

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: RSA

Report Number: P219684

Luminaire Tested: **MRZ-1-REC-X-3-L35-80-NFL-UNV-X-STD-SNT**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219684  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14874)  
Test Lab: INNOVATION CENTER (G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: RSA  
Catalog Number: MRZ-1-REC-X-3-L35-80-NFL-UNV-X-STD-SNT  
Description: MRZ INTEGRAL LED DOWNLIGHT  
25 DEGREE NARROW FLOOD OPTIC WITH SNOOT, LIGHT LEVEL 3  
Light Source: (1) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1231.0 lumens  
Efficiency: N/A  
Efficacy: 103.4 lumens/watt  
Spacing Criteria (0/90/45): 0.42 / 0.41 / 0.38  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

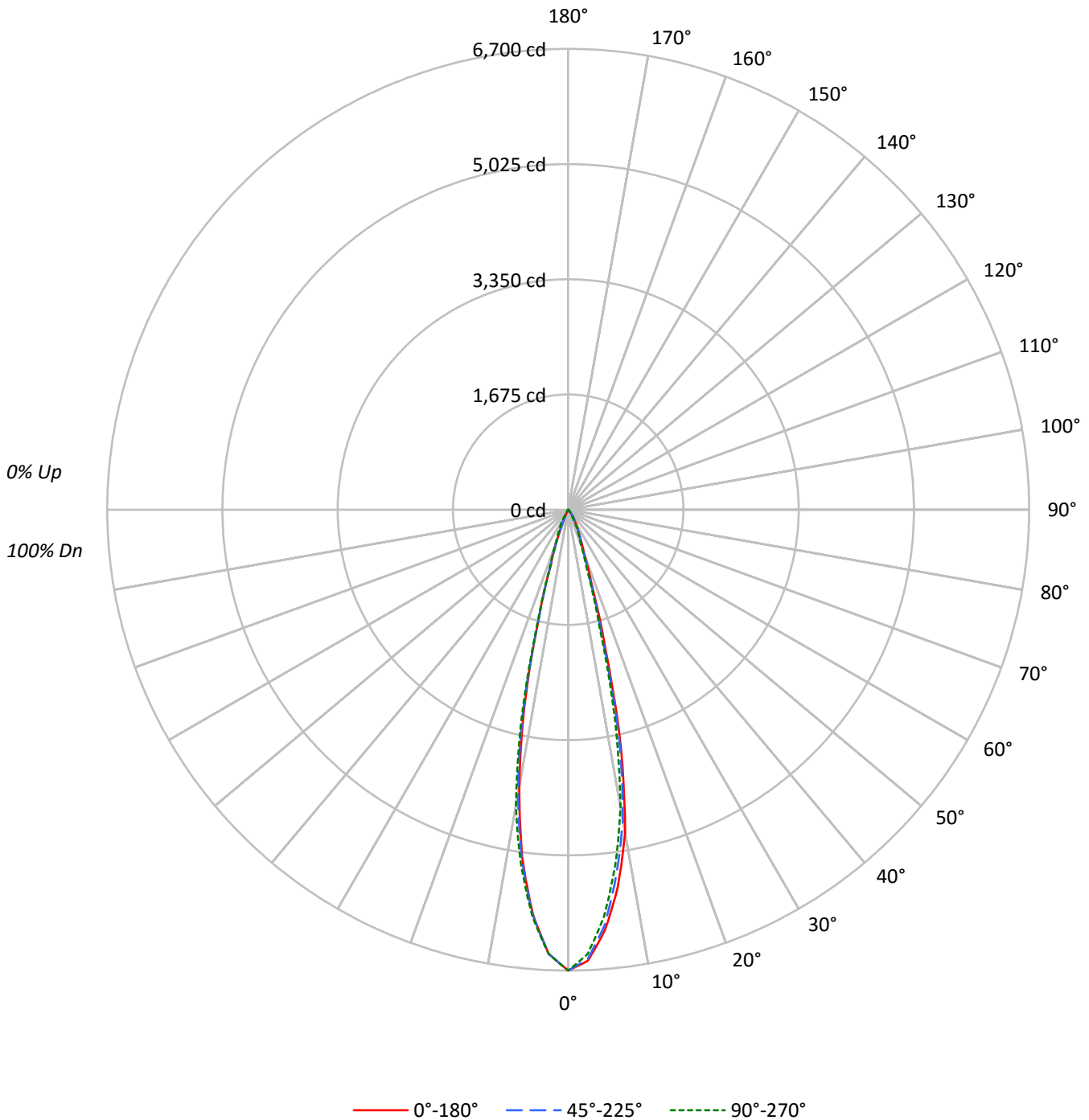
Input Watts (W): 11.9  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P219684

CATALOG NUMBER: MRZ-1-REC-X-3-L35-80-NFL-UNV-X-STD-SNT

### Luminous Intensity Polar Plot





TEST NUMBER: P219684

CATALOG NUMBER: MRZ-1-REC-X-3-L35-80-NFL-UNV-X-STD-SNT

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|---|
| RF  | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |  |   |
| RC  | 80  |     |     |     |     | 70  |     |     |     |     | 50  |     |     |     |     | 30  |     |     |     |     | 10  |     |     |     |  | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 0   |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |  |   |
| 1   | 115 | 113 | 111 | 110 | 113 | 111 | 110 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 100 | 99  | 99  | 97  | 97  | 97  | 97  | 97  | 97  | 97  |  |   |
| 2   | 112 | 108 | 105 | 103 | 110 | 107 | 104 | 102 | 104 | 102 | 100 | 101 | 99  | 98  | 98  | 97  | 96  | 94  | 94  | 94  | 94  | 94  | 94  | 94  |  |   |
| 3   | 108 | 104 | 101 | 98  | 107 | 103 | 100 | 97  | 100 | 98  | 96  | 98  | 96  | 94  | 96  | 94  | 93  | 92  | 92  | 92  | 92  | 92  | 92  | 92  |  |   |
| 4   | 105 | 100 | 97  | 94  | 104 | 99  | 96  | 93  | 97  | 95  | 92  | 96  | 93  | 91  | 94  | 92  | 90  | 89  | 89  | 89  | 89  | 89  | 89  | 89  |  |   |
| 5   | 103 | 97  | 93  | 90  | 101 | 96  | 93  | 90  | 95  | 92  | 89  | 93  | 91  | 89  | 92  | 90  | 88  | 87  | 87  | 87  | 87  | 87  | 87  | 87  |  |   |
| 6   | 100 | 94  | 90  | 88  | 99  | 94  | 90  | 87  | 92  | 89  | 87  | 91  | 88  | 86  | 90  | 88  | 86  | 85  | 85  | 85  | 85  | 85  | 85  | 85  |  |   |
| 7   | 98  | 92  | 88  | 85  | 97  | 91  | 87  | 85  | 90  | 87  | 84  | 89  | 86  | 84  | 88  | 86  | 84  | 83  | 83  | 83  | 83  | 83  | 83  | 83  |  |   |
| 8   | 95  | 89  | 85  | 83  | 94  | 89  | 85  | 83  | 88  | 85  | 82  | 87  | 84  | 82  | 86  | 84  | 82  | 81  | 81  | 81  | 81  | 81  | 81  | 81  |  |   |
| 9   | 93  | 87  | 83  | 81  | 92  | 86  | 83  | 80  | 86  | 82  | 80  | 85  | 82  | 80  | 84  | 82  | 80  | 79  | 79  | 79  | 79  | 79  | 79  | 79  |  |   |
| 10  | 91  | 85  | 81  | 79  | 90  | 84  | 81  | 79  | 84  | 81  | 78  | 83  | 80  | 78  | 83  | 80  | 78  | 77  | 77  | 77  | 77  | 77  | 77  | 77  |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°      | 90°     | 180°    |
|-----|---------|---------|---------|
| 0°  | 3305396 | 3305396 | 3305396 |
| 5°  | 3038446 | 2944048 | 2920276 |
| 10° | 2386219 | 2194440 | 2050054 |
| 15° | 1058855 | 900921  | 861029  |
| 20° | 352304  | 286884  | 258531  |
| 25° | 195325  | 164241  | 53948   |
| 30° | 112859  | 59022   | 17091   |
| 35° | 64206   | 17166   | 6324    |
| 40° | 33813   | 9661    | 3864    |
| 45° | 16746   | 6280    | 1047    |
| 50° | 9211    | 3454    | 0       |
| 55° | 6451    | 2581    | 0       |
| 60° | 4440    | 1480    | 0       |
| 65° | 3502    | 1751    | 0       |
| 70° | 2164    | 0       | 0       |
| 75° | 2859    | 0       | 0       |
| 80° | 0       | 0       | 0       |
| 85° | 0       | 0       | 0       |



TEST NUMBER: P219684

CATALOG NUMBER: MRZ-1-REC-X-3-L35-80-NFL-UNV-X-STD-SNT

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 520.2  | 42.3      |
| 10°-20°   | 537.2  | 43.6      |
| 20°-30°   | 123.3  | 10.0      |
| 30°-40°   | 35.5   | 2.9       |
| 40°-50°   | 9.9    | 0.8       |
| 50°-60°   | 3.0    | 0.2       |
| 60°-70°   | 1.2    | 0.1       |
| 70°-80°   | 0.6    | 0.0       |
| 80°-90°   | 0.0    | 0.0       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1180.7 | 95.9      |
| 0°-40°    | 1216.2 | 98.8      |
| 0°-60°    | 1229.2 | 99.9      |
| 0°-90°    | 1231.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1231.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 6700 | 6700 | 6700 | 6700 | 6700 |      |
| 5°  | 6135 | 6066 | 5944 | 5914 | 5896 | 542  |
| 15° | 2073 | 1890 | 1764 | 1668 | 1686 | 605  |
| 25° | 359  | 345  | 302  | 111  | 99   | 173  |
| 35° | 107  | 99   | 28   | 12   | 10   | 70   |
| 45° | 24   | 22   | 9    | 3    | 2    | 21   |
| 55° | 8    | 6    | 3    | 0    | 0    | 7    |
| 65° | 3    | 3    | 2    | 0    | 0    | 3    |
| 75° | 2    | 2    | 0    | 0    | 0    | 1    |
| 85° | 0    | 0    | 0    | 0    | 0    | 0    |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



TEST NUMBER: P219684

CATALOG NUMBER: MRZ-1-REC-X-3-L35-80-NFL-UNV-X-STD-SNT

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 6699.5 | 6699.5 | 6699.5 | 6699.5 | 6699.5 | 6699.5 | 6699.5 | 6699.5 | 6699.5 |
| 2.5°  | 6564.4 | 6562.9 | 6534.3 | 6504.3 | 6465.3 | 6468.3 | 6462.3 | 6471.3 | 6466.8 |
| 5°    | 6135.0 | 6102.0 | 6066.0 | 5999.9 | 5944.4 | 5920.4 | 5914.4 | 5894.9 | 5896.4 |
| 7.5°  | 5530.1 | 5459.5 | 5357.5 | 5270.4 | 5223.9 | 5163.8 | 5138.3 | 5084.3 | 5106.8 |
| 10°   | 4763.0 | 4671.5 | 4579.9 | 4471.8 | 4380.2 | 4281.2 | 4204.6 | 4155.1 | 4092.0 |
| 12.5° | 3536.6 | 3463.1 | 3425.5 | 3284.4 | 3174.8 | 3098.3 | 3056.3 | 2936.2 | 2937.7 |
| 15°   | 2073.0 | 1981.5 | 1889.9 | 1817.8 | 1763.8 | 1735.3 | 1667.7 | 1651.2 | 1685.7 |
| 17.5° | 1107.8 | 1067.3 | 1007.2 | 941.2  | 903.7  | 876.6  | 854.1  | 845.1  | 831.6  |
| 20°   | 671.0  | 659.0  | 624.5  | 580.9  | 546.4  | 522.4  | 499.9  | 493.9  | 492.4  |
| 22.5° | 484.9  | 478.9  | 456.3  | 424.8  | 391.8  | 336.2  | 268.7  | 255.2  | 259.7  |
| 25°   | 358.8  | 354.3  | 345.3  | 321.2  | 301.7  | 166.6  | 111.1  | 106.6  | 99.1   |
| 27.5° | 268.7  | 265.7  | 255.2  | 238.7  | 202.6  | 73.6   | 61.5   | 57.0   | 57.0   |
| 30°   | 198.1  | 196.6  | 190.6  | 174.1  | 103.6  | 42.0   | 34.5   | 31.5   | 30.0   |
| 32.5° | 145.6  | 145.6  | 139.6  | 124.6  | 46.5   | 27.0   | 21.0   | 19.5   | 18.0   |
| 35°   | 106.6  | 106.6  | 99.1   | 85.6   | 28.5   | 18.0   | 12.0   | 12.0   | 10.5   |
| 37.5° | 76.6   | 75.1   | 70.6   | 54.0   | 21.0   | 12.0   | 9.0    | 9.0    | 7.5    |
| 40°   | 52.5   | 52.5   | 48.0   | 33.0   | 15.0   | 9.0    | 7.5    | 6.0    | 6.0    |
| 42.5° | 36.0   | 36.0   | 33.0   | 21.0   | 12.0   | 7.5    | 4.5    | 4.5    | 4.5    |
| 45°   | 24.0   | 24.0   | 22.5   | 15.0   | 9.0    | 4.5    | 3.0    | 3.0    | 1.5    |
| 47.5° | 16.5   | 16.5   | 15.0   | 10.5   | 6.0    | 3.0    | 1.5    | 1.5    | 1.5    |
| 50°   | 12.0   | 12.0   | 10.5   | 7.5    | 4.5    | 3.0    | 1.5    | 1.5    | 0.0    |
| 52.5° | 9.0    | 9.0    | 9.0    | 6.0    | 3.0    | 1.5    | 0.0    | 0.0    | 0.0    |
| 55°   | 7.5    | 7.5    | 6.0    | 4.5    | 3.0    | 1.5    | 0.0    | 0.0    | 0.0    |
| 57.5° | 6.0    | 6.0    | 4.5    | 3.0    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    |
| 60°   | 4.5    | 4.5    | 4.5    | 3.0    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    |
| 62.5° | 3.0    | 3.0    | 3.0    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    |
| 65°   | 3.0    | 3.0    | 3.0    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    |
| 67.5° | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    |
| 70°   | 1.5    | 1.5    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 72.5° | 1.5    | 1.5    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 75°   | 1.5    | 1.5    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 77.5° | 1.5    | 1.5    | 1.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)