	12000
1.5D 3.0R		1698.48	2286.80*	2400	12000
1.5D 9.0R		1850.64		1200	-
3.0D 15.0L		5395.09		1200	-
3.0D 15.0R		6292.72		1200	-
MX(10U-60U/15L-15R)	10.0U 1.6R	36.75		-	150
MAXIMUM	4.3D 4.7L	8301.96		-	-
	4.2D 6.6R	8216.74		-	-

*** - Denotes Failure.**

Applied Voltage: 13.20V / 1.098A after stabilization warmup
Multiply above values by 1.231 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 housing. Adjusted lamp aim hardware until max gradient Gmax located at 0.5°D/V (one time aim allowance per 6.2.5.2).

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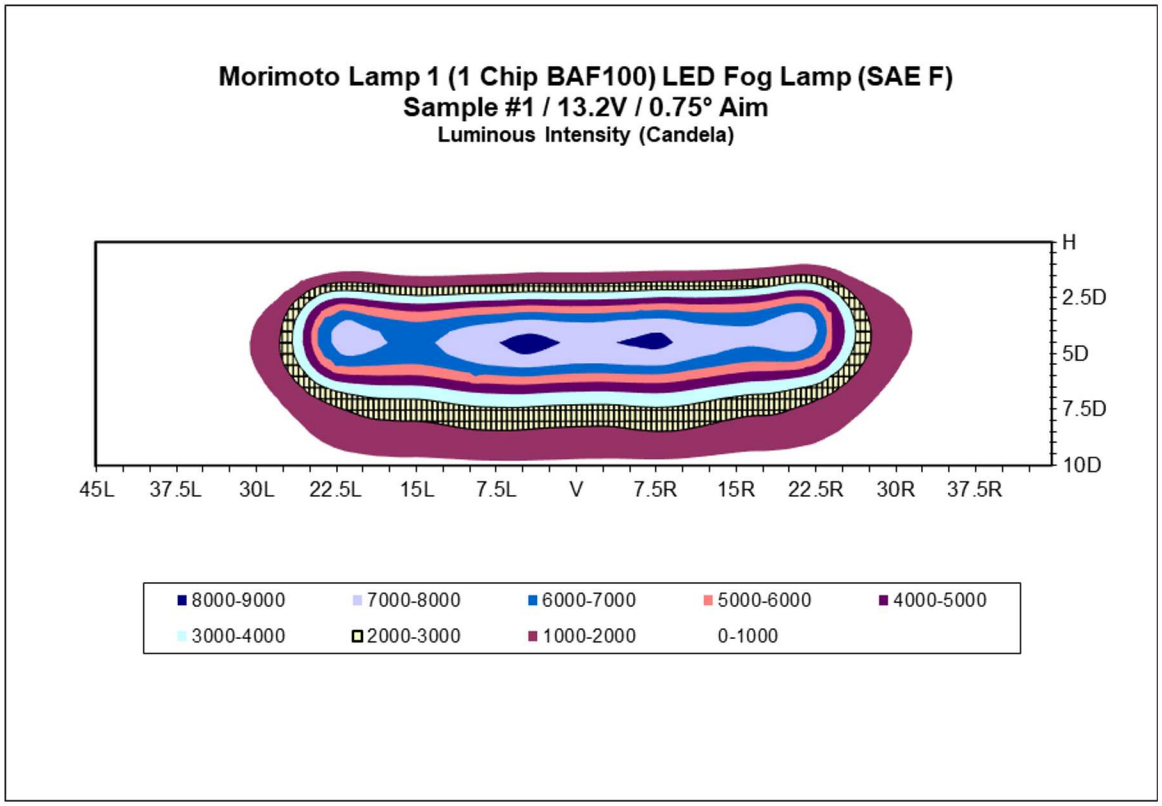
PHOTOMETRIC TEST DATA SHEET

Project Name: Morimoto BAF100(1 Chip) LED Front Fog Lamp (SAE F)

Sample Number: #1 aimed 0.75°D



Applied Voltage: 13.20V / 1.098A after stabilization warmup
Multiply above values by 1.231 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).

PHOTOGRAPH SHEET

Project Name: Morimoto BAF100(1 Chip) LED Front Fog Lamp (SAE F)