

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: P592617

Luminaire Tested: **HCC4S10D010MB-HM40525950-41WWBB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P592617  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-17)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCC4S10D010MB-HM40525950-41WWBB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

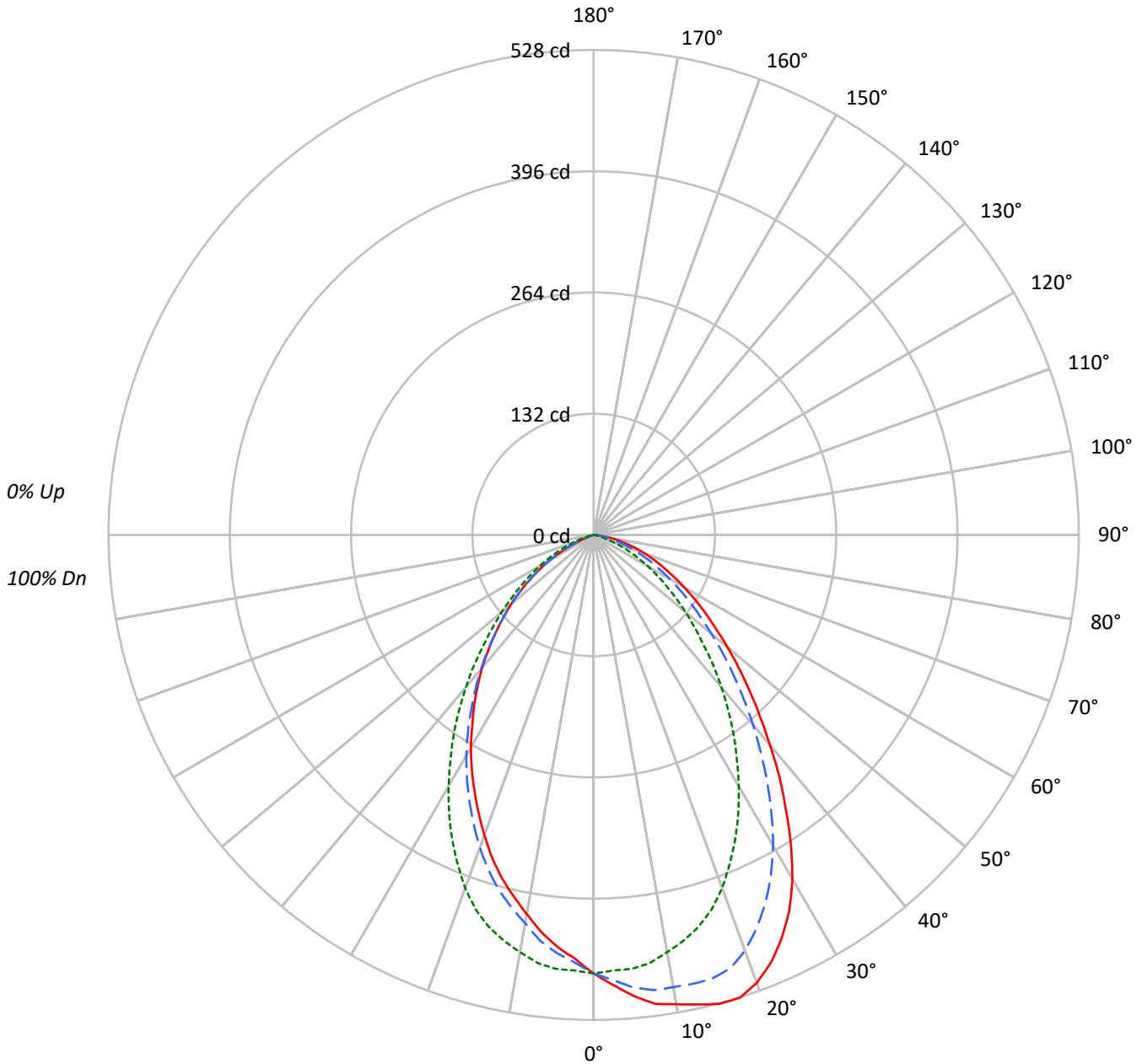
Lumens per Lamp: N/A  
Luminaire Lumens: 824.9 lumens  
Efficiency: N/A  
Efficacy: 83.3 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.04 / 1.12  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 9.9  
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   | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 | 101 | 99  | 97  | 97  | 95  | 94  | 94  | 92  | 91  | 89  |    |    |    |  |  |  |  |   |
| 2   | 103 | 97  | 91  | 87  | 101 | 95  | 90  | 86  | 92  | 87  | 84  | 88  | 85  | 82  | 85  | 83  | 80  | 78  |    |    |    |  |  |  |  |   |
| 3   | 96  | 87  | 80  | 75  | 94  | 86  | 79  | 74  | 83  | 78  | 73  | 80  | 76  | 72  | 78  | 74  | 71  | 69  |    |    |    |  |  |  |  |   |
| 4   | 89  | 79  | 72  | 66  | 87  | 78  | 71  | 65  | 75  | 69  | 65  | 73  | 68  | 64  | 71  | 67  | 63  | 61  |    |    |    |  |  |  |  |   |
| 5   | 83  | 72  | 64  | 58  | 81  | 71  | 64  | 58  | 69  | 62  | 58  | 67  | 61  | 57  | 65  | 60  | 56  | 55  |    |    |    |  |  |  |  |   |
| 6   | 77  | 66  | 58  | 52  | 75  | 65  | 57  | 52  | 63  | 57  | 52  | 61  | 56  | 51  | 60  | 55  | 51  | 49  |    |    |    |  |  |  |  |   |
| 7   | 72  | 60  | 53  | 47  | 71  | 59  | 52  | 47  | 58  | 51  | 47  | 57  | 51  | 46  | 55  | 50  | 46  | 44  |    |    |    |  |  |  |  |   |
| 8   | 68  | 56  | 48  | 43  | 66  | 55  | 48  | 43  | 54  | 47  | 42  | 53  | 47  | 42  | 51  | 46  | 42  | 40  |    |    |    |  |  |  |  |   |
| 9   | 64  | 52  | 44  | 39  | 62  | 51  | 44  | 39  | 50  | 43  | 39  | 49  | 43  | 39  | 48  | 43  | 39  | 37  |    |    |    |  |  |  |  |   |
| 10  | 60  | 48  | 41  | 36  | 59  | 47  | 41  | 36  | 46  | 40  | 36  | 46  | 40  | 36  | 45  | 39  | 36  | 34  |    |    |    |  |  |  |  |   |

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

|     | 0°    | 90°   | 180°  |
|-----|-------|-------|-------|
| 0°  | 58898 | 58898 | 58898 |
| 5°  | 62404 | 58702 | 55767 |
| 10° | 64991 | 57765 | 52492 |
| 15° | 67488 | 56378 | 49355 |
| 20° | 68112 | 53673 | 45653 |
| 25° | 65912 | 49635 | 41782 |
| 30° | 61628 | 44993 | 38028 |
| 35° | 54916 | 39993 | 34166 |
| 40° | 48015 | 34780 | 30400 |
| 45° | 41830 | 29497 | 26305 |
| 50° | 36498 | 25023 | 22566 |
| 55° | 31977 | 20752 | 18257 |
| 60° | 27999 | 16750 | 13420 |
| 65° | 24370 | 12492 | 7530  |
| 70° | 21314 | 8078  | 2452  |
| 75° | 17442 | 4241  | 667   |
| 80° | 12999 | 1918  | 497   |
| 85° | 7784  | 991   | 991   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 45.1   | 5.5       |
| 10°-20°   | 126.1  | 15.3      |
| 20°-30°   | 174.4  | 21.1      |
| 30°-40°   | 175.4  | 21.3      |
| 40°-50°   | 141.5  | 17.2      |
| 50°-60°   | 95.7   | 11.6      |
| 60°-70°   | 48.7   | 5.9       |
| 70°-80°   | 15.6   | 1.9       |
| 80°-90°   | 2.4    | 0.3       |
| 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°    | 345.6  | 41.9      |
| 0°-40°    | 521.0  | 63.2      |
| 0°-60°    | 758.2  | 91.9      |
| 0°-90°    | 824.9  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 824.9  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0°  | 478 | 478 | 478 | 478  | 478  |      |
| 5°  | 504 | 495 | 474 | 457  | 450  | 49   |
| 15° | 528 | 500 | 442 | 399  | 386  | 149  |
| 25° | 484 | 442 | 365 | 320  | 307  | 222  |
| 35° | 365 | 330 | 266 | 232  | 227  | 228  |
| 45° | 240 | 215 | 169 | 151  | 151  | 186  |
| 55° | 149 | 128 | 96  | 84   | 85   | 134  |
| 65° | 84  | 68  | 43  | 28   | 26   | 84   |
| 75° | 37  | 26  | 9   | 2    | 1    | 40   |
| 85° | 6   | 3   | 1   | 1    | 1    | 7    |
| 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°    | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5  | 477.5 | 477.5  | 477.5 |
| 2.5°  | 490.5 | 487.7 | 485.0 | 480.2 | 474.8 | 469.4  | 466.0 | 463.3  | 461.9 |
| 5°    | 504.0 | 500.6 | 494.6 | 484.3 | 474.1 | 464.6  | 457.1 | 452.4  | 450.4 |
| 7.5°  | 514.9 | 510.2 | 499.9 | 485.7 | 470.1 | 455.1  | 445.6 | 438.8  | 436.1 |
| 10°   | 518.9 | 513.6 | 499.9 | 480.9 | 461.2 | 442.9  | 429.3 | 422.5  | 419.1 |
| 12.5° | 523.7 | 517.6 | 500.6 | 476.8 | 452.4 | 430.6  | 415.0 | 406.3  | 402.9 |
| 15°   | 528.5 | 520.3 | 499.9 | 470.8 | 441.5 | 416.4  | 399.4 | 390.6  | 386.5 |
| 17.5° | 528.5 | 518.9 | 494.6 | 460.5 | 427.3 | 400.8  | 381.8 | 371.6  | 368.1 |
| 20°   | 518.9 | 508.1 | 481.6 | 444.3 | 408.9 | 380.4  | 362.1 | 351.9  | 347.8 |
| 22.5° | 504.0 | 491.8 | 463.3 | 424.6 | 387.1 | 359.4  | 340.9 | 331.5  | 327.4 |
| 25°   | 484.3 | 472.2 | 442.2 | 402.2 | 364.7 | 337.0  | 319.9 | 311.1  | 307.0 |
| 27.5° | 461.2 | 447.7 | 417.8 | 377.7 | 340.9 | 314.5  | 298.8 | 290.8  | 287.3 |
| 30°   | 432.7 | 419.8 | 390.6 | 351.2 | 315.9 | 291.4  | 277.1 | 269.7  | 267.0 |
| 32.5° | 399.4 | 388.5 | 360.1 | 323.3 | 290.1 | 267.7  | 254.7 | 248.7  | 245.9 |
| 35°   | 364.7 | 354.6 | 329.5 | 295.5 | 265.6 | 244.6  | 232.3 | 228.3  | 226.9 |
| 37.5° | 332.2 | 323.3 | 298.8 | 267.7 | 240.5 | 222.1  | 211.2 | 208.6  | 207.2 |
| 40°   | 298.2 | 292.1 | 269.7 | 241.1 | 216.0 | 199.7  | 190.8 | 188.8  | 188.8 |
| 42.5° | 267.7 | 260.8 | 241.1 | 215.3 | 192.9 | 176.6  | 170.5 | 168.4  | 169.1 |
| 45°   | 239.8 | 232.9 | 214.6 | 190.8 | 169.1 | 155.6  | 150.8 | 150.8  | 150.8 |
| 47.5° | 213.9 | 207.9 | 190.8 | 166.4 | 148.7 | 137.9  | 133.1 | 133.1  | 133.8 |
| 50°   | 190.2 | 186.2 | 167.1 | 146.0 | 130.4 | 120.3  | 116.9 | 116.2  | 117.6 |
| 52.5° | 167.7 | 163.1 | 146.0 | 127.0 | 112.1 | 103.9  | 100.5 | 99.8   | 100.5 |
| 55°   | 148.7 | 143.3 | 128.4 | 110.0 | 96.5  | 88.3   | 84.2  | 83.5   | 84.9  |
| 57.5° | 130.4 | 126.3 | 110.7 | 94.5  | 81.5  | 73.4   | 70.0  | 68.6   | 69.3  |
| 60°   | 113.5 | 109.4 | 95.1  | 79.4  | 67.9  | 59.7   | 55.0  | 53.7   | 54.4  |
| 62.5° | 97.9  | 94.5  | 80.8  | 65.9  | 54.4  | 46.9   | 42.1  | 38.7   | 40.1  |
| 65°   | 83.5  | 80.1  | 67.9  | 53.0  | 42.8  | 34.6   | 27.9  | 25.1   | 25.8  |
| 67.5° | 71.4  | 67.3  | 55.6  | 42.1  | 32.0  | 23.1   | 15.6  | 14.2   | 14.2  |
| 70°   | 59.1  | 55.0  | 44.8  | 32.7  | 22.4  | 12.2   | 6.8   | 6.8    | 6.8   |
| 72.5° | 47.6  | 44.2  | 34.6  | 24.5  | 14.2  | 5.5    | 2.7   | 2.7    | 2.7   |
| 75°   | 36.6  | 33.9  | 25.8  | 17.0  | 8.9   | 2.7    | 2.0   | 1.4    | 1.4   |
| 77.5° | 27.2  | 24.5  | 18.3  | 11.5  | 5.5   | 1.4    | 1.4   | 1.4    | 1.4   |
| 80°   | 18.3  | 16.3  | 12.2  | 6.8   | 2.7   | 0.7    | 0.7   | 0.7    | 0.7   |
| 82.5° | 10.9  | 9.6   | 6.8   | 3.4   | 1.4   | 0.7    | 0.7   | 0.7    | 0.7   |
| 85°   | 5.5   | 4.1   | 2.7   | 1.4   | 0.7   | 0.7    | 0.7   | 0.7    | 0.7   |
| 87.5° | 1.4   | 0.7   | 0.7   | 0.7   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 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



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

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