

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: P580499

Luminaire Tested: **HVSL4-2-LD4-2LO-30-UNV-O-EDD-90**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580499  
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: HVSL4-2-LD4-2LO-30-UNV-O-EDD-90  
Description: 2 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

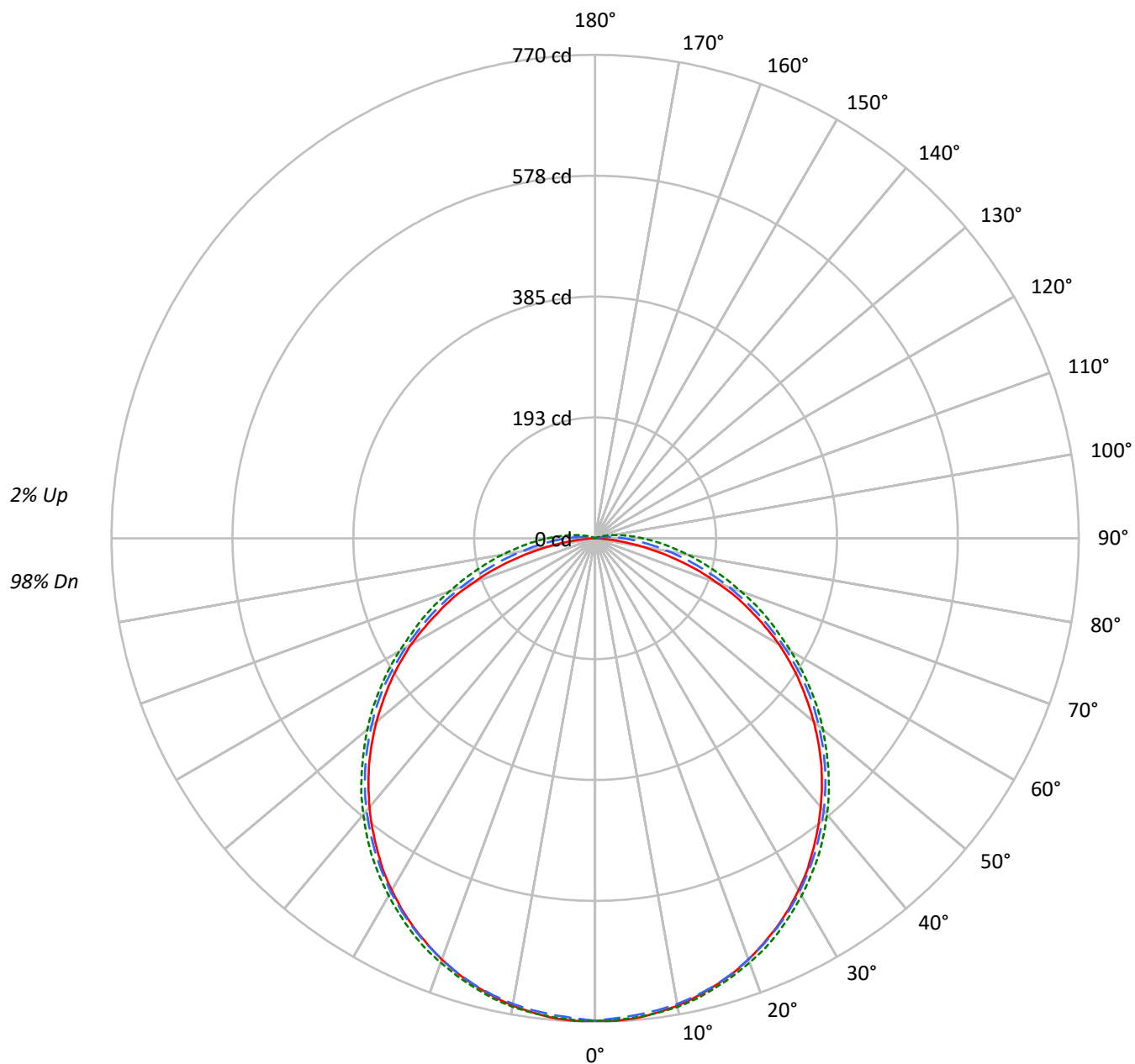
Lumens per Lamp: N/A  
Luminaire Lumens: 2324.0 lumens  
Efficiency: N/A  
Efficacy: 100.6 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 2' x H: 0.17')  
CIE Type: Direct

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°  | 12410 | 12410 | 12410 |
| 5°  | 12341 | 11921 | 11890 |
| 10° | 12215 | 11511 | 11419 |
| 15° | 12063 | 11095 | 10924 |
| 20° | 11905 | 10662 | 10454 |
| 25° | 11724 | 10233 | 9994  |
| 30° | 11519 | 9795  | 9510  |
| 35° | 11271 | 9336  | 9039  |
| 40° | 11012 | 8865  | 8528  |
| 45° | 10732 | 8372  | 7999  |
| 50° | 10380 | 7830  | 7449  |
| 55° | 9997  | 7253  | 6867  |
| 60° | 9541  | 6565  | 6228  |
| 65° | 8851  | 5826  | 5595  |
| 70° | 7893  | 5001  | 4900  |
| 75° | 6581  | 4132  | 4250  |
| 80° | 4716  | 3288  | 3633  |
| 85° | 2267  | 2460  | 3015  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 72.7   | 3.1       |
| 10°-20°   | 208.6  | 9.0       |
| 20°-30°   | 316.6  | 13.6      |
| 30°-40°   | 382.8  | 16.5      |
| 40°-50°   | 399.4  | 17.2      |
| 50°-60°   | 365.2  | 15.7      |
| 60°-70°   | 284.7  | 12.2      |
| 70°-80°   | 178.1  | 7.7       |
| 80°-90°   | 80.9   | 3.5       |
| 90°-100°  | 27.1   | 1.2       |
| 100°-110° | 6.8    | 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°    | 597.9  | 25.7      |
| 0°-40°    | 980.7  | 42.2      |
| 0°-60°    | 1745.4 | 75.1      |
| 0°-90°    | 2289.0 | 98.5      |
| 90°-120°  | 34.9   | 1.5       |
| 90°-150°  | 34.9   | 1.5       |
| 90°-180°  | 35.0   | 1.5       |
| 0°-180°   | 2324.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 769 | 769   | 769 | 769   | 769 |      |
| 5°   | 767 | 766   | 762 | 766   | 766 | 73   |
| 15°  | 738 | 739   | 737 | 741   | 741 | 208  |
| 25°  | 684 | 684   | 685 | 691   | 692 | 315  |
| 35°  | 605 | 608   | 610 | 617   | 619 | 379  |
| 45°  | 509 | 514   | 518 | 523   | 526 | 392  |
| 55°  | 397 | 402   | 410 | 416   | 418 | 355  |
| 65°  | 273 | 278   | 287 | 299   | 304 | 270  |
| 75°  | 138 | 147   | 168 | 188   | 195 | 147  |
| 85°  | 24  | 44    | 76  | 100   | 109 | 30   |
| 90°  | 0   | 16    | 45  | 67    | 75  | 1    |
| 95°  | 0   | 4     | 23  | 42    | 49  | 0    |
| 105° | 0   | 0     | 4   | 11    | 15  | 0    |
| 115° | 0   | 0     | 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   |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 768.6 | 768.6 | 768.6 | 768.6 | 768.6 |
| 2.5°   | 769.5 | 768.5 | 765.0 | 768.5 | 768.3 |
| 5°     | 767.0 | 765.6 | 762.1 | 765.7 | 765.7 |
| 7.5°   | 761.9 | 761.4 | 758.3 | 762.5 | 762.5 |
| 10°    | 756.0 | 755.8 | 753.2 | 757.8 | 757.9 |
| 12.5°  | 747.6 | 748.3 | 746.0 | 750.3 | 750.9 |
| 15°    | 737.8 | 739.1 | 737.1 | 741.3 | 741.1 |
| 17.5°  | 727.1 | 727.9 | 726.4 | 731.1 | 730.9 |
| 20°    | 713.9 | 714.8 | 713.7 | 718.6 | 719.2 |
| 22.5°  | 699.2 | 700.5 | 700.3 | 705.4 | 706.9 |
| 25°    | 683.7 | 684.2 | 684.9 | 690.7 | 691.8 |
| 27.5°  | 666.4 | 667.3 | 668.6 | 673.9 | 675.0 |
| 30°    | 647.6 | 649.0 | 650.5 | 655.9 | 657.4 |
| 32.5°  | 627.7 | 629.1 | 630.9 | 638.0 | 638.7 |
| 35°    | 605.2 | 607.9 | 610.5 | 616.6 | 619.2 |
| 37.5°  | 582.7 | 586.2 | 588.5 | 595.1 | 597.0 |
| 40°    | 559.0 | 562.4 | 566.2 | 573.1 | 574.4 |
| 42.5°  | 534.2 | 538.2 | 542.7 | 548.8 | 551.0 |
| 45°    | 509.2 | 513.7 | 517.9 | 522.9 | 525.5 |
| 47.5°  | 482.2 | 486.7 | 491.8 | 497.6 | 499.2 |
| 50°    | 454.3 | 459.5 | 465.0 | 470.4 | 473.3 |
| 52.5°  | 425.6 | 432.0 | 438.1 | 443.9 | 446.7 |
| 55°    | 397.4 | 402.1 | 409.5 | 415.5 | 418.2 |
| 57.5°  | 368.0 | 372.0 | 378.7 | 388.5 | 389.9 |
| 60°    | 338.1 | 341.7 | 348.6 | 356.6 | 359.9 |
| 62.5°  | 305.1 | 310.0 | 317.3 | 327.4 | 330.3 |
| 65°    | 273.1 | 277.8 | 287.4 | 298.8 | 303.5 |
| 67.5°  | 242.1 | 243.7 | 256.0 | 268.0 | 275.6 |
| 70°    | 205.5 | 211.6 | 226.0 | 240.6 | 246.4 |
| 72.5°  | 173.9 | 180.1 | 195.9 | 213.1 | 220.3 |
| 75°    | 138.3 | 146.8 | 168.2 | 188.3 | 195.3 |
| 77.5°  | 106.9 | 116.3 | 142.8 | 163.1 | 171.2 |
| 80°    | 74.7  | 89.3  | 118.1 | 141.0 | 149.9 |
| 82.5°  | 46.9  | 65.0  | 95.9  | 119.8 | 127.6 |
| 85°    | 23.9  | 44.2  | 75.9  | 100.4 | 109.3 |
| 87.5°  | 6.3   | 28.6  | 59.1  | 82.4  | 91.5  |
| 90°    | 0.2   | 16.5  | 44.8  | 67.2  | 75.4  |
| 92.5°  | 0.2   | 9.2   | 33.3  | 53.5  | 61.8  |
| 95°    | 0.2   | 4.3   | 23.2  | 42.0  | 48.6  |
| 97.5°  | 0.2   | 1.8   | 15.9  | 31.7  | 38.2  |
| 100°   | 0.2   | 0.9   | 10.1  | 23.0  | 28.6  |
| 102.5° | 0.4   | 0.5   | 6.3   | 16.5  | 21.0  |
| 105°   | 0.4   | 0.5   | 3.8   | 11.2  | 15.0  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.5 | 0.5   | 0.7 | 3.1   | 4.5 |
| 115°   | 0.5 | 0.5   | 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 | 0.5 | 2.2 | 7.6 | 10.3 |
| 110°   | 0.5 | 0.5 | 1.3 | 4.7 | 6.9  |



(END OF REPORT)