

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: P580544

Luminaire Tested: **HVSL4-3-LD4-2HI-40-UNV-O-EDD**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580544  
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: HVSL4-3-LD4-2HI-40-UNV-O-EDD  
Description: 3 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

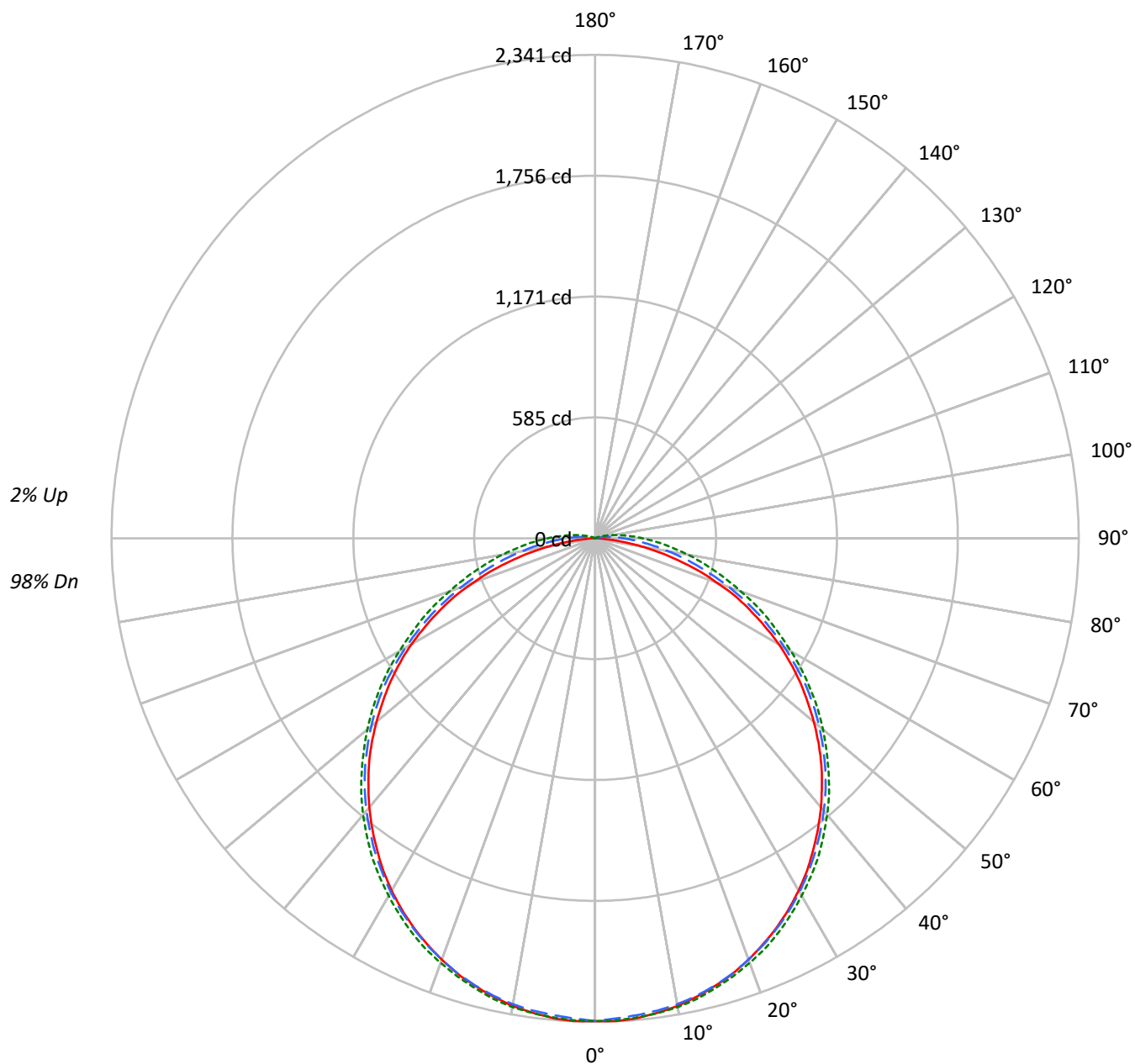
Lumens per Lamp: N/A  
Luminaire Lumens: 7069.0 lumens  
Efficiency: N/A  
Efficacy: 109.3 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 3' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 64.7  
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°  | 25166 | 25166 | 25166 |
| 5°  | 25086 | 24216 | 24112 |
| 10° | 24889 | 23420 | 23157 |
| 15° | 24643 | 22605 | 22152 |
| 20° | 24381 | 21757 | 21199 |
| 25° | 24074 | 20912 | 20266 |
| 30° | 23722 | 20045 | 19285 |
| 35° | 23284 | 19135 | 18329 |
| 40° | 22827 | 18201 | 17293 |
| 45° | 22334 | 17215 | 16219 |
| 50° | 21700 | 16130 | 15105 |
| 55° | 21015 | 14973 | 13926 |
| 60° | 20197 | 13584 | 12627 |
| 65° | 18903 | 12082 | 11346 |
| 70° | 17065 | 10402 | 9937  |
| 75° | 14484 | 8625  | 8620  |
| 80° | 10704 | 6901  | 7365  |
| 85° | 5499  | 5193  | 6111  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 221.2  | 3.1       |
| 10°-20°   | 634.6  | 9.0       |
| 20°-30°   | 962.9  | 13.6      |
| 30°-40°   | 1164.4 | 16.5      |
| 40°-50°   | 1214.9 | 17.2      |
| 50°-60°   | 1110.8 | 15.7      |
| 60°-70°   | 865.9  | 12.2      |
| 70°-80°   | 541.7  | 7.7       |
| 80°-90°   | 246.0  | 3.5       |
| 90°-100°  | 82.5   | 1.2       |
| 100°-110° | 20.7   | 0.3       |
| 110°-120° | 3.3    | 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°    | 1818.8 | 25.7      |
| 0°-40°    | 2983.2 | 42.2      |
| 0°-60°    | 5308.9 | 75.1      |
| 0°-90°    | 6962.6 | 98.5      |
| 90°-120°  | 106.5  | 1.5       |
| 90°-150°  | 106.5  | 1.5       |
| 90°-180°  | 106.0  | 1.5       |
| 0°-180°   | 7069.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 2338 | 2338  | 2338 | 2338  | 2338 |      |
| 5°   | 2333 | 2329  | 2318 | 2329  | 2329 | 222  |
| 15°  | 2244 | 2248  | 2242 | 2255  | 2254 | 634  |
| 25°  | 2080 | 2081  | 2083 | 2101  | 2104 | 958  |
| 35°  | 1841 | 1849  | 1857 | 1876  | 1883 | 1152 |
| 45°  | 1549 | 1562  | 1575 | 1591  | 1598 | 1193 |
| 55°  | 1209 | 1223  | 1246 | 1264  | 1272 | 1080 |
| 65°  | 831  | 845   | 874  | 909   | 923  | 822  |
| 75°  | 420  | 446   | 512  | 573   | 594  | 448  |
| 85°  | 73   | 134   | 231  | 305   | 332  | 92   |
| 90°  | 1    | 50    | 136  | 204   | 229  | 3    |
| 95°  | 1    | 13    | 70   | 128   | 148  | 0    |
| 105° | 1    | 2     | 12   | 34    | 46   | 1    |
| 115° | 2    | 2     | 2    | 6     | 9    | 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    |      |



TEST NUMBER: P580544

CATALOG NUMBER: HVSL4-3-LD4-2HI-40-UNV-O-EDD

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 2338.0 | 2338.0 | 2338.0 | 2338.0 | 2338.0 |
| 2.5°   | 2340.8 | 2337.4 | 2327.0 | 2337.4 | 2336.9 |
| 5°     | 2333.0 | 2328.6 | 2318.2 | 2329.2 | 2329.2 |
| 7.5°   | 2317.6 | 2316.0 | 2306.6 | 2319.3 | 2319.3 |
| 10°    | 2299.4 | 2298.9 | 2291.2 | 2304.9 | 2305.5 |
| 12.5°  | 2274.1 | 2276.3 | 2269.1 | 2282.3 | 2284.0 |
| 15°    | 2244.3 | 2248.2 | 2242.1 | 2254.8 | 2254.2 |
| 17.5°  | 2211.8 | 2214.0 | 2209.6 | 2223.9 | 2223.4 |
| 20°    | 2171.5 | 2174.3 | 2171.0 | 2185.9 | 2187.5 |
| 22.5°  | 2126.9 | 2130.8 | 2130.2 | 2145.6 | 2150.1 |
| 25°    | 2079.5 | 2081.2 | 2083.4 | 2101.0 | 2104.3 |
| 27.5°  | 2027.1 | 2029.9 | 2033.8 | 2049.7 | 2053.1 |
| 30°    | 1969.8 | 1974.2 | 1978.6 | 1995.2 | 1999.6 |
| 32.5°  | 1909.2 | 1913.6 | 1919.1 | 1940.6 | 1942.8 |
| 35°    | 1840.9 | 1849.1 | 1856.8 | 1875.6 | 1883.3 |
| 37.5°  | 1772.5 | 1783.0 | 1790.2 | 1810.0 | 1816.1 |
| 40°    | 1700.3 | 1710.8 | 1722.4 | 1743.3 | 1747.2 |
| 42.5°  | 1624.8 | 1636.9 | 1650.7 | 1669.4 | 1676.1 |
| 45°    | 1548.7 | 1562.5 | 1575.2 | 1590.6 | 1598.3 |
| 47.5°  | 1466.6 | 1480.4 | 1495.8 | 1513.5 | 1518.4 |
| 50°    | 1381.7 | 1397.7 | 1414.3 | 1430.8 | 1439.6 |
| 52.5°  | 1294.7 | 1314.0 | 1332.7 | 1350.3 | 1358.6 |
| 55°    | 1208.7 | 1223.0 | 1245.6 | 1263.8 | 1272.1 |
| 57.5°  | 1119.4 | 1131.5 | 1151.9 | 1181.7 | 1186.1 |
| 60°    | 1028.5 | 1039.5 | 1060.4 | 1084.7 | 1094.6 |
| 62.5°  | 928.1  | 943.0  | 965.1  | 995.9  | 1004.8 |
| 65°    | 830.6  | 844.9  | 874.1  | 908.9  | 923.2  |
| 67.5°  | 736.3  | 741.3  | 778.8  | 815.2  | 838.3  |
| 70°    | 625.0  | 643.7  | 687.3  | 731.9  | 749.6  |
| 72.5°  | 529.1  | 547.8  | 595.8  | 648.2  | 670.2  |
| 75°    | 420.5  | 446.4  | 511.5  | 572.6  | 594.1  |
| 77.5°  | 325.2  | 353.8  | 434.3  | 496.0  | 520.8  |
| 80°    | 227.1  | 271.7  | 359.4  | 428.8  | 455.8  |
| 82.5°  | 142.7  | 197.9  | 291.6  | 364.3  | 388.0  |
| 85°    | 72.8   | 134.5  | 230.9  | 305.3  | 332.3  |
| 87.5°  | 19.3   | 87.1   | 179.7  | 250.8  | 278.3  |
| 90°    | 0.6    | 50.2   | 136.1  | 204.5  | 229.3  |
| 92.5°  | 0.6    | 28.1   | 101.4  | 162.6  | 187.9  |
| 95°    | 0.6    | 13.2   | 70.5   | 127.9  | 147.7  |
| 97.5°  | 0.6    | 5.5    | 48.5   | 96.5   | 116.3  |
| 100°   | 0.6    | 2.8    | 30.9   | 70.0   | 87.1   |
| 102.5° | 1.1    | 1.7    | 19.3   | 50.2   | 63.9   |
| 105°   | 1.1    | 1.7    | 11.6   | 34.2   | 45.7   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90°  |
|--------|-----|-------|-----|-------|------|
| 112.5° | 1.7 | 1.7   | 2.2 | 9.4   | 13.8 |
| 115°   | 1.7 | 1.7   | 2.2 | 6.1   | 8.8  |
| 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° | 1.1 | 1.7 | 6.6 | 23.1 | 31.4 |
| 110°   | 1.7 | 1.7 | 3.9 | 14.3 | 20.9 |



(END OF REPORT)