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.

Notification Number: 210074

Test Report Date: January 6, 2021
Expiration Date: July 1, 2024

Item: "20-GM003/20-GM004" - Combination Turn Signal, Parking, Headlamp, Daytime Running and Side Marker Lamp With Reflex Reflector - White and Yellow In Color

Use: On 2015-2019 Model Years GMC Yukon Motor Vehicles

Jurisdictional Compliance Standard(S)
Identical To: United States FMVSS 571.108 Photometric Only

Item Markings: Lens: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003

Lightsource:	Turn Signal Lamp:	18 LED's, 12.8V
	Parking/Daytime Running Lamp:	14 LED's, 12.8V
	Side Marker Lamp:	2 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-20-0902

Executive Director

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Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

ISOQA
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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.

Archer Chang

ISOQA TECHNICAL SERVICE CO., LTD.
2021-01-06

Signature of Responsible Laboratory Official

Title: Laboratory Manager

Approval Date

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

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Report Prepared By : Lisa Liu

Review By : J.Y Pan

Approval By : Arthur Chang

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PRODUCT INFORMATION

Test Component	20-GM003/20-GM004
Applicant	Morimoto Lighting
Manufacturer	same as Applicant
Trade Mark	MORIMOTO
Lens Material	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $
Coating of Exterior Lens	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $
Inner Lens Material	CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE A-202 Yellow
Reflex Reflector Material	CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE A-202 Yellow
Applicable Vehicle	GMC YUKON 2015-2019
Rated Voltage	12 V
Marking on Lens	RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 LOGO LH: LOGO DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004
Marking on Housing	12 V
Method of Mounting to Vehicle	bolted

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

Functions			Front Turn Signal Lamp	Parking Lamp	Headlamp - Lower Beam	Headlamp - Upper Beam	Daytime Running Lamp
Requirements			FMVSS 108 SAE J588	FMVSS 108 SAE J222	FMVSS 108	FMVSS 108	FMVSS 108 SAE J2087
Identification Code of SAE J759			I5	P	HL	HL	DRL
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	-	-	Clear
Color of Light Emitted			Yellow	White	White	White	White
Light Source Designation			LED × 18	LED × 14	LED × 9	LED × 9	LED × 14
Design Voltage			12.8 V	12.8 V	12.8 V	12.8 V	12.8 V
Rated Mean Spherical Candlepower			N/A	N/A	N/A	N/A	N/A
Effective projected illuminated area of lens (mm^2)			7421	N/A	N/A	N/A	11580
Method of determination			Projected	N/A	N/A	N/A	Projected
Test Item	Inspector	Date	Number of Tested				
Physical Inspection	Bo Yang Lee	2021/12/28	2	2	2	2	2
Photometry Test	Bo Yang Lee	2021/12/28	2	2	2	2	2
Color Test	Bo Yang Lee	2021/12/28	2	2	2	2	2

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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Functions			Side Marker Lamp	Reflex Reflector			
Requirements			FMVSS 108 SAE J592	FMVSS 108 SAE J594			
Identification Code of SAE J759			P2	A			
Number of Compartments or Lamps			1	1			
Color of External Lens			Clear	Clear			
Color of Inner Lens or Filter			Clear	-			
Color of Light Emitted			White	Yellow			
Light Source type and Trade Number			LED × 2	N/A			
Design Voltage			12.8 V	N/A			
Rated Mean Spherical Candlepower			N/A	N/A			
Effective Projected Luminous Lens Area (cm^2)			N/A	N/A			
Method of determination			N/A	N/A			
Test Item	Inspector	Date	Number of Tested				
Physical Inspection	Bo Yang Lee	2021/12/28	2	2			
Photometry Test	Bo Yang Lee	2021/12/28	2	2			
Color Test	Bo Yang Lee	2021/12/28	2	2			

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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TURN SIGNAL LAMP TEST REPORT

Test Component	20-GM003/20-GM004
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/12/28
Report Number	108-ISOQA-20-0902
Number of devices tested	See below
Light source Designation	LED × 18

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 :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : January 6, 2021

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/12/28

Marking on Lens	RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 LOGO LH: LOGO DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004	
Marking on Housing	12 V	
Lens Material	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Coating of External Lens	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Light Sources Used	Trade No/ Designation	LED
	Quantity	18
	Rated Voltage	12 V

Remarks :

EFFECTIVE PROJECTED LUMINOUS LENS AREA

Test Performed by : Bo Yang Lee Date : 2021/12/28

Vehicle Type	Passenger cars, multipurpose passenger vehicles, trucks, trailers, and buses of less than 2032 mm in overall width		
Method of determination	Projected		
Effective projected illuminated area of lens (mm^2)	Requirement	Value	Result
	2200	7421	PASSED

Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
Test distance(m)	:	3.167 m	Light Source Designation	:	LED × 18
Tested Voltage	:	12.8 V	Lighted Sections	:	3

Steady Burning at H-V (according to SAE J1889)	Sample 1 (LHM)			Sample 2 (RHM)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	889.0	884.0	1.01	901.0	897.0	1.00

Test Points	Zone	Rto. Parking Lamp	Minimum (cd)	Maximum (cd)	Sample 1 (LHM)		Sample 2 (RHM)	
					Rto	Measured (1)	Rto	Measured (1)
5U - 20L	1	3	87.5	-	4.7	132.600	5.7	115.100
5D - 20L	1	-	87.5	-	3.7	99.300	8.6	183.400
10U - 5L	1	3	137.5	-	3.2	227.400	3.2	173.700
10D - 5L	1	-	137.5	-	3.7	259.800	7.5	417.400
5U - 10L	2	3	250	-	3.7	352.300	6.9	359.600
H - 10L	2	3	350	-	4.2	446.100	9.7	551.300
5D - 10L	2	-	250	-	3.9	374.100	9.3	495.900
5U - V	3	5	587.5	-	7.1	595.200	7.2	660.800
H - 5L	3	5	687.5	-	6.9	712.400	9.7	785.400
H - V	3	5	687.5	-	9.7	884.000	8.9	897.000
H - 5R	3	5	687.5	-	10.5	788.600	7.4	769.100
5D - V	3	-	587.5	-	9.3	781.400	9.4	812.700
5U - 10R	4	3	250	-	5.8	293.600	4.4	434.700
H - 10R	4	3	350	-	9.7	534.100	5.0	524.200
5D - 10R	4	-	250	-	9.1	487.700	5.1	468.100
10U - 5R	5	3	137.5	-	3.1	159.500	3.1	229.400
10D - 5R	5	-	137.5	-	7.8	419.100	4.9	318.200
5U - 20R	5	3	87.5	-	5.4	100.700	6.1	167.200
5D - 20R	5	-	87.5	-	9.6	181.700	5.8	131.100
Visibility			0.3	-	-	0.590	-	0.695

Zone Total Luminous Intensity

Zone	Minimum (cd)	Sample 1 (LHM)	Sample 2 (RHM)
1	450	719.100	889.600
2	850	1172.500	1406.800
3	3237.5	3761.600	3925.000
4	850	1315.400	1427.000
5	450	861.000	845.900

(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-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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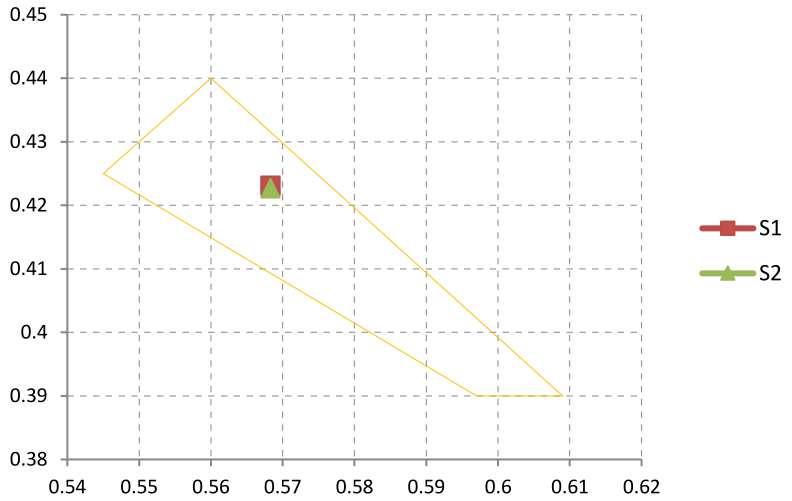
COLOR TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
Test distance(m)	:	3.073 m	Light Source Designation	:	LED × 18
Color of Light Emitted	:	Yellow			

		Sample 1 (LHM)	Sample 2 (RHM)
Color emitted from HV point	x=	0.5683	0.5683
	y=	0.4231	0.4227



Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PARKING LAMP TEST REPORT

Test Component	20-GM003/20-GM004
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/12/28
Report Number	108-ISOQA-20-0902
Number of devices tested	See below
Light source Designation	LED × 14

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 :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : January 6, 2021

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/12/28

Marking on Lens	RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 LOGO LH: LOGO DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004	
Marking on Housing	12 V	
Lens Material	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Coating of External Lens	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Light Sources Used	Trade No/ Designation	LED
	Quantity	14
	Rated Voltage	12 V

Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by : Bo Yang Lee
Date : 2021/12/28
Test distance(m) : 3.16 m
Light Source Designation : LED × 14
Tested Voltage : 12.8 V

Steady Burning at H-V (according to SAE J1889)	Sample 1 (LHM)			Sample 2 (RHM)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	90.30	90.80	0.99	99.80	100.40	0.99

Test Points	Zone	Minimum (cd)	Maximum (cd)	Sample 1 (LHM)	Sample 2 (RHM)
				Measured (1)	Measured (1)
5U - 20L	1	0.4	125	28.510	20.100
5D - 20L	1	0.4	250	27.180	21.380
10U - 5L	1	0.8	125	70.650	54.640
10D - 5L	1	0.8	250	69.650	55.320
5U - 10L	2	0.8	125	96.100	52.090
H - 10L	2	1.4	125	107.000	56.980
5D - 10L	2	0.8	250	95.000	53.430
5U - V	3	2.8	125	83.300	91.500
H - 5L	3	3.6	125	103.800	81.100
H - V	3	4	125	90.800	100.400
H - 5R	3	3.6	125	75.000	104.200
5D - V	3	2.8	250	84.200	86.800
5U - 10R	4	0.8	125	50.760	99.700
H - 10R	4	1.4	125	55.270	105.600
5D - 10R	4	0.8	250	53.360	91.200
10U - 5R	5	0.8	125	50.800	73.880
10D - 5R	5	0.8	250	53.830	64.650
5U - 20R	5	0.4	125	18.550	27.530
5D - 20R	5	0.4	250	18.990	22.600
Visibility on or above HH		0.05	125	(0.390) 108.800	(0.490) 108.400
Visibility below HH		0.05	250	(0.290) 108.800	(0.330) 107.800

Zone Total Luminous Intensity

Zone	Minimum (cd)	Sample 1 (LHM)	Sample 2 (RHM)
1	2.4	195.990	151.440
2	3.0	298.100	162.500
3	16.8	437.100	464.000
4	3.0	159.390	296.500
5	2.4	142.170	188.660

(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-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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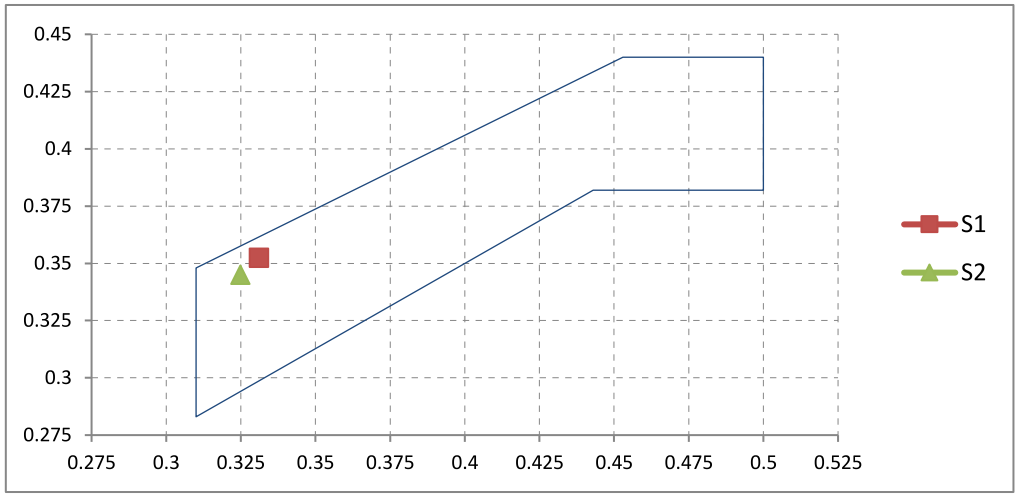
COLOR TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
Test distance(m)	:	3.073 m	Light Source Designation	:	LED × 14
Color of Light Emitted	:	White			

		Sample 1 (LHM)	Sample 2 (RHM)
Color emitted from HV point	x=	0.3311	0.3249
	y=	0.3524	0.3450



Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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HEADLAMP TEST REPORT

Test Component	20-GM003/20-GM004
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/12/28
Report Number	108-ISOQA-20-0902
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 :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : January 6, 2021

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/12/28

Marking on Lens	RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 LOGO LH: LOGO DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004		
Marking on Housing	12 V		
Lens Material	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $		
Coating of External Lens	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $		
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-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
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 (LHM)			Sample 2 (RHM)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	52290.0	42850.0	1.22	51810.0	42600.0	1.22

UB2 - Upper Beam Photometric Test Point Values

Test Points	Minimum (cd)	Maximum (cd)	Sample 1 (LHM)	Sample 2 (RHM)
			Measured	Measured
2U - V	1500	-	33580.000	27530.000
1U - 3L	5000	-	37470.000	38770.000
1U - 3R	5000	-	28350.000	25480.000
H - V	40000	75000	42850.000	42600.000
H - 3L	15000	-	19370.000	24570.000
H - 3R	15000	-	27550.000	26220.000
H - 6L	5000	-	10720.000	10240.000
H - 6R	5000	-	10410.000	8620.000
H - 9L	3000	-	5512.000	6116.000
H - 9R	3000	-	3793.000	3187.000
H - 12L	1500	-	2406.000	2699.000
H - 12R	1500	-	2634.000	2007.000
1.5D - V	5000	-	28810.000	28150.000
1.5D - 9L	2000	-	7899.000	7238.000
1.5D - 9R	2000	-	6864.000	7440.000
2.5D - V	2500	-	18470.000	19920.000
2.5D - 12L	1000	-	5026.000	4898.000
2.5D - 12R	1000	-	4434.000	5496.000
4D - V	-	12000	8790.000	9120.000

Steady Burning at 1.5D - 2R (according to SAE J2650)	Sample 1 (LHM)			Sample 2 (RHM)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	33000.0	26430.0	1.25	34620.0	27850.0	1.24

LB2V - Lower Beam Photometric Test Point Values

Test Points	Minimum (cd)	Maximum (cd)	Sample 1 (LHM)	Sample 2 (RHM)
			Measured	Measured
10U to 90U	-	125	99.762	91.645
4U - 8L	64	-	103.800	74.600
4U - 8R	64	-	118.000	101.200
2U - 4L	135	-	221.400	184.800
1.5U - 1R to 3R	200	-	257.000	293.215
1.5U - 1R to R	-	1400	268.759	296.914
1U - 1.5L to L	-	700	277.607	289.556
0.5U - 1.5L to L	-	1000	292.509	342.676
0.5U - 1R to 3R	500	2700	(852.770) 1068.139	(533.63) 558.715
H - 4L	135	-	387.200	448.500
H - 8L	64	-	249.500	355.300
0.6D - 1.3R	10000	-	33230.000	26830.000
0.86D - V	4500	-	29010.000	26430.000
0.86D - 3.5L	1800	12000	6621.000	3671.000
1.5D - 2R	15000	-	26430.000	27850.000
2D - 9L	1250	-	7121.000	6488.000
2D - 9R	1250	-	6527.000	6893.000
2D - 15L	1000	-	4405.000	3932.000
2D - 15R	1000	-	3791.000	4435.000
4D - 4R	-	12500	6224.000	6763.000
4D - 20L	300	-	1853.000	1710.000
4D - 20R	300	-	1631.000	2140.000

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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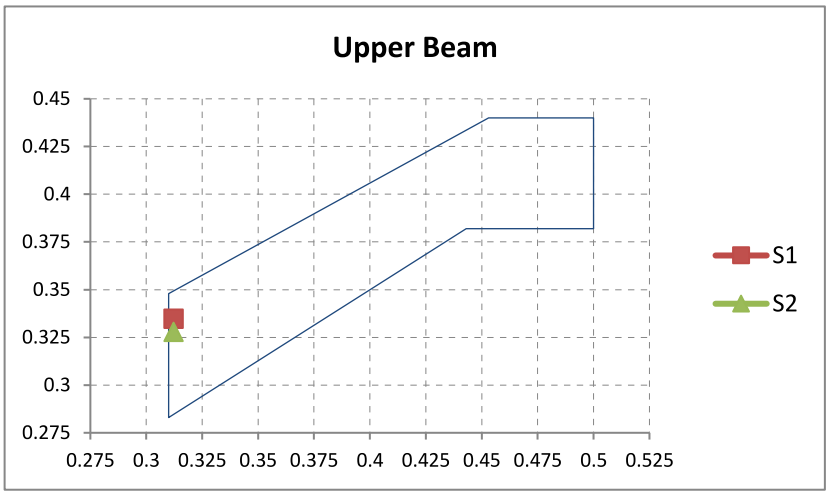
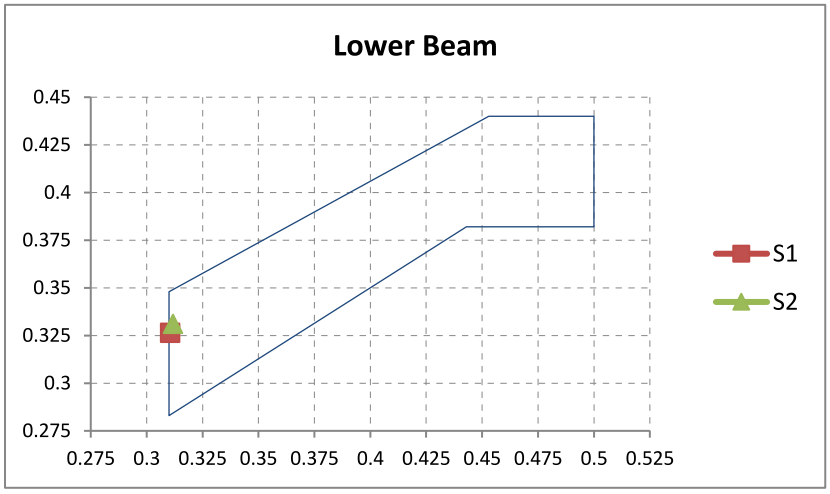
COLOR TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
Test distance(m)	:	3.073 m	Color of Light Emitted	:	White

Color emitted from HV point		Sample 1 (LHM)	Sample 2 (RHM)
Upper Beam	x=	0.3122	0.3123
	y=	0.3348	0.3279
Lower Beam	x=	0.3105	0.3117
	y=	0.3265	0.3311





Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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DAYTIME RUNNING LAMP TEST REPORT

Test Component	20-GM003/20-GM004
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/12/28
Report Number	108-ISOQA-20-0902
Number of devices tested	See below
Light source Designation	LED × 14

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 :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : January 6, 2021

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/12/28

Marking on Lens	RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 LOGO LH: LOGO DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004	
Marking on Housing	12 V	
Lens Material	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Coating of External Lens	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Light Sources Used	Trade No/ Designation	LED
	Quantity	14
	Rated Voltage	12 V

Remarks :

Unobstructed Effective Projected Luminous Lens Area

Test Performed by : Bo Yang Lee Date : 2021/12/28

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	11580	PASSED

Remarks : Required by SAE J2087

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
Test distance(m)	:	3.167 m	Light Source Designation	:	LED × 14
Test Voltage	:	12.8 V	Lighted Sections	:	N/A

Steady Burning at H-V (according to SAE J1889)	Sample 1 (LHM)			Sample 2 (RHM)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	1074.0	1052.0	1.02	1173.0	1142.0	1.03

Test Points	Zone	Minimum (cd)	Maximum (cd)	Sample 1 (LHM)	Sample 2 (RHM)
				Measured (1)	Measured (1)
5U - V	1	350	2500	961.000	1041.000
H - 5L	1	450	2500	1199.000	922.000
H - V	1	500	2500	1052.000	1142.000
H - 5R	1	450	2500	866.000	1185.000
5D - V	1	350	2500	971.000	985.000
5U - 10L	2	100	2500	1107.000	588.800
H - 20L	2	50	2500	352.400	242.200
H - 10L	2	350	2500	1234.000	644.200
5D - 10L	2	100	2500	1093.000	603.100
5U - 10R	3	100	2500	583.400	1135.000
H - 10R	3	350	2500	635.500	1200.000
H - 20R	3	50	2500	221.700	309.800
5D - 10R	3	100	2500	612.400	1034.000

Zone Total Luminous Intensity

Zone	Minimum (cd)	Sample 1 (LHM)	Sample 2 (RHM)
1	2100.0	5049.000	5275.000
2	600.0	3786.400	2078.300
3	600.0	2053.000	3678.800

(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-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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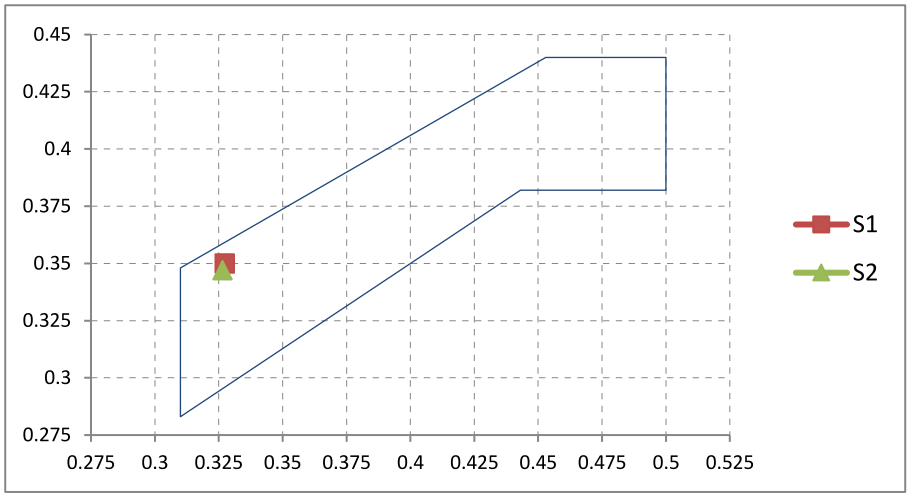
COLOR TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
Test distance(m)	:	3.073 m	Light Source Designation	:	LED × 14
Color of Light Emitted	:	White			

		Sample 1 (LHM)	Sample 2 (RHM)
Color emitted from HV point	x=	0.3273	0.3265
	y=	0.3500	0.3470



Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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SIDE MARKER LAMP TEST REPORT

Test Component	20-GM003/20-GM004
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/12/28
Report Number	108-ISOQA-20-0902
Number of devices tested	See below
Light source Designation	LED × 2

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 :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : January 6, 2021

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/12/28

Marking on Lens	RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 LOGO LH: LOGO DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004	
Marking on Housing	12 V	
Lens Material	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Coating of External Lens	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Light Sources Used	Trade No/ Designation	LED
	Quantity	2
	Rated Voltage	12 V

Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
Test distance(m)	:	3.167 m	Light Source Designation	:	LED × 2
Tested Voltage	:	12.8 V			

Steady Burning at H-V (according to SAE J1889)	Sample 1 (LHM)			Sample 2 (RHM)		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	20.63	20.15	1.02	21.61	21.01	1.03

Test Points		Minimum (cd)		Sample 1 (LHM)	Sample 2 (RHM)
LHM	RHM	FMVSS 108	SAE J2042	Measured	Measured
H - V	H - V	0.62	-	20.150	21.010
10U - 45R	10U - 45R	0.62	-	11.300	4.310
10U - V	10U - V	0.62	-	16.220	15.360
10U - 45L	10U - 45L	0.62	-	3.423	9.940
H - 45L	H - 45L	0.62	-	1.574	9.770
H - 45R	H - 45R	0.62	-	10.830	1.858
10D - 45R	10D - 45R	0.62	-	4.690	1.575
10D - V	10D - V	0.62	-	6.806	8.156
10D - 45L	10D - 45L	0.62	-	0.862	4.666

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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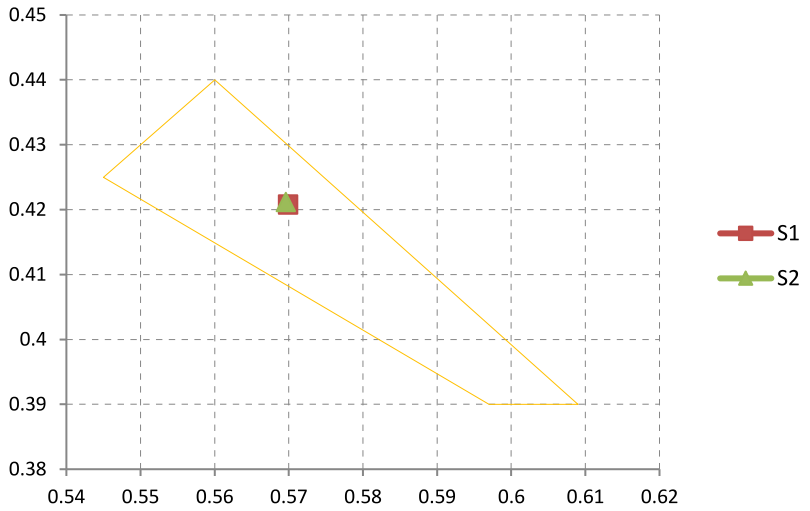
COLOR TEST

Test Performed by	:	Bo Yang Lee	Date	:	2021/12/28
Test distance(m)	:	3.073 m	Light Source Designation	:	LED × 2
Color of Light Emitted	:	White			

		Sample 1 (LHM)	Sample 2 (RHM)
Color emitted from HV point	x=	0.5699	0.5696
	y=	0.4208	0.4212



Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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REFLEX REFLECTOR TEST REPORT

Test Component	20-GM003/20-GM004
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2021/12/28
Report Number	108-ISOQA-20-0902
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 :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : January 6, 2021

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2021/12/28

Marking on Lens	RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 LOGO LH: LOGO DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004	
Marking on Housing	12 V	
Reflex Reflector Material	CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE A-202 Yellow	
Coating of External Lens	CHIMEI-ASAHI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear $	
Light Sources Used	Trade No/ Designation	N/A
	Quantity	N/A
	Rated Voltage	N/A

Remarks :

Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by : Bo Yang Lee Date : 2021/12/28

Test distance(m) : 100 ft Color of Light Emitted : Yellow

Observe Angle	Entrance Angle		Minimum (Mcd/ Lux)	Sample 1 (LHM)	Sample 2 (RHM)
0.2	H	V	1050	6170.000	4950.000
0.2	H	10U	700	5560.000	4770.000
0.2	H	10D	700	4950.000	3630.000
0.2	20L	V	350	1360.000	7080.000
0.2	20R	V	350	6120.000	817.000
1.5	H	V	15	172.600	135.600
1.5	H	10U	12.5	103.100	105.700
1.5	H	10D	12.5	99.100	86.100
1.5	20L	V	7.5	37.800	121.300
1.5	20R	V	7.5	110.900	30.700

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2021/12/28

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-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

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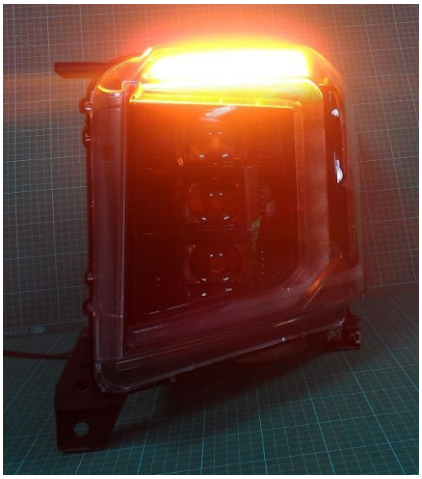
Front View

Side View

Top View

Rear View



Turn Signal Lamp

Parking Lamp

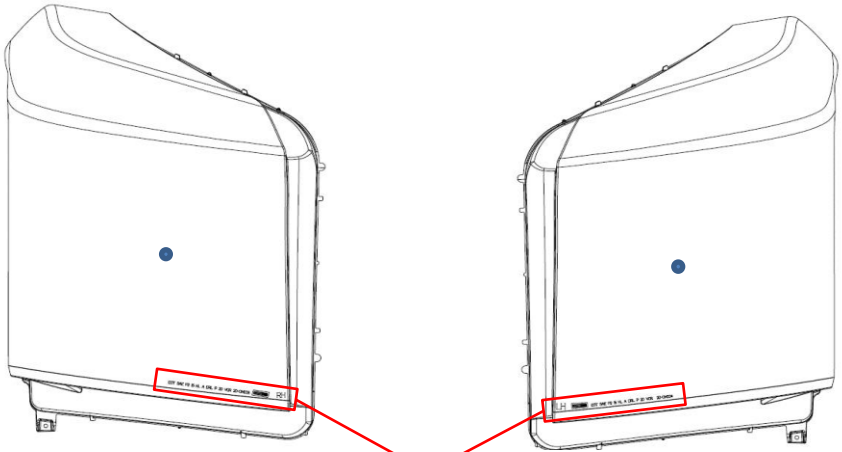
Report No. : 108-ISOQA-20-0902

Test Component : 20-GM003/20-GM004

Applicant : Morimoto Lighting

Daytime Running Lamp

Side Marker Lamp



RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 **LOGO**
LH: **LOGO** DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004

LOGO

RH: DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM003 **LOGO**
LH: **LOGO** DOT SAE P2 I5 HL A DRL P 20 VOR 20-GM004

Marking on Lens