

**Report No. : 108-ISOQA-19-0176**

*Test Component* : RH : 11-DG001 / LH : 11-DG002

*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**



*Archer Chang*

Signature of Responsible Laboratory Official

Title: Laboratory Manager

Approval Date

**Report No. : 108-ISOQA-19-0176**

*Test Component* : RH : 11-DG001 / LH : 11-DG002

*Applicant* : Morimoto Lighting

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Report Prepared By : Jason Lee  
Review By : Julie Wu  
Approval By : Arthur Chang

**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

**PRODUCT INFORMATION**

|                               |   |
|-------------------------------|---|
| Test Component                | RH : 11-DG001 / LH : 11-DG002   |
| Applicant                     | Morimoto Lighting   |
| Manufacturer                  | same as Applicant   |
| Trade Mark                    |    |
| Lens Material                 | CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE N-000 Clear   |
| Coating of Exterior Lens      | N/A   |
| Inner Lens Material           | CHIMEI Corporation WONDERLITE PC-110L POLYCARBONATE N-102 Clear \$  |
| Reflex Reflector Material     | CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE R-103 Red   |
| Applicable Vehicle            | DODGE RAM 2009-2017   |
| Rated Voltage                 | 12 V  |
| Marking on Lens               | DOT SAE 09 STIRAP2 11-DG002 (OR 11-DG001)  |
| Marking on Housing            | 12 V  |
| Method of Mounting to Vehicle | bolted  |

\* Above-mentioned information is provided by the applicant

| Functions   | Rear Turn Signal Lamp | Tail Lamp             | Stop Lamp             | Backup Lamp           | Side Marker Lamp      |   |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|
| Requirements  | FMVSS 108<br>SAE J588 | FMVSS 108<br>SAE J585 | FMVSS 108<br>SAE J586 | FMVSS 108<br>SAE J593 | FMVSS 108<br>SAE J592 |   |
| Identification Code of SAE J759                                 | I                     | T                     | S                     | R                     | P2                    |   |
| Number of Compartments or Lamps                                 | 2                     | 2                     | 2                     | 1                     | 2                     |   |
| Color of Lens   | Smoke                 | Smoke                 | Smoke                 | Smoke                 | Smoke                 |   |
| Color of Light Emitted  | Red                   | Red                   | Red                   | White                 | Red                   |   |
| Light Source Designation  | LED × 56              | LED × 56              | LED × 56              | LED × 1               | LED × 8               |   |
| 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 <sup>2</sup> ) | 13260                 | N/A                   | 13260                 | N/A                   | N/A                   |   |
| Method of determination   | Projected             | N/A                   | Projected             | N/A                   | N/A                   |   |
| Test Item   | Inspector             | Date                  | Number of Tested      |                       |                       |   |
| Physical Inspection   | Bo Yang Lee           | 2019/4/19             | 2                     | 2                     | 2                     | 2 |
| Photometry Test   | Bo Yang Lee           | 2019/4/19             | 2                     | 2                     | 2                     | 2 |
| Color Test  | Bo Yang Lee           | 2019/4/19             | 2                     | 2                     | 2                     | 2 |

**Report No. : 108-ISOQA-19-0176***Test Component* : RH : 11-DG001 / LH : 11-DG002*Applicant* : Morimoto Lighting

| Functions   |             |           | Reflex Reflector      |  |  |  |  |
|---|-------------|-----------|-----------------------|--|--|--|--|
| Requirements  |             |           | FMVSS 108<br>SAE J594 |  |  |  |  |
| Identification Code of SAE J759                           |             |           | A                     |  |  |  |  |
| Number of Compartments or Lamps                           |             |           | 2                     |  |  |  |  |
| Color of Lens   |             |           | Smoke                 |  |  |  |  |
| Color of Light Emitted                                    |             |           | Red                   |  |  |  |  |
| Light Source type and Trade Number                        |             |           | N/A                   |  |  |  |  |
| Design Voltage  |             |           | N/A                   |  |  |  |  |
| Rated Mean Spherical Candlepower                          |             |           | N/A                   |  |  |  |  |
| Effective Projected Luminous Lens Area (cm <sup>2</sup> ) |             |           | N/A                   |  |  |  |  |
| Method of determination                                   |             |           | N/A                   |  |  |  |  |
| Test Item   | Inspector   | Date      | Number of Tested      |  |  |  |  |
| Physical Inspection                                       | Bo Yang Lee | 2019/4/19 | 2                     |  |  |  |  |
| Photometry Test   | Bo Yang Lee | 2019/4/19 | 2                     |  |  |  |  |
| Color Test  | Bo Yang Lee | 2019/4/19 | 2                     |  |  |  |  |

**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting



## TURN SIGNAL LAMP TEST REPORT

|                          |                                   |
|--------------------------|-----------------------------------|
| Test Component           | RH : 11-DG001 / LH : 11-DG002     |
| Applicant                | Morimoto Lighting                 |
| Test Laboratory          | ISOQA Technical Service Co., Ltd. |
| Test Date                | 2019/4/19                         |
| Report Number            | 108-ISOQA-19-0176                 |
| Number of devices tested | See below                         |
| Light source Designation | LED x 56                          |

### 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: : May 27, 2019


**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

**PHYSICAL INSPECTION**

Inspection Performed by : Bo Yang Lee Date : 2019/4/19

|                          |   |      |  |
|--------------------------|---|------|--|
| Marking on Lens          | DOT SAE 09 STIRAP2 11-DG002 (OR 11-DG001)  |      |  |
| Marking on Housing       | 12V   |      |  |
| Lens Material            | CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE N-000 Clear   |      |  |
| Coating of External Lens | N/A   |      |  |
| Light Sources Used       | Trade No/ Designation   | LED  |  |
|                          | Quantity  | 56   |  |
|                          | Rated Voltage   | 12 V |  |

Remarks : \_\_\_\_\_

**EFFECTIVE PROJECTED LUMINOUS LENS AREA**

Test Performed by : Bo Yang Lee Date : 2019/4/19

|   |  |       |        |
|---|--|-------|--------|
| 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 <sup>2</sup> ) | Requirement  | Value | Result |
|   | 5000   | 13260 | PASSED |

Remarks : \_\_\_\_\_

**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

**PHOTOMETRY TEST**

Test Performed by : Bo Yang Lee                      Date : 2019/4/19  
 Test distance(m) : 3.167 m                      Light Source Designation : LED × 56  
 Tested Voltage : 12.8 V                      Lighted Sections : 3

| Steady Burning at H-V<br>(according to SAE J1889) | Sample 1 |        |       | Sample 2 |        |       |
|---|----------|--------|-------|----------|--------|-------|
|   | 1 min.   | Steady | Ratio | 1 min.   | Steady | Ratio |
|   | 238.2    | 175.1  | 1.36  | 225.5    | 167.2  | 1.35  |

| Test Points | Zone | Rto.      | Minimum<br>(cd) | Maximum<br>(cd) | Sample 1 |                         | Sample 2 |                         |
|-------------|------|-----------|-----------------|-----------------|----------|-------------------------|----------|-------------------------|
|             |      | Tail Lamp |                 |                 | Rto      | Measured <sup>(1)</sup> | Rto      | Measured <sup>(1)</sup> |
| 5U - 20L    | 1    | 3         | 15              | 420             | 9.3      | 104.60                  | 10.0     | 105.70                  |
| 5D - 20L    | 1    | 3         | 15              | 420             | 9.3      | 98.50                   | 9.8      | 105.10                  |
| 10U - 5L    | 1    | 3         | 22              | 420             | 9.2      | 112.90                  | 10.3     | 107.90                  |
| 10D - 5L    | 1    | 3         | 22              | 420             | 9.3      | 111.00                  | 9.7      | 103.50                  |
| 5U - 10L    | 2    | 3         | 40              | 420             | 9.2      | 121.10                  | 10.1     | 113.00                  |
| H - 10L     | 2    | 3         | 55              | 420             | 9.4      | 123.30                  | 10.0     | 117.40                  |
| 5D - 10L    | 2    | 3         | 40              | 420             | 9.3      | 115.90                  | 9.9      | 114.60                  |
| 5U - V      | 3    | 5         | 95              | 420             | 9.3      | 178.70                  | 10.1     | 155.30                  |
| H - 5L      | 3    | 5         | 110             | 420             | 9.3      | 164.30                  | 10.1     | 145.60                  |
| H - V       | 3    | 5         | 110             | 420             | 9.1      | 175.10                  | 9.2      | 167.20                  |
| H - 5R      | 3    | 5         | 110             | 420             | 9.5      | 166.10                  | 10.0     | 149.30                  |
| 5D - V      | 3    | 3         | 95              | 420             | 9.4      | 172.70                  | 9.9      | 158.60                  |
| 5U - 10R    | 4    | 3         | 40              | 420             | 9.3      | 119.50                  | 10.0     | 112.60                  |
| H - 10R     | 4    | 3         | 55              | 420             | 9.3      | 120.60                  | 9.8      | 117.50                  |
| 5D - 10R    | 4    | 3         | 40              | 420             | 9.4      | 119.70                  | 9.8      | 113.70                  |
| 10U - 5R    | 5    | 3         | 22              | 420             | 9.5      | 119.20                  | 10.2     | 105.60                  |
| 10D - 5R    | 5    | 3         | 22              | 420             | 9.4      | 112.80                  | 9.7      | 107.40                  |
| 5U - 20R    | 5    | 3         | 15              | 420             | 9.3      | 102.00                  | 9.8      | 97.10                   |
| 5D - 20R    | 5    | 3         | 15              | 420             | 9.5      | 105.50                  | 9.5      | 99.60                   |
| Visibility  |      |           | 0.3             | 420             | -        | (1.49)<br>180.88        | -        | (1.49)<br>170.30        |

**Zone Total Luminous Intensity**

| Zone | Minimum (cd) | Sample 1 | Sample 2 |
|------|--------------|----------|----------|
| 1    | 70           | 427.00   | 422.20   |
| 2    | 135          | 360.30   | 345.00   |
| 3    | 520          | 856.90   | 776.00   |
| 4    | 135          | 359.80   | 343.80   |
| 5    | 70           | 439.50   | 409.70   |

(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.

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Test Component : RH : 11-DG001 / LH : 11-DG002

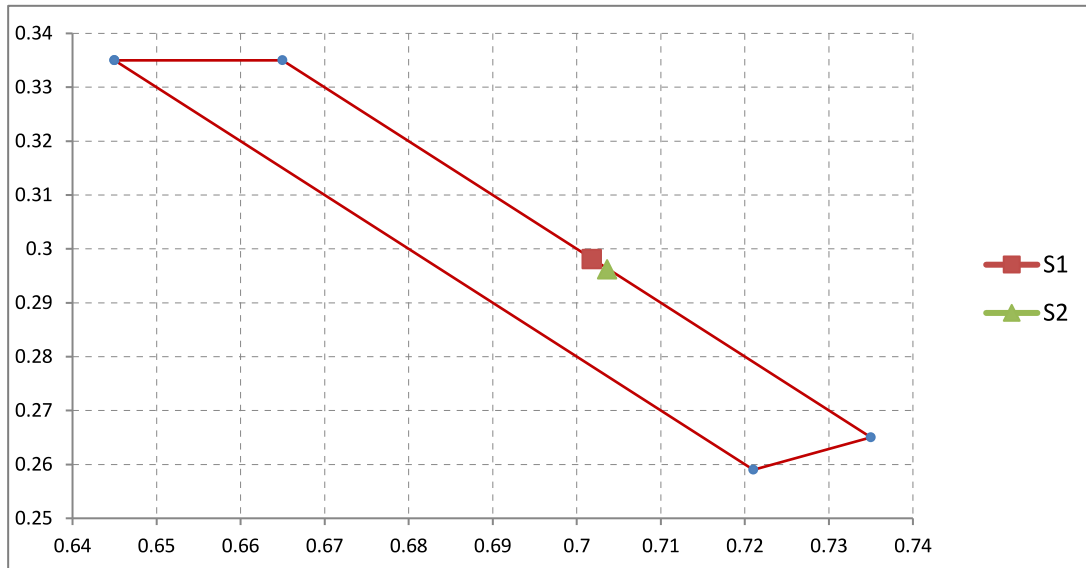
Applicant : Morimoto Lighting



**COLOR TEST**

Test Performed by : Bo Yang Lee                      Date : 2019/4/19  
Test distance(m) : 3.073 m                      Light Source Designation : LED × 56  
Color of Light Emitted : Red

| Color emitted from HV point |    | Sample 1 | Sample 2 |
|-----------------------------|----|----------|----------|
|                             | x= | 0.7018   | 0.7036   |
|                             | y= | 0.2981   | 0.2962   |



Remarks : \_\_\_\_\_



**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting



## TAIL LAMP TEST REPORT

|                          |                                   |
|--------------------------|-----------------------------------|
| Test Component           | RH : 11-DG001 / LH : 11-DG002     |
| Applicant                | Morimoto Lighting                 |
| Test Laboratory          | ISOQA Technical Service Co., Ltd. |
| Test Date                | 2019/4/19                         |
| Report Number            | 108-ISOQA-19-0176                 |
| Number of devices tested | See below                         |
| Light source Designation | LED × 56                          |

### SUMMARY

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

Remarks : \_\_\_\_\_

A handwritten signature in black ink that reads 'Arthur Chang'.

Signature of Responsible Laboratory Officer

Title : Laboratory Manager

Date: : May 27, 2019





**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

**COLOR TEST**

Test Performed by : Bo Yang Lee

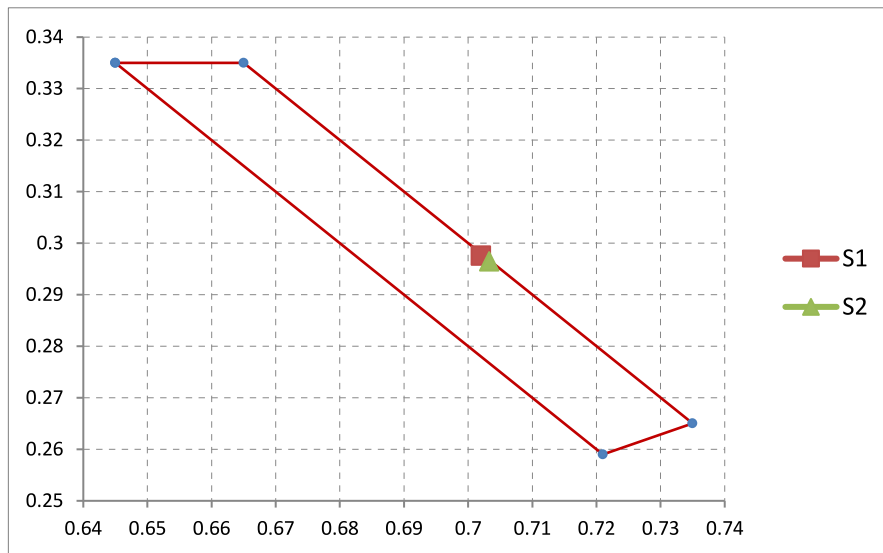
Date : 2019/4/19

Test distance(m) : 3.073 m

Light Source Designation : LED x 56

Color of Light Emitted : Red

| Color emitted from HV point |    | Sample 1 | Sample 2 |
|-----------------------------|----|----------|----------|
|                             | x= | 0.7020   | 0.7033   |
|                             | y= | 0.2976   | 0.2965   |



Remarks :

**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting



## STOP LAMP TEST REPORT

|                          |                                   |
|--------------------------|-----------------------------------|
| Test Component           | RH : 11-DG001 / LH : 11-DG002     |
| Applicant                | Morimoto Lighting                 |
| Test Laboratory          | ISOQA Technical Service Co., Ltd. |
| Test Date                | 2019/4/19                         |
| Report Number            | 108-ISOQA-19-0176                 |
| Number of devices tested | See below                         |
| Light source Designation | LED × 56                          |

### 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: : May 27, 2019


**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

PHYSICAL INSPECTION

Inspection Performed by : Bo Yang Lee Date : 2019/4/19

|                          |   |      |  |
|--------------------------|---|------|--|
| Marking on Lens          | DOT SAE 09 STIRAP2 11-DG002 (OR 11-DG001)  |      |  |
| Marking on Housing       | 12V   |      |  |
| Lens Material            | CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE N-000 Clear   |      |  |
| Coating of External Lens | N/A   |      |  |
| Light Sources Used       | Trade No/ Designation   | LED  |  |
|                          | Quantity  | 56   |  |
|                          | Rated Voltage   | 12 V |  |

Remarks : \_\_\_\_\_

EFFECTIVE PROJECTED LUMINOUS LENS AREA

Test Performed by : Bo Yang Lee Date : 2019/4/19

|   |  |       |        |
|---|--|-------|--------|
| 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 <sup>2</sup> ) | Requirement  | Value | Result |
|   | 5000   | 13260 | PASSED |

Remarks : \_\_\_\_\_



**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

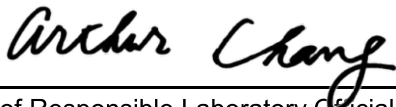
## BACKUP LAMP TEST REPORT

|                          |                                   |
|--------------------------|-----------------------------------|
| Test Component           | RH : 11-DG001 / LH : 11-DG002     |
| Applicant                | Morimoto Lighting                 |
| Test Laboratory          | ISOQA Technical Service Co., Ltd. |
| Test Date                | 2019/4/19                         |
| Report Number            | 108-ISOQA-19-0176                 |
| Number of devices tested | See below                         |
| Light source Designation | LED × 1                           |

### 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: : May 27, 2019



**Report No. : 108-ISOQA-19-0176**

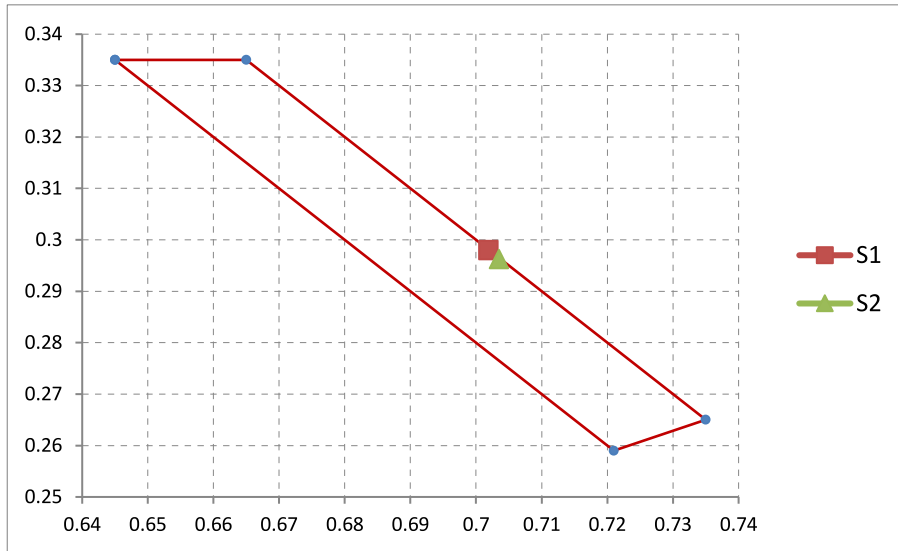
Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

**COLOR TEST**

Test Performed by : Bo Yang Lee                      Date : 2019/4/19  
Test distance(m) : 3.073 m                      Light Source Designation : LED × 56  
Color of Light Emitted : Red


| Color emitted from HV point |    | Sample 1 | Sample 2 |
|-----------------------------|----|----------|----------|
|                             | x= | 0.7019   | 0.7035   |
|                             | y= | 0.2980   | 0.2963   |



Remarks :

**Report No. : 108-ISOQA-19-0176***Test Component* : RH : 11-DG001 / LH : 11-DG002*Applicant* : Morimoto Lighting**PHYSICAL INSPECTION**

Inspection Performed by : Bo Yang Lee Date : 2019/4/19

|                          |   |      |
|--------------------------|---|------|
| Marking on Lens          | DOT SAE 09 STIRAP2 11-DG002 (OR 11-DG001)  |      |
| Marking on Housing       | 12V   |      |
| Lens Material            | CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE N-000 Clear   |      |
| Coating of External Lens | N/A   |      |
| Light Sources Used       | Trade No/ Designation   | LED  |
|                          | Quantity  | 1    |
|                          | Rated Voltage   | 12 V |

Remarks : \_\_\_\_\_

**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

**PHOTOMETRY TEST**

Test Performed by : Bo Yang Lee                      Date : 2019/4/19  
 Test distance(m) : 3.167 m                      Light Source Designation : LED × 1  
 Tested Voltage : 12.8 V                      Lighted Sections : -

| Steady Burning at H-V<br>(according to SAE J1889) | Sample 1 |        |       | Sample 2 |        |       |
|---|----------|--------|-------|----------|--------|-------|
|   | 1 min.   | Steady | Ratio | 1 min.   | Steady | Ratio |
|   | 121.0    | 103.7  | 1.17  | 116.7    | 99.7   | 1.17  |

| Test Points | Zone | Two Lamps System |              | Sample 1                | Sample 2                |
|-------------|------|------------------|--------------|-------------------------|-------------------------|
|             |      | Minimum (cd)     | Maximum (cd) | Measured <sup>(1)</sup> | Measured <sup>(1)</sup> |
| 5U - 45L    | 1    | 15               | 300          | 36.46                   | 26.25                   |
| H - 45L     | 1    | 15               | 300          | 46.68                   | 56.77                   |
| 5D - 45L    | 1    | 15               | -            | 45.31                   | 55.72                   |
| H - 30L     | 2    | 25               | 300          | 89.70                   | 86.10                   |
| 5D - 30L    | 2    | 25               | -            | 66.91                   | 79.20                   |
| 10U - 10L   | 3    | 10               | 300          | 14.32                   | 13.43                   |
| 10U - V     | 3    | 15               | 300          | 9.58                    | 12.91                   |
| 10U - 10R   | 3    | 10               | 300          | 8.56                    | 16.22                   |
| 5U - 10L    | 3    | 20               | 300          | 53.68                   | 40.50                   |
| 5U - V      | 3    | 25               | 300          | 50.61                   | 45.40                   |
| 5U - 10R    | 3    | 20               | 300          | 47.27                   | 46.59                   |
| H - 10L     | 4    | 50               | 300          | 102.10                  | 99.60                   |
| H - V       | 4    | 80               | 300          | 103.70                  | 99.70                   |
| H - 10R     | 4    | 50               | 300          | 105.00                  | 95.30                   |
| 5D - 10L    | 4    | 50               | -            | 72.83                   | 87.80                   |
| 5D - V      | 4    | 80               | -            | 75.45                   | 91.40                   |
| 5D - 10R    | 4    | 50               | -            | 80.39                   | 88.50                   |
| H - 30R     | 5    | 25               | 300          | 87.40                   | 80.00                   |
| 5D - 30R    | 5    | 25               | -            | 74.68                   | 66.52                   |
| 5U - 45R    | 6    | 15               | 300          | 15.93                   | 14.01                   |
| H - 45R     | 6    | 15               | 300          | 37.27                   | 15.71                   |
| 5D - 45R    | 6    | 15               | -            | 35.51                   | 16.09                   |
| Maximum     |      | -                | 300          | 109.02                  | 104.34                  |

**Zone Total Luminous Intensity**

| Zone | Minimum (cd) | Sample 1 | Sample 2 |
|------|--------------|----------|----------|
| 1    | 45           | 128.45   | 138.74   |
| 2    | 50           | 156.61   | 165.30   |
| 3    | 100          | 184.02   | 175.05   |
| 4    | 360          | 539.47   | 562.30   |
| 5    | 50           | 162.08   | 146.52   |
| 6    | 45           | 88.71    | 45.81    |

(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.

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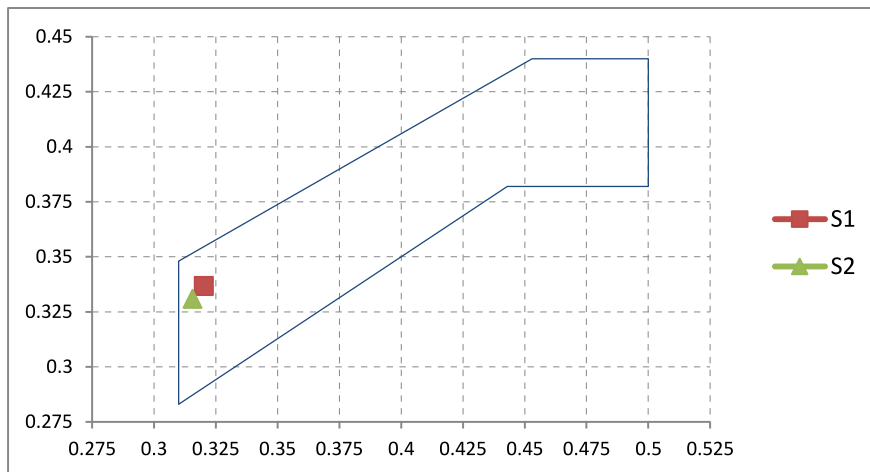
Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

**COLOR TEST**

Test Performed by : Bo Yang Lee                      Date : 2019/4/19  
Test distance(m) : 3.073 m                      Light Source Designation : LED × 1  
Color of Light Emitted : White

| Color emitted from HV point | Sample 1 |        | Sample 2 |
|-----------------------------|----------|--------|----------|
|                             | x=       | 0.3202 | 0.3157   |
|                             | y=       | 0.3368 | 0.3310   |



Remarks : \_\_\_\_\_

**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting



## SIDE MARKER LAMP TEST REPORT

|                          |                                   |
|--------------------------|-----------------------------------|
| Test Component           | RH : 11-DG001 / LH : 11-DG002     |
| Applicant                | Morimoto Lighting                 |
| Test Laboratory          | ISOQA Technical Service Co., Ltd. |
| Test Date                | 2019/4/19                         |
| Report Number            | 108-ISOQA-19-0176                 |
| Number of devices tested | See below                         |
| Light source Designation | LED × 8                           |

### 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: : May 27, 2019

**Report No. : 108-ISOQA-19-0176**


Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting



**PHYSICAL INSPECTION**

Inspection Performed by : Bo Yang Lee Date : 2019/4/19

|                          |   |      |
|--------------------------|---|------|
| Marking on Lens          | DOT SAE 09 STIRAP2 11-DG002 (OR 11-DG001)  |      |
| Marking on Housing       | 12V   |      |
| Lens Material            | CHIMEI Corporation ACRYREX CM-205 POLYMETHYL METHACRYLATE N-000 Clear   |      |
| Coating of External Lens | N/A   |      |
| Light Sources Used       | Trade No/ Designation   | LED  |
|                          | Quantity  | 8    |
|                          | Rated Voltage   | 12 V |

Remarks : \_\_\_\_\_



**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

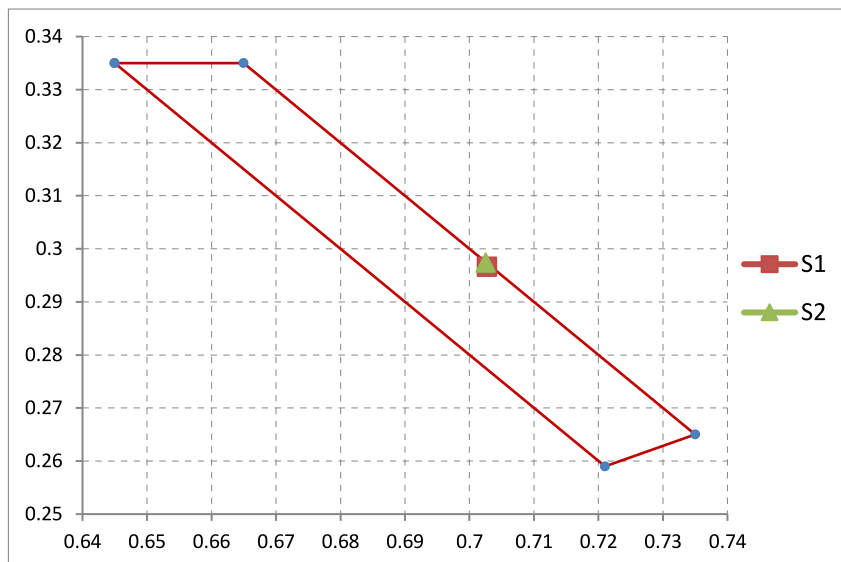
Applicant : Morimoto Lighting



**COLOR TEST**

Test Performed by : Bo Yang Lee                      Date : 2019/4/19  
Test distance(m) : 3.073 m                      Light Source Designation : LED × 8  
Color of Light Emitted : Red

| Color emitted from HV point | Sample 1 |        | Sample 2 |
|-----------------------------|----------|--------|----------|
|                             | x=       | 0.7027 | 0.7025   |
|                             | y=       | 0.2966 | 0.2974   |



Remarks :



**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting



## REFLEX REFLECTOR TEST REPORT

|                          |                                   |
|--------------------------|-----------------------------------|
| Test Component           | RH : 11-DG001 / LH : 11-DG002     |
| Applicant                | Morimoto Lighting                 |
| Test Laboratory          | ISOQA Technical Service Co., Ltd. |
| Test Date                | 2019/4/19                         |
| Report Number            | 108-ISOQA-19-0176                 |
| 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: : May 27, 2019



**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting

PHOTOMETRY TEST

Rear Reflex Reflector

Test Performed by : Bo Yang Lee Date : 2019/4/19  
Test distance(m) : 30.48 m Color of Light Emitted : Red

| Observe Angle | Entrance Angle |     | Minimum (mcd/ lx) | Sample 1 | Sample 2 |
|---------------|----------------|-----|-------------------|----------|----------|
| 0.2           | 0              | 0   | 420               | 427.00   | 493.00   |
| 0.2           | H              | 10U | 280               | 287.00   | 402.00   |
| 0.2           | H              | 10D | 280               | 329.00   | 319.00   |
| 0.2           | 20L            | V   | 140               | 171.70   | 194.30   |
| 0.2           | 20R            | V   | 140               | 171.10   | 239.00   |
| 1.5           | 0              | 0   | 6                 | 34.80    | 42.00    |
| 1.5           | H              | 10U | 5                 | 18.10    | 21.30    |
| 1.5           | H              | 10D | 5                 | 16.50    | 24.40    |
| 1.5           | 20L            | V   | 3                 | 7.70     | 7.80     |
| 1.5           | 20R            | V   | 3                 | 7.60     | 10.20    |

**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting



**PHOTOMETRY TEST**  
**Side Reflex Reflector**

Test Performed by : Bo Yang Lee                      Date : 2019/4/19  
Test distance(m) : 30.48 m                      Color of Light Emitted : Red

| Observe Angle | Entrance Angle |     | Minimum (mcd/ lx) | Side LHM | Side RHM |
|---------------|----------------|-----|-------------------|----------|----------|
| 0.2           | 0              | 0   | 420               | 1135.00  | 602.00   |
| 0.2           | H              | 10U | 280               | 828.00   | 450.00   |
| 0.2           | H              | 10D | 280               | 855.00   | 460.00   |
| 0.2           | 20L            | V   | 140               | 716.00   | 189.10   |
| 0.2           | 20R            | V   | 140               | 274.00   | 277.00   |
| 1.5           | 0              | 0   | 6                 | 38.00    | 26.30    |
| 1.5           | H              | 10U | 5                 | 27.50    | 16.70    |
| 1.5           | H              | 10D | 5                 | 24.70    | 22.80    |
| 1.5           | 20L            | V   | 3                 | 15.70    | 11.60    |
| 1.5           | 20R            | V   | 3                 | 11.00    | 10.60    |

**COLOR TEST**

Test Performed by : Bo Yang Lee                      Date : 2019/4/19  
Color of Light Emitted : Red

| Requirement (Visual Method)  | PASS | FAILED |
|--|------|--------|
| Red. Red is not acceptable if it is less saturated (paler), yellower, or bluer than the limit standards. | x    |        |

Remarks : \_\_\_\_\_

**Report No. : 108-ISOQA-19-0176**

Test Component : RH : 11-DG001 / LH : 11-DG002

Applicant : Morimoto Lighting



Front View



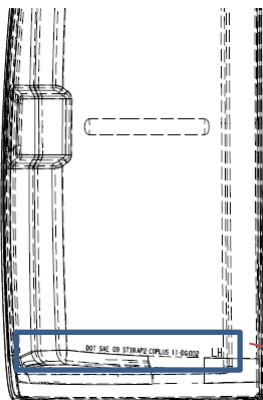
Side View



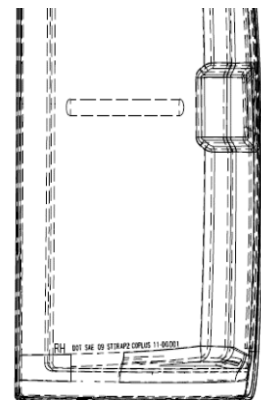
Top View




Rear View



DOT SAE 09 STIRAP2 11-DG002



DOT SAE 09 STIRAP2 11-DG002 (OR 11-DG001) 

**Marking**