

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: P580613

Luminaire Tested: **HVSL4-8-LD4-1HI-35-UNV-O-EDD-90**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580613  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/16/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: HVSL4-8-LD4-1HI-35-UNV-O-EDD-90  
Description: 8 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

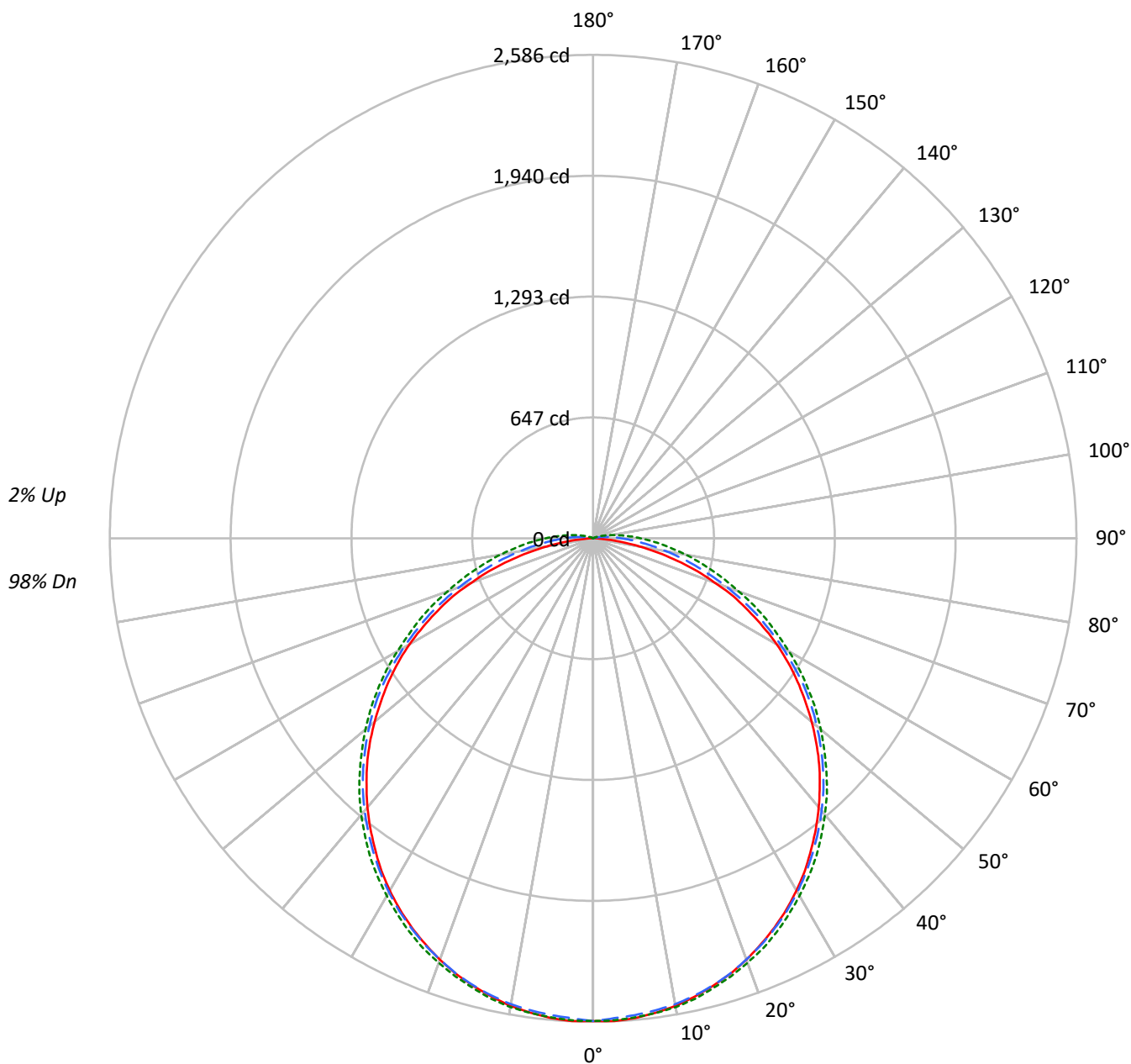
Lumens per Lamp: N/A  
Luminaire Lumens: 7808.0 lumens  
Efficiency: N/A  
Efficacy: 90.6 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 8' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 86.2  
Input Voltage (V): NR  
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 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50 | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 110 | 110 | 110 | 105 | 105 | 105 | 101 | 101 | 101 |    |    | 98 |
| 1   | 108 | 102 | 98  | 94  | 105 | 100 | 96  | 92  | 95  | 92  | 89  | 91  | 88  | 86  | 87  | 85  | 83  |    |    | 81 |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 80  | 75  | 83  | 77  | 73  | 79  | 75  | 71  | 76  | 72  | 69  |    |    | 67 |
| 3   | 89  | 78  | 69  | 63  | 86  | 76  | 68  | 62  | 73  | 66  | 61  | 70  | 64  | 59  | 67  | 62  | 58  |    |    | 56 |
| 4   | 81  | 69  | 60  | 53  | 79  | 67  | 59  | 52  | 65  | 57  | 52  | 62  | 56  | 51  | 60  | 54  | 50  |    |    | 47 |
| 5   | 75  | 61  | 52  | 45  | 72  | 60  | 52  | 45  | 58  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 43  |    |    | 41 |
| 6   | 69  | 55  | 46  | 40  | 67  | 54  | 46  | 39  | 52  | 45  | 39  | 50  | 44  | 38  | 49  | 43  | 38  |    |    | 36 |
| 7   | 64  | 50  | 41  | 35  | 62  | 49  | 41  | 35  | 47  | 40  | 34  | 46  | 39  | 34  | 44  | 38  | 34  |    |    | 32 |
| 8   | 59  | 46  | 37  | 31  | 58  | 45  | 37  | 31  | 43  | 36  | 31  | 42  | 35  | 30  | 41  | 35  | 30  |    |    | 28 |
| 9   | 55  | 42  | 34  | 28  | 54  | 41  | 33  | 28  | 40  | 33  | 28  | 39  | 32  | 27  | 38  | 32  | 27  |    |    | 25 |
| 10  | 52  | 39  | 31  | 25  | 51  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 29  | 25  | 35  | 29  | 25  |    |    | 23 |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 10424 | 10424 | 10424 |
| 5°  | 10422 | 10051 | 9987  |
| 10° | 10372 | 9740  | 9592  |
| 15° | 10301 | 9419  | 9175  |
| 20° | 10226 | 9083  | 8781  |
| 25° | 10131 | 8747  | 8394  |
| 30° | 10021 | 8400  | 7988  |
| 35° | 9875  | 8034  | 7592  |
| 40° | 9726  | 7657  | 7163  |
| 45° | 9566  | 7258  | 6718  |
| 50° | 9352  | 6817  | 6256  |
| 55° | 9123  | 6344  | 5768  |
| 60° | 8851  | 5773  | 5230  |
| 65° | 8387  | 5152  | 4699  |
| 70° | 7706  | 4453  | 4116  |
| 75° | 6722  | 3710  | 3571  |
| 80° | 5214  | 2987  | 3051  |
| 85° | 3007  | 2268  | 2531  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 244.4  | 3.1       |
| 10°-20°   | 701.0  | 9.0       |
| 20°-30°   | 1063.6 | 13.6      |
| 30°-40°   | 1286.1 | 16.5      |
| 40°-50°   | 1341.9 | 17.2      |
| 50°-60°   | 1226.9 | 15.7      |
| 60°-70°   | 956.5  | 12.2      |
| 70°-80°   | 598.3  | 7.7       |
| 80°-90°   | 271.7  | 3.5       |
| 90°-100°  | 91.1   | 1.2       |
| 100°-110° | 22.9   | 0.3       |
| 110°-120° | 3.6    | 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°    | 2009.0 | 25.7      |
| 0°-40°    | 3295.1 | 42.2      |
| 0°-60°    | 5863.9 | 75.1      |
| 0°-90°    | 7690.4 | 98.5      |
| 90°-120°  | 117.5  | 1.5       |
| 90°-150°  | 117.5  | 1.5       |
| 90°-180°  | 118.0  | 1.5       |
| 0°-180°   | 7808.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 2582 | 2582  | 2582 | 2582  | 2582 |      |
| 5°   | 2577 | 2572  | 2560 | 2573  | 2573 | 245  |
| 15°  | 2479 | 2483  | 2476 | 2490  | 2490 | 700  |
| 25°  | 2297 | 2299  | 2301 | 2321  | 2324 | 1058 |
| 35°  | 2033 | 2042  | 2051 | 2072  | 2080 | 1273 |
| 45°  | 1711 | 1726  | 1740 | 1757  | 1765 | 1318 |
| 55°  | 1335 | 1351  | 1376 | 1396  | 1405 | 1193 |
| 65°  | 917  | 933   | 966  | 1004  | 1020 | 908  |
| 75°  | 464  | 493   | 565  | 632   | 656  | 495  |
| 85°  | 80   | 148   | 255  | 337   | 367  | 102  |
| 90°  | 1    | 55    | 150  | 226   | 253  | 3    |
| 95°  | 1    | 15    | 78   | 141   | 163  | 0    |
| 105° | 1    | 2     | 13   | 38    | 50   | 1    |
| 115° | 2    | 2     | 2    | 7     | 10   | 1    |
| 125° | 0    | 0     | 0    | 0     | 0    | 0    |
| 135° | 0    | 0     | 0    | 0     | 0    | 0    |
| 145° | 0    | 0     | 0    | 0     | 0    | 0    |
| 155° | 0    | 0     | 0    | 0     | 0    | 0    |
| 165° | 0    | 0     | 0    | 0     | 0    | 0    |
| 175° | 0    | 0     | 0    | 0     | 0    | 0    |
| 180° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 2582.4 | 2582.4 | 2582.4 | 2582.4 | 2582.4 |
| 2.5°   | 2585.5 | 2581.8 | 2570.2 | 2581.8 | 2581.2 |
| 5°     | 2576.9 | 2572.1 | 2560.5 | 2572.7 | 2572.7 |
| 7.5°   | 2559.9 | 2558.1 | 2547.7 | 2561.7 | 2561.7 |
| 10°    | 2539.8 | 2539.2 | 2530.7 | 2545.9 | 2546.5 |
| 12.5°  | 2511.8 | 2514.2 | 2506.3 | 2520.9 | 2522.8 |
| 15°    | 2478.9 | 2483.2 | 2476.5 | 2490.5 | 2489.9 |
| 17.5°  | 2443.0 | 2445.4 | 2440.6 | 2456.4 | 2455.8 |
| 20°    | 2398.6 | 2401.6 | 2398.0 | 2414.4 | 2416.2 |
| 22.5°  | 2349.3 | 2353.5 | 2352.9 | 2370.0 | 2374.8 |
| 25°    | 2296.9 | 2298.7 | 2301.2 | 2320.6 | 2324.3 |
| 27.5°  | 2239.1 | 2242.1 | 2246.4 | 2264.0 | 2267.7 |
| 30°    | 2175.8 | 2180.6 | 2185.5 | 2203.8 | 2208.6 |
| 32.5°  | 2108.8 | 2113.7 | 2119.7 | 2143.5 | 2145.9 |
| 35°    | 2033.3 | 2042.4 | 2051.0 | 2071.7 | 2080.2 |
| 37.5°  | 1957.8 | 1969.4 | 1977.3 | 1999.2 | 2005.9 |
| 40°    | 1878.1 | 1889.6 | 1902.4 | 1925.5 | 1929.8 |
| 42.5°  | 1794.7 | 1808.1 | 1823.3 | 1844.0 | 1851.3 |
| 45°    | 1710.7 | 1725.9 | 1739.9 | 1756.9 | 1765.4 |
| 47.5°  | 1619.9 | 1635.2 | 1652.2 | 1671.7 | 1677.2 |
| 50°    | 1526.2 | 1543.8 | 1562.1 | 1580.4 | 1590.1 |
| 52.5°  | 1430.0 | 1451.3 | 1472.0 | 1491.5 | 1500.6 |
| 55°    | 1335.0 | 1350.9 | 1375.8 | 1395.9 | 1405.0 |
| 57.5°  | 1236.4 | 1249.8 | 1272.3 | 1305.2 | 1310.1 |
| 60°    | 1136.0 | 1148.1 | 1171.3 | 1198.1 | 1209.0 |
| 62.5°  | 1025.2 | 1041.6 | 1066.0 | 1100.1 | 1109.8 |
| 65°    | 917.4  | 933.2  | 965.5  | 1003.9 | 1019.7 |
| 67.5°  | 813.3  | 818.8  | 860.2  | 900.4  | 925.9  |
| 70°    | 690.3  | 711.0  | 759.1  | 808.5  | 827.9  |
| 72.5°  | 584.4  | 605.1  | 658.1  | 715.9  | 740.3  |
| 75°    | 464.5  | 493.1  | 564.9  | 632.5  | 656.3  |
| 77.5°  | 359.2  | 390.8  | 479.7  | 547.9  | 575.3  |
| 80°    | 250.8  | 300.1  | 396.9  | 473.6  | 503.5  |
| 82.5°  | 157.7  | 218.5  | 322.0  | 402.4  | 428.6  |
| 85°    | 80.4   | 148.5  | 255.1  | 337.3  | 367.1  |
| 87.5°  | 21.3   | 96.2   | 198.5  | 277.0  | 307.4  |
| 90°    | 0.6    | 55.4   | 150.4  | 225.9  | 253.2  |
| 92.5°  | 0.6    | 31.0   | 112.0  | 179.6  | 207.6  |
| 95°    | 0.6    | 14.6   | 77.9   | 141.2  | 163.2  |
| 97.5°  | 0.6    | 6.1    | 53.6   | 106.5  | 128.5  |
| 100°   | 0.6    | 3.0    | 34.1   | 77.3   | 96.2   |
| 102.5° | 1.2    | 1.8    | 21.3   | 55.4   | 70.6   |
| 105°   | 1.2    | 1.8    | 12.8   | 37.7   | 50.5   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90°  |
|--------|-----|-------|-----|-------|------|
| 112.5° | 1.8 | 1.8   | 2.4 | 10.3  | 15.2 |
| 115°   | 1.8 | 1.8   | 2.4 | 6.7   | 9.7  |
| 117.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 120°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 122.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 125°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 127.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 130°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 132.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 135°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 137.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 140°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 142.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 145°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 147.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 150°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 152.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 155°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 157.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 160°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 162.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 165°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 167.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 170°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 172.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 175°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 177.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |
| 180°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  |



Report Generated By 670246072 / DESKTOP-MV3F9LC





— 0°-180°    - - 45°-225°    - - - 90°-270°







|        |     |     |     |      |      |
|--------|-----|-----|-----|------|------|
| 107.5° | 1.2 | 1.8 | 7.3 | 25.6 | 34.7 |
| 110°   | 1.8 | 1.8 | 4.3 | 15.8 | 23.1 |



(END OF REPORT)