

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: FAIL-SAFE

Report Number: P412194

Luminaire Tested: **MRI-4ASR-4-500-L935-HEO**

Issue Date: 10/5/2020

Test Information

Test Method: LM-79-08
Report Number: P412194
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2006-829-2)
Test Lab: INNOVATION CENTER
Issue Date: 10/5/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MRI-4ASR-4-500-L935-HEO
Description: 4 FT, 4 INCH CHANNEL, HIGH EFFICIENCY LENS
Light Source: (336) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3334.0 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.2 / 1.32
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Direct

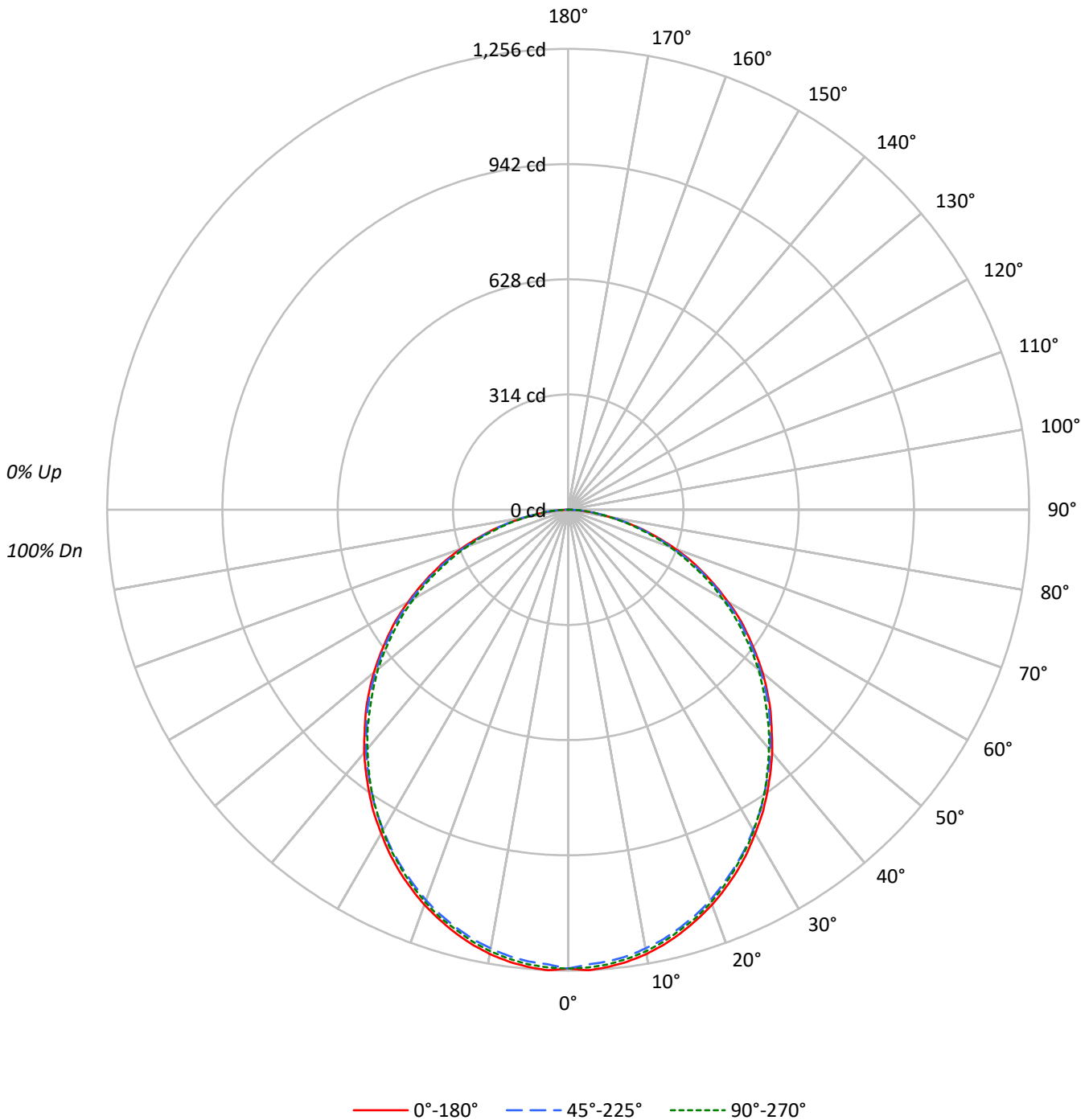
Input Watts (W): 30.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 79 | 97 | 89 | 83 | 78 | 86 | 80 | 76 | 82 | 78 | 74 | 79 | 76 | 72 | 70 |
| 3 | 90 | 80 | 72 | 65 | 88 | 78 | 71 | 65 | 75 | 69 | 64 | 73 | 67 | 63 | 70 | 65 | 62 | 59 |
| 4 | 83 | 71 | 62 | 56 | 81 | 70 | 61 | 55 | 67 | 60 | 54 | 65 | 59 | 54 | 63 | 57 | 53 | 51 |
| 5 | 76 | 63 | 55 | 48 | 74 | 62 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 47 | 56 | 51 | 46 | 44 |
| 6 | 70 | 57 | 48 | 42 | 69 | 56 | 48 | 42 | 54 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 41 | 39 |
| 7 | 65 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 41 | 36 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 37 | 33 | 43 | 37 | 32 | 31 |
| 9 | 57 | 44 | 35 | 30 | 56 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 29 | 40 | 34 | 29 | 27 |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 10096 | 10096 | 10096 |
| 5° | 10139 | 10015 | 10080 |
| 10° | 10079 | 9954 | 10017 |
| 15° | 9972 | 9853 | 9902 |
| 20° | 9845 | 9733 | 9780 |
| 25° | 9692 | 9568 | 9602 |
| 30° | 9494 | 9392 | 9420 |
| 35° | 9309 | 9210 | 9210 |
| 40° | 9115 | 9025 | 8967 |
| 45° | 8905 | 8833 | 8712 |
| 50° | 8683 | 8583 | 8498 |
| 55° | 8424 | 8329 | 8169 |
| 60° | 8129 | 8021 | 7831 |
| 65° | 7788 | 7643 | 7410 |
| 70° | 7294 | 7093 | 6904 |
| 75° | 6634 | 6478 | 6226 |
| 80° | 5435 | 5532 | 5300 |
| 85° | 3909 | 4418 | 4733 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 118.1 | 3.5 |
| 10°-20° | 334.6 | 10.0 |
| 20°-30° | 497.6 | 14.9 |
| 30°-40° | 586.7 | 17.6 |
| 40°-50° | 596.1 | 17.9 |
| 50°-60° | 529.0 | 15.9 |
| 60°-70° | 395.8 | 11.9 |
| 70°-80° | 219.2 | 6.6 |
| 80°-90° | 57.0 | 1.7 |
| 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° | 950.2 | 28.5 |
| 0°-40° | 1536.9 | 46.1 |
| 0°-60° | 2662.0 | 79.8 |
| 0°-90° | 3334.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3334.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1251 | 1251 | 1251 | 1251 | 1251 | |
| 5° | 1251 | 1248 | 1236 | 1245 | 1244 | 119 |
| 15° | 1193 | 1191 | 1179 | 1188 | 1185 | 336 |
| 25° | 1088 | 1084 | 1074 | 1080 | 1078 | 501 |
| 35° | 945 | 943 | 934 | 936 | 934 | 591 |
| 45° | 780 | 780 | 774 | 767 | 763 | 601 |
| 55° | 598 | 601 | 592 | 584 | 580 | 536 |
| 65° | 408 | 410 | 400 | 393 | 388 | 403 |
| 75° | 213 | 211 | 208 | 202 | 200 | 224 |
| 85° | 42 | 48 | 48 | 49 | 51 | 53 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1250.6 | 1250.6 | 1250.6 | 1250.6 | 1250.6 |
| 2.5° | 1256.5 | 1252.7 | 1240.5 | 1250.6 | 1248.9 |
| 5° | 1251.1 | 1247.7 | 1235.9 | 1245.2 | 1243.9 |
| 7.5° | 1242.2 | 1238.4 | 1227.4 | 1236.7 | 1234.6 |
| 10° | 1229.5 | 1225.7 | 1214.3 | 1224.0 | 1221.9 |
| 12.5° | 1213.1 | 1209.7 | 1199.1 | 1207.2 | 1205.5 |
| 15° | 1193.2 | 1191.1 | 1178.9 | 1187.7 | 1184.8 |
| 17.5° | 1170.4 | 1168.3 | 1157.4 | 1165.8 | 1164.1 |
| 20° | 1146.0 | 1142.2 | 1132.9 | 1138.8 | 1138.4 |
| 22.5° | 1117.7 | 1114.3 | 1103.8 | 1110.9 | 1109.7 |
| 25° | 1088.1 | 1083.9 | 1074.2 | 1079.7 | 1078.0 |
| 27.5° | 1055.2 | 1051.0 | 1043.0 | 1047.2 | 1046.3 |
| 30° | 1018.5 | 1017.2 | 1007.5 | 1011.3 | 1010.5 |
| 32.5° | 983.9 | 980.5 | 973.8 | 973.3 | 972.1 |
| 35° | 944.6 | 942.9 | 934.5 | 935.8 | 934.5 |
| 37.5° | 904.5 | 903.7 | 896.5 | 894.8 | 892.3 |
| 40° | 864.9 | 862.3 | 856.4 | 853.0 | 850.9 |
| 42.5° | 821.0 | 822.2 | 814.2 | 810.4 | 808.7 |
| 45° | 780.0 | 780.0 | 773.7 | 767.4 | 763.1 |
| 47.5° | 736.1 | 736.5 | 729.8 | 721.8 | 719.2 |
| 50° | 691.4 | 692.2 | 683.4 | 676.6 | 676.6 |
| 52.5° | 644.5 | 647.1 | 638.6 | 631.4 | 628.5 |
| 55° | 598.5 | 601.0 | 591.8 | 584.2 | 580.4 |
| 57.5° | 554.2 | 553.8 | 546.2 | 536.0 | 535.2 |
| 60° | 503.5 | 506.5 | 496.8 | 489.2 | 485.0 |
| 62.5° | 455.4 | 459.2 | 448.7 | 441.5 | 439.0 |
| 65° | 407.7 | 410.3 | 400.1 | 393.4 | 387.9 |
| 67.5° | 360.9 | 360.0 | 350.8 | 343.2 | 340.2 |
| 70° | 309.0 | 310.7 | 300.5 | 295.0 | 292.5 |
| 72.5° | 260.4 | 262.1 | 253.3 | 249.5 | 245.2 |
| 75° | 212.7 | 210.6 | 207.7 | 201.8 | 199.6 |
| 77.5° | 162.1 | 164.2 | 163.3 | 157.0 | 156.2 |
| 80° | 116.9 | 121.6 | 119.0 | 114.4 | 114.0 |
| 82.5° | 77.7 | 82.3 | 81.0 | 79.8 | 78.5 |
| 85° | 42.2 | 48.1 | 47.7 | 49.4 | 51.1 |
| 87.5° | 16.0 | 20.7 | 24.5 | 24.1 | 25.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)