

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: P219683

Luminaire Tested: **MRZ-1-REC-X-3-L30-80-NFL-UNV-X-STD-SNT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219683
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-L30-80-NFL-UNV-X-STD-SNT
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH SNOOT, LIGHT LEVEL 3
Light Source: (1) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1167.9 lumens
Efficiency: N/A
Efficacy: 98.1 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

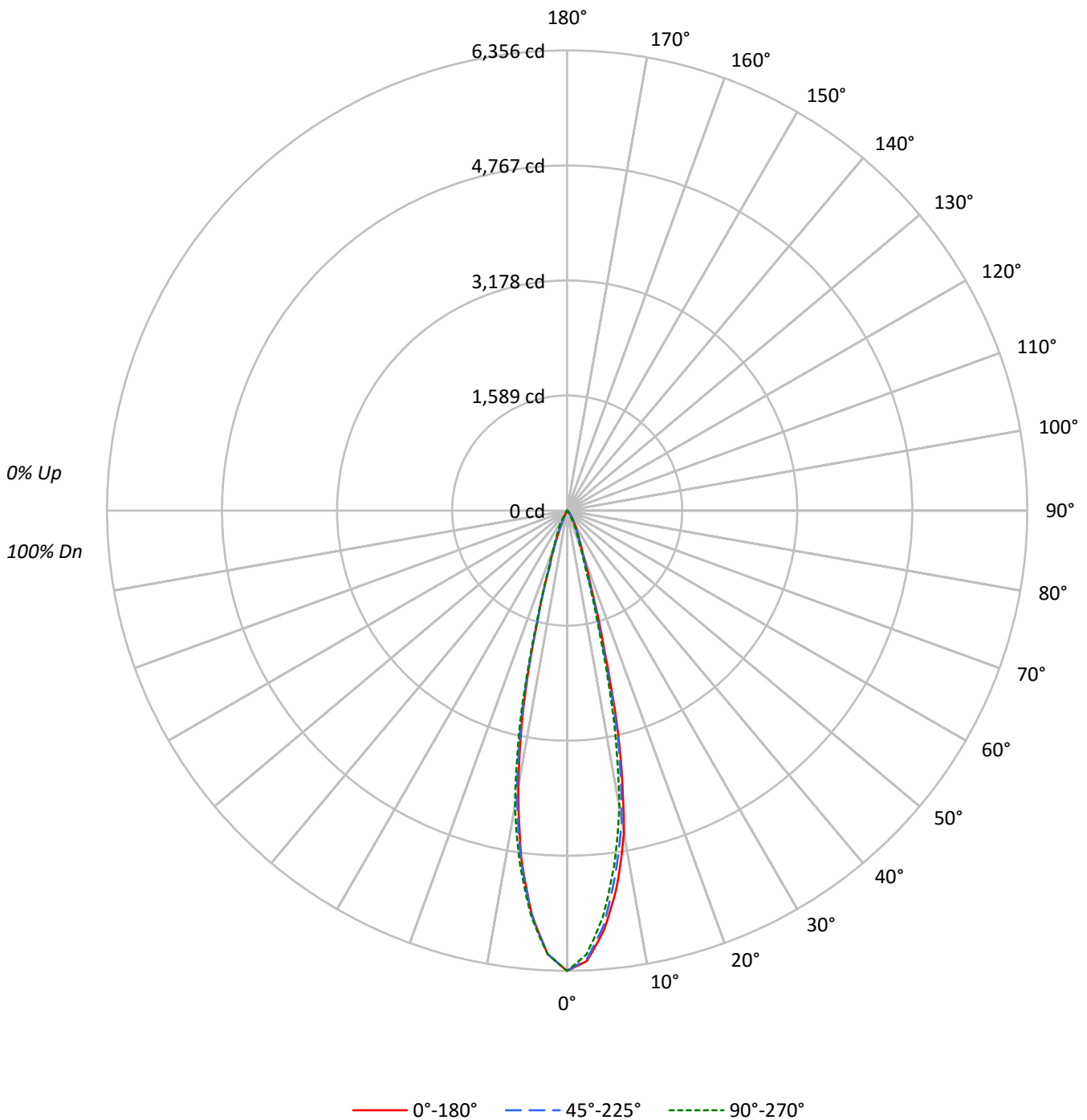
Input Watts (W): 11.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|---------|---------|---------|
| 0° | 3136167 | 3136167 | 3136167 |
| 5° | 2882883 | 2793339 | 2770755 |
| 10° | 2264077 | 2082117 | 1945096 |
| 15° | 1004661 | 854797 | 816948 |
| 20° | 334243 | 272183 | 245300 |
| 25° | 185308 | 155857 | 51172 |
| 30° | 107105 | 56002 | 16237 |
| 35° | 60893 | 16322 | 6023 |
| 40° | 32074 | 9146 | 3671 |
| 45° | 15909 | 5931 | 977 |
| 50° | 8750 | 3301 | 0 |
| 55° | 6107 | 2409 | 0 |
| 60° | 4243 | 1381 | 0 |
| 65° | 3269 | 1634 | 0 |
| 70° | 2020 | 0 | 0 |
| 75° | 2669 | 0 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 493.5 | 42.3 |
| 10°-20° | 509.7 | 43.6 |
| 20°-30° | 117.0 | 10.0 |
| 30°-40° | 33.7 | 2.9 |
| 40°-50° | 9.4 | 0.8 |
| 50°-60° | 2.9 | 0.2 |
| 60°-70° | 1.1 | 0.1 |
| 70°-80° | 0.5 | 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° | 1120.2 | 95.9 |
| 0°-40° | 1154.0 | 98.8 |
| 0°-60° | 1166.3 | 99.9 |
| 0°-90° | 1167.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1167.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 6356 | 6356 | 6356 | 6356 | 6356 | |
| 5° | 5821 | 5755 | 5640 | 5612 | 5594 | 514 |
| 15° | 1967 | 1793 | 1674 | 1582 | 1599 | 574 |
| 25° | 340 | 328 | 286 | 105 | 94 | 164 |
| 35° | 101 | 94 | 27 | 11 | 10 | 66 |
| 45° | 23 | 21 | 8 | 3 | 1 | 20 |
| 55° | 7 | 6 | 3 | 0 | 0 | 6 |
| 65° | 3 | 3 | 1 | 0 | 0 | 2 |
| 75° | 1 | 1 | 0 | 0 | 0 | 1 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 |



TEST NUMBER: P219683

CATALOG NUMBER: MRZ-1-REC-X-3-L30-80-NFL-UNV-X-STD-SNT

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 6356.5 | 6356.5 | 6356.5 | 6356.5 | 6356.5 | 6356.5 | 6356.5 | 6356.5 | 6356.5 |
| 2.5° | 6228.3 | 6226.9 | 6199.8 | 6171.3 | 6134.3 | 6137.1 | 6131.4 | 6140.0 | 6135.7 |
| 5° | 5820.9 | 5789.6 | 5755.4 | 5692.8 | 5640.1 | 5617.3 | 5611.6 | 5593.1 | 5594.5 |
| 7.5° | 5247.0 | 5180.0 | 5083.2 | 5000.6 | 4956.4 | 4899.4 | 4875.2 | 4824.0 | 4845.3 |
| 10° | 4519.2 | 4432.3 | 4345.4 | 4242.9 | 4156.0 | 4062.0 | 3989.3 | 3942.3 | 3882.5 |
| 12.5° | 3355.6 | 3285.8 | 3250.2 | 3116.3 | 3012.3 | 2939.7 | 2899.8 | 2785.8 | 2787.3 |
| 15° | 1966.9 | 1880.0 | 1793.1 | 1724.8 | 1673.5 | 1646.4 | 1582.3 | 1566.7 | 1599.4 |
| 17.5° | 1051.1 | 1012.6 | 955.7 | 893.0 | 857.4 | 831.8 | 810.4 | 801.9 | 789.0 |
| 20° | 636.6 | 625.2 | 592.5 | 551.2 | 518.4 | 495.6 | 474.3 | 468.6 | 467.2 |
| 22.5° | 460.0 | 454.3 | 433.0 | 403.1 | 371.7 | 319.0 | 254.9 | 242.1 | 246.4 |
| 25° | 340.4 | 336.1 | 327.6 | 304.8 | 286.3 | 158.1 | 105.4 | 101.1 | 94.0 |
| 27.5° | 254.9 | 252.1 | 242.1 | 226.5 | 192.3 | 69.8 | 58.4 | 54.1 | 54.1 |
| 30° | 188.0 | 186.6 | 180.9 | 165.2 | 98.3 | 39.9 | 32.8 | 29.9 | 28.5 |
| 32.5° | 138.2 | 138.2 | 132.5 | 118.2 | 44.2 | 25.6 | 19.9 | 18.5 | 17.1 |
| 35° | 101.1 | 101.1 | 94.0 | 81.2 | 27.1 | 17.1 | 11.4 | 11.4 | 10.0 |
| 37.5° | 72.6 | 71.2 | 66.9 | 51.3 | 19.9 | 11.4 | 8.5 | 8.5 | 7.1 |
| 40° | 49.8 | 49.8 | 45.6 | 31.3 | 14.2 | 8.5 | 7.1 | 5.7 | 5.7 |
| 42.5° | 34.2 | 34.2 | 31.3 | 19.9 | 11.4 | 7.1 | 4.3 | 4.3 | 4.3 |
| 45° | 22.8 | 22.8 | 21.4 | 14.2 | 8.5 | 4.3 | 2.8 | 2.8 | 1.4 |
| 47.5° | 15.7 | 15.7 | 14.2 | 10.0 | 5.7 | 2.8 | 1.4 | 1.4 | 1.4 |
| 50° | 11.4 | 11.4 | 10.0 | 7.1 | 4.3 | 2.8 | 1.4 | 1.4 | 0.0 |
| 52.5° | 8.5 | 8.5 | 8.5 | 5.7 | 2.8 | 1.4 | 0.0 | 0.0 | 0.0 |
| 55° | 7.1 | 7.1 | 5.7 | 4.3 | 2.8 | 1.4 | 0.0 | 0.0 | 0.0 |
| 57.5° | 5.7 | 5.7 | 4.3 | 2.8 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 |
| 60° | 4.3 | 4.3 | 4.3 | 2.8 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 62.5° | 2.8 | 2.8 | 2.8 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65° | 2.8 | 2.8 | 2.8 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67.5° | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70° | 1.4 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 1.4 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 1.4 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 1.4 | 1.4 | 1.4 | 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)