

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: P580448

Luminaire Tested: **HVSL4-1-LD4-2HI-40-UNV-O-EDD**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580448  
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-LD4-2HI-40-UNV-O-EDD  
Description: 1 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

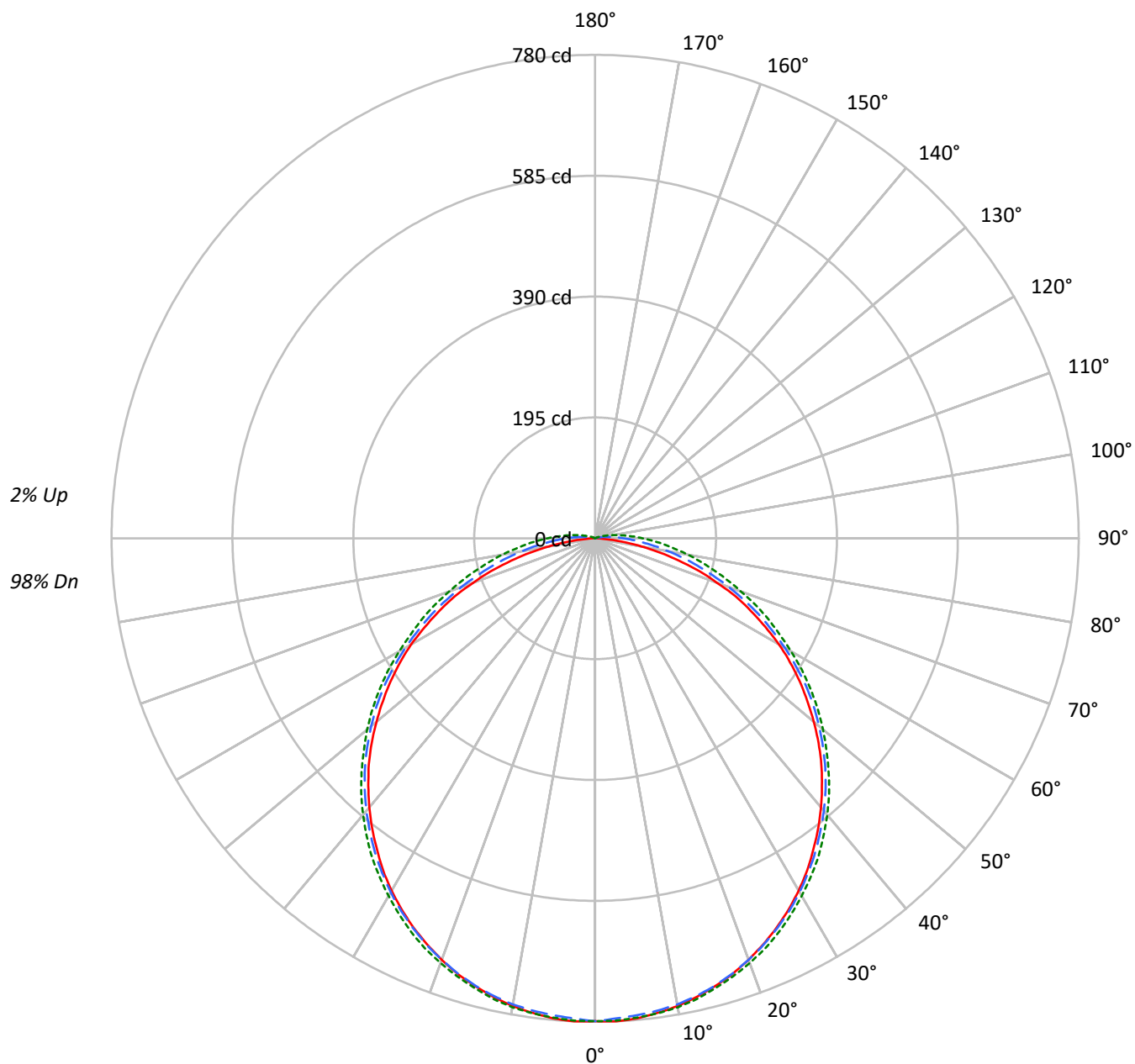
Lumens per Lamp: N/A  
Luminaire Lumens: 2356.0 lumens  
Efficiency: N/A  
Efficacy: 109.1 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 21.6  
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°  | 25162 | 25162 | 25162 |
| 5°  | 24844 | 24052 | 24109 |
| 10° | 24413 | 23117 | 23154 |
| 15° | 23937 | 22181 | 22149 |
| 20° | 23447 | 21224 | 21197 |
| 25° | 22914 | 20282 | 20262 |
| 30° | 22330 | 19329 | 19281 |
| 35° | 21657 | 18342 | 18327 |
| 40° | 20957 | 17337 | 17291 |
| 45° | 20205 | 16293 | 16217 |
| 50° | 19300 | 15162 | 15103 |
| 55° | 18317 | 13966 | 13925 |
| 60° | 17179 | 12564 | 12625 |
| 65° | 15580 | 11067 | 11344 |
| 70° | 13489 | 9423  | 9935  |
| 75° | 10783 | 7708  | 8618  |
| 80° | 7236  | 6064  | 7363  |
| 85° | 3086  | 4465  | 6112  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 73.7   | 3.1       |
| 10°-20°   | 211.5  | 9.0       |
| 20°-30°   | 320.9  | 13.6      |
| 30°-40°   | 388.1  | 16.5      |
| 40°-50°   | 404.9  | 17.2      |
| 50°-60°   | 370.2  | 15.7      |
| 60°-70°   | 288.6  | 12.2      |
| 70°-80°   | 180.5  | 7.7       |
| 80°-90°   | 82.0   | 3.5       |
| 90°-100°  | 27.5   | 1.2       |
| 100°-110° | 6.9    | 0.3       |
| 110°-120° | 1.1    | 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°    | 606.2  | 25.7      |
| 0°-40°    | 994.3  | 42.2      |
| 0°-60°    | 1769.4 | 75.1      |
| 0°-90°    | 2320.5 | 98.5      |
| 90°-120°  | 35.5   | 1.5       |
| 90°-150°  | 35.5   | 1.5       |
| 90°-180°  | 35.0   | 1.5       |
| 0°-180°   | 2356.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 779 | 779   | 779 | 779   | 779 |      |
| 5°   | 778 | 776   | 773 | 776   | 776 | 74   |
| 15°  | 748 | 749   | 747 | 752   | 751 | 211  |
| 25°  | 693 | 694   | 694 | 700   | 701 | 319  |
| 35°  | 614 | 616   | 619 | 625   | 628 | 384  |
| 45°  | 516 | 521   | 525 | 530   | 533 | 398  |
| 55°  | 403 | 408   | 415 | 421   | 424 | 360  |
| 65°  | 277 | 282   | 291 | 303   | 308 | 274  |
| 75°  | 140 | 149   | 170 | 191   | 198 | 149  |
| 85°  | 24  | 45    | 77  | 102   | 111 | 31   |
| 90°  | 0   | 17    | 45  | 68    | 76  | 1    |
| 95°  | 0   | 4     | 24  | 43    | 49  | 0    |
| 105° | 0   | 1     | 4   | 11    | 15  | 0    |
| 115° | 1   | 1     | 1   | 2     | 3   | 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   |      |



TEST NUMBER: P580448

CATALOG NUMBER: HVSL4-1-LD4-2HI-40-UNV-O-EDD

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 779.2 | 779.2 | 779.2 | 779.2 | 779.2 |
| 2.5°   | 780.1 | 779.0 | 775.5 | 779.0 | 778.9 |
| 5°     | 777.6 | 776.1 | 772.6 | 776.3 | 776.3 |
| 7.5°   | 772.4 | 771.9 | 768.8 | 773.0 | 773.0 |
| 10°    | 766.4 | 766.2 | 763.6 | 768.2 | 768.4 |
| 12.5°  | 757.9 | 758.6 | 756.3 | 760.7 | 761.2 |
| 15°    | 748.0 | 749.3 | 747.3 | 751.5 | 751.3 |
| 17.5°  | 737.2 | 737.9 | 736.4 | 741.2 | 741.0 |
| 20°    | 723.7 | 724.7 | 723.6 | 728.5 | 729.1 |
| 22.5°  | 708.9 | 710.2 | 710.0 | 715.1 | 716.6 |
| 25°    | 693.1 | 693.6 | 694.4 | 700.2 | 701.3 |
| 27.5°  | 675.6 | 676.5 | 677.8 | 683.2 | 684.3 |
| 30°    | 656.5 | 658.0 | 659.5 | 665.0 | 666.4 |
| 32.5°  | 636.3 | 637.8 | 639.6 | 646.8 | 647.5 |
| 35°    | 613.5 | 616.3 | 618.9 | 625.1 | 627.7 |
| 37.5°  | 590.8 | 594.2 | 596.6 | 603.2 | 605.3 |
| 40°    | 566.7 | 570.2 | 574.0 | 581.0 | 582.3 |
| 42.5°  | 541.5 | 545.6 | 550.2 | 556.4 | 558.6 |
| 45°    | 516.2 | 520.8 | 525.0 | 530.1 | 532.7 |
| 47.5°  | 488.8 | 493.4 | 498.5 | 504.4 | 506.1 |
| 50°    | 460.5 | 465.8 | 471.4 | 476.9 | 479.8 |
| 52.5°  | 431.5 | 437.9 | 444.2 | 450.0 | 452.8 |
| 55°    | 402.8 | 407.6 | 415.1 | 421.2 | 424.0 |
| 57.5°  | 373.1 | 377.1 | 383.9 | 393.8 | 395.3 |
| 60°    | 342.8 | 346.4 | 353.4 | 361.5 | 364.8 |
| 62.5°  | 309.3 | 314.3 | 321.6 | 331.9 | 334.9 |
| 65°    | 276.8 | 281.6 | 291.3 | 302.9 | 307.7 |
| 67.5°  | 245.4 | 247.1 | 259.6 | 271.7 | 279.4 |
| 70°    | 208.3 | 214.6 | 229.1 | 243.9 | 249.8 |
| 72.5°  | 176.3 | 182.6 | 198.6 | 216.0 | 223.4 |
| 75°    | 140.2 | 148.8 | 170.5 | 190.9 | 198.0 |
| 77.5°  | 108.4 | 117.9 | 144.7 | 165.3 | 173.6 |
| 80°    | 75.7  | 90.6  | 119.8 | 142.9 | 151.9 |
| 82.5°  | 47.6  | 65.9  | 97.2  | 121.4 | 129.3 |
| 85°    | 24.2  | 44.8  | 77.0  | 101.8 | 110.8 |
| 87.5°  | 6.4   | 29.0  | 59.9  | 83.6  | 92.8  |
| 90°    | 0.2   | 16.7  | 45.4  | 68.1  | 76.4  |
| 92.5°  | 0.2   | 9.4   | 33.8  | 54.2  | 62.6  |
| 95°    | 0.2   | 4.4   | 23.5  | 42.6  | 49.2  |
| 97.5°  | 0.2   | 1.8   | 16.2  | 32.1  | 38.8  |
| 100°   | 0.2   | 0.9   | 10.3  | 23.3  | 29.0  |
| 102.5° | 0.4   | 0.6   | 6.4   | 16.7  | 21.3  |
| 105°   | 0.4   | 0.6   | 3.9   | 11.4  | 15.2  |



TEST NUMBER: P580448

CATALOG NUMBER: HVSL4-1-LD4-2HI-40-UNV-O-EDD

**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.6 | 0.6   | 0.7 | 3.1   | 4.6 |
| 115°   | 0.6 | 0.6   | 0.7 | 2.0   | 2.9 |
| 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° | 0.4 | 0.6 | 2.2 | 7.7 | 10.5 |
| 110°   | 0.6 | 0.6 | 1.3 | 4.8 | 7.0  |



(END OF REPORT)