

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: P580578

Luminaire Tested: **HVSL4-4-LD4-1LO-50-UNV-O-EDD**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580578  
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-LD4-1LO-50-UNV-O-EDD  
Description: 4 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

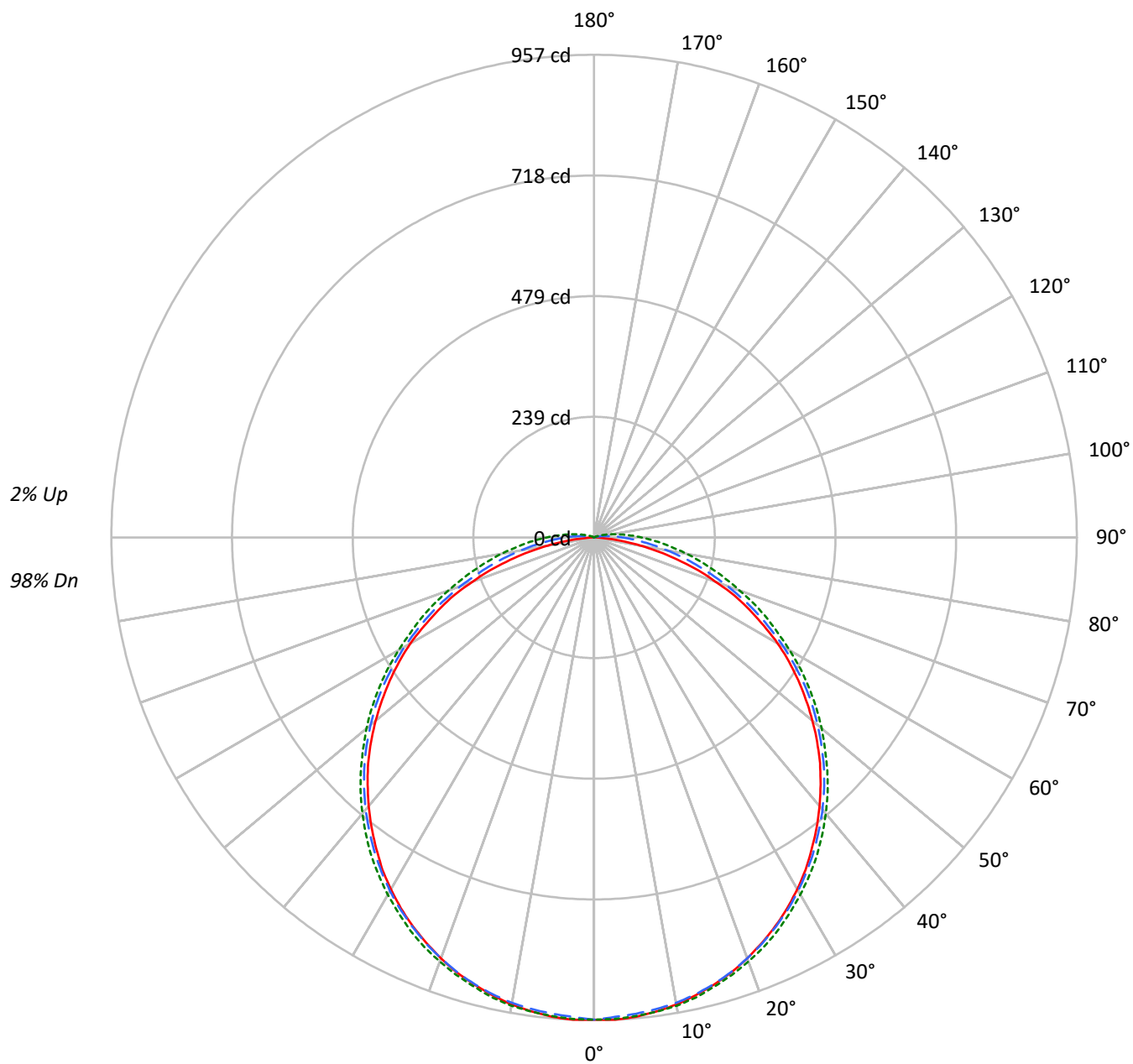
Lumens per Lamp: N/A  
Luminaire Lumens: 2891.1 lumens  
Efficiency: N/A  
Efficacy: 125.2 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 23.1  
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°  | 7719 | 7719 | 7719 |
| 5°  | 7704 | 7434 | 7396 |
| 10° | 7653 | 7195 | 7103 |
| 15° | 7586 | 6950 | 6795 |
| 20° | 7516 | 6695 | 6502 |
| 25° | 7431 | 6439 | 6216 |
| 30° | 7333 | 6177 | 5915 |
| 35° | 7210 | 5901 | 5622 |
| 40° | 7081 | 5618 | 5304 |
| 45° | 6942 | 5318 | 4975 |
| 50° | 6761 | 4987 | 4633 |
| 55° | 6566 | 4634 | 4271 |
| 60° | 6334 | 4209 | 3873 |
| 65° | 5957 | 3749 | 3480 |
| 70° | 5413 | 3233 | 3048 |
| 75° | 4643 | 2686 | 2644 |
| 80° | 3493 | 2154 | 2259 |
| 85° | 1870 | 1626 | 1874 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 90.5   | 3.1       |
| 10°-20°   | 259.5  | 9.0       |
| 20°-30°   | 393.8  | 13.6      |
| 30°-40°   | 476.2  | 16.5      |
| 40°-50°   | 496.9  | 17.2      |
| 50°-60°   | 454.3  | 15.7      |
| 60°-70°   | 354.1  | 12.2      |
| 70°-80°   | 221.5  | 7.7       |
| 80°-90°   | 100.6  | 3.5       |
| 90°-100°  | 33.7   | 1.2       |
| 100°-110° | 8.5    | 0.3       |
| 110°-120° | 1.3    | 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°    | 743.8  | 25.7      |
| 0°-40°    | 1220.0 | 42.2      |
| 0°-60°    | 2171.2 | 75.1      |
| 0°-90°    | 2847.5 | 98.5      |
| 90°-120°  | 43.5   | 1.5       |
| 90°-150°  | 43.5   | 1.5       |
| 90°-180°  | 44.0   | 1.5       |
| 0°-180°   | 2891.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 956 | 956   | 956 | 956   | 956 |      |
| 5°   | 954 | 952   | 948 | 953   | 953 | 91   |
| 15°  | 918 | 919   | 917 | 922   | 922 | 259  |
| 25°  | 850 | 851   | 852 | 859   | 861 | 392  |
| 35°  | 753 | 756   | 759 | 767   | 770 | 471  |
| 45°  | 633 | 639   | 644 | 650   | 654 | 488  |
| 55°  | 494 | 500   | 509 | 517   | 520 | 442  |
| 65°  | 340 | 346   | 358 | 372   | 378 | 336  |
| 75°  | 172 | 183   | 209 | 234   | 243 | 183  |
| 85°  | 30  | 55    | 94  | 125   | 136 | 38   |
| 90°  | 0   | 20    | 56  | 84    | 94  | 1    |
| 95°  | 0   | 5     | 29  | 52    | 60  | 0    |
| 105° | 0   | 1     | 5   | 14    | 19  | 1    |
| 115° | 1   | 1     | 1   | 2     | 4   | 0    |
| 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°     | 956.2 | 956.2 | 956.2 | 956.2 | 956.2 |
| 2.5°   | 957.3 | 955.9 | 951.7 | 955.9 | 955.7 |
| 5°     | 954.1 | 952.3 | 948.1 | 952.6 | 952.6 |
| 7.5°   | 947.8 | 947.2 | 943.3 | 948.5 | 948.5 |
| 10°    | 940.4 | 940.2 | 937.0 | 942.6 | 942.9 |
| 12.5°  | 930.0 | 930.9 | 928.0 | 933.4 | 934.1 |
| 15°    | 917.8 | 919.4 | 916.9 | 922.1 | 921.9 |
| 17.5°  | 904.6 | 905.5 | 903.6 | 909.5 | 909.3 |
| 20°    | 888.1 | 889.2 | 887.9 | 894.0 | 894.6 |
| 22.5°  | 869.8 | 871.4 | 871.2 | 877.5 | 879.3 |
| 25°    | 850.5 | 851.1 | 852.0 | 859.2 | 860.6 |
| 27.5°  | 829.0 | 830.2 | 831.7 | 838.3 | 839.6 |
| 30°    | 805.6 | 807.4 | 809.2 | 816.0 | 817.8 |
| 32.5°  | 780.8 | 782.6 | 784.9 | 793.7 | 794.6 |
| 35°    | 752.9 | 756.2 | 759.4 | 767.1 | 770.2 |
| 37.5°  | 724.9 | 729.2 | 732.1 | 740.2 | 742.7 |
| 40°    | 695.4 | 699.7 | 704.4 | 713.0 | 714.5 |
| 42.5°  | 664.5 | 669.5 | 675.1 | 682.8 | 685.5 |
| 45°    | 633.4 | 639.0 | 644.2 | 650.5 | 653.7 |
| 47.5°  | 599.8 | 605.4 | 611.7 | 619.0 | 621.0 |
| 50°    | 565.1 | 571.6 | 578.4 | 585.2 | 588.8 |
| 52.5°  | 529.5 | 537.4 | 545.0 | 552.2 | 555.6 |
| 55°    | 494.3 | 500.2 | 509.4 | 516.9 | 520.2 |
| 57.5°  | 457.8 | 462.8 | 471.1 | 483.3 | 485.1 |
| 60°    | 420.6 | 425.1 | 433.7 | 443.6 | 447.7 |
| 62.5°  | 379.6 | 385.7 | 394.7 | 407.3 | 410.9 |
| 65°    | 339.7 | 345.5 | 357.5 | 371.7 | 377.6 |
| 67.5°  | 301.1 | 303.2 | 318.5 | 333.4 | 342.8 |
| 70°    | 255.6 | 263.3 | 281.1 | 299.3 | 306.6 |
| 72.5°  | 216.4 | 224.1 | 243.7 | 265.1 | 274.1 |
| 75°    | 172.0 | 182.6 | 209.2 | 234.2 | 243.0 |
| 77.5°  | 133.0 | 144.7 | 177.6 | 202.9 | 213.0 |
| 80°    | 92.9  | 111.1 | 147.0 | 175.4 | 186.4 |
| 82.5°  | 58.4  | 80.9  | 119.2 | 149.0 | 158.7 |
| 85°    | 29.8  | 55.0  | 94.4  | 124.9 | 135.9 |
| 87.5°  | 7.9   | 35.6  | 73.5  | 102.6 | 113.8 |
| 90°    | 0.2   | 20.5  | 55.7  | 83.6  | 93.8  |
| 92.5°  | 0.2   | 11.5  | 41.5  | 66.5  | 76.9  |
| 95°    | 0.2   | 5.4   | 28.9  | 52.3  | 60.4  |
| 97.5°  | 0.2   | 2.3   | 19.8  | 39.4  | 47.6  |
| 100°   | 0.2   | 1.1   | 12.6  | 28.6  | 35.6  |
| 102.5° | 0.5   | 0.7   | 7.9   | 20.5  | 26.1  |
| 105°   | 0.5   | 0.7   | 4.7   | 14.0  | 18.7  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.7 | 0.7   | 0.9 | 3.8   | 5.6 |
| 115°   | 0.7 | 0.7   | 0.9 | 2.5   | 3.6 |
| 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° | 0.5 | 0.7 | 2.7 | 9.5 | 12.8 |
| 110°   | 0.7 | 0.7 | 1.6 | 5.9 | 8.6  |



(END OF REPORT)