

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: P580109

Luminaire Tested: **HCC4S20D010MB-HM40525940-41WWW**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580109
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-16)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HCC4S20D010MB-HM40525940-41WWW
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

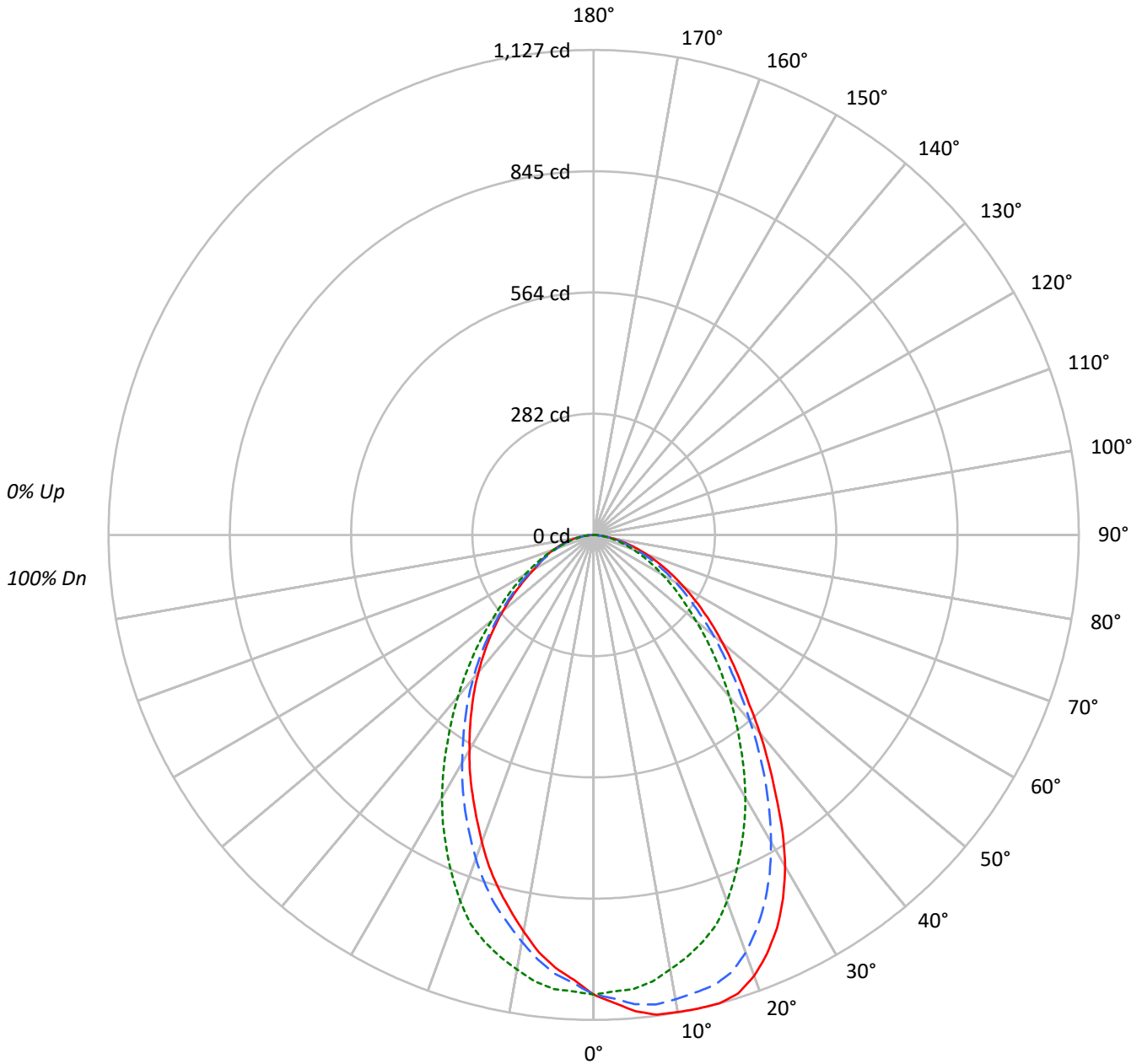
Lumens per Lamp: N/A
Luminaire Lumens: 1907.3 lumens
Efficiency: N/A
Efficacy: 95.4 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 20
Input Voltage (V): NR
Input Current (A_{in}): 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 | 106 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | 87 | | | | | | | | |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 81 | 87 | 83 | 80 | 84 | 81 | 78 | 76 | | | | | | | | |
| 3 | 94 | 85 | 78 | 72 | 92 | 84 | 77 | 72 | 81 | 75 | 71 | 78 | 73 | 69 | 76 | 72 | 68 | 66 | | | | | | | | |
| 4 | 87 | 77 | 69 | 63 | 85 | 76 | 68 | 63 | 73 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 | | | | | | | | |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 52 | | | | | | | | |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 59 | 53 | 49 | 58 | 53 | 48 | 47 | | | | | | | | |
| 7 | 71 | 58 | 50 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 44 | 55 | 49 | 44 | 53 | 48 | 44 | 42 | | | | | | | | |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | | | | | | |
| 9 | 62 | 50 | 42 | 37 | 61 | 49 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | | | | | | |
| 10 | 59 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 131745 | 131745 | 131745 |
| 5° | 137536 | 131159 | 125092 |
| 10° | 141017 | 128417 | 117245 |
| 15° | 143940 | 124990 | 108785 |
| 20° | 143167 | 118910 | 99628 |
| 25° | 137158 | 109953 | 90627 |
| 30° | 126703 | 100397 | 82138 |
| 35° | 111066 | 89307 | 74355 |
| 40° | 96706 | 78898 | 66967 |
| 45° | 84166 | 68833 | 59849 |
| 50° | 74991 | 59314 | 52809 |
| 55° | 67009 | 52149 | 45654 |
| 60° | 59823 | 45564 | 39347 |
| 65° | 53148 | 39985 | 37387 |
| 70° | 46667 | 34441 | 34910 |
| 75° | 39508 | 29357 | 32359 |
| 80° | 30331 | 25003 | 29478 |
| 85° | 17832 | 19672 | 24767 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 100.1 | 5.2 |
| 10°-20° | 276.2 | 14.5 |
| 20°-30° | 377.3 | 19.8 |
| 30°-40° | 378.9 | 19.9 |
| 40°-50° | 313.4 | 16.4 |
| 50°-60° | 227.1 | 11.9 |
| 60°-70° | 143.9 | 7.5 |
| 70°-80° | 72.7 | 3.8 |
| 80°-90° | 17.8 | 0.9 |
| 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° | 753.5 | 39.5 |
| 0°-40° | 1132.4 | 59.4 |
| 0°-60° | 1672.9 | 87.7 |
| 0°-90° | 1907.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1907.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1068 | 1068 | 1068 | 1068 | 1068 | |
| 5° | 1111 | 1094 | 1059 | 1024 | 1010 | 106 |
| 15° | 1127 | 1083 | 979 | 888 | 852 | 317 |
| 25° | 1008 | 941 | 808 | 706 | 666 | 461 |
| 35° | 738 | 694 | 593 | 520 | 494 | 462 |
| 45° | 482 | 455 | 395 | 356 | 343 | 375 |
| 55° | 312 | 284 | 242 | 221 | 212 | 280 |
| 65° | 182 | 162 | 137 | 123 | 128 | 181 |
| 75° | 83 | 72 | 62 | 64 | 68 | 89 |
| 85° | 13 | 13 | 14 | 16 | 18 | 17 |
| 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° | 1068.1 | 1068.1 | 1068.1 | 1068.1 | 1068.1 | 1068.1 | 1068.1 | 1068.1 | 1068.1 |
| 2.5° | 1088.2 | 1084.4 | 1078.1 | 1070.6 | 1061.8 | 1051.7 | 1043.0 | 1037.9 | 1035.4 |
| 5° | 1110.8 | 1105.7 | 1094.5 | 1078.1 | 1059.3 | 1040.4 | 1024.0 | 1014.1 | 1010.3 |
| 7.5° | 1124.6 | 1117.1 | 1100.7 | 1075.5 | 1046.6 | 1019.0 | 995.1 | 981.4 | 977.6 |
| 10° | 1125.9 | 1117.1 | 1095.7 | 1061.8 | 1025.3 | 988.8 | 960.0 | 939.9 | 936.1 |
| 12.5° | 1127.2 | 1115.8 | 1089.4 | 1049.2 | 1004.0 | 958.8 | 923.6 | 899.7 | 893.4 |
| 15° | 1127.2 | 1115.8 | 1083.1 | 1035.4 | 978.8 | 927.3 | 888.4 | 860.7 | 851.9 |
| 17.5° | 1117.1 | 1104.4 | 1065.6 | 1010.3 | 948.7 | 890.9 | 845.7 | 816.8 | 807.9 |
| 20° | 1090.7 | 1076.8 | 1032.9 | 972.5 | 905.9 | 845.7 | 800.4 | 770.2 | 759.0 |
| 22.5° | 1052.9 | 1036.7 | 990.1 | 924.8 | 858.2 | 796.6 | 752.7 | 721.2 | 711.1 |
| 25° | 1007.8 | 991.4 | 941.1 | 877.1 | 807.9 | 750.1 | 706.2 | 677.3 | 665.9 |
| 27.5° | 952.5 | 934.8 | 885.8 | 821.7 | 757.7 | 699.9 | 659.6 | 633.3 | 622.0 |
| 30° | 889.6 | 870.8 | 824.2 | 762.8 | 704.9 | 649.7 | 610.7 | 589.3 | 576.7 |
| 32.5° | 816.8 | 800.4 | 759.0 | 703.7 | 649.7 | 596.9 | 564.2 | 545.3 | 535.3 |
| 35° | 737.6 | 728.8 | 693.6 | 645.9 | 593.1 | 549.1 | 520.2 | 502.6 | 493.8 |
| 37.5° | 667.2 | 658.4 | 628.2 | 588.1 | 541.6 | 501.4 | 477.5 | 462.4 | 454.9 |
| 40° | 600.6 | 593.1 | 564.2 | 530.3 | 490.0 | 454.9 | 434.7 | 423.5 | 415.9 |
| 42.5° | 535.3 | 531.5 | 507.7 | 476.2 | 441.0 | 410.9 | 394.6 | 385.7 | 379.4 |
| 45° | 482.5 | 477.5 | 454.9 | 424.7 | 394.6 | 369.4 | 355.6 | 349.3 | 343.1 |
| 47.5° | 436.0 | 429.8 | 405.8 | 379.4 | 351.8 | 329.2 | 316.7 | 310.4 | 307.9 |
| 50° | 390.8 | 384.5 | 363.1 | 336.8 | 309.1 | 292.7 | 282.7 | 276.4 | 275.2 |
| 52.5° | 350.5 | 344.3 | 320.4 | 295.2 | 273.9 | 260.1 | 251.3 | 245.0 | 242.5 |
| 55° | 311.6 | 304.1 | 284.0 | 260.1 | 242.5 | 230.0 | 221.1 | 214.8 | 212.3 |
| 57.5° | 276.4 | 268.9 | 251.3 | 228.7 | 212.3 | 201.1 | 193.5 | 187.2 | 184.7 |
| 60° | 242.5 | 236.3 | 219.9 | 198.5 | 184.7 | 174.7 | 167.1 | 162.1 | 159.5 |
| 62.5° | 211.0 | 206.1 | 189.7 | 170.9 | 159.5 | 150.8 | 144.5 | 139.5 | 142.0 |
| 65° | 182.1 | 177.2 | 162.1 | 145.8 | 137.0 | 128.1 | 123.2 | 123.2 | 128.1 |
| 67.5° | 154.5 | 149.6 | 137.0 | 123.2 | 115.6 | 109.3 | 105.5 | 109.3 | 113.1 |
| 70° | 129.4 | 124.4 | 113.1 | 101.7 | 95.5 | 90.5 | 90.5 | 94.3 | 96.8 |
| 72.5° | 105.5 | 100.5 | 91.8 | 82.9 | 77.9 | 74.1 | 77.9 | 80.4 | 82.9 |
| 75° | 82.9 | 79.1 | 71.6 | 65.4 | 61.6 | 60.3 | 64.1 | 66.6 | 67.9 |
| 77.5° | 61.6 | 59.1 | 54.0 | 49.0 | 46.5 | 47.7 | 51.5 | 52.8 | 54.0 |
| 80° | 42.7 | 41.5 | 37.7 | 35.2 | 35.2 | 36.5 | 39.0 | 40.3 | 41.5 |
| 82.5° | 26.4 | 26.4 | 23.9 | 22.6 | 23.9 | 26.4 | 27.6 | 28.9 | 28.9 |
| 85° | 12.6 | 13.9 | 12.6 | 12.6 | 13.9 | 16.3 | 16.3 | 17.5 | 17.5 |
| 87.5° | 3.8 | 3.8 | 5.0 | 5.0 | 6.3 | 6.3 | 6.3 | 6.3 | 7.6 |
| 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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