

Classified  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO COMMERCIAL

Report Number: P580488

Luminaire Tested: **HCC4S35D010BZ-HM43040927-41WWWB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580488  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCC4S35D010BZ-HM43040927-41WWWB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

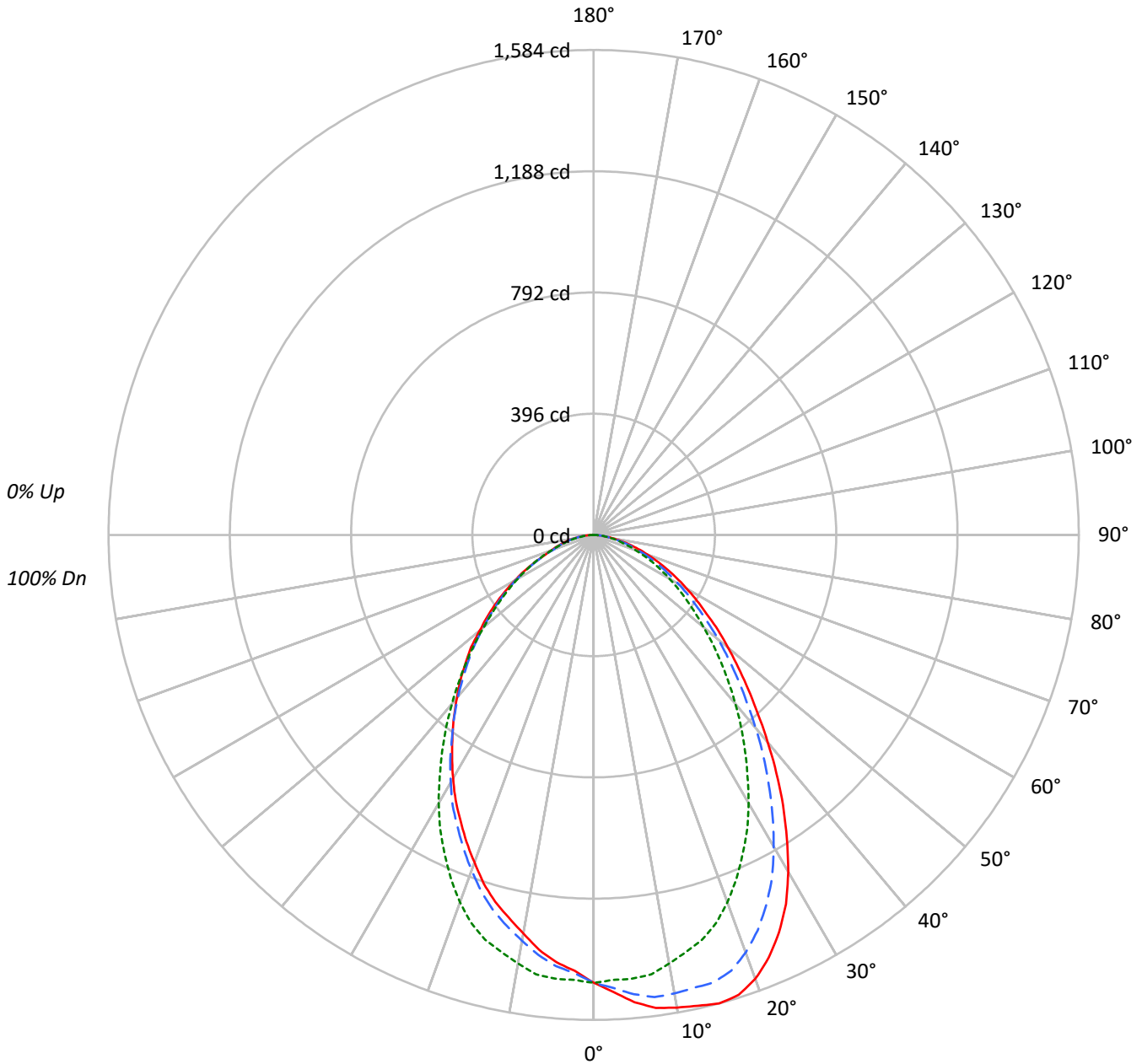
Lumens per Lamp: N/A  
Luminaire Lumens: 2836.3 lumens  
Efficiency: N/A  
Efficacy: 84.2 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.15  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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 |  |  |  |  | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 10 | 0  |  |  |  |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |  |  |  |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |    |  |  |  |  |   |
| 1   | 110 | 106 | 103 | 99  | 108 | 104 | 101 | 98  | 100 | 97  | 95  | 96  | 94  | 92  | 92  | 91  | 89  | 87  |    |    |    |  |  |  |  |   |
| 2   | 102 | 95  | 89  | 84  | 99  | 93  | 87  | 83  | 89  | 85  | 81  | 86  | 82  | 79  | 83  | 80  | 77  | 75  |    |    |    |  |  |  |  |   |
| 3   | 94  | 85  | 77  | 72  | 92  | 83  | 76  | 71  | 80  | 75  | 70  | 78  | 73  | 69  | 75  | 71  | 68  | 66  |    |    |    |  |  |  |  |   |
| 4   | 87  | 76  | 68  | 62  | 85  | 75  | 68  | 62  | 72  | 66  | 61  | 70  | 65  | 60  | 68  | 63  | 60  | 58  |    |    |    |  |  |  |  |   |
| 5   | 81  | 69  | 61  | 55  | 79  | 68  | 60  | 55  | 66  | 59  | 54  | 64  | 58  | 53  | 62  | 57  | 53  | 51  |    |    |    |  |  |  |  |   |
| 6   | 75  | 63  | 55  | 49  | 73  | 62  | 54  | 49  | 60  | 53  | 48  | 59  | 53  | 48  | 57  | 52  | 47  | 46  |    |    |    |  |  |  |  |   |
| 7   | 70  | 58  | 50  | 44  | 68  | 57  | 49  | 44  | 55  | 48  | 43  | 54  | 48  | 43  | 53  | 47  | 43  | 41  |    |    |    |  |  |  |  |   |
| 8   | 65  | 53  | 45  | 40  | 64  | 52  | 45  | 40  | 51  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 39  | 37  |    |    |    |  |  |  |  |   |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 36  | 45  | 40  | 36  | 34  |    |    |    |  |  |  |  |   |
| 10  | 58  | 45  | 38  | 33  | 57  | 45  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 42  | 37  | 33  | 31  |    |    |    |  |  |  |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 180393 | 180393 | 180393 |
| 5°  | 189687 | 180153 | 173405 |
| 10° | 196339 | 178003 | 165541 |
| 15° | 202336 | 174766 | 158472 |
| 20° | 202576 | 167569 | 149336 |
| 25° | 194945 | 156634 | 140016 |
| 30° | 181025 | 144122 | 130762 |
| 35° | 162262 | 129767 | 120989 |
| 40° | 142387 | 115771 | 111842 |
| 45° | 124443 | 102499 | 103145 |
| 50° | 109877 | 89709  | 92933  |
| 55° | 96900  | 79524  | 83567  |
| 60° | 86589  | 70406  | 73169  |
| 65° | 76701  | 61904  | 61904  |
| 70° | 67043  | 52834  | 52834  |
| 75° | 57284  | 44750  | 50088  |
| 80° | 45318  | 39991  | 45318  |
| 85° | 29295  | 34532  | 42457  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 138.6  | 4.9       |
| 10°-20°   | 390.2  | 13.8      |
| 20°-30°   | 546.7  | 19.3      |
| 30°-40°   | 563.2  | 19.9      |
| 40°-50°   | 479.5  | 16.9      |
| 50°-60°   | 355.3  | 12.5      |
| 60°-70°   | 223.0  | 7.9       |
| 70°-80°   | 110.8  | 3.9       |
| 80°-90°   | 29.1   | 1.0       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 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°    | 1075.4 | 37.9      |
| 0°-40°    | 1638.7 | 57.8      |
| 0°-60°    | 2473.4 | 87.2      |
| 0°-90°    | 2836.3 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2836.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1462 | 1462 | 1462 | 1462 | 1462 |      |
| 5°  | 1532 | 1506 | 1455 | 1414 | 1400 | 147  |
| 15° | 1584 | 1513 | 1369 | 1269 | 1241 | 446  |
| 25° | 1432 | 1333 | 1151 | 1051 | 1029 | 655  |
| 35° | 1078 | 997  | 862  | 806  | 804  | 672  |
| 45° | 713  | 665  | 588  | 576  | 591  | 554  |
| 55° | 451  | 415  | 370  | 377  | 389  | 407  |
| 65° | 263  | 237  | 212  | 208  | 212  | 262  |
| 75° | 120  | 107  | 94   | 101  | 105  | 128  |
| 85° | 21   | 21   | 24   | 28   | 30   | 27   |
| 90° | 0    | 0    | 0    | 0    | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1462.5 | 1462.5 | 1462.5 | 1462.5 | 1462.5 | 1462.5 | 1462.5 | 1462.5 | 1462.5 |
| 2.5°  | 1494.4 | 1488.7 | 1481.3 | 1468.2 | 1455.0 | 1443.8 | 1432.4 | 1426.8 | 1424.9 |
| 5°    | 1532.0 | 1520.7 | 1505.7 | 1481.3 | 1455.0 | 1432.4 | 1413.7 | 1404.3 | 1400.5 |
| 7.5°  | 1558.2 | 1547.0 | 1522.6 | 1485.0 | 1447.5 | 1413.7 | 1383.6 | 1370.5 | 1366.8 |
| 10°   | 1567.6 | 1554.5 | 1520.7 | 1470.0 | 1421.2 | 1379.9 | 1346.1 | 1329.2 | 1321.7 |
| 12.5° | 1575.2 | 1558.2 | 1515.0 | 1455.0 | 1394.9 | 1344.2 | 1308.6 | 1286.0 | 1280.3 |
| 15°   | 1584.5 | 1565.7 | 1513.2 | 1440.0 | 1368.6 | 1308.6 | 1269.1 | 1248.4 | 1241.0 |
| 17.5° | 1575.2 | 1554.5 | 1492.6 | 1409.9 | 1329.2 | 1263.5 | 1220.3 | 1201.6 | 1194.0 |
| 20°   | 1543.3 | 1520.7 | 1451.2 | 1363.0 | 1276.6 | 1209.1 | 1165.8 | 1147.0 | 1137.7 |
| 22.5° | 1494.4 | 1470.0 | 1398.7 | 1304.7 | 1216.5 | 1150.9 | 1109.5 | 1090.7 | 1085.1 |
| 25°   | 1432.4 | 1408.0 | 1333.0 | 1237.2 | 1150.9 | 1087.0 | 1051.4 | 1034.4 | 1028.8 |
| 27.5° | 1359.3 | 1334.9 | 1261.6 | 1167.7 | 1085.1 | 1025.1 | 996.9  | 980.0  | 976.2  |
| 30°   | 1271.0 | 1246.6 | 1175.3 | 1088.9 | 1011.9 | 955.6  | 933.0  | 919.9  | 918.1  |
| 32.5° | 1173.3 | 1152.8 | 1087.0 | 1008.1 | 934.9  | 888.0  | 871.1  | 861.8  | 859.9  |
| 35°   | 1077.6 | 1055.1 | 996.9  | 925.6  | 861.8  | 820.4  | 805.5  | 803.5  | 803.5  |
| 37.5° | 980.0  | 957.4  | 910.6  | 844.8  | 790.4  | 752.9  | 747.2  | 749.0  | 749.0  |
| 40°   | 884.3  | 863.6  | 822.3  | 767.8  | 719.0  | 690.9  | 689.0  | 692.7  | 694.6  |
| 42.5° | 794.1  | 777.2  | 739.7  | 692.7  | 651.5  | 628.9  | 630.8  | 638.3  | 643.9  |
| 45°   | 713.4  | 698.3  | 664.6  | 623.3  | 587.6  | 570.8  | 576.4  | 585.7  | 591.3  |
| 47.5° | 640.2  | 627.1  | 595.2  | 557.6  | 527.6  | 516.3  | 523.8  | 535.0  | 542.6  |
| 50°   | 572.6  | 561.3  | 531.3  | 491.9  | 467.5  | 459.9  | 469.4  | 480.6  | 484.3  |
| 52.5° | 512.5  | 501.3  | 469.4  | 435.6  | 416.8  | 413.1  | 422.4  | 431.8  | 437.5  |
| 55°   | 450.6  | 441.2  | 414.9  | 384.9  | 369.8  | 368.0  | 377.3  | 384.9  | 388.6  |
| 57.5° | 399.9  | 390.5  | 366.1  | 339.8  | 326.6  | 324.8  | 334.2  | 339.8  | 341.7  |
| 60°   | 351.0  | 341.7  | 319.1  | 294.7  | 285.4  | 285.4  | 291.0  | 294.7  | 296.6  |
| 62.5° | 306.1  | 296.6  | 275.9  | 255.4  | 247.8  | 247.8  | 247.8  | 249.6  | 255.4  |
| 65°   | 262.8  | 255.4  | 236.6  | 217.8  | 212.1  | 208.4  | 208.4  | 208.4  | 212.1  |
| 67.5° | 223.5  | 215.9  | 200.9  | 184.0  | 178.4  | 172.8  | 170.8  | 174.6  | 174.6  |
| 70°   | 185.9  | 180.2  | 165.2  | 152.1  | 146.5  | 140.8  | 138.9  | 146.5  | 146.5  |
| 72.5° | 152.1  | 146.5  | 137.0  | 123.9  | 118.2  | 116.4  | 120.2  | 123.9  | 125.8  |
| 75°   | 120.2  | 114.5  | 107.0  | 99.5   | 93.9   | 95.8   | 101.4  | 103.3  | 105.1  |
| 77.5° | 90.1   | 88.2   | 80.7   | 75.1   | 75.1   | 77.0   | 80.7   | 84.5   | 86.3   |
| 80°   | 63.8   | 61.9   | 58.2   | 54.4   | 56.3   | 60.0   | 61.9   | 65.8   | 63.8   |
| 82.5° | 39.5   | 39.5   | 37.5   | 37.5   | 39.5   | 43.2   | 45.1   | 47.0   | 48.8   |
| 85°   | 20.7   | 20.7   | 20.7   | 22.5   | 24.4   | 26.3   | 28.2   | 30.0   | 30.0   |
| 87.5° | 5.6    | 7.5    | 7.5    | 9.4    | 11.2   | 11.2   | 13.2   | 13.2   | 13.2   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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Scaled Data Report



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Scaled Data Report





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Scaled Data Report



— 0°-180°    - - 45°-225°    - - - - 90°-270°

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