

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: P580607

Luminaire Tested: **HVSL4-4-LD4-2STD-40-UNV-O-EDD-90**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580607  
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: HVSL4-4-LD4-2STD-40-UNV-O-EDD-90  
Description: 4 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

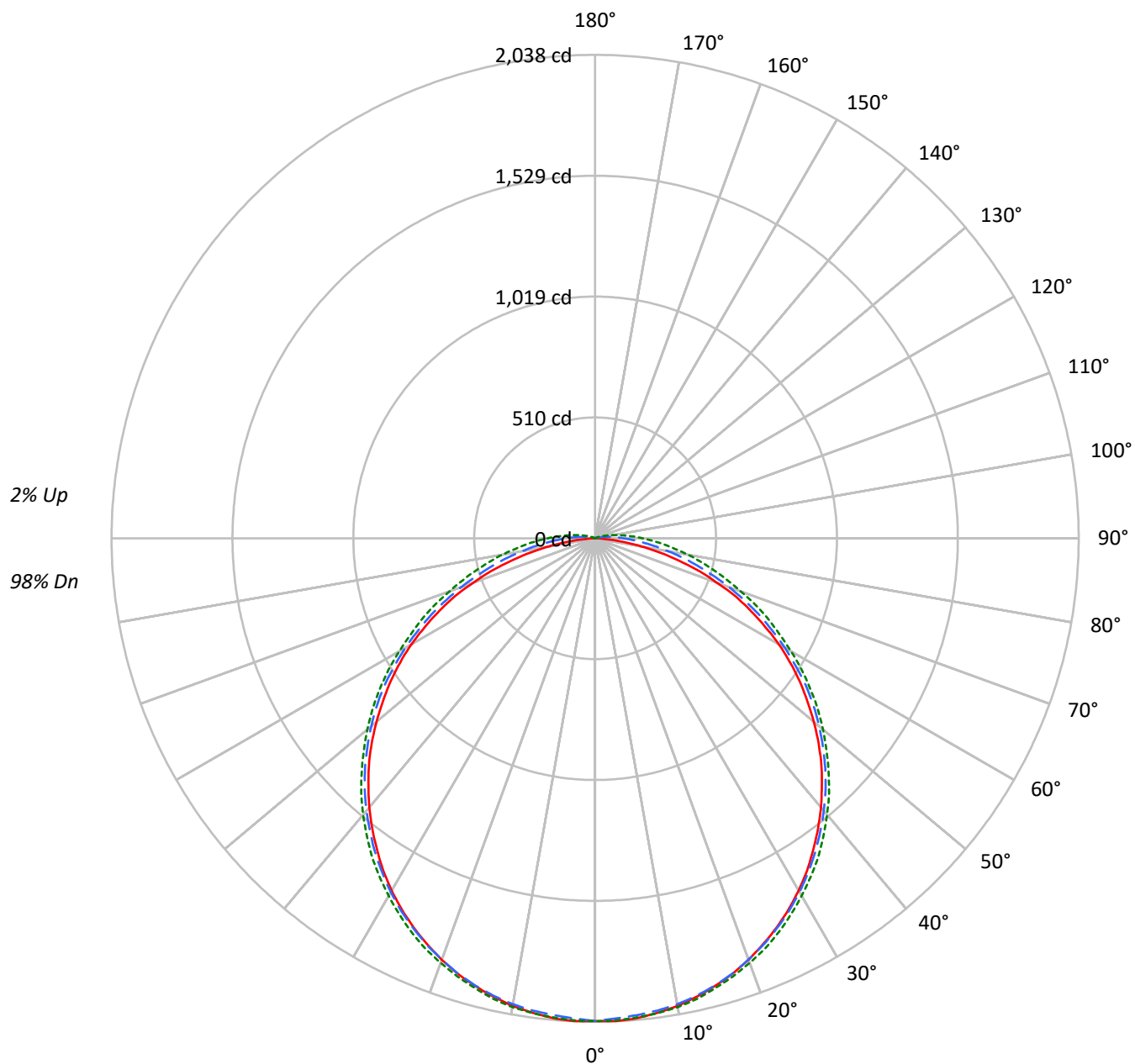
Lumens per Lamp: N/A  
Luminaire Lumens: 6154.0 lumens  
Efficiency: N/A  
Efficacy: 94.1 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 65.4  
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°  | 16432 | 16432 | 16432 |
| 5°  | 16400 | 15824 | 15743 |
| 10° | 16290 | 15316 | 15120 |
| 15° | 16149 | 14795 | 14463 |
| 20° | 15999 | 14250 | 13841 |
| 25° | 15818 | 13707 | 13232 |
| 30° | 15610 | 13149 | 12592 |
| 35° | 15346 | 12561 | 11967 |
| 40° | 15072 | 11958 | 11291 |
| 45° | 14777 | 11320 | 10590 |
| 50° | 14393 | 10616 | 9863  |
| 55° | 13978 | 9865  | 9092  |
| 60° | 13482 | 8960  | 8244  |
| 65° | 12680 | 7980  | 7408  |
| 70° | 11523 | 6880  | 6487  |
| 75° | 9882  | 5717  | 5628  |
| 80° | 7434  | 4584  | 4809  |
| 85° | 3971  | 3461  | 3990  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 192.6  | 3.1       |
| 10°-20°   | 552.5  | 9.0       |
| 20°-30°   | 838.3  | 13.6      |
| 30°-40°   | 1013.7 | 16.5      |
| 40°-50°   | 1057.7 | 17.2      |
| 50°-60°   | 967.0  | 15.7      |
| 60°-70°   | 753.8  | 12.2      |
| 70°-80°   | 471.6  | 7.7       |
| 80°-90°   | 214.2  | 3.5       |
| 90°-100°  | 71.8   | 1.2       |
| 100°-110° | 18.0   | 0.3       |
| 110°-120° | 2.8    | 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°    | 1583.4 | 25.7      |
| 0°-40°    | 2597.1 | 42.2      |
| 0°-60°    | 4621.8 | 75.1      |
| 0°-90°    | 6061.3 | 98.5      |
| 90°-120°  | 92.6   | 1.5       |
| 90°-150°  | 92.6   | 1.5       |
| 90°-180°  | 93.0   | 1.5       |
| 0°-180°   | 6154.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 2035 | 2035  | 2035 | 2035  | 2035 |      |
| 5°   | 2031 | 2027  | 2018 | 2028  | 2028 | 193  |
| 15°  | 1954 | 1957  | 1952 | 1963  | 1962 | 552  |
| 25°  | 1810 | 1812  | 1814 | 1829  | 1832 | 834  |
| 35°  | 1603 | 1610  | 1616 | 1633  | 1640 | 1003 |
| 45°  | 1348 | 1360  | 1371 | 1385  | 1392 | 1039 |
| 55°  | 1052 | 1065  | 1084 | 1100  | 1107 | 940  |
| 65°  | 723  | 736   | 761  | 791   | 804  | 715  |
| 75°  | 366  | 389   | 445  | 498   | 517  | 390  |
| 85°  | 63   | 117   | 201  | 266   | 289  | 80   |
| 90°  | 0    | 44    | 118  | 178   | 200  | 3    |
| 95°  | 0    | 12    | 61   | 111   | 129  | 0    |
| 105° | 1    | 1     | 10   | 30    | 40   | 1    |
| 115° | 1    | 1     | 2    | 5     | 8    | 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    | 0    |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 2035.4 | 2035.4 | 2035.4 | 2035.4 | 2035.4 |
| 2.5°   | 2037.8 | 2034.9 | 2025.8 | 2034.9 | 2034.4 |
| 5°     | 2031.1 | 2027.2 | 2018.1 | 2027.7 | 2027.7 |
| 7.5°   | 2017.6 | 2016.2 | 2008.0 | 2019.1 | 2019.1 |
| 10°    | 2001.8 | 2001.3 | 1994.6 | 2006.6 | 2007.1 |
| 12.5°  | 1979.7 | 1981.6 | 1975.4 | 1986.9 | 1988.3 |
| 15°    | 1953.8 | 1957.2 | 1951.9 | 1962.9 | 1962.4 |
| 17.5°  | 1925.5 | 1927.4 | 1923.6 | 1936.0 | 1935.6 |
| 20°    | 1890.5 | 1892.9 | 1890.0 | 1902.9 | 1904.4 |
| 22.5°  | 1851.6 | 1855.0 | 1854.5 | 1867.9 | 1871.8 |
| 25°    | 1810.3 | 1811.8 | 1813.7 | 1829.1 | 1831.9 |
| 27.5°  | 1764.8 | 1767.2 | 1770.5 | 1784.4 | 1787.3 |
| 30°    | 1714.9 | 1718.7 | 1722.5 | 1736.9 | 1740.8 |
| 32.5°  | 1662.1 | 1665.9 | 1670.7 | 1689.4 | 1691.3 |
| 35°    | 1602.6 | 1609.8 | 1616.5 | 1632.8 | 1639.5 |
| 37.5°  | 1543.1 | 1552.2 | 1558.4 | 1575.7 | 1581.0 |
| 40°    | 1480.2 | 1489.3 | 1499.4 | 1517.7 | 1521.0 |
| 42.5°  | 1414.5 | 1425.0 | 1437.0 | 1453.4 | 1459.1 |
| 45°    | 1348.3 | 1360.3 | 1371.3 | 1384.7 | 1391.5 |
| 47.5°  | 1276.8 | 1288.8 | 1302.2 | 1317.6 | 1321.9 |
| 50°    | 1202.9 | 1216.8 | 1231.2 | 1245.6 | 1253.3 |
| 52.5°  | 1127.1 | 1143.9 | 1160.2 | 1175.5 | 1182.7 |
| 55°    | 1052.2 | 1064.7 | 1084.4 | 1100.2 | 1107.4 |
| 57.5°  | 974.5  | 985.1  | 1002.8 | 1028.7 | 1032.6 |
| 60°    | 895.3  | 904.9  | 923.2  | 944.3  | 952.9  |
| 62.5°  | 808.0  | 821.0  | 840.2  | 867.0  | 874.7  |
| 65°    | 723.1  | 735.6  | 761.0  | 791.2  | 803.7  |
| 67.5°  | 641.0  | 645.3  | 678.0  | 709.6  | 729.8  |
| 70°    | 544.1  | 560.4  | 598.3  | 637.2  | 652.5  |
| 72.5°  | 460.6  | 476.9  | 518.7  | 564.3  | 583.5  |
| 75°    | 366.1  | 388.6  | 445.3  | 498.5  | 517.2  |
| 77.5°  | 283.1  | 308.0  | 378.1  | 431.8  | 453.4  |
| 80°    | 197.7  | 236.5  | 312.8  | 373.3  | 396.8  |
| 82.5°  | 124.3  | 172.3  | 253.8  | 317.2  | 337.8  |
| 85°    | 63.3   | 117.1  | 201.0  | 265.8  | 289.3  |
| 87.5°  | 16.8   | 75.8   | 156.4  | 218.3  | 242.3  |
| 90°    | 0.5    | 43.7   | 118.5  | 178.0  | 199.6  |
| 92.5°  | 0.5    | 24.5   | 88.3   | 141.5  | 163.6  |
| 95°    | 0.5    | 11.5   | 61.4   | 111.3  | 128.6  |
| 97.5°  | 0.5    | 4.8    | 42.2   | 84.0   | 101.2  |
| 100°   | 0.5    | 2.4    | 26.9   | 60.9   | 75.8   |
| 102.5° | 1.0    | 1.4    | 16.8   | 43.7   | 55.7   |
| 105°   | 1.0    | 1.4    | 10.1   | 29.7   | 39.8   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90°  |
|--------|-----|-------|-----|-------|------|
| 112.5° | 1.4 | 1.4   | 1.9 | 8.2   | 12.0 |
| 115°   | 1.4 | 1.4   | 1.9 | 5.3   | 7.7  |
| 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° | 1.0 | 1.4 | 5.8 | 20.2 | 27.3 |
| 110°   | 1.4 | 1.4 | 3.4 | 12.5 | 18.2 |



(END OF REPORT)