



AUTOMOTIVE MANUFACTURERS EQUIPMENT
COMPLIANCE AGENCY, INC.

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This notice verifies that the item described below has been tested by an accredited laboratory and has been found to be in compliance with the jurisdictional standard(s) listed below where applicable. The issuance of this AMECA Notice of Equipment Compliance™ does not denote or imply any endorsement or recommendation of the item described below. AMECA does not warranty or guaranty parts. Parts warranties/guaranties are between the buyer and seller and can vary by state and jurisdictions involved.

Notification Number: 211334

Test Report Date: August 24, 2021

Expiration Date: January 1, 2025

Item: "20-FD009/FD010" - Combination Parking, Headlamp, And Daytime Running Lamp With Reflex Reflector - White And Yellow In Color

Use: On 2015+ Model Years Ford Mustang Motor Vehicles

Jurisdictional Compliance Standard(S)

Identical To: United States FMVSS 571.108 Photometric Only

Markings	
Lens	Housing
LOGO DOT SAE HL A DRL P 19 VOL 20-FD009 (Or FD010)	12V


Light Source: Parking /Daytime Running Lamp: 39 LED's, 12.8V

Lower Beam Headlamp: 9 LED's, 12.8V

Upper Beam Headlamp: 9 LED's, 12.8V

Test Lab: ISOQA Technical Service Co., Ltd.

Report Number: 108-ISOQA-21-0086


Executive Director



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Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting



SAFETY COMPLIANCE TESTING FOR FMVSS 108

Lamps, Reflective Devices, and Associated Equipment

* * * * *

ISOQA Technical Service Co., Ltd.

60, Yong Long Road,
Da-Li, Taichung, 41257
Taiwan

TEST REPORT

- This report becomes effective when the signatory signs it and affixed the seal to the document.
- No part of this report may be altered and may not be reproduced except in full without the written approval of the test laboratory.
- The specification and basic data of this test report are provided by the applicant. The applicant shall be responsible for it if the information provided is incorrect and effects the test results.
- The test results only apply to the test sample(s) received.
- The test samples are selected and provided by the applicant. The laboratory does not responsible for implement sampling.



Signature of Responsible Laboratory Official

Title: Laboratory Manager

Approval Date

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

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Report Prepared By : Lisa Liu
 Review By : J.Y Pan
 Approval By : Arthur Chang

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

PRODUCT INFORMATION

Test Component	20-FD009/20-FD010
Applicant	Morimoto Lighting
Manufacturer	same as Applicant
Trade Mark	
Lens Material	CHIMEI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear \$
Coating of Exterior Lens	UVHC 3000
Inner Lens Material	CHIMEI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear \$
Reflex Reflector Material	CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE A-202 Yellow
Applicable Vehicle	FORD MUSTANG 2018+
Rated Voltage	12 V
Marking on Lens	RH: LOGO DOT SAE HL A DRL P 19 VOL 20-FD009 LH: DOT SAE HL A DRL P 19 VOL 20-FD010 LOGO
Marking on Housing	12V
Method of Mounting to Vehicle	bolted

* Above-mentioned information is provided by the applicant ('-' = not applicable or no information provided)

Functions	Parking Lamp	Headlamp - Lower Beam	Headlamp - Upper Beam	Daytime Running Lamp	Reflex Reflector		
Requirements	FMVSS 108 SAE J222	FMVSS 108	FMVSS 108	FMVSS 108 SAE J2087	FMVSS 108 SAE J594		
Identification Code of SAE J759	P	HL	HL	DRL	A		
Number of Compartments or Lamps	1	1	1	1	1		
Color of External Lens	Clear	Clear	Clear	Clear	Clear		
Color of Inner Lens or Filter	Clear	-	-	Clear	-		
Color of Light Emitted	White	White	White	White	Yellow		
Light Source Designation	LED × 39	LED × 9	LED × 9	LED × 39	N/A		
Design Voltage	12.8 V	12.8 V	12.8 V	12.8 V	N/A		
Rated Mean Spherical Candlepower	N/A	N/A	N/A	N/A	N/A		
Effective projected illuminated area of lens (mm ²)	N/A	N/A	N/A	11844	N/A		
Method of determination	N/A	N/A	N/A	Projected	N/A		
Test Item	Inspector	Date	Number of Tested				
Physical Inspection	Bo Yang Lee	2021/2/1	2	2	2	2	2
Photometry Test	Bo Yang Lee	2021/8/20	2	2	2	2	2
Color Test	Bo Yang Lee	2021/8/20	2	2	2	2	2

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

PARKING LAMP TEST REPORT

Test Component	20-FD009/20-FD010
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/2/1 - 2021/8/20
Report Number	108-ISOQA-21-0086
Number of devices tested	See below
Light source Designation	LED × 39

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-
- Dust Test	Not Tested	-
- Moisture Test	Not Tested	-
- Corrosion Test	Not Tested	-
- Vibration Test	Not Tested	-

Remarks : _____

Arthur Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : August 24, 2021

Report No. : 108-ISOQA-21-0086*Test Component* : 20-FD009/20-FD010*Applicant* : Morimoto Lighting**PHYSICAL INSPECTION**

Inspection Performed by : Bo Yang Lee Date : 2021/2/1

Marking on Lens	RH: LOGO DOT SAE HL A DRL P 19 VOL 20-FD009 LH: DOT SAE HL A DRL P 19 VOL 20-FD010 LOGO	
Marking on Housing	12V	
Lens Material	CHIMEI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear \$	
Coating of External Lens	UVHC 3000	
Light Sources Used	Trade No/ Designation	LED
	Quantity	39
	Rated Voltage	12 V

Remarks : _____

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting



PHOTOMETRY TEST

Test Performed by : Bo Yang Lee Date : 2021/8/20
 Test distance(m) : 3.167 m Light Source Designation : LED × 39
 Tested Voltage : 12.8 V

Steady Burning at H-V (according to SAE J1889)	Sample 1 (LH)			Sample 2 (RH)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	112.2	110.1	1.02	116.4	113.1	1.03

Test Points	Zone	Minimum (cd)	Maximum (cd)	Sample 1 (LH)	Sample 2 (RH)
				Measured ⁽¹⁾	Measured ⁽¹⁾
5U - 20L	1	0.4	125	31.620	22.460
5D - 20L	1	0.4	250	38.340	25.660
10U - 5L	1	0.8	125	44.330	64.920
10D - 5L	1	0.8	250	75.740	101.300
5U - 10L	2	0.8	125	46.790	48.210
H - 10L	2	1.4	125	57.460	54.470
5D - 10L	2	0.8	250	56.740	65.180
5U - V	3	2.8	125	82.600	69.340
H - 5L	3	3.6	125	97.900	110.800
H - V	3	4	125	110.100	113.100
H - 5R	3	3.6	125	70.510	61.760
5D - V	3	2.8	250	108.200	136.400
5U - 10R	4	0.8	125	35.900	35.820
H - 10R	4	1.4	125	39.790	43.870
5D - 10R	4	0.8	250	42.460	44.650
10U - 5R	5	0.8	125	49.900	32.330
10D - 5R	5	0.8	250	65.760	58.460
5U - 20R	5	0.4	125	19.690	27.840
5D - 20R	5	0.4	250	19.910	33.720
Visibility on or above HH		0.05	125	(0.624) 114.130	(0.449) 117.187
Visibility below HH		0.05	250	(3.293) 118.403	(2.227) 150.310

Zone Total Luminous Intensity

Zone	Minimum (cd)	Sample 1 (LH)	Sample 2 (RH)
1	2.4	190.030	214.340
2	3.0	160.990	167.860
3	16.8	469.310	491.400
4	3.0	118.150	124.340
5	2.4	155.260	152.350

(1) The measured values at each individual test point shall not be less than 60% of the required minimum value shown for that individual test point location. The sum of the luminous intensity measurements at each test point within a zone shall not be less than the Zone Total Luminous Intensity shown.

Report No. : 108-ISOQA-21-0086

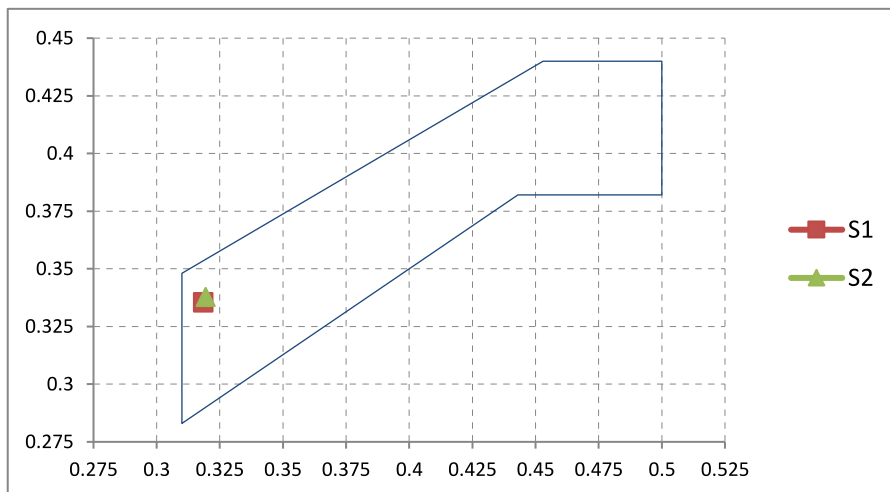
Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2021/8/20
Test distance(m) : 3.073 m Light Source Designation : LED × 39
Color of Light Emitted : White

Color emitted from HV point	Sample 1 (LH)		Sample 2 (RH)
	x=	0.3185	0.3194
	y=	0.3354	0.3378



Remarks : _____

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

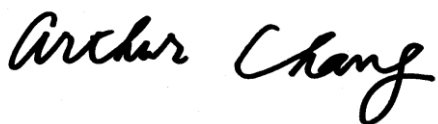
HEADLAMP TEST REPORT

Test Component	20-FD009/20-FD010
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/2/1 - 2021/8/20
Report Number	108-ISOQA-21-0086
Number of devices tested	See below
Light source Designation	Upper Beam - LED × 9 Lower Beam - LED × 9

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-
- Dust Test	Not Tested	-
- Corrosion Test	Not Tested	-
- Vibration Test	Not Tested	-
- Abrasion Test	Not Tested	-
- Chemical Resistance Test	Not Tested	-
- Temp. Cycle Test	Not Tested	-
- Internal Heat Test	Not Tested	-
- Humidity Test	Not Tested	-

Remarks : _____



Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : August 24, 2021

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting



PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/2/1

Marking on Lens	RH: LOGO DOT SAE HL A DRL P 19 VOL 20-FD009 LH: DOT SAE HL A DRL P 19 VOL 20-FD010 LOGO		
Marking on Housing	12V		
Lens Material	CHIMEI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear \$		
Coating of External Lens	UVHC 3000		
Light Sources Used	Function	Upper Beam	Lower Beam
	Trade No/ Designation	LED	LED
	Quantity	9	9
	Rated Voltage	12 V	12 V

Remarks : The headlamps designed to provide alternately a driving-beam and a passing-beam

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

PHOTOMETRY TEST

Test Performed by : Bo Yang Lee Date : 2021/8/20
Test distance(m) : 25 m Test Voltage : 12.8 V
Light Source Designation : Upper Beam - LED × 9 / Lower Beam - LED × 9

Steady Burning at H - V (according to SAE J2650)	Sample 1 (LH)			Sample 2 (RH)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	55920	48130	1.16	48230	44700	1.08

UB2 - Upper Beam Photometric Test Point Values

Test Points	Minimum (cd)	Maximum (cd)	Sample 1 (LH)	Sample 2 (RH)
			Measured	Measured
2U - V	1500	-	5281.000	2512.000
1U - 3L	5000	-	25490.000	13210.000
1U - 3R	5000	-	34950.000	24470.000
H - V	40000	75000	48130.000	44700.000
H - 3L	15000	-	37400.000	33350.000
H - 3R	15000	-	48450.000	42390.000
H - 6L	5000	-	13660.000	7797.000
H - 6R	5000	-	31330.000	17190.000
H - 9L	3000	-	9120.000	5029.000
H - 9R	3000	-	11250.000	7621.000
H - 12L	1500	-	6388.000	3560.000
H - 12R	1500	-	7299.000	5678.000
1.5D - V	5000	-	35920.000	41930.000
1.5D - 9L	2000	-	8890.000	7326.000
1.5D - 9R	2000	-	12220.000	8930.000
2.5D - V	2500	-	17020.000	22070.000
2.5D - 12L	1000	-	4161.000	4651.000
2.5D - 12R	1000	-	5514.000	5251.000
4D - V	-	12000	5538.000	6930.000

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

Steady Burning at 1.5D - 2R (according to SAE J2650)	Sample 1 (LH)			Sample 2 (RH)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	39160	35940	1.09	41960	38420	1.09

LB2V - Lower Beam Photometric Test Point Values

Test Points	Minimum (cd)	Maximum (cd)	Sample 1 (LH)	Sample 2 (RH)
			Measured	Measured
10U to 90U	-	125	86.602	76.278
4U - 8L	64	-	228.400	95.100
4U - 8R	64	-	339.700	120.900
2U - 4L	135	-	482.900	384.200
1.5U - 1R to 3R	200	-	728.748	351.794
1.5U - 1R to R	-	1400	767.048	400.846
1U - 1.5L to L	-	700	629.074	291.505
0.5U - 1.5L to L	-	1000	866.294	381.033
0.5U - 1R to 3R	500	2700	(1719.265) 2076.681	(700.21) 778.299
H - 4L	135	-	985.000	328.000
H - 8L	64	-	678.400	204.100
0.6D - 1.3R	10000	-	55370.000	53600.000
0.86D - V	4500	-	46300.000	55080.000
0.86D - 3.5L	1800	12000	7295.000	10550.000
1.5D - 2R	15000	-	35940.000	38420.000
2D - 9L	1250	-	6665.000	7214.000
2D - 9R	1250	-	9910.000	8210.000
2D - 15L	1000	-	4208.000	3365.000
2D - 15R	1000	-	4789.000	4738.000
4D - 4R	-	12500	5727.000	6568.000
4D - 20L	300	-	1442.000	1671.000
4D - 20R	300	-	1379.000	1594.000

Report No. : 108-ISOQA-21-0086

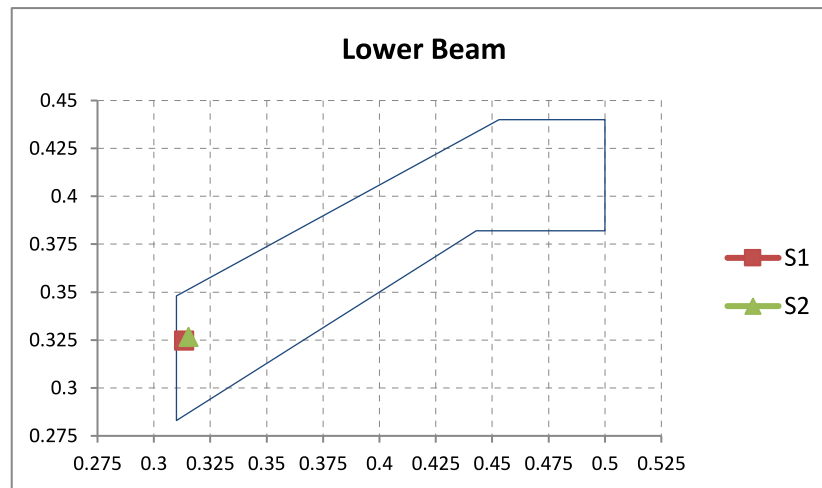
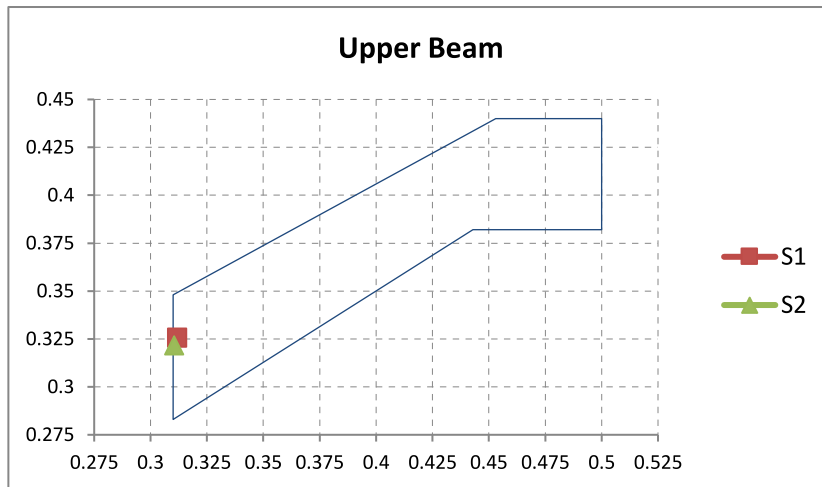
Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2021/8/20
Test distance(m) : 3.073 m Color of Light Emitted : White

Color emitted from HV point		Sample 1 (LH)	Sample 2 (RH)
Upper Beam	x=	0.3118	0.3105
	y=	0.3257	0.3216
Lower Beam	x=	0.3134	0.3153
	y=	0.3248	0.3267



Remarks : _____

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant :



DAYTIME RUNNING LAMP TEST REPORT

Test Component	20-FD009/20-FD010
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/2/1 - 2021/8/20
Report Number	108-ISOQA-21-0086
Number of devices tested	See below
Light source Designation	LED × 39

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-
- Dust Test	Not Tested	-
- Moisture Test	Not Tested	-
- Corrosion Test	Not Tested	-
- Vibration Test	Not Tested	-

Remarks : _____

A handwritten signature in black ink that reads 'Arthur Chang' in a cursive, flowing script.

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : August 24, 2021

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/2/1

Marking on Lens	RH: LOGO DOT SAE HL A DRL P 19 VOL 20-FD009 LH: DOT SAE HL A DRL P 19 VOL 20-FD010 LOGO		
Marking on Housing	12V		
Lens Material	CHIMEI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear \$		
Coating of External Lens	UVHC 3000		
Light Sources Used	Trade No/ Designation	LED	
	Quantity	39	
	Rated Voltage	12 V	

Remarks : _____

Unobstructed Effective Projected Luminous Lens Area

Test Performed by : Bo Yang Lee Date : 2021/8/20

Vehicle Type	Passenger cars, multipurpose passenger vehicles, trucks, trailers, and buses of less than 2032 mm in overall width		
Method of determination	Projected		
Unobstructed effective projected luminous lens area (mm ²)	Requirement	Value	Result
	2500	11844	PASSED

Remarks : Required by SAE J2087 _____

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

PHOTOMETRY TEST

Test Performed by	: Bo Yang Lee	Date	: 2021/8/20
Test distance(m)	: 3.167 m	Light Source Designation	: LED × 39
Test Voltage	: 12.8 V	Lighted Sections	: N/A

Steady Burning at H-V (according to SAE J1889)	Sample 1 (LH)			Sample 2 (RH)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	884	804.6	1.10	902	811.2	1.11

Test Points	Zone	Minimum (cd)	Maximum (cd)	Sample 1 (LH)	Sample 2 (RH)
				Measured ⁽¹⁾	Measured ⁽¹⁾
5U - V	1	350	2500	613.300	517.500
H - 5L	1	450	2500	722.200	817.300
H - V	1	500	2500	804.600	811.200
H - 5R	1	450	2500	526.500	463.700
5D - V	1	350	2500	800.300	1008.000
5U - 10L	2	100	2500	353.400	360.500
H - 20L	2	50	2500	277.000	187.300
H - 10L	2	350	2500	428.900	406.900
5D - 10L	2	100	2500	421.500	484.000
5U - 10R	3	100	2500	271.800	270.500
H - 10R	3	350	2500	300.000	328.900
H - 20R	3	50	2500	154.200	241.300
5D - 10R	3	100	2500	317.200	332.900

Zone Total Luminous Intensity

Zone	Minimum (cd)	Sample 1 (LH)	Sample 2 (RH)
1	2100.0	3466.900	3617.700
2	600.0	1480.800	1438.700
3	600.0	1043.200	1173.600

(1) The measured values at each individual test point shall not be less than 60% of the required minimum value shown for that individual test point location. The sum of the luminous intensity measurements at each test point within a zone shall not be less than the Zone Total Luminous Intensity shown.

Report No. : 108-ISOQA-21-0086

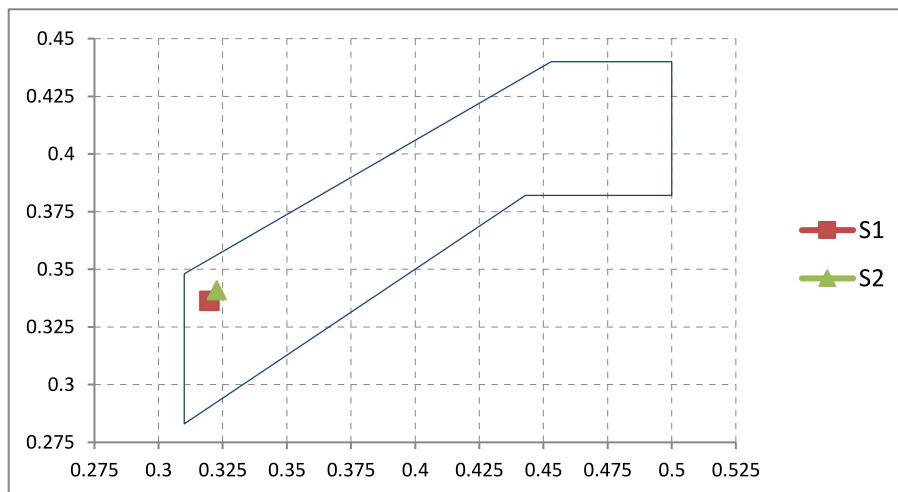
Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2021/8/20
Test distance(m) : 3.073 m Light Source Designation : LED × 39
Color of Light Emitted : White

Color emitted from HV point		Sample 1 (LH)	Sample 2 (RH)
	x=	0.3199	0.3226
	y=	0.3363	0.3409



Remarks : _____

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

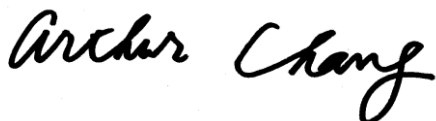
REFLEX REFLECTOR TEST REPORT

Test Component	20-FD009/20-FD010
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/2/1 - 2021/8/20
Report Number	108-ISOQA-21-0086
Number of devices tested	See below
Light source Designation	N/A

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-
- Dust Test	Not Tested	-
- Moisture Test	Not Tested	-
- Corrosion Test	Not Tested	-
- Vibration Test	Not Tested	-

Remarks : _____

_____
Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : August 24, 2021

Report No. : 108-ISOQA-21-0086*Test Component* : 20-FD009/20-FD010*Applicant* : Morimoto LightingPHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/2/1

Marking on Lens	RH: LOGO DOT SAE HL A DRL P 19 VOL 20-FD009 LH: DOT SAE HL A DRL P 19 VOL 20-FD010 LOGO	
Marking on Housing	12V	
Reflex Reflector Material	CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE A-202 Yellow	
Coating of External Lens	UVHC 3000	
Light Sources Used	Trade No/ Designation	N/A
	Quantity	N/A
	Rated Voltage	N/A

Remarks : _____

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting

PHOTOMETRY TEST

Test Performed by : Bo Yang Lee Date : 2021/8/20
 Test distance(m) : 100 ft Color of Light Emitted : Yellow

Observe Angle	Entrance Angle	Minimum (Mcd/ Lux)	Sample 1 (LH)	Sample 2 (RH)
0.2	H V	1050	1274.000	1175.000
0.2	H 10U	700	837.000	785.000
0.2	H 10D	700	781.000	724.000
0.2	20L V	350	412.000	406.900
0.2	20R V	350	435.000	381.900
1.5	H V	15	42.300	40.900
1.5	H 10U	12.5	21.400	24.100
1.5	H 10D	12.5	22.000	22.600
1.5	20L V	7.5	15.500	12.600
1.5	20R V	7.5	13.700	11.900

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2021/8/20
 Color of Light Emitted : Yellow

Requirement (Visual Method)	PASS	FAILED
Yellow (Amber). Yellow is not acceptable if it is less saturated (paler), greener, or redder than the limit standards.	x	

Remarks : _____

Report No. : 108-ISOQA-21-0086

Test Component : 20-FD009/20-FD010

Applicant : Morimoto Lighting



Front View



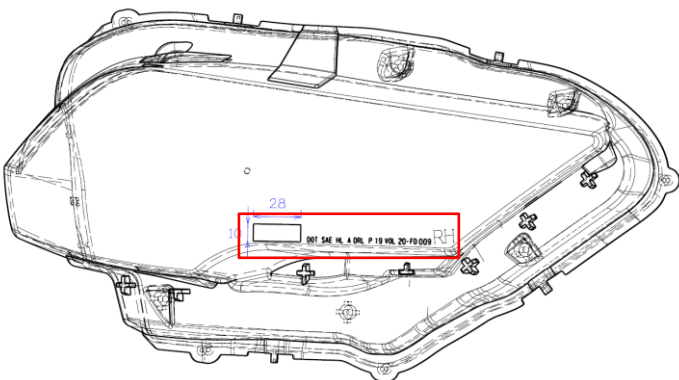
Side View



Top View



Rear View



RH: LOGO DOT SAE HL A DRL P 19 VOL 20-FD009
LH: DOT SAE HL A DRL P 19 VOL 20-FD010 LOGO

Marking