AUTOMOTIVE MANUFACTURERS EQUIPMENT COMPLIANCE AGENCY, INC.

AMECA NOTICE OF EQUIPMENT COMPLIANCE™

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: 181845

Test Report Date: November 28, 2018
Expiration Date: January 1, 2022

Item: "20-FD005/20-FD006" - Combination Turn Signal, Parking, Headlamp, Daytime Running and Side Marker Lamp With Reflex Reflector - White and Yellow In Color

Use: On 2015 Model Years Ford F150 Motor Vehicles

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

Item Markings: Lens: Morimoto (Morimoto Logo) DOT SAE I5HL(2)A(2)P2P DRL VOL 15 20-FD005
Housing: 12V

Lightsource:		
	Turn Signal Lamp:	15 LED's, 12.8V
	Parking Lamp:	45 LED's, 12.8V
	Lower Beam:	6 LED's, 12.8V
	Upper Beam:	6 LED's, 12.8V
	Daytime Running Lamp:	45 LED's, 12.8V
	Side Marker Lamp:	3 (2X) LED's, 12.8V

Test Lab: ISOQA Technical Service Co., Ltd.
Report Number: ISOQA-18-0596

Executive Director

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Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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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

Archer Chang

ISOQA
2018-11-28
ISOQA TECHNICAL SERVICE CO., LTD.

Signature of Responsible Laboratory Official
Title: Laboratory Manager

Approval Date

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PRODUCT INFORMATION

Test Component	R : 20-FD005/ L : 20-FD006
Applicant	Morimoto Lighting
Manufacturer	same as Applicant
Trade Mark	MORIMOTO
Lens Material	Chimei WONDERLITE PC-110L Polycarbonate N-102
Coating of Exterior Lens	UVHC 3000
Inner Lens Material	Chimei WONDERLITE PC-110L Polycarbonate N-102 CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE A-001 Yellow
Reflex Reflector Material	CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE A-001 Yellow
Applicable Vehicle	FORD F150 2015
Rated Voltage	12 V
Marking on Lens	DOT SAE I5 HL (2)A (2)P2 P DRL VOL 15 20-FD005
Marking on Housing	12 V
Method of Mounting to Vehicle	bolted

* Above-mentioned information is provided by the applicant

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 Lens			Clear	Clear	Clear	Clear	Clear
Color of Light Emitted			Yellow	White	White	White	White
Light Source Designation			LED × 15	LED × 45	LED × 6	LED × 6	LED × 45
Design Voltage			12.8 V	12.8 V	12.8 V	12.8 V	12.8 V
Rated Mean Spherical Candlepower			-	-	-	-	-
Effective projected illuminated area of lens (mm^2)			4470	N/A	N/A	N/A	10070
Method of determination			Projected	N/A	N/A	N/A	Projected
Test Item	Inspector	Date	Number of Tested				
Physical Inspection	Bo Yang Lee	2018/10/24	2	2	2	2	2
Photometry Test	Bo Yang Lee	2018/10/24	2	2	2	2	2
Color Test	Bo Yang Lee	2018/10/24	2	2	2	2	2

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

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			2	1			
Color of Lens			Clear and Yellow	Clear			
Color of Light Emitted			Yellow	Yellow			
Light Source type and Trade Number			LED × 3 (each lamp	N/A			
Design Voltage			12.8 V	N/A			
Rated Mean Spherical Candlepower			-	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	2018/10/24	2	2			
Photometry Test	Bo Yang Lee	2018/10/24	2	2			
Color Test	Bo Yang Lee	2018/10/24	2	2			

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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TURN SIGNAL LAMP TEST REPORT

Test Component	R : 20-FD005/ L : 20-FD006
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/10/24
Report Number	ISOQA-18-0596
Number of devices tested	See below
Light source Designation	LED × 15

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-

Remarks :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/10/24

Marking on Lens	MORIMOTO DOT SAE I5 HL (2)A (2)P2 P DRL VOL 15 20-FD005	
Marking on Housing	12 V	
Lens Material	Chimei WONDERLITE PC-110L Polycarbonate N-102	
Coating of External Lens	UVHC 3000	
Light Sources Used	Trade No/ Designation	LED
	Quantity	15
	Rated Voltage	12 V

Remarks :

EFFECTIVE PROJECTED LUMINOUS LENS AREA

Test Performed by : Bo Yang Lee Date : 2018/10/24

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	4470	PASSED

Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2018/10/24
Test distance(m)	:	3.167 m	Light Source Designation	:	LED × 15
Tested Voltage	:	12.8 V	Lighted Sections	:	1

Steady Burning at H-V (according to SAE J1889)	Sample 1			Sample 2		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	1116	1085	1.03	801.7	790.1	1.01

Test Points	Zone	Rto.	Minimum (cd)	Maximum (cd)	Sample 1		Sample 2	
		Parking Lamp			Rto	Measured (1)	Rto	Measured (1)
5U - 20L	1	3	62.5	-	18.1	966.00	8.9	141.10
5D - 20L	1	-	62.5	-	16.9	646.70	10.2	131.90
10U - 5L	1	3	100	-	14.5	922.00	10.1	492.20
10D - 5L	1	-	100	-	13.5	491.30	11.8	384.90
5U - 10L	2	3	187.5	-	16.9	1265.00	11.1	468.60
H - 10L	2	3	250	-	16.6	1196.00	10.7	454.70
5D - 10L	2	-	187.5	-	15.7	876.00	10.8	396.40
5U - V	3	5	437.5	-	14.1	1101.00	11.9	845.00
H - 5L	3	5	500	-	15.6	1166.00	10.8	638.30
H - V	3	5	500	-	13.7	1085.00	10.9	790.10
H - 5R	3	5	500	-	13.9	1012.00	12.0	902.00
5D - V	3	-	437.5	-	14.1	871.00	11.5	661.50
5U - 10R	4	3	187.5	-	13.9	804.80	13.7	1068.00
H - 10R	4	3	250	-	14.0	821.00	12.7	956.00
5D - 10R	4	-	187.5	-	14.2	703.80	12.5	737.90
10U - 5R	5	3	100	-	12.1	720.30	11.3	733.30
10D - 5R	5	-	100	-	13.4	527.00	12.9	474.30
5U - 20R	5	3	62.5	-	14.0	331.80	15.5	912.00
5D - 20R	5	-	62.5	-	16.6	319.80	14.8	612.30
Visibility			0.3	-	-	(5.54)	-	(2.91)

Zone Total Luminous Intensity

Zone	Minimum (cd)	Sample 1	Sample 2
1	325	3026.00	1150.10
2	625	3337.00	1319.70
3	2375	5235.00	3836.90
4	625	2329.60	2761.90
5	325	1898.90	2731.90

(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. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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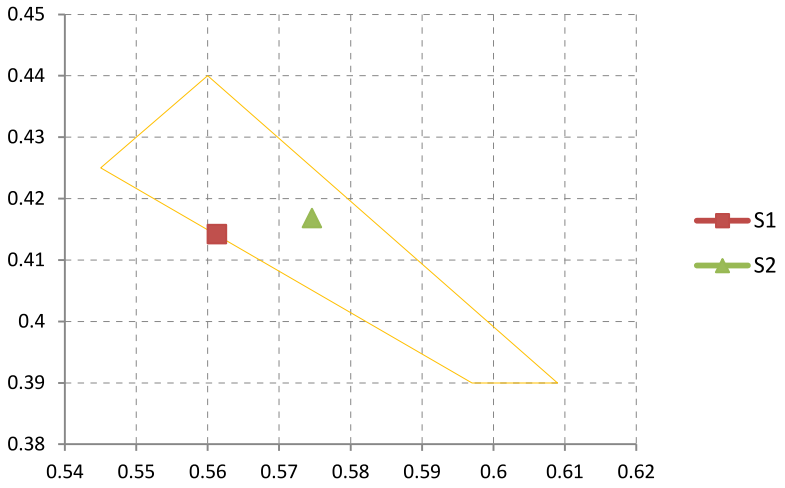
COLOR TEST

Test Performed by	: Bo Yang Lee	Date	: 2018/10/24
Test distance(m)	: 3.073 m	Light Source Designation	: LED × 15
Color of Light Emitted	: Yellow		

		Sample 1	Sample 2
Color emitted from HV point	x=	0.5613	0.5746
	y=	0.4142	0.4168



Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PARKING LAMP TEST REPORT

Test Component	R : 20-FD005/ L : 20-FD006
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/10/24
Report Number	ISOQA-18-0596
Number of devices tested	See below
Light source Designation	LED × 45

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-

Remarks :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/10/24

Marking on Lens	MORIMOTO DOT SAE I5 HL (2)A (2)P2 P DRL VOL 15 20-FD005	
Marking on Housing	12 V	
Lens Material	Chimei WONDERLITE PC-110L Polycarbonate N-102	
Coating of External Lens	UVHC 3000	
Light Sources Used	Trade No/ Designation	LED
	Quantity	45
	Rated Voltage	12 V

Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2018/10/24
Test distance(m)	:	3.167 m	Light Source Designation	:	LED × 45
Tested Voltage	:	12.8 V			

Steady Burning at H-V (according to SAE J1889)	Sample 1			Sample 2		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	79.36	79.25	1.00	73.35	72.21	1.02

Test Points	Zone	Minimum (cd)	Maximum (cd)	Sample 1	Sample 2
				Measured (1)	Measured (1)
5U - 20L	1	0.4	125	53.24	15.80
5D - 20L	1	0.4	250	38.37	12.94
10U - 5L	1	0.8	125	63.39	48.75
10D - 5L	1	0.8	250	36.38	32.53
5U - 10L	2	0.8	125	75.00	42.30
H - 10L	2	1.4	125	71.95	42.53
5D - 10L	2	0.8	250	55.79	36.68
5U - V	3	2.8	125	78.03	70.99
H - 5L	3	3.6	125	74.63	58.95
H - V	3	4	125	79.25	72.21
H - 5R	3	3.6	125	72.93	75.29
5D - V	3	2.8	250	61.90	57.48
5U - 10R	4	0.8	125	57.85	77.69
H - 10R	4	1.4	125	58.76	75.50
5D - 10R	4	0.8	250	49.55	59.13
10U - 5R	5	0.8	125	59.30	65.13
10D - 5R	5	0.8	250	39.20	36.81
5U - 20R	5	0.4	125	23.62	59.00
5D - 20R	5	0.4	250	19.25	41.30
Visibility on or above HH		0.05	125	(1.15) 81.27	(0.78) 80.60
Visibility below HH		0.05	250	(0.67) 79.22	(0.48) 77.87

Zone Total Luminous Intensity

Zone	Minimum (cd)	Sample 1	Sample 2
1	2.4	191.38	110.02
2	3.0	202.74	121.51
3	16.8	366.74	334.92
4	3.0	166.16	212.32
5	2.4	141.37	202.24

(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. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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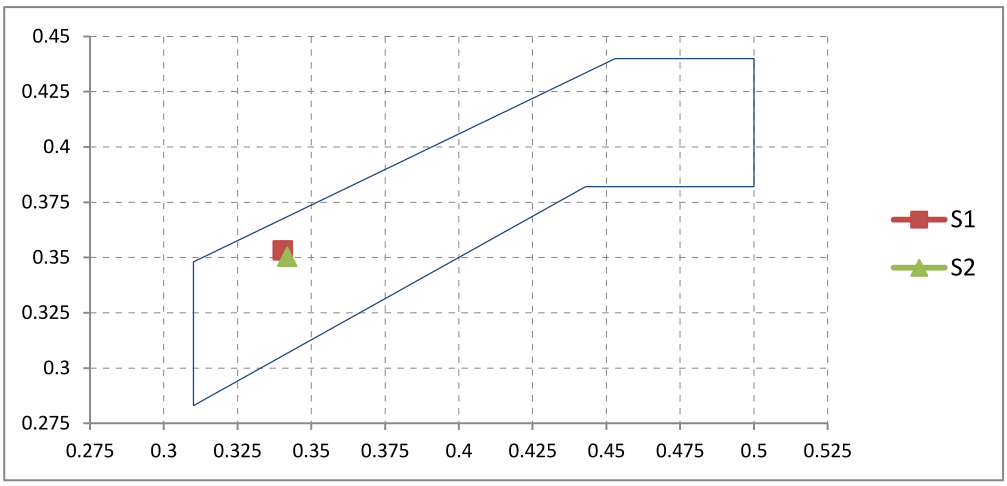
COLOR TEST

Test Performed by	:	Bo Yang Lee	Date	:	2018/10/24
Test distance(m)	:	3.073 m	Light Source Designation	:	LED × 45
Color of Light Emitted	:	White			

		Sample 1	Sample 2
Color emitted from HV point	x=	0.3404	0.3419
	y=	0.3531	0.3503



Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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HEADLAMP TEST REPORT

Test Component	R : 20-FD005/ L : 20-FD006
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/10/24
Report Number	ISOQA-18-0596
Number of devices tested	See below
Light source Designation	Upper Beam - LED × 6 Lower Beam - LED × 6

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-

Remarks :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/10/24

Marking on Lens	MORIMOTO DOT SAE I5 HL (2)A (2)P2 P DRL VOL 15 20-FD005		
Marking on Housing	12 V		
Lens Material	Chimei WONDERLITE PC-110L Polycarbonate N-102		
Coating of External Lens	UVHC 3000		
Light Sources Used	Function	Upper Beam	Lower Beam
	Trade No/ Designation	LED	LED
	Quantity	6	6
	Rated Voltage	12 V	12 V

Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2018/10/24
Test distance(m)	:	25 m	Test Voltage	:	12.8 V
Light Source Designation	:	Upper Beam - LED × 6 / Lower Beam - LED × 6			

Steady Burning at H - V (according to SAE J2650)	Sample 1			Sample 2		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	64760	53280	1.22	65920	53620	1.23

UB2 - Upper Beam Photometric Test Point Values

Test Points	Minimum (cd)	Maximum (cd)	Sample 1	Sample 2
			Measured	Measured
2U - V	1500	-	36530.00	49480.00
1U - 3L	5000	-	29820.00	44280.00
1U - 3R	5000	-	51040.00	39890.00
H - V	40000	75000	53280.00	53620.00
H - 3L	15000	-	27770.00	34070.00
H - 3R	15000	-	52050.00	43330.00
H - 6L	5000	-	14050.00	15020.00
H - 6R	5000	-	22520.00	27250.00
H - 9L	3000	-	8070.00	5303.00
H - 9R	3000	-	12250.00	14750.00
H - 12L	1500	-	4553.00	4526.00
H - 12R	1500	-	7138.00	6426.00
1.5D - V	5000	-	42280.00	34790.00
1.5D - 9L	2000	-	8470.00	8580.00
1.5D - 9R	2000	-	9920.00	9460.00
2.5D - V	2500	-	23610.00	13780.00
2.5D - 12L	1000	-	5524.00	4851.00
2.5D - 12R	1000	-	5348.00	3994.00
4D - V	-	12000	8059.00	6136.00

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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Steady Burning at 1.5D - 2R (according to SAE J2650)	Sample 1			Sample 2		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	34070	30160	1.13	37160	32430	1.15

LB2V - Lower Beam Photometric Test Point Values

Test Points	Minimum (cd)	Maximum (cd)	Sample 1	Sample 2
			Measured	Measured
10U to 90U	-	125	38.20	55.46
4U - 8L	64	-	78.60	78.90
4U - 8R	64	-	107.60	272.50
2U - 4L	135	-	237.10	263.60
1.5U - 1R to 3R	200	-	509.38	743.85
1.5U - 1R to R	-	1400	546.60	944.33
1U - 1.5L to L	-	700	499.40	603.47
0.5U - 1.5L to L	-	1000	661.10	756.93
0.5U - 1R to 3R	500	2700	(927.05) 966.29	(1292.35) 1550.19
H - 4L	135	-	580.90	580.10
H - 8L	64	-	286.50	232.30
0.6D - 1.3R	10000	-	16620.00	30670.00
0.86D - V	4500	-	25170.00	35270.00
0.86D - 3.5L	1800	12000	8870.00	9490.00
1.5D - 2R	15000	-	30160.00	32430.00
2D - 9L	1250	-	6432.00	6108.00
2D - 9R	1250	-	6728.00	7198.00
2D - 15L	1000	-	4228.00	3884.00
2D - 15R	1000	-	3533.00	2930.00
4D - 4R	-	12500	6690.00	7579.00
4D - 20L	300	-	1701.00	1261.00
4D - 20R	300	-	1543.00	1674.00

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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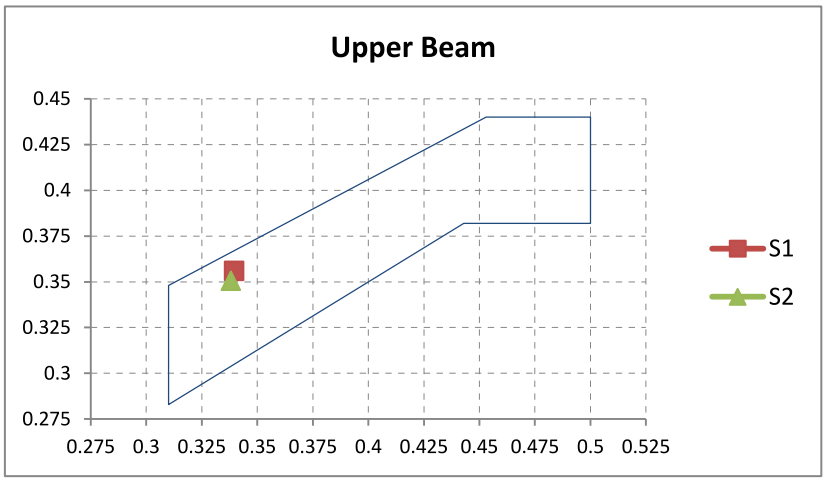
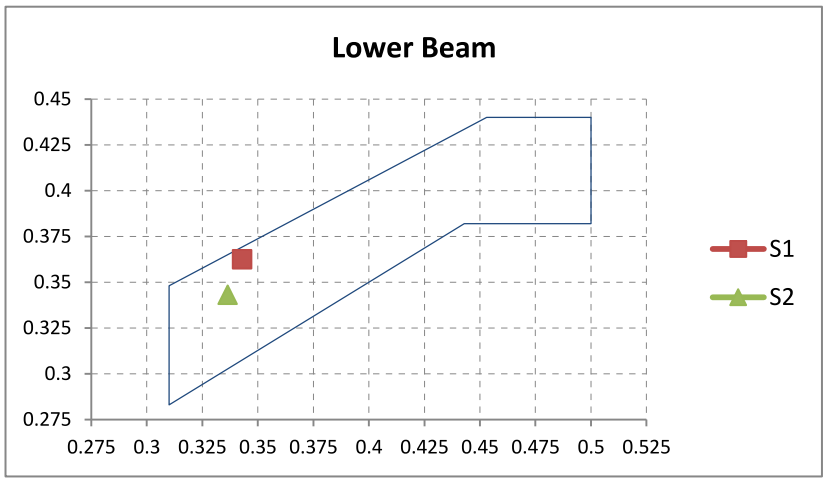
COLOR TEST

Test Performed by	:	Bo Yang Lee	Date	:	2018/10/24
Test distance(m)	:	3.073 m	Color of Light Emitted	:	White

Color emitted from HV point		Sample 1	Sample 2
Upper Beam	x=	0.3397	0.3382
	y=	0.356	0.3505
Lower Beam	x=	0.343	0.3365
	y=	0.3625	0.343





Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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DAYTIME RUNNING LAMP TEST REPORT

Test Component	R : 20-FD005/ L : 20-FD006
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/10/24
Report Number	ISOQA-18-0596
Number of devices tested	See below
Light source Designation	LED × 45

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-

Remarks :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

www.isoqa.org | isoqa@isoqa.org

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/10/24

Marking on Lens	MORIMOTO DOT SAE I5 HL (2)A (2)P2 P DRL VOL 15 20-FD005	
Marking on Housing	12 V	
Lens Material	Chimei WONDERLITE PC-110L Polycarbonate N-102	
Coating of External Lens	UVHC 3000	
Light Sources Used	Trade No/ Designation	LED
	Quantity	45
	Rated Voltage	12 V

Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

ISOQA
www.isoqa.org | isoqa@isoqa.org

PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2018/10/24
Test distance(m)	:	3.167 m	Light Source Designation	:	LED × 45
Test Voltage	:	12.8 V	Lighted Sections	:	3

Steady Burning at H-V (according to SAE J1889)	Sample 1			Sample 2		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	1073	1063	1.01	984	975	1.01

Test Points	Minimum (cd)	Maximum (cd)	Sample 1	Sample 2
			Measured (1)	Measured (1)
H - V	500	3000	1063.00	975.00
Visibility	-	3000	1091.05	1086.09

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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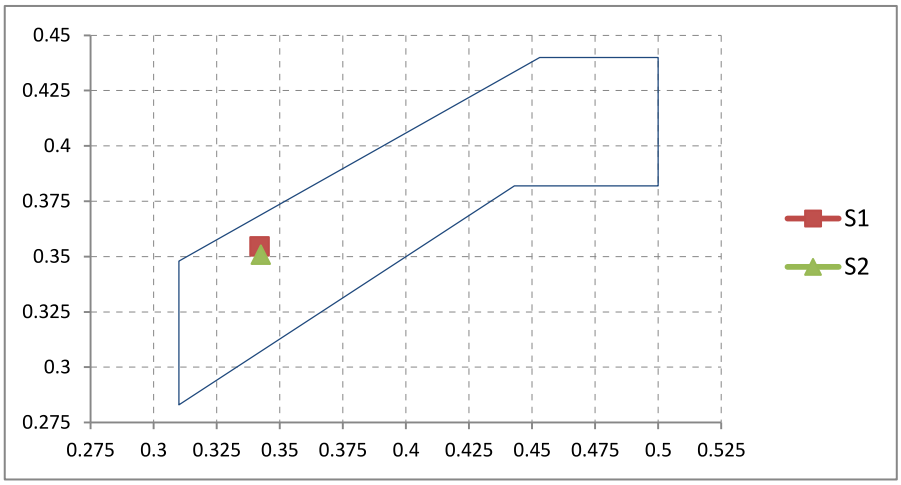
COLOR TEST

Test Performed by	:	Bo Yang Lee	Date	:	2018/10/24
Test distance(m)	:	3.073 m	Light Source Designation	:	LED × 45
Color of Light Emitted	:	White			

		Sample 1	Sample 2
Color emitted from HV point	x=	0.3421	0.3426
	y=	0.3545	0.3508



Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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SIDE MARKER LAMP TEST REPORT

Test Component	R : 20-FD005/ L : 20-FD006
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/10/24
Report Number	ISOQA-18-0596
Number of devices tested	See below
Light source Designation	LED × 3 (each lamp)

SUMMARY

Test Description	Test Results	
	Number Passed	Number Failed
- Physical Inspection	2	-
- Photometry Test	2	-
- Color Test	2	-

Remarks :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

www.isoqa.org | isoqa@isoqa.org

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/10/24

Marking on Lens	MORIMOTO DOT SAE I5 HL (2)A (2)P2 P DRL VOL 15 20-FD005	
Marking on Housing	12 V	
Lens Material	Chimei WONDERLITE PC-110L Polycarbonate N-102	
Coating of External Lens	UVHC 3000	
Light Sources Used	Trade No/ Designation	LED
	Quantity	3 (each lamp)
	Rated Voltage	12 V

Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

ISOQA
www.isoqa.org | isoqa@isoqa.org

PHOTOMETRY TEST

Test Performed by	:	Bo Yang Lee	Date	:	2018/10/24
Test distance(m)	:	3.167 m	Light Source Designation	:	LED × 3 (each lamp)
Tested Voltage	:	12.8 V			

Steady Burning at H-V (according to SAE J1889)	Sample 1			Sample 2		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	115.7	102.8	1.13	69.34	61.67	1.12

Test Points	Minimum (cd)		Sample 1	Sample 2
	FMVSS 108	SAE J2042	Measured	Measured
H - V	0.62	-	102.80	61.67
10U - 45R	0.62	-	19.90	1.13
10U - V	0.62	-	80.49	77.15
10U - 45L	0.62	-	1.19	29.43
H - 45L	0.62	-	1.06	22.30
H - 45R	0.62	-	22.12	1.04
10D - 45R	0.62	-	21.57	0.93
10D - V	0.62	-	67.27	76.20
10D - 45L	0.62	-	1.24	29.99

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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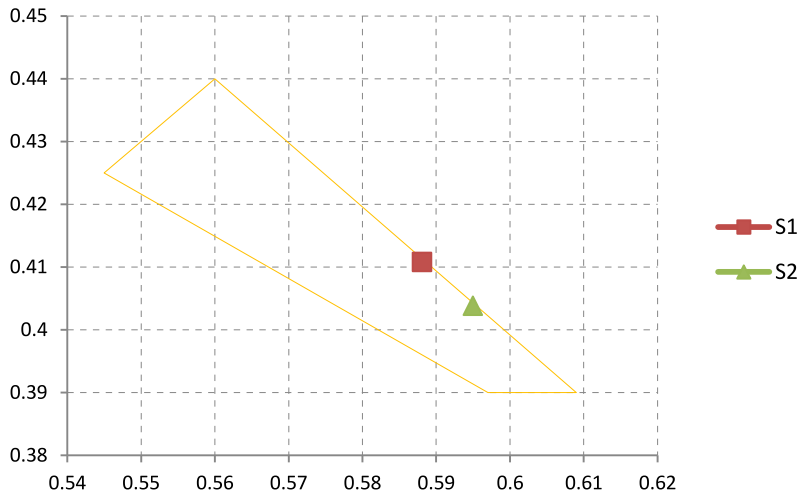
COLOR TEST

Test Performed by	: Bo Yang Lee	Date	: 2018/10/24
Test distance(m)	: 3.073	Light Source Designation	: LED × 3 (each lamp)
Color of Light Emitted	: Yellow		

		Sample 1	Sample 2
Color emitted from HV point	x=	0.5881	0.5950
	y=	0.4108	0.4038



Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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REFLEX REFLECTOR TEST REPORT

Test Component	R : 20-FD005/ L : 20-FD006
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/10/24
Report Number	ISOQA-18-0596
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	-

Remarks :

Archer Chang

Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/10/24

Marking on Lens	MORIMOTO DOT SAE I5 HL (2)A (2)P2 P DRL VOL 15 20-FD005	
Marking on Housing	12 V	
Reflex Reflector Material	CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE A-001 Yellow	
Coating of External Lens	-	
Light Sources Used	Trade No/ Designation	N/A
	Quantity	N/A
	Rated Voltage	N/A

Remarks :

Report No. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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PHOTOMETRY TEST

Test Performed by : Bo Yang Lee Date : 2018/10/24

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

Observe Angle	Entrance Angle		Minimum (Mcd/ Lux)	Sample 1	Sample 2
0.2	0	0	1050	1969.00	2049.00
0.2	H	10U	700	1688.00	1612.00
0.2	H	10D	700	1437.00	1559.00
0.2	20L	V	350	869.00	483.00
0.2	20R	V	350	1071.00	483.00
1.5	0	0	15	139.20	220.00
1.5	H	10U	12.5	70.10	93.00
1.5	H	10D	12.5	75.30	112.80
1.5	20L	V	7.5	30.90	18.30
1.5	20R	V	7.5	99.90	56.10

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2018/10/24

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. : ISOQA-18-0596

Test Component : R : 20-FD005/ L : 20-FD006

Applicant : Morimoto Lighting

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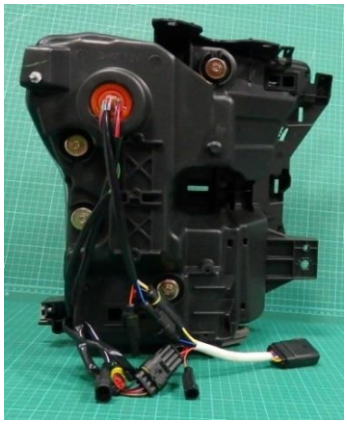
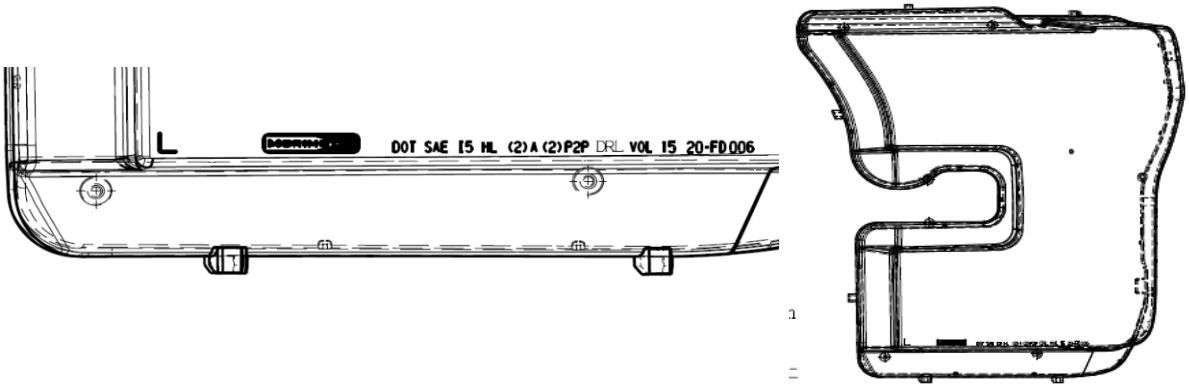
Front View

Side View

Top View



Rear View



DOT SAE I5 HL (2)A (2)P2 P DRL VOL 15 20-FD005

Marking