

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: P580441

Luminaire Tested: **HVSL4-1-LD4-1STD-50-UNV-O-EDD-90**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580441  
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: HVSL4-1-LD4-1STD-50-UNV-O-EDD-90  
Description: 1 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

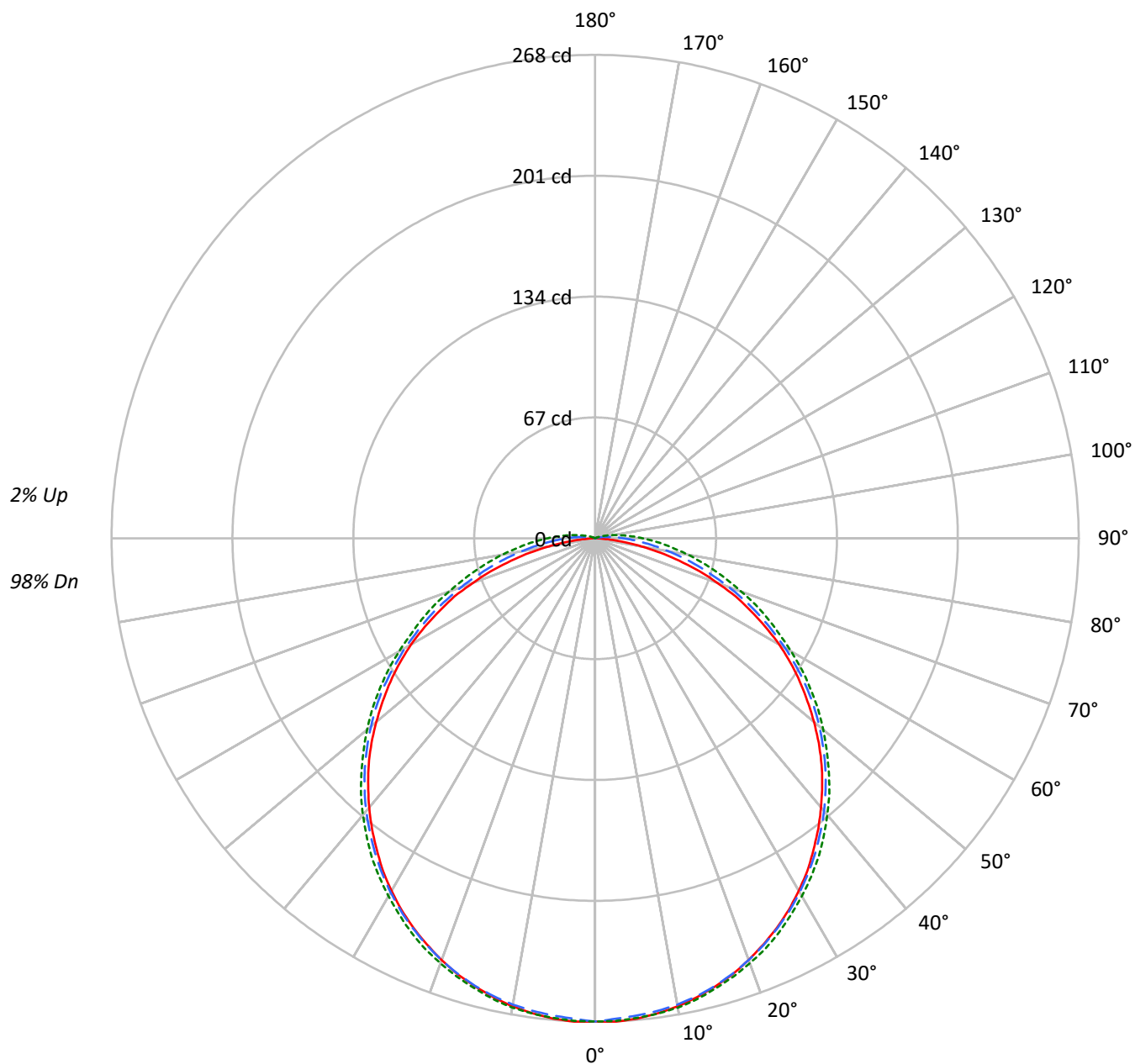
Lumens per Lamp: N/A  
Luminaire Lumens: 810.0 lumens  
Efficiency: N/A  
Efficacy: 98.8 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 8.2  
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°  | 8651 | 8651 | 8651 |
| 5°  | 8540 | 8268 | 8289 |
| 10° | 8393 | 7947 | 7961 |
| 15° | 8231 | 7625 | 7615 |
| 20° | 8061 | 7297 | 7288 |
| 25° | 7878 | 6972 | 6966 |
| 30° | 7677 | 6644 | 6629 |
| 35° | 7445 | 6307 | 6301 |
| 40° | 7204 | 5962 | 5945 |
| 45° | 6948 | 5602 | 5574 |
| 50° | 6634 | 5214 | 5194 |
| 55° | 6298 | 4801 | 4788 |
| 60° | 5903 | 4319 | 4340 |
| 65° | 5359 | 3807 | 3901 |
| 70° | 4637 | 3241 | 3416 |
| 75° | 3707 | 2649 | 2964 |
| 80° | 2485 | 2085 | 2530 |
| 85° | 1058 | 1537 | 2102 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 25.4   | 3.1       |
| 10°-20°   | 72.7   | 9.0       |
| 20°-30°   | 110.3  | 13.6      |
| 30°-40°   | 133.4  | 16.5      |
| 40°-50°   | 139.2  | 17.2      |
| 50°-60°   | 127.3  | 15.7      |
| 60°-70°   | 99.2   | 12.2      |
| 70°-80°   | 62.1   | 7.7       |
| 80°-90°   | 28.2   | 3.5       |
| 90°-100°  | 9.4    | 1.2       |
| 100°-110° | 2.4    | 0.3       |
| 110°-120° | 0.4    | 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°    | 208.4  | 25.7      |
| 0°-40°    | 341.8  | 42.2      |
| 0°-60°    | 608.3  | 75.1      |
| 0°-90°    | 797.8  | 98.5      |
| 90°-120°  | 12.2   | 1.5       |
| 90°-150°  | 12.2   | 1.5       |
| 90°-180°  | 12.0   | 1.5       |
| 0°-180°   | 810.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 268 | 268   | 268 | 268   | 268 |      |
| 5°   | 267 | 267   | 266 | 267   | 267 | 25   |
| 15°  | 257 | 258   | 257 | 258   | 258 | 73   |
| 25°  | 238 | 238   | 239 | 241   | 241 | 110  |
| 35°  | 211 | 212   | 213 | 215   | 216 | 132  |
| 45°  | 178 | 179   | 180 | 182   | 183 | 137  |
| 55°  | 138 | 140   | 143 | 145   | 146 | 124  |
| 65°  | 95  | 97    | 100 | 104   | 106 | 94   |
| 75°  | 48  | 51    | 59  | 66    | 68  | 51   |
| 85°  | 8   | 15    | 26  | 35    | 38  | 11   |
| 90°  | 0   | 6     | 16  | 23    | 26  | 0    |
| 95°  | 0   | 2     | 8   | 15    | 17  | 0    |
| 105° | 0   | 0     | 1   | 4     | 5   | 0    |
| 115° | 0   | 0     | 0   | 1     | 1   | 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°     | 267.9 | 267.9 | 267.9 | 267.9 | 267.9 |
| 2.5°   | 268.2 | 267.8 | 266.6 | 267.8 | 267.8 |
| 5°     | 267.3 | 266.8 | 265.6 | 266.9 | 266.9 |
| 7.5°   | 265.6 | 265.4 | 264.3 | 265.8 | 265.8 |
| 10°    | 263.5 | 263.4 | 262.5 | 264.1 | 264.2 |
| 12.5°  | 260.6 | 260.8 | 260.0 | 261.5 | 261.7 |
| 15°    | 257.2 | 257.6 | 256.9 | 258.4 | 258.3 |
| 17.5°  | 253.4 | 253.7 | 253.2 | 254.8 | 254.8 |
| 20°    | 248.8 | 249.1 | 248.8 | 250.5 | 250.7 |
| 22.5°  | 243.7 | 244.2 | 244.1 | 245.9 | 246.4 |
| 25°    | 238.3 | 238.5 | 238.7 | 240.7 | 241.1 |
| 27.5°  | 232.3 | 232.6 | 233.0 | 234.9 | 235.2 |
| 30°    | 225.7 | 226.2 | 226.7 | 228.6 | 229.1 |
| 32.5°  | 218.8 | 219.3 | 219.9 | 222.4 | 222.6 |
| 35°    | 210.9 | 211.9 | 212.8 | 214.9 | 215.8 |
| 37.5°  | 203.1 | 204.3 | 205.1 | 207.4 | 208.1 |
| 40°    | 194.8 | 196.0 | 197.4 | 199.8 | 200.2 |
| 42.5°  | 186.2 | 187.6 | 189.1 | 191.3 | 192.1 |
| 45°    | 177.5 | 179.0 | 180.5 | 182.3 | 183.1 |
| 47.5°  | 168.1 | 169.6 | 171.4 | 173.4 | 174.0 |
| 50°    | 158.3 | 160.2 | 162.1 | 163.9 | 165.0 |
| 52.5°  | 148.3 | 150.6 | 152.7 | 154.7 | 155.7 |
| 55°    | 138.5 | 140.1 | 142.7 | 144.8 | 145.8 |
| 57.5°  | 128.3 | 129.7 | 132.0 | 135.4 | 135.9 |
| 60°    | 117.8 | 119.1 | 121.5 | 124.3 | 125.4 |
| 62.5°  | 106.4 | 108.1 | 110.6 | 114.1 | 115.1 |
| 65°    | 95.2  | 96.8  | 100.2 | 104.1 | 105.8 |
| 67.5°  | 84.4  | 84.9  | 89.2  | 93.4  | 96.1  |
| 70°    | 71.6  | 73.8  | 78.8  | 83.9  | 85.9  |
| 72.5°  | 60.6  | 62.8  | 68.3  | 74.3  | 76.8  |
| 75°    | 48.2  | 51.2  | 58.6  | 65.6  | 68.1  |
| 77.5°  | 37.3  | 40.5  | 49.8  | 56.8  | 59.7  |
| 80°    | 26.0  | 31.1  | 41.2  | 49.1  | 52.2  |
| 82.5°  | 16.4  | 22.7  | 33.4  | 41.7  | 44.5  |
| 85°    | 8.3   | 15.4  | 26.5  | 35.0  | 38.1  |
| 87.5°  | 2.2   | 10.0  | 20.6  | 28.7  | 31.9  |
| 90°    | 0.1   | 5.7   | 15.6  | 23.4  | 26.3  |
| 92.5°  | 0.1   | 3.2   | 11.6  | 18.6  | 21.5  |
| 95°    | 0.1   | 1.5   | 8.1   | 14.7  | 16.9  |
| 97.5°  | 0.1   | 0.6   | 5.6   | 11.1  | 13.3  |
| 100°   | 0.1   | 0.3   | 3.5   | 8.0   | 10.0  |
| 102.5° | 0.1   | 0.2   | 2.2   | 5.7   | 7.3   |
| 105°   | 0.1   | 0.2   | 1.3   | 3.9   | 5.2   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.2 | 0.2   | 0.3 | 1.1   | 1.6 |
| 115°   | 0.2 | 0.2   | 0.3 | 0.7   | 1.0 |
| 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° | 0.1 | 0.2 | 0.8 | 2.7 | 3.6 |
| 110°   | 0.2 | 0.2 | 0.4 | 1.6 | 2.4 |



(END OF REPORT)