

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: P580602

Luminaire Tested: **HVSL4-4-LD4-2LO-50-UNV-O-EDD**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580602  
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-LD4-2LO-50-UNV-O-EDD  
Description: 4 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

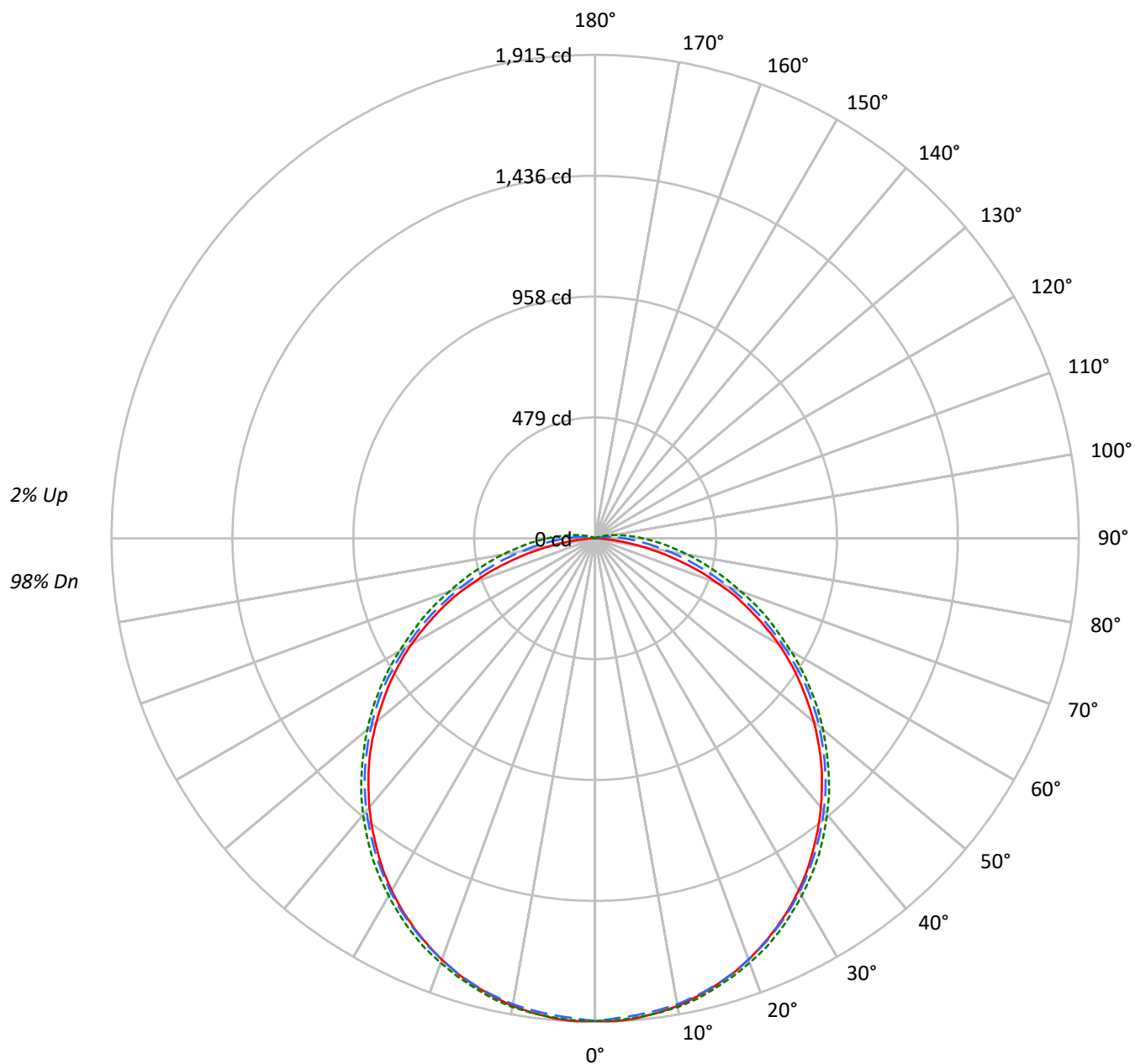
Lumens per Lamp: N/A  
Luminaire Lumens: 5782.0 lumens  
Efficiency: N/A  
Efficacy: 125.2 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 46.2  
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

TEST NUMBER: P580602

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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°  | 15438 | 15438 | 15438 |
| 5°  | 15408 | 14867 | 14791 |
| 10° | 15305 | 14390 | 14205 |
| 15° | 15173 | 13900 | 13589 |
| 20° | 15031 | 13388 | 13005 |
| 25° | 14862 | 12879 | 12432 |
| 30° | 14666 | 12354 | 11830 |
| 35° | 14418 | 11802 | 11244 |
| 40° | 14161 | 11235 | 10609 |
| 45° | 13884 | 10635 | 9950  |
| 50° | 13523 | 9975  | 9266  |
| 55° | 13133 | 9268  | 8543  |
| 60° | 12668 | 8419  | 7746  |
| 65° | 11913 | 7498  | 6960  |
| 70° | 10827 | 6465  | 6096  |
| 75° | 9286  | 5371  | 5289  |
| 80° | 6983  | 4307  | 4518  |
| 85° | 3733  | 3253  | 3749  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 181.0  | 3.1       |
| 10°-20°   | 519.1  | 9.0       |
| 20°-30°   | 787.6  | 13.6      |
| 30°-40°   | 952.4  | 16.5      |
| 40°-50°   | 993.7  | 17.2      |
| 50°-60°   | 908.6  | 15.7      |
| 60°-70°   | 708.3  | 12.2      |
| 70°-80°   | 443.1  | 7.7       |
| 80°-90°   | 201.2  | 3.5       |
| 90°-100°  | 67.5   | 1.2       |
| 100°-110° | 16.9   | 0.3       |
| 110°-120° | 2.7    | 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°    | 1487.7 | 25.7      |
| 0°-40°    | 2440.1 | 42.2      |
| 0°-60°    | 4342.4 | 75.1      |
| 0°-90°    | 5694.9 | 98.5      |
| 90°-120°  | 87.1   | 1.5       |
| 90°-150°  | 87.1   | 1.5       |
| 90°-180°  | 87.0   | 1.5       |
| 0°-180°   | 5782.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1912 | 1912  | 1912 | 1912  | 1912 |      |
| 5°   | 1908 | 1905  | 1896 | 1905  | 1905 | 181  |
| 15°  | 1836 | 1839  | 1834 | 1844  | 1844 | 518  |
| 25°  | 1701 | 1702  | 1704 | 1718  | 1721 | 784  |
| 35°  | 1506 | 1512  | 1519 | 1534  | 1540 | 942  |
| 45°  | 1267 | 1278  | 1288 | 1301  | 1307 | 976  |
| 55°  | 989  | 1000  | 1019 | 1034  | 1040 | 883  |
| 65°  | 679  | 691   | 715  | 743   | 755  | 672  |
| 75°  | 344  | 365   | 418  | 468   | 486  | 367  |
| 85°  | 60   | 110   | 189  | 250   | 272  | 75   |
| 90°  | 0    | 41    | 111  | 167   | 188  | 2    |
| 95°  | 0    | 11    | 58   | 105   | 121  | 0    |
| 105° | 1    | 1     | 10   | 28    | 37   | 1    |
| 115° | 1    | 1     | 2    | 5     | 7    | 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    |



TEST NUMBER: P580602

CATALOG NUMBER: HVSL4-4-LD4-2LO-50-UNV-O-EDD

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1912.3 | 1912.3 | 1912.3 | 1912.3 | 1912.3 |
| 2.5°   | 1914.6 | 1911.9 | 1903.3 | 1911.9 | 1911.4 |
| 5°     | 1908.3 | 1904.7 | 1896.1 | 1905.1 | 1905.1 |
| 7.5°   | 1895.7 | 1894.3 | 1886.6 | 1897.0 | 1897.0 |
| 10°    | 1880.8 | 1880.3 | 1874.0 | 1885.3 | 1885.7 |
| 12.5°  | 1860.0 | 1861.8 | 1856.0 | 1866.8 | 1868.2 |
| 15°    | 1835.7 | 1838.9 | 1833.9 | 1844.3 | 1843.8 |
| 17.5°  | 1809.1 | 1810.9 | 1807.3 | 1819.0 | 1818.6 |
| 20°    | 1776.2 | 1778.4 | 1775.7 | 1787.9 | 1789.3 |
| 22.5°  | 1739.7 | 1742.8 | 1742.4 | 1755.0 | 1758.6 |
| 25°    | 1700.9 | 1702.3 | 1704.1 | 1718.5 | 1721.2 |
| 27.5°  | 1658.1 | 1660.3 | 1663.5 | 1676.6 | 1679.3 |
| 30°    | 1611.2 | 1614.8 | 1618.4 | 1631.9 | 1635.5 |
| 32.5°  | 1561.6 | 1565.2 | 1569.7 | 1587.3 | 1589.1 |
| 35°    | 1505.7 | 1512.5 | 1518.8 | 1534.1 | 1540.4 |
| 37.5°  | 1449.8 | 1458.4 | 1464.2 | 1480.5 | 1485.4 |
| 40°    | 1390.7 | 1399.3 | 1408.8 | 1425.9 | 1429.1 |
| 42.5°  | 1329.0 | 1338.9 | 1350.2 | 1365.5 | 1370.9 |
| 45°    | 1266.8 | 1278.0 | 1288.4 | 1301.0 | 1307.3 |
| 47.5°  | 1199.6 | 1210.9 | 1223.5 | 1237.9 | 1242.0 |
| 50°    | 1130.2 | 1143.3 | 1156.8 | 1170.3 | 1177.5 |
| 52.5°  | 1059.0 | 1074.7 | 1090.1 | 1104.5 | 1111.2 |
| 55°    | 988.6  | 1000.3 | 1018.8 | 1033.7 | 1040.5 |
| 57.5°  | 915.6  | 925.5  | 942.2  | 966.5  | 970.1  |
| 60°    | 841.2  | 850.2  | 867.4  | 887.2  | 895.3  |
| 62.5°  | 759.2  | 771.3  | 789.4  | 814.6  | 821.8  |
| 65°    | 679.4  | 691.1  | 715.0  | 743.4  | 755.1  |
| 67.5°  | 602.3  | 606.3  | 637.0  | 666.7  | 685.7  |
| 70°    | 511.2  | 526.5  | 562.2  | 598.7  | 613.1  |
| 72.5°  | 432.8  | 448.1  | 487.3  | 530.2  | 548.2  |
| 75°    | 344.0  | 365.2  | 418.4  | 468.4  | 486.0  |
| 77.5°  | 266.0  | 289.4  | 355.2  | 405.7  | 426.0  |
| 80°    | 185.7  | 222.2  | 293.9  | 350.7  | 372.8  |
| 82.5°  | 116.8  | 161.8  | 238.5  | 298.0  | 317.4  |
| 85°    | 59.5   | 110.0  | 188.9  | 249.7  | 271.8  |
| 87.5°  | 15.8   | 71.2   | 147.0  | 205.1  | 227.7  |
| 90°    | 0.5    | 41.0   | 111.4  | 167.3  | 187.5  |
| 92.5°  | 0.5    | 23.0   | 82.9   | 133.0  | 153.7  |
| 95°    | 0.5    | 10.8   | 57.7   | 104.6  | 120.8  |
| 97.5°  | 0.5    | 4.5    | 39.7   | 78.9   | 95.1   |
| 100°   | 0.5    | 2.3    | 25.2   | 57.3   | 71.2   |
| 102.5° | 0.9    | 1.4    | 15.8   | 41.0   | 52.3   |
| 105°   | 0.9    | 1.4    | 9.5    | 28.0   | 37.4   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90°  |
|--------|-----|-------|-----|-------|------|
| 112.5° | 1.4 | 1.4   | 1.8 | 7.7   | 11.3 |
| 115°   | 1.4 | 1.4   | 1.8 | 5.0   | 7.2  |
| 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° | 0.9 | 1.4 | 5.4 | 18.9 | 25.7 |
| 110°   | 1.4 | 1.4 | 3.2 | 11.7 | 17.1 |



(END OF REPORT)