

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: P580614

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

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580614  
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  
Description: 8 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

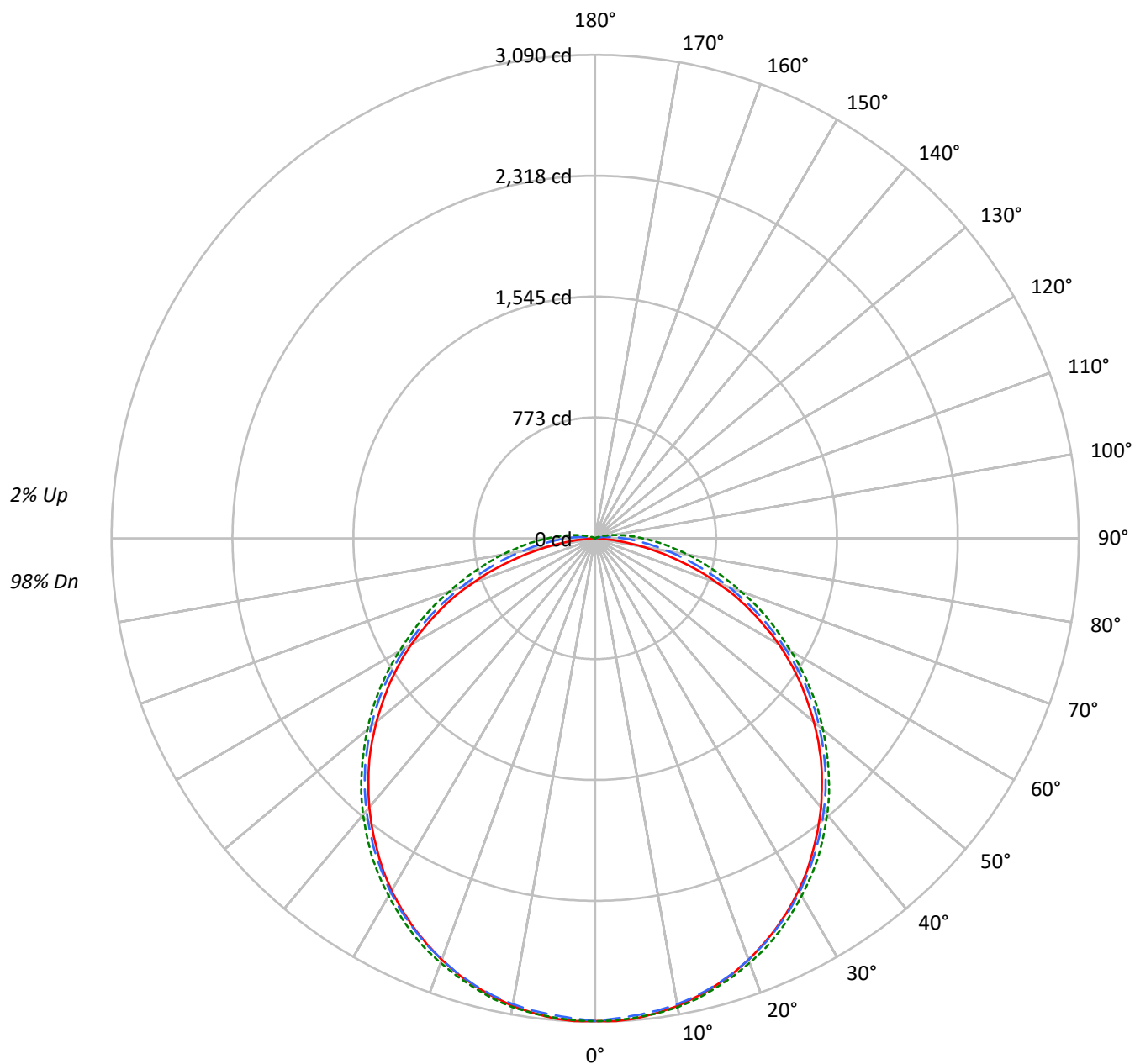
Lumens per Lamp: N/A  
Luminaire Lumens: 9331.0 lumens  
Efficiency: N/A  
Efficacy: 108.2 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 8' x H: 0.17')  
CIE Type: Direct

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°  | 12457 | 12457 | 12457 |
| 5°  | 12455 | 12011 | 11935 |
| 10° | 12395 | 11640 | 11463 |
| 15° | 12311 | 11256 | 10965 |
| 20° | 12220 | 10854 | 10493 |
| 25° | 12107 | 10452 | 10032 |
| 30° | 11975 | 10038 | 9546  |
| 35° | 11801 | 9601  | 9073  |
| 40° | 11623 | 9151  | 8560  |
| 45° | 11432 | 8674  | 8029  |
| 50° | 11176 | 8147  | 7477  |
| 55° | 10903 | 7582  | 6893  |
| 60° | 10577 | 6898  | 6250  |
| 65° | 10024 | 6157  | 5616  |
| 70° | 9209  | 5321  | 4919  |
| 75° | 8033  | 4434  | 4267  |
| 80° | 6230  | 3569  | 3646  |
| 85° | 3591  | 2709  | 3025  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 292.0  | 3.1       |
| 10°-20°   | 837.7  | 9.0       |
| 20°-30°   | 1271.1 | 13.6      |
| 30°-40°   | 1536.9 | 16.5      |
| 40°-50°   | 1603.7 | 17.2      |
| 50°-60°   | 1466.3 | 15.7      |
| 60°-70°   | 1143.0 | 12.2      |
| 70°-80°   | 715.0  | 7.7       |
| 80°-90°   | 324.7  | 3.5       |
| 90°-100°  | 108.8  | 1.2       |
| 100°-110° | 27.3   | 0.3       |
| 110°-120° | 4.3    | 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°    | 2400.8 | 25.7      |
| 0°-40°    | 3937.8 | 42.2      |
| 0°-60°    | 7007.7 | 75.1      |
| 0°-90°    | 9190.5 | 98.5      |
| 90°-120°  | 140.5  | 1.5       |
| 90°-150°  | 140.5  | 1.5       |
| 90°-180°  | 140.0  | 1.5       |
| 0°-180°   | 9331.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 3086 | 3086  | 3086 | 3086  | 3086 |      |
| 5°   | 3080 | 3074  | 3060 | 3074  | 3074 | 292  |
| 15°  | 2962 | 2968  | 2960 | 2976  | 2976 | 836  |
| 25°  | 2745 | 2747  | 2750 | 2773  | 2778 | 1265 |
| 35°  | 2430 | 2441  | 2451 | 2476  | 2486 | 1521 |
| 45°  | 2044 | 2062  | 2079 | 2100  | 2110 | 1575 |
| 55°  | 1595 | 1614  | 1644 | 1668  | 1679 | 1425 |
| 65°  | 1096 | 1115  | 1154 | 1200  | 1219 | 1085 |
| 75°  | 555  | 589   | 675  | 756   | 784  | 592  |
| 85°  | 96   | 178   | 305  | 403   | 439  | 121  |
| 90°  | 1    | 66    | 180  | 270   | 303  | 4    |
| 95°  | 1    | 18    | 93   | 169   | 195  | 1    |
| 105° | 2    | 2     | 15   | 45    | 60   | 2    |
| 115° | 2    | 2     | 3    | 8     | 12   | 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: P580614

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 3086.1 | 3086.1 | 3086.1 | 3086.1 | 3086.1 |
| 2.5°   | 3089.8 | 3085.4 | 3071.6 | 3085.4 | 3084.7 |
| 5°     | 3079.6 | 3073.8 | 3059.9 | 3074.5 | 3074.5 |
| 7.5°   | 3059.2 | 3057.0 | 3044.7 | 3061.4 | 3061.4 |
| 10°    | 3035.2 | 3034.5 | 3024.3 | 3042.5 | 3043.2 |
| 12.5°  | 3001.7 | 3004.6 | 2995.2 | 3012.7 | 3014.8 |
| 15°    | 2962.5 | 2967.5 | 2959.5 | 2976.3 | 2975.5 |
| 17.5°  | 2919.5 | 2922.4 | 2916.6 | 2935.5 | 2934.8 |
| 20°    | 2866.4 | 2870.1 | 2865.7 | 2885.3 | 2887.5 |
| 22.5°  | 2807.5 | 2812.6 | 2811.9 | 2832.2 | 2838.0 |
| 25°    | 2744.9 | 2747.1 | 2750.0 | 2773.3 | 2777.7 |
| 27.5°  | 2675.8 | 2679.4 | 2684.5 | 2705.6 | 2710.0 |
| 30°    | 2600.1 | 2606.0 | 2611.8 | 2633.6 | 2639.4 |
| 32.5°  | 2520.1 | 2525.9 | 2533.2 | 2561.6 | 2564.5 |
| 35°    | 2429.9 | 2440.8 | 2451.0 | 2475.7 | 2485.9 |
| 37.5°  | 2339.7 | 2353.5 | 2363.0 | 2389.2 | 2397.2 |
| 40°    | 2244.4 | 2258.2 | 2273.5 | 2301.1 | 2306.2 |
| 42.5°  | 2144.7 | 2160.7 | 2178.9 | 2203.7 | 2212.4 |
| 45°    | 2044.3 | 2062.5 | 2079.2 | 2099.6 | 2109.8 |
| 47.5°  | 1935.9 | 1954.1 | 1974.5 | 1997.8 | 2004.3 |
| 50°    | 1823.9 | 1845.0 | 1866.8 | 1888.6 | 1900.3 |
| 52.5°  | 1708.9 | 1734.4 | 1759.1 | 1782.4 | 1793.3 |
| 55°    | 1595.4 | 1614.4 | 1644.2 | 1668.2 | 1679.1 |
| 57.5°  | 1477.6 | 1493.6 | 1520.5 | 1559.8 | 1565.6 |
| 60°    | 1357.5 | 1372.1 | 1399.7 | 1431.8 | 1444.9 |
| 62.5°  | 1225.1 | 1244.8 | 1273.9 | 1314.6 | 1326.3 |
| 65°    | 1096.4 | 1115.3 | 1153.8 | 1199.7 | 1218.6 |
| 67.5°  | 972.0  | 978.5  | 1028.0 | 1076.0 | 1106.6 |
| 70°    | 825.0  | 849.7  | 907.2  | 966.1  | 989.4  |
| 72.5°  | 698.4  | 723.2  | 786.4  | 855.6  | 884.7  |
| 75°    | 555.1  | 589.3  | 675.1  | 755.9  | 784.3  |
| 77.5°  | 429.2  | 467.1  | 573.3  | 654.8  | 687.5  |
| 80°    | 299.7  | 358.7  | 474.3  | 566.0  | 601.7  |
| 82.5°  | 188.4  | 261.2  | 384.9  | 480.9  | 512.2  |
| 85°    | 96.0   | 177.5  | 304.8  | 403.0  | 438.7  |
| 87.5°  | 25.5   | 114.9  | 237.2  | 331.0  | 367.4  |
| 90°    | 0.7    | 66.2   | 179.7  | 269.9  | 302.6  |
| 92.5°  | 0.7    | 37.1   | 133.9  | 214.6  | 248.1  |
| 95°    | 0.7    | 17.5   | 93.1   | 168.8  | 195.0  |
| 97.5°  | 0.7    | 7.3    | 64.0   | 127.3  | 153.5  |
| 100°   | 0.7    | 3.6    | 40.7   | 92.4   | 114.9  |
| 102.5° | 1.5    | 2.2    | 25.5   | 66.2   | 84.4   |
| 105°   | 1.5    | 2.2    | 15.3   | 45.1   | 60.4   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90°  |
|--------|-----|-------|-----|-------|------|
| 112.5° | 2.2 | 2.2   | 2.9 | 12.4  | 18.2 |
| 115°   | 2.2 | 2.2   | 2.9 | 8.0   | 11.6 |
| 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° | 1.5 | 2.2 | 8.7 | 30.6 | 41.5 |
| 110°   | 2.2 | 2.2 | 5.1 | 18.9 | 27.6 |



(END OF REPORT)