

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: P708872

Luminaire Tested: **22APR-38-89L930-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P708872
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 22APR-38-89L930-UNV
Description: ArcMed Patient Recessed 2x2 Fixture Ambient and Exam Light
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

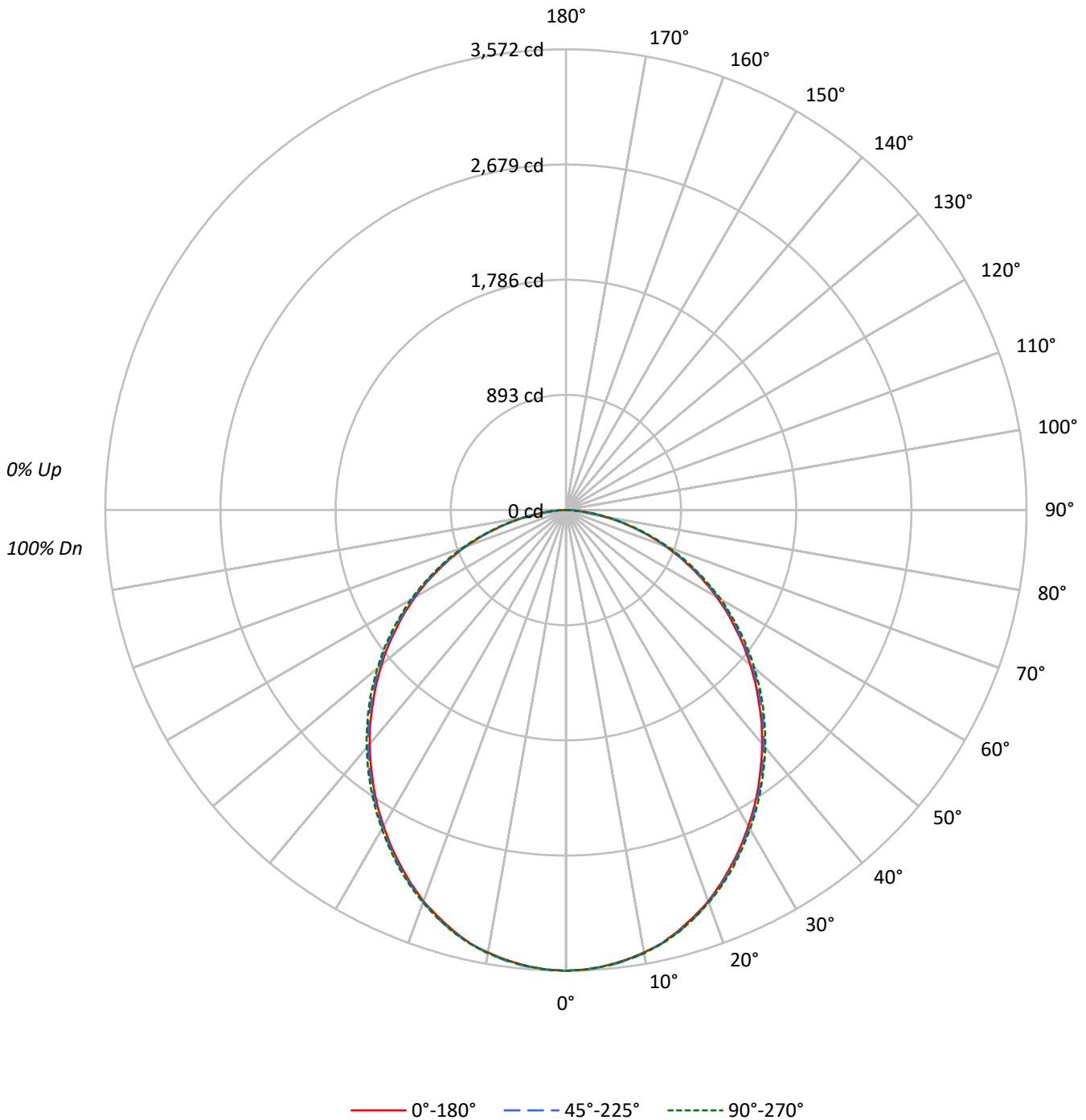
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9291.4 lumens
Efficiency: N/A
Efficacy: 79.6 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.19 / 1.31
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 116.7
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 | | | | 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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 102 | 102 | 102 | 100 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 86 | 86 | 86 | 84 |
| 2 | 99 | 91 | 84 | 79 | 97 | 89 | 83 | 78 | 86 | 81 | 76 | 82 | 78 | 74 | 79 | 76 | 73 | 73 | 73 | 73 | 71 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 65 | 76 | 69 | 64 | 73 | 67 | 63 | 70 | 66 | 62 | 62 | 62 | 62 | 60 |
| 4 | 83 | 71 | 63 | 56 | 81 | 70 | 62 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 53 | 53 | 53 | 53 | 51 |
| 5 | 76 | 64 | 55 | 48 | 74 | 63 | 54 | 48 | 61 | 53 | 47 | 59 | 52 | 47 | 57 | 51 | 46 | 46 | 46 | 46 | 44 |
| 6 | 71 | 57 | 49 | 42 | 69 | 57 | 48 | 42 | 55 | 47 | 42 | 53 | 46 | 41 | 51 | 46 | 41 | 41 | 41 | 41 | 39 |
| 7 | 66 | 52 | 44 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 36 | 36 | 36 | 36 | 34 |
| 8 | 61 | 48 | 39 | 33 | 60 | 47 | 39 | 33 | 46 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 33 | 33 | 33 | 31 |
| 9 | 57 | 44 | 36 | 30 | 56 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 30 | 30 | 30 | 30 | 28 |
| 10 | 54 | 41 | 33 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 27 | 27 | 27 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 9613 | 9613 | 9613 |
| 5° | 9582 | 9594 | 9586 |
| 10° | 9522 | 9536 | 9534 |
| 15° | 9405 | 9430 | 9434 |
| 20° | 9244 | 9263 | 9276 |
| 25° | 9021 | 9063 | 9092 |
| 30° | 8791 | 8839 | 8872 |
| 35° | 8555 | 8614 | 8658 |
| 40° | 8315 | 8380 | 8448 |
| 45° | 8056 | 8155 | 8226 |
| 50° | 7816 | 7909 | 7990 |
| 55° | 7547 | 7649 | 7743 |
| 60° | 7273 | 7368 | 7473 |
| 65° | 6912 | 7026 | 7107 |
| 70° | 6469 | 6557 | 6651 |
| 75° | 5818 | 5926 | 6003 |
| 80° | 4912 | 5040 | 5084 |
| 85° | 3677 | 3838 | 3813 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 337.0 | 3.6 |
| 10°-20° | 953.3 | 10.3 |
| 20°-30° | 1405.1 | 15.1 |
| 30°-40° | 1639.9 | 17.6 |
| 40°-50° | 1652.7 | 17.8 |
| 50°-60° | 1458.6 | 15.7 |
| 60°-70° | 1090.8 | 11.7 |
| 70°-80° | 604.5 | 6.5 |
| 80°-90° | 149.5 | 1.6 |
| 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° | 2695.4 | 29.0 |
| 0°-40° | 4335.3 | 46.7 |
| 0°-60° | 7446.6 | 80.1 |
| 0°-90° | 9291.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 9291.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3572 | 3572 | 3572 | 3572 | 3572 | |
| 5° | 3547 | 3552 | 3552 | 3552 | 3549 | 337 |
| 15° | 3376 | 3382 | 3385 | 3388 | 3386 | 951 |
| 25° | 3038 | 3045 | 3052 | 3058 | 3062 | 1399 |
| 35° | 2604 | 2610 | 2622 | 2633 | 2636 | 1629 |
| 45° | 2117 | 2130 | 2143 | 2158 | 2162 | 1635 |
| 55° | 1609 | 1618 | 1630 | 1645 | 1650 | 1440 |
| 65° | 1086 | 1091 | 1104 | 1112 | 1116 | 1075 |
| 75° | 560 | 562 | 570 | 576 | 577 | 594 |
| 85° | 119 | 123 | 124 | 123 | 124 | 145 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P708872

CATALOG NUMBER: 22APR-38-89L930-UNV

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3572.4 | 3572.4 | 3572.4 | 3572.4 | 3572.4 |
| 2.5° | 3565.7 | 3569.4 | 3566.5 | 3569.4 | 3566.5 |
| 5° | 3547.1 | 3551.6 | 3551.6 | 3552.3 | 3548.6 |
| 7.5° | 3519.6 | 3524.8 | 3527.0 | 3527.8 | 3522.6 |
| 10° | 3484.6 | 3489.8 | 3489.8 | 3492.8 | 3489.1 |
| 12.5° | 3440.0 | 3442.9 | 3442.2 | 3446.7 | 3443.7 |
| 15° | 3376.0 | 3381.9 | 3384.9 | 3387.9 | 3386.4 |
| 17.5° | 3304.5 | 3312.0 | 3314.2 | 3319.4 | 3315.7 |
| 20° | 3227.9 | 3233.1 | 3234.6 | 3242.8 | 3239.1 |
| 22.5° | 3136.4 | 3141.6 | 3146.8 | 3154.2 | 3155.0 |
| 25° | 3038.2 | 3044.9 | 3052.3 | 3058.2 | 3062.0 |
| 27.5° | 2937.0 | 2943.7 | 2950.4 | 2957.8 | 2959.3 |
| 30° | 2829.1 | 2837.2 | 2844.7 | 2853.6 | 2855.1 |
| 32.5° | 2720.4 | 2723.4 | 2734.6 | 2744.2 | 2748.7 |
| 35° | 2604.3 | 2610.3 | 2622.2 | 2632.6 | 2635.6 |
| 37.5° | 2486.0 | 2495.0 | 2507.6 | 2518.8 | 2521.8 |
| 40° | 2367.0 | 2374.4 | 2385.6 | 2400.5 | 2404.9 |
| 42.5° | 2246.4 | 2251.6 | 2266.5 | 2279.2 | 2282.9 |
| 45° | 2117.0 | 2130.4 | 2143.0 | 2157.9 | 2161.6 |
| 47.5° | 1993.4 | 2003.9 | 2016.5 | 2030.6 | 2036.6 |
| 50° | 1866.9 | 1879.6 | 1889.3 | 1904.9 | 1908.6 |
| 52.5° | 1740.4 | 1748.6 | 1762.0 | 1775.4 | 1781.4 |
| 55° | 1608.7 | 1618.4 | 1630.3 | 1645.2 | 1650.4 |
| 57.5° | 1482.2 | 1487.5 | 1500.8 | 1513.5 | 1518.0 |
| 60° | 1351.3 | 1356.5 | 1369.1 | 1382.5 | 1388.5 |
| 62.5° | 1220.3 | 1224.8 | 1235.2 | 1250.8 | 1250.8 |
| 65° | 1085.6 | 1090.8 | 1103.5 | 1112.4 | 1116.1 |
| 67.5° | 954.7 | 959.1 | 968.1 | 979.2 | 984.4 |
| 70° | 822.2 | 825.9 | 833.4 | 844.6 | 845.3 |
| 72.5° | 689.8 | 693.5 | 703.2 | 706.9 | 712.1 |
| 75° | 559.6 | 562.5 | 570.0 | 575.9 | 577.4 |
| 77.5° | 435.3 | 439.8 | 445.0 | 447.2 | 449.4 |
| 80° | 317.0 | 321.5 | 325.2 | 327.4 | 328.1 |
| 82.5° | 209.8 | 214.3 | 216.5 | 218.0 | 217.3 |
| 85° | 119.1 | 122.8 | 124.3 | 122.8 | 123.5 |
| 87.5° | 46.9 | 49.1 | 50.6 | 49.9 | 48.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)