

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: P580442

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

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580442  
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  
Description: 1 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

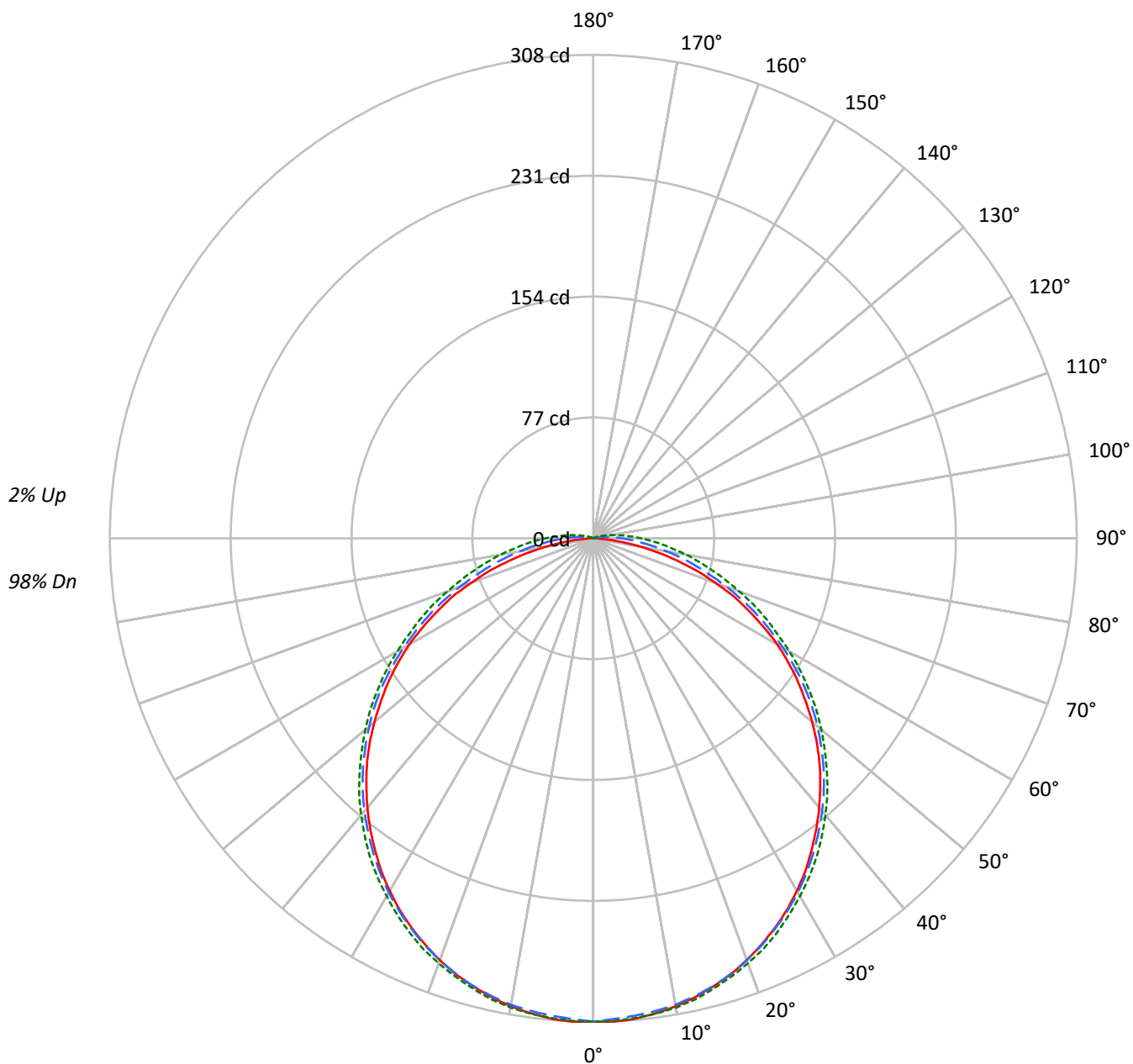
Lumens per Lamp: N/A  
Luminaire Lumens: 931.0 lumens  
Efficiency: N/A  
Efficacy: 113.5 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.17')  
CIE Type: Direct

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°  | 9943 | 9943 | 9943 |
| 5°  | 9818 | 9504 | 9528 |
| 10° | 9645 | 9133 | 9148 |
| 15° | 9460 | 8765 | 8753 |
| 20° | 9266 | 8386 | 8376 |
| 25° | 9055 | 8015 | 8006 |
| 30° | 8823 | 7638 | 7618 |
| 35° | 8557 | 7246 | 7241 |
| 40° | 8280 | 6850 | 6832 |
| 45° | 7985 | 6440 | 6408 |
| 50° | 7628 | 5992 | 5968 |
| 55° | 7239 | 5518 | 5501 |
| 60° | 6785 | 4966 | 4990 |
| 65° | 6158 | 4373 | 4483 |
| 70° | 5329 | 3722 | 3925 |
| 75° | 4261 | 3047 | 3404 |
| 80° | 2858 | 2394 | 2909 |
| 85° | 1224 | 1763 | 2416 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 29.1   | 3.1       |
| 10°-20°   | 83.6   | 9.0       |
| 20°-30°   | 126.8  | 13.6      |
| 30°-40°   | 153.3  | 16.5      |
| 40°-50°   | 160.0  | 17.2      |
| 50°-60°   | 146.3  | 15.7      |
| 60°-70°   | 114.1  | 12.3      |
| 70°-80°   | 71.3   | 7.7       |
| 80°-90°   | 32.4   | 3.5       |
| 90°-100°  | 10.9   | 1.2       |
| 100°-110° | 2.7    | 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°    | 239.5  | 25.7      |
| 0°-40°    | 392.9  | 42.2      |
| 0°-60°    | 699.2  | 75.1      |
| 0°-90°    | 917.0  | 98.5      |
| 90°-120°  | 14.0   | 1.5       |
| 90°-150°  | 14.0   | 1.5       |
| 90°-180°  | 14.0   | 1.5       |
| 0°-180°   | 931.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 308 | 308   | 308 | 308   | 308 |      |
| 5°   | 307 | 307   | 305 | 307   | 307 | 29   |
| 15°  | 296 | 296   | 295 | 297   | 297 | 83   |
| 25°  | 274 | 274   | 274 | 277   | 277 | 126  |
| 35°  | 242 | 244   | 244 | 247   | 248 | 152  |
| 45°  | 204 | 206   | 208 | 210   | 210 | 157  |
| 55°  | 159 | 161   | 164 | 166   | 168 | 142  |
| 65°  | 109 | 111   | 115 | 120   | 122 | 108  |
| 75°  | 55  | 59    | 67  | 75    | 78  | 59   |
| 85°  | 10  | 18    | 30  | 40    | 44  | 12   |
| 90°  | 0   | 7     | 18  | 27    | 30  | 0    |
| 95°  | 0   | 2     | 9   | 17    | 20  | 0    |
| 105° | 0   | 0     | 2   | 4     | 6   | 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°     | 307.9 | 307.9 | 307.9 | 307.9 | 307.9 |
| 2.5°   | 308.3 | 307.8 | 306.5 | 307.8 | 307.8 |
| 5°     | 307.3 | 306.7 | 305.3 | 306.8 | 306.8 |
| 7.5°   | 305.2 | 305.0 | 303.8 | 305.5 | 305.5 |
| 10°    | 302.8 | 302.8 | 301.7 | 303.6 | 303.6 |
| 12.5°  | 299.5 | 299.8 | 298.8 | 300.6 | 300.8 |
| 15°    | 295.6 | 296.1 | 295.3 | 297.0 | 296.9 |
| 17.5°  | 291.3 | 291.6 | 291.0 | 292.9 | 292.8 |
| 20°    | 286.0 | 286.4 | 285.9 | 287.9 | 288.1 |
| 22.5°  | 280.1 | 280.6 | 280.6 | 282.6 | 283.2 |
| 25°    | 273.9 | 274.1 | 274.4 | 276.7 | 277.1 |
| 27.5°  | 267.0 | 267.3 | 267.8 | 270.0 | 270.4 |
| 30°    | 259.4 | 260.0 | 260.6 | 262.8 | 263.3 |
| 32.5°  | 251.4 | 252.0 | 252.8 | 255.6 | 255.9 |
| 35°    | 242.4 | 243.5 | 244.5 | 247.0 | 248.0 |
| 37.5°  | 233.4 | 234.8 | 235.8 | 238.4 | 239.2 |
| 40°    | 223.9 | 225.3 | 226.8 | 229.6 | 230.1 |
| 42.5°  | 214.0 | 215.6 | 217.4 | 219.9 | 220.7 |
| 45°    | 204.0 | 205.8 | 207.5 | 209.5 | 210.5 |
| 47.5°  | 193.2 | 195.0 | 197.0 | 199.3 | 200.0 |
| 50°    | 182.0 | 184.1 | 186.3 | 188.4 | 189.6 |
| 52.5°  | 170.5 | 173.0 | 175.5 | 177.8 | 178.9 |
| 55°    | 159.2 | 161.1 | 164.0 | 166.4 | 167.5 |
| 57.5°  | 147.4 | 149.0 | 151.7 | 155.6 | 156.2 |
| 60°    | 135.4 | 136.9 | 139.7 | 142.9 | 144.2 |
| 62.5°  | 122.2 | 124.2 | 127.1 | 131.2 | 132.3 |
| 65°    | 109.4 | 111.3 | 115.1 | 119.7 | 121.6 |
| 67.5°  | 97.0  | 97.6  | 102.6 | 107.4 | 110.4 |
| 70°    | 82.3  | 84.8  | 90.5  | 96.4  | 98.7  |
| 72.5°  | 69.7  | 72.2  | 78.5  | 85.4  | 88.3  |
| 75°    | 55.4  | 58.8  | 67.4  | 75.4  | 78.2  |
| 77.5°  | 42.8  | 46.6  | 57.2  | 65.3  | 68.6  |
| 80°    | 29.9  | 35.8  | 47.3  | 56.5  | 60.0  |
| 82.5°  | 18.8  | 26.1  | 38.4  | 48.0  | 51.1  |
| 85°    | 9.6   | 17.7  | 30.4  | 40.2  | 43.8  |
| 87.5°  | 2.5   | 11.5  | 23.7  | 33.0  | 36.7  |
| 90°    | 0.1   | 6.6   | 17.9  | 26.9  | 30.2  |
| 92.5°  | 0.1   | 3.7   | 13.4  | 21.4  | 24.8  |
| 95°    | 0.1   | 1.7   | 9.3   | 16.8  | 19.5  |
| 97.5°  | 0.1   | 0.7   | 6.4   | 12.7  | 15.3  |
| 100°   | 0.1   | 0.4   | 4.1   | 9.2   | 11.5  |
| 102.5° | 0.1   | 0.2   | 2.5   | 6.6   | 8.4   |
| 105°   | 0.1   | 0.2   | 1.5   | 4.5   | 6.0   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.2 | 0.2   | 0.3 | 1.2   | 1.8 |
| 115°   | 0.2 | 0.2   | 0.3 | 0.8   | 1.2 |
| 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° | 0.1 | 0.2 | 0.9 | 3.0 | 4.1 |
| 110°   | 0.2 | 0.2 | 0.5 | 1.9 | 2.8 |



(END OF REPORT)