

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: P580469

Luminaire Tested: **HVSL4-2-LD4-1HI-35-UNV-O-EDD-90**

Issue Date: 12/16/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P580469  
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-LD4-1HI-35-UNV-O-EDD-90  
Description: 2 FOOT, 4INCH WIDE, HVSL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

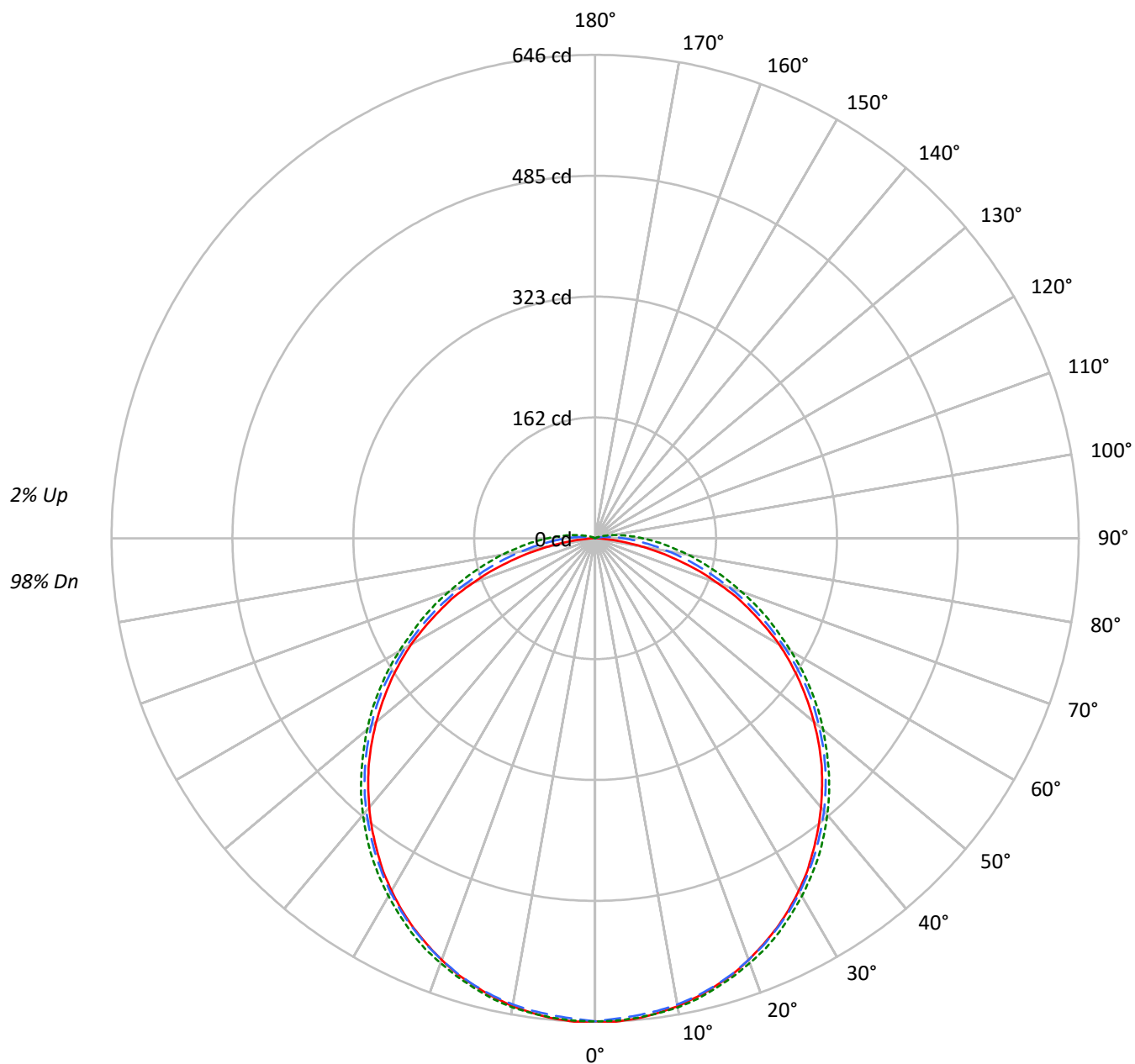
Lumens per Lamp: N/A  
Luminaire Lumens: 1952.0 lumens  
Efficiency: N/A  
Efficacy: 90.4 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 2' x H: 0.17')  
CIE Type: Direct

Input Watts (W): 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

TEST NUMBER: P580469

CATALOG NUMBER: HVSL4-2-LD4-1HI-35-UNV-O-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P580469

CATALOG NUMBER: HVSL4-2-LD4-1HI-35-UNV-O-EDD-90

**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°  | 10424 | 10424 | 10424 |
| 5°  | 10365 | 10013 | 9988  |
| 10° | 10260 | 9670  | 9591  |
| 15° | 10132 | 9318  | 9176  |
| 20° | 9999  | 8956  | 8781  |
| 25° | 9847  | 8595  | 8395  |
| 30° | 9675  | 8227  | 7988  |
| 35° | 9466  | 7841  | 7591  |
| 40° | 9249  | 7446  | 7164  |
| 45° | 9015  | 7032  | 6719  |
| 50° | 8717  | 6576  | 6256  |
| 55° | 8397  | 6093  | 5769  |
| 60° | 8014  | 5514  | 5231  |
| 65° | 7435  | 4893  | 4699  |
| 70° | 6630  | 4200  | 4116  |
| 75° | 5524  | 3468  | 3571  |
| 80° | 3959  | 2762  | 3052  |
| 85° | 1907  | 2068  | 2532  |



TEST NUMBER: P580469

CATALOG NUMBER: HVSL4-2-LD4-1HI-35-UNV-O-EDD-90

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 61.1   | 3.1       |
| 10°-20°   | 175.2  | 9.0       |
| 20°-30°   | 265.9  | 13.6      |
| 30°-40°   | 321.5  | 16.5      |
| 40°-50°   | 335.5  | 17.2      |
| 50°-60°   | 306.7  | 15.7      |
| 60°-70°   | 239.1  | 12.2      |
| 70°-80°   | 149.6  | 7.7       |
| 80°-90°   | 67.9   | 3.5       |
| 90°-100°  | 22.8   | 1.2       |
| 100°-110° | 5.7    | 0.3       |
| 110°-120° | 0.9    | 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°    | 502.2  | 25.7      |
| 0°-40°    | 823.8  | 42.2      |
| 0°-60°    | 1466.0 | 75.1      |
| 0°-90°    | 1922.6 | 98.5      |
| 90°-120°  | 29.4   | 1.5       |
| 90°-150°  | 29.4   | 1.5       |
| 90°-180°  | 29.0   | 1.5       |
| 0°-180°   | 1952.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 646 | 646   | 646 | 646   | 646 |      |
| 5°   | 644 | 643   | 640 | 643   | 643 | 61   |
| 15°  | 620 | 621   | 619 | 623   | 622 | 175  |
| 25°  | 574 | 575   | 575 | 580   | 581 | 265  |
| 35°  | 508 | 511   | 513 | 518   | 520 | 318  |
| 45°  | 428 | 432   | 435 | 439   | 441 | 330  |
| 55°  | 334 | 338   | 344 | 349   | 351 | 298  |
| 65°  | 229 | 233   | 241 | 251   | 255 | 227  |
| 75°  | 116 | 123   | 141 | 158   | 164 | 124  |
| 85°  | 20  | 37    | 64  | 84    | 92  | 25   |
| 90°  | 0   | 14    | 38  | 56    | 63  | 1    |
| 95°  | 0   | 4     | 20  | 35    | 41  | 0    |
| 105° | 0   | 0     | 3   | 9     | 13  | 0    |
| 115° | 0   | 0     | 1   | 2     | 2   | 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: P580469

CATALOG NUMBER: HVSL4-2-LD4-1HI-35-UNV-O-EDD-90

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 645.6 | 645.6 | 645.6 | 645.6 | 645.6 |
| 2.5°   | 646.4 | 645.5 | 642.6 | 645.5 | 645.3 |
| 5°     | 644.2 | 643.0 | 640.1 | 643.2 | 643.2 |
| 7.5°   | 640.0 | 639.5 | 636.9 | 640.4 | 640.4 |
| 10°    | 635.0 | 634.8 | 632.7 | 636.5 | 636.6 |
| 12.5°  | 627.9 | 628.6 | 626.6 | 630.2 | 630.7 |
| 15°    | 619.7 | 620.8 | 619.1 | 622.6 | 622.5 |
| 17.5°  | 610.8 | 611.4 | 610.1 | 614.1 | 613.9 |
| 20°    | 599.6 | 600.4 | 599.5 | 603.6 | 604.1 |
| 22.5°  | 587.3 | 588.4 | 588.2 | 592.5 | 593.7 |
| 25°    | 574.2 | 574.7 | 575.3 | 580.2 | 581.1 |
| 27.5°  | 559.8 | 560.5 | 561.6 | 566.0 | 566.9 |
| 30°    | 543.9 | 545.2 | 546.4 | 550.9 | 552.2 |
| 32.5°  | 527.2 | 528.4 | 529.9 | 535.9 | 536.5 |
| 35°    | 508.3 | 510.6 | 512.7 | 517.9 | 520.0 |
| 37.5°  | 489.5 | 492.3 | 494.3 | 499.8 | 501.5 |
| 40°    | 469.5 | 472.4 | 475.6 | 481.4 | 482.5 |
| 42.5°  | 448.7 | 452.0 | 455.8 | 461.0 | 462.8 |
| 45°    | 427.7 | 431.5 | 435.0 | 439.2 | 441.4 |
| 47.5°  | 405.0 | 408.8 | 413.1 | 417.9 | 419.3 |
| 50°    | 381.5 | 386.0 | 390.5 | 395.1 | 397.5 |
| 52.5°  | 357.5 | 362.8 | 368.0 | 372.9 | 375.2 |
| 55°    | 333.8 | 337.7 | 344.0 | 349.0 | 351.3 |
| 57.5°  | 309.1 | 312.5 | 318.1 | 326.3 | 327.5 |
| 60°    | 284.0 | 287.0 | 292.8 | 299.5 | 302.3 |
| 62.5°  | 256.3 | 260.4 | 266.5 | 275.0 | 277.4 |
| 65°    | 229.4 | 233.3 | 241.4 | 251.0 | 254.9 |
| 67.5°  | 203.3 | 204.7 | 215.0 | 225.1 | 231.5 |
| 70°    | 172.6 | 177.8 | 189.8 | 202.1 | 207.0 |
| 72.5°  | 146.1 | 151.3 | 164.5 | 179.0 | 185.1 |
| 75°    | 116.1 | 123.3 | 141.2 | 158.1 | 164.1 |
| 77.5°  | 89.8  | 97.7  | 119.9 | 137.0 | 143.8 |
| 80°    | 62.7  | 75.0  | 99.2  | 118.4 | 125.9 |
| 82.5°  | 39.4  | 54.6  | 80.5  | 100.6 | 107.1 |
| 85°    | 20.1  | 37.1  | 63.8  | 84.3  | 91.8  |
| 87.5°  | 5.3   | 24.0  | 49.6  | 69.2  | 76.9  |
| 90°    | 0.2   | 13.8  | 37.6  | 56.5  | 63.3  |
| 92.5°  | 0.2   | 7.8   | 28.0  | 44.9  | 51.9  |
| 95°    | 0.2   | 3.7   | 19.5  | 35.3  | 40.8  |
| 97.5°  | 0.2   | 1.5   | 13.4  | 26.6  | 32.1  |
| 100°   | 0.2   | 0.8   | 8.5   | 19.3  | 24.0  |
| 102.5° | 0.3   | 0.5   | 5.3   | 13.8  | 17.7  |
| 105°   | 0.3   | 0.5   | 3.2   | 9.4   | 12.6  |



TEST NUMBER: P580469

CATALOG NUMBER: HVSL4-2-LD4-1HI-35-UNV-O-EDD-90

**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.5 | 0.5   | 0.6 | 2.6   | 3.8 |
| 115°   | 0.5 | 0.5   | 0.6 | 1.7   | 2.4 |
| 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° | 0.3 | 0.5 | 1.8 | 6.4 | 8.7 |
| 110°   | 0.5 | 0.5 | 1.1 | 4.0 | 5.8 |



(END OF REPORT)