



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: 181846

Test Report Date: November 28, 2018

Expiration Date: January 1, 2022

Item: "20-FD013/20-FD014" - Combination Turn Signal, Parking, Headlamp, Daytime Running And Side Marker Lamp With Reflex Reflector - White and Yellow In Color

Use: On 2018 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 I5HLAP2P DRL VOL 15
20-FD014
Housing: 12V

Lightsource: Turn Signal Lamp:	18 LED's, 12.8V
Parking Lamp:	48 LED's, 12.8V
Lower Beam:	6 LED's, 12.8V
Upper Beam:	6 LED's, 12.8V
Daytime Running Lamp:	48 LED's, 12.8V
Side Marker Lamp:	3 LED's, 12.8V

Test Lab: ISOQA Technical Service Co., Ltd.

Report Number: ISOQA-18-0658


Executive Director



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SAFETY COMPLIANCE TESTING FOR FMVSS 108

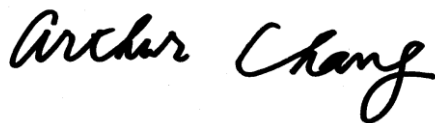
Lamps, Reflective Devices, and Associated Equipment

* * * * *

ISOQA Technical Service Co., Ltd.

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

TEST REPORT



Signature of Responsible Laboratory Official
Title: Laboratory Manager



Approval Date

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Total Pages	29

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

PRODUCT INFORMATION

Test Component	R : 20-FD013/ L : 20-FD014
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 2018
Rated Voltage	12 V
Marking on Lens	 DOT SAE I5 HL A P2 P DRL VOL 15 20-FD014
Marking on Housing	12 V
Method of Mounting to Vehicle	bolted

* Above-mentioned information is provided by the applicant

Functions	Reflex Reflector	Front Turn Signal Lamp	Parking Lamp	Daytime Running Lamp	Side Marker Lamp	
Requirements	FMVSS 108 SAE J594	FMVSS 108 SAE J588	FMVSS 108 SAE J222	FMVSS 108 SAE J2087	FMVSS 108 SAE J592	
Identification Code of SAE J759	A	I5	P	DRL	P2	
Number of Compartments or Lamps	1	1	1	1	1	
Color of Lens	Clear	Clear	Clear	Clear	Clear and Yellow	
Color of Light Emitted	Yellow	Yellow	White	White	Yellow	
Light Source Designation	N/A	LED × 18	LED × 48	LED × 48	LED × 3	
Design Voltage	N/A	12.8 V	12.8 V	12.8 V	12.8 V	
Rated Mean Spherical Candlepower	N/A	-	-	-	-	
Effective projected illuminated area of lens (mm ²)	N/A	5500	N/A	9900	N/A	
Method of determination	N/A	Projected	N/A	Projected	N/A	
Test Item	Inspector	Date	Number of Tested			
Physical Inspection	Bo Yang Lee	2018/11/16	2	2	2	2
Photometry Test	Bo Yang Lee	2018/11/16	2	2	2	2
Color Test	Bo Yang Lee	2018/11/16	2	2	2	2

Report No. : ISOQA-18-0658

Test Component : R : 20-FD013/ L : 20-FD014

Applicant : Morimoto Lighting

Functions			Headlamp - Lower Beam	Headlamp - Upper Beam			
Requirements			FMVSS 108	FMVSS 108			
Identification Code of SAE J759			HL	HL			
Number of Compartments or Lamps			1	1			
Color of Lens			Clear	Clear			
Color of Light Emitted			White	White			
Light Source type and Trade Number			LED × 6	LED × 6			
Design Voltage			12.8 V	12.8 V			
Rated Mean Spherical Candlepower			-	-			
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	2018/11/16	2	2			
Photometry Test	Bo Yang Lee	2018/11/16	2	2			
Color Test	Bo Yang Lee	2018/11/16	2	2			

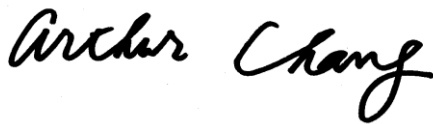
REFLEX REFLECTOR TEST REPORT

Test Component	R : 20-FD013/ L : 20-FD014
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/11/16
Report Number	ISOQA-18-0658
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 : _____



Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018


Report No. : ISOQA-18-0658

Test Component : R : 20-FD013/ L : 20-FD014

Applicant : Morimoto Lighting

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/11/16

Marking on Lens	 DOT SAE I5 HL A P2 P DRL VOL 15 20-FD014	
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 : _____

PHOTOMETRY TEST

Test Performed by : Bo Yang Lee Date : 2018/11/16
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	1063.00	1155.00
0.2	H	10U	700	924.00	838.00
0.2	H	10D	700	743.00	957.00
0.2	20L	V	350	525.00	429.00
0.2	20R	V	350	383.00	591.00
1.5	0	0	15	21.50	16.10
1.5	H	10U	12.5	13.90	12.70
1.5	H	10D	12.5	12.80	13.20
1.5	20L	V	7.5	8.80	8.40
1.5	20R	V	7.5	13.30	9.20

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2018/11/16
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 : _____

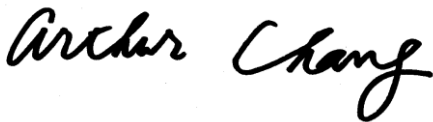
TURN SIGNAL LAMP TEST REPORT

Test Component	R : 20-FD013/ L : 20-FD014
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/11/16
Report Number	ISOQA-18-0658
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	-

Remarks : _____



Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018


Report No. : ISOQA-18-0658

Test Component : R : 20-FD013/ L : 20-FD014

Applicant : Morimoto Lighting

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/11/16

Marking on Lens	 DOT SAE I5 HL A P2 P DRL VOL 15 20-FD014		
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	18	
	Rated Voltage	12 V	

Remarks : _____

EFFECTIVE PROJECTED LUMINOUS LENS AREA

Test Performed by : Bo Yang Lee Date : 2018/11/16

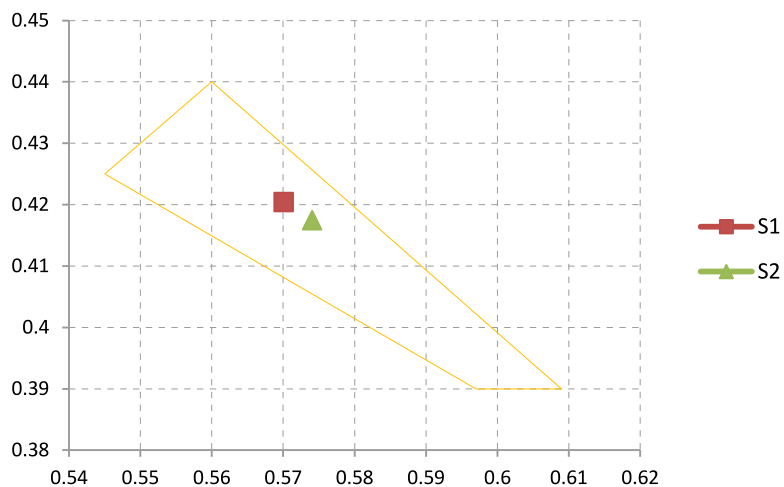
Vehicle Type	Passenger cars, multipurpose passenger vehicles, trucks, trailers, and buses of less than 2032 mm in overall width		
Method of determination	Projected		
Effective projected illuminated area of lens (mm ²)	Requirement	Value	Result
	2200	5500	PASSED

Remarks : _____

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2018/11/16
 Test distance(m) : 3.073 m Light Source Designation : LED × 18
 Color of Light Emitted : Yellow

Color emitted from HV point		Sample 1	Sample 2
	x=	0.5701	0.5741
	y=	0.4204	0.4174



Remarks : _____

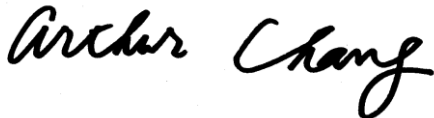
PARKING LAMP TEST REPORT

Test Component	R : 20-FD013/ L : 20-FD014
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/11/16
Report Number	ISOQA-18-0658
Number of devices tested	See below
Light source Designation	LED × 48

SUMMARY

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

Remarks : _____



Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018


Report No. : ISOQA-18-0658

Test Component : R : 20-FD013/ L : 20-FD014

Applicant : Morimoto Lighting

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/11/16

Marking on Lens	 DOT SAE I5 HL A P2 P DRL VOL 15 20-FD014	
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	48
	Rated Voltage	12 V

Remarks : _____

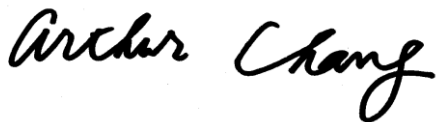
DAYTIME RUNNING LAMP TEST REPORT

Test Component	R : 20-FD013/ L : 20-FD014
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/11/16
Report Number	ISOQA-18-0658
Number of devices tested	See below
Light source Designation	LED × 48

SUMMARY

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

Remarks : _____



Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018


Report No. : ISOQA-18-0658

Test Component : R : 20-FD013/ L : 20-FD014

Applicant : Morimoto Lighting

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/11/16

Marking on Lens	 DOT SAE I5 HL A P2 P DRL VOL 15 20-FD014	
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	48
	Rated Voltage	12 V

Remarks : _____

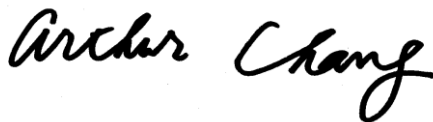
HEADLAMP TEST REPORT

Test Component	R : 20-FD013/ L : 20-FD014
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/11/16
Report Number	ISOQA-18-0658
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 : _____




Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/11/16

Marking on Lens	 DOT SAE I5 HL A P2 P DRL VOL 15 20-FD014		
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 : _____

Steady Burning at 1.5D - 2R (according to SAE J2650)	Sample 1			Sample 2		
	1 min.	Steady	Ratio	1 min.	Steady	Ratio
	35050	31680	1.11	34640	30840	1.12

LB2V - Lower Beam Photometric Test Point Values

Test Points	Minimum (cd)	Maximum (cd)	Sample 1	Sample 2
			Measured	Measured
10U to 90U	-	125	68.96	51.54
4U - 8L	64	-	138.00	92.70
4U - 8R	64	-	189.50	126.90
2U - 4L	135	-	339.80	262.70
1.5U - 1R to 3R	200	-	626.05	645.52
1.5U - 1R to R	-	1400	626.52	663.09
1U - 1.5L to L	-	700	601.57	617.95
0.5U - 1.5L to L	-	1000	746.44	827.62
0.5U - 1R to 3R	500	2700	(1409.26) 2282.39	(1220.19) 1253.02
H - 4L	135	-	758.70	650.10
H - 8L	64	-	457.00	434.30
0.6D - 1.3R	10000	-	28120.00	28230.00
0.86D - V	4500	-	30160.00	31660.00
0.86D - 3.5L	1800	12000	8630.00	8280.00
1.5D - 2R	15000	-	31680.00	30840.00
2D - 9L	1250	-	5434.00	5542.00
2D - 9R	1250	-	6252.00	7163.00
2D - 15L	1000	-	3507.00	3903.00
2D - 15R	1000	-	4003.00	4445.00
4D - 4R	-	12500	5172.00	5399.00
4D - 20L	300	-	1286.00	1186.00
4D - 20R	300	-	1229.00	1326.00

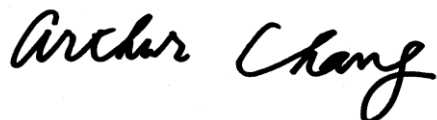
SIDE MARKER LAMP TEST REPORT

Test Component	R : 20-FD013/ L : 20-FD014
Applicant	Morimoto Lighting
Test Laboratory	ISOQA Technical Service Co., Ltd.
Test Date	2018/11/16
Report Number	ISOQA-18-0658
Number of devices tested	See below
Light source Designation	LED × 3

SUMMARY

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

Remarks : _____



Signature of Responsible Laboratory Official

Title : Laboratory Manager

Date: : November 28, 2018


Report No. : ISOQA-18-0658

Test Component : R : 20-FD013/ L : 20-FD014

Applicant : Morimoto Lighting

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2018/11/16

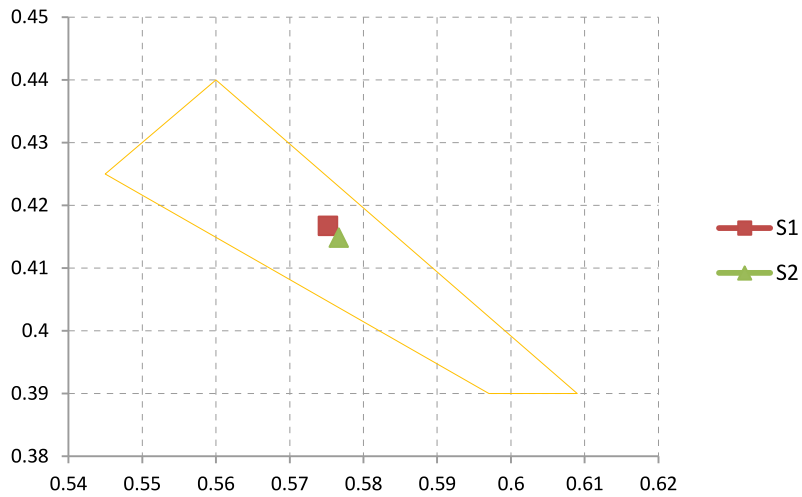
Marking on Lens	 DOT SAE I5 HL A P2 P DRL VOL 15 20-FD014	
Marking on Housing	12 V	
Lens Material	Chimei WONDERLITE PC-110L Polycarbonate N-102	
Coating of External Lens	UVHC 3000	
Light Sources Used	Trade No/ Designation	LED
	Quantity	3
	Rated Voltage	12 V

Remarks : _____

COLOR TEST

Test Performed by : Bo Yang Lee Date : 2018/11/16
Test distance(m) : 3.073 Light Source Designation : LED x 3
Color of Light Emitted : Yellow

Color emitted from HV point	Sample 1		Sample 2
	x=	0.5752	0.5767
	y=	0.4167	0.4148



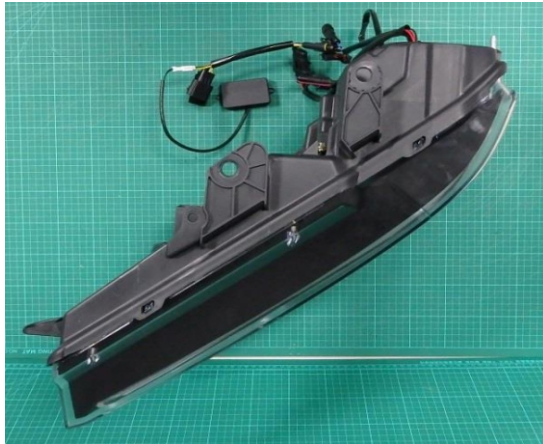
Remarks : _____



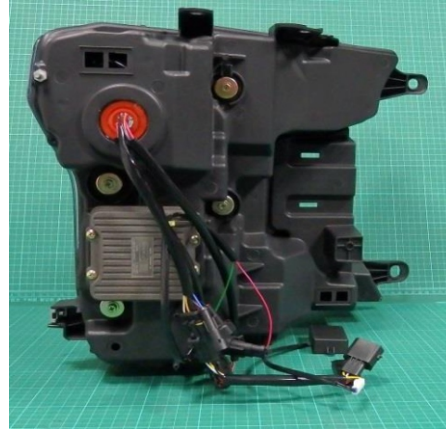
Front View



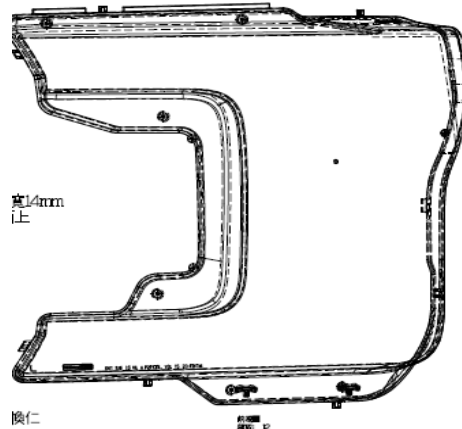
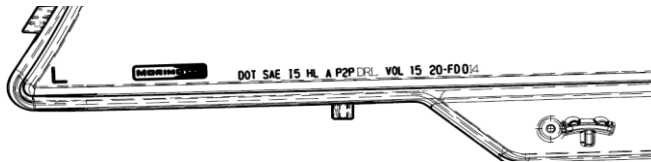
Side View



Top View



Rear View



MORIMOTO DOT SAE 15 HL A P2 P DRL VOL 15 20-FD014

Marking