

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: P580004

Luminaire Tested: **HCC4S20D010SL-HM40525830-41RWWH**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580004
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-15)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HCC4S20D010SL-HM40525830-41RWWH
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

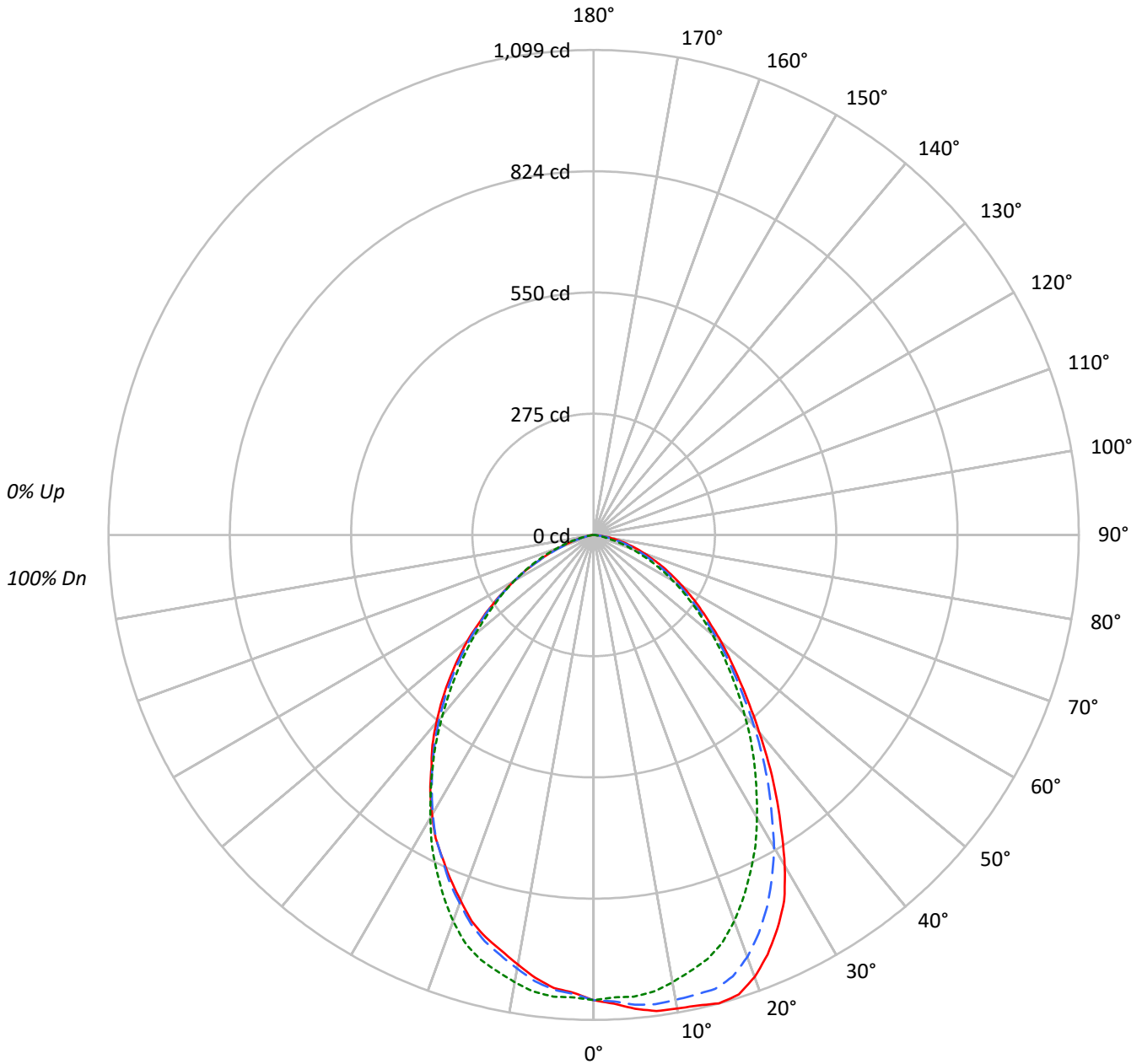
Lumens per Lamp: N/A
Luminaire Lumens: 2009.4 lumens
Efficiency: N/A
Efficacy: 100.5 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.08 / 1.16
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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 | 107 | 104 | 100 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 88 | | | | | | | | |
| 2 | 103 | 96 | 90 | 85 | 100 | 94 | 89 | 84 | 90 | 86 | 82 | 87 | 84 | 80 | 84 | 81 | 79 | 77 | | | | | | | | |
| 3 | 95 | 86 | 79 | 73 | 92 | 84 | 78 | 73 | 81 | 76 | 71 | 79 | 74 | 70 | 76 | 72 | 69 | 67 | | | | | | | | |
| 4 | 88 | 77 | 70 | 64 | 86 | 76 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 62 | 69 | 65 | 61 | 59 | | | | | | | | |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 55 | 63 | 58 | 54 | 52 | | | | | | | | |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 60 | 54 | 49 | 58 | 53 | 49 | 47 | | | | | | | | |
| 7 | 71 | 58 | 51 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 45 | 55 | 49 | 44 | 54 | 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 | 41 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | | | | | | |
| 10 | 58 | 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° | 130031 | 130031 | 130031 |
| 5° | 133450 | 130045 | 127618 |
| 10° | 136471 | 128918 | 123833 |
| 15° | 140313 | 127109 | 120571 |
| 20° | 139925 | 122218 | 115694 |
| 25° | 134028 | 114430 | 110143 |
| 30° | 123285 | 105382 | 104271 |
| 35° | 108461 | 95647 | 96430 |
| 40° | 93840 | 85612 | 89203 |
| 45° | 81549 | 76072 | 80625 |
| 50° | 72362 | 67105 | 71614 |
| 55° | 64213 | 58858 | 61396 |
| 60° | 57183 | 51040 | 51040 |
| 65° | 50842 | 42407 | 39722 |
| 70° | 43926 | 32097 | 28346 |
| 75° | 36839 | 21207 | 17490 |
| 80° | 27916 | 10300 | 9305 |
| 85° | 14718 | 3680 | 3680 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 99.8 | 5.0 |
| 10°-20° | 283.0 | 14.1 |
| 20°-30° | 399.2 | 19.9 |
| 30°-40° | 412.4 | 20.5 |
| 40°-50° | 349.6 | 17.4 |
| 50°-60° | 254.3 | 12.7 |
| 60°-70° | 148.6 | 7.4 |
| 70°-80° | 55.2 | 2.7 |
| 80°-90° | 7.2 | 0.4 |
| 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° | 782.1 | 38.9 |
| 0°-40° | 1194.4 | 59.4 |
| 0°-60° | 1798.3 | 89.5 |
| 0°-90° | 2009.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2009.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1054 | 1054 | 1054 | 1054 | 1054 | |
| 5° | 1078 | 1069 | 1050 | 1035 | 1031 | 103 |
| 15° | 1099 | 1065 | 995 | 953 | 944 | 309 |
| 25° | 985 | 930 | 841 | 811 | 809 | 450 |
| 35° | 720 | 689 | 635 | 636 | 640 | 450 |
| 45° | 468 | 454 | 436 | 452 | 462 | 364 |
| 55° | 299 | 284 | 274 | 283 | 286 | 269 |
| 65° | 174 | 160 | 145 | 136 | 136 | 173 |
| 75° | 77 | 64 | 44 | 35 | 37 | 83 |
| 85° | 10 | 6 | 3 | 3 | 3 | 15 |
| 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° | 1054.2 | 1054.2 | 1054.2 | 1054.2 | 1054.2 | 1054.2 | 1054.2 | 1054.2 | 1054.2 |
| 2.5° | 1063.4 | 1060.7 | 1058.2 | 1054.2 | 1049.0 | 1045.0 | 1041.1 | 1038.5 | 1038.5 |
| 5° | 1077.8 | 1073.9 | 1068.7 | 1059.5 | 1050.3 | 1042.5 | 1034.6 | 1030.7 | 1030.7 |
| 7.5° | 1088.3 | 1083.1 | 1072.6 | 1059.5 | 1043.8 | 1032.0 | 1020.1 | 1015.0 | 1012.3 |
| 10° | 1089.6 | 1084.4 | 1069.9 | 1050.3 | 1029.3 | 1011.1 | 997.9 | 990.1 | 988.7 |
| 12.5° | 1092.2 | 1085.6 | 1067.3 | 1039.9 | 1012.3 | 990.1 | 975.6 | 967.8 | 965.2 |
| 15° | 1098.8 | 1089.6 | 1064.8 | 1029.3 | 995.4 | 969.1 | 953.4 | 946.8 | 944.2 |
| 17.5° | 1092.2 | 1079.1 | 1049.0 | 1007.1 | 969.1 | 940.3 | 924.6 | 918.1 | 918.1 |
| 20° | 1066.0 | 1052.9 | 1017.6 | 971.7 | 931.1 | 903.6 | 887.9 | 884.0 | 881.4 |
| 22.5° | 1029.3 | 1015.0 | 977.0 | 928.5 | 887.9 | 863.0 | 852.6 | 847.3 | 846.0 |
| 25° | 984.8 | 970.5 | 929.9 | 880.1 | 840.8 | 819.9 | 810.7 | 810.7 | 809.3 |
| 27.5° | 935.0 | 916.7 | 874.8 | 831.6 | 793.6 | 777.9 | 774.0 | 774.0 | 775.3 |
| 30° | 865.6 | 852.6 | 817.2 | 775.3 | 739.9 | 729.5 | 729.5 | 732.1 | 732.1 |
| 32.5° | 791.0 | 781.8 | 750.4 | 713.8 | 686.3 | 679.7 | 682.4 | 687.5 | 688.9 |
| 35° | 720.3 | 709.8 | 688.9 | 656.1 | 635.2 | 632.6 | 636.5 | 640.4 | 640.4 |
| 37.5° | 650.9 | 640.4 | 626.0 | 599.8 | 584.1 | 585.4 | 590.6 | 595.9 | 599.8 |
| 40° | 582.8 | 574.9 | 564.4 | 543.4 | 531.7 | 536.9 | 543.4 | 548.7 | 554.0 |
| 42.5° | 522.6 | 514.7 | 506.9 | 491.1 | 483.2 | 489.8 | 497.7 | 502.8 | 508.1 |
| 45° | 467.5 | 462.2 | 454.4 | 441.4 | 436.1 | 442.6 | 451.8 | 457.1 | 462.2 |
| 47.5° | 420.4 | 417.7 | 407.3 | 395.5 | 392.8 | 399.4 | 407.3 | 413.8 | 417.7 |
| 50° | 377.1 | 373.2 | 364.1 | 352.2 | 349.7 | 360.2 | 365.4 | 369.3 | 373.2 |
| 52.5° | 335.3 | 331.4 | 320.8 | 310.4 | 310.4 | 318.3 | 322.2 | 323.5 | 327.4 |
| 55° | 298.6 | 294.7 | 284.2 | 276.3 | 273.7 | 280.2 | 282.9 | 282.9 | 285.5 |
| 57.5° | 264.5 | 260.6 | 250.2 | 241.0 | 239.6 | 243.6 | 243.6 | 243.6 | 244.9 |
| 60° | 231.8 | 227.9 | 217.4 | 209.6 | 206.9 | 208.2 | 206.9 | 205.7 | 206.9 |
| 62.5° | 201.6 | 197.7 | 187.3 | 178.1 | 175.5 | 175.5 | 171.6 | 170.2 | 171.6 |
| 65° | 174.2 | 167.6 | 159.8 | 150.6 | 145.3 | 141.4 | 136.1 | 136.1 | 136.1 |
| 67.5° | 146.7 | 141.4 | 132.2 | 123.1 | 116.5 | 110.0 | 102.2 | 104.7 | 106.1 |
| 70° | 121.8 | 117.9 | 107.4 | 98.2 | 89.0 | 81.2 | 74.7 | 77.3 | 78.6 |
| 72.5° | 99.6 | 94.3 | 85.1 | 74.7 | 66.8 | 56.3 | 52.4 | 55.1 | 55.1 |
| 75° | 77.3 | 72.0 | 64.1 | 53.7 | 44.5 | 35.3 | 35.3 | 36.7 | 36.7 |
| 77.5° | 57.6 | 52.4 | 44.5 | 35.3 | 27.5 | 21.0 | 22.3 | 22.3 | 22.3 |
| 80° | 39.3 | 35.3 | 28.8 | 21.0 | 14.5 | 11.8 | 11.8 | 11.8 | 13.1 |
| 82.5° | 22.3 | 19.6 | 15.7 | 10.4 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| 85° | 10.4 | 7.9 | 6.5 | 3.9 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 87.5° | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 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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