

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: P580019

Luminaire Tested: **HCC4S20D010MW-HM40525835-41WWW**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580019
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: HCC4S20D010MW-HM40525835-41WWW
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

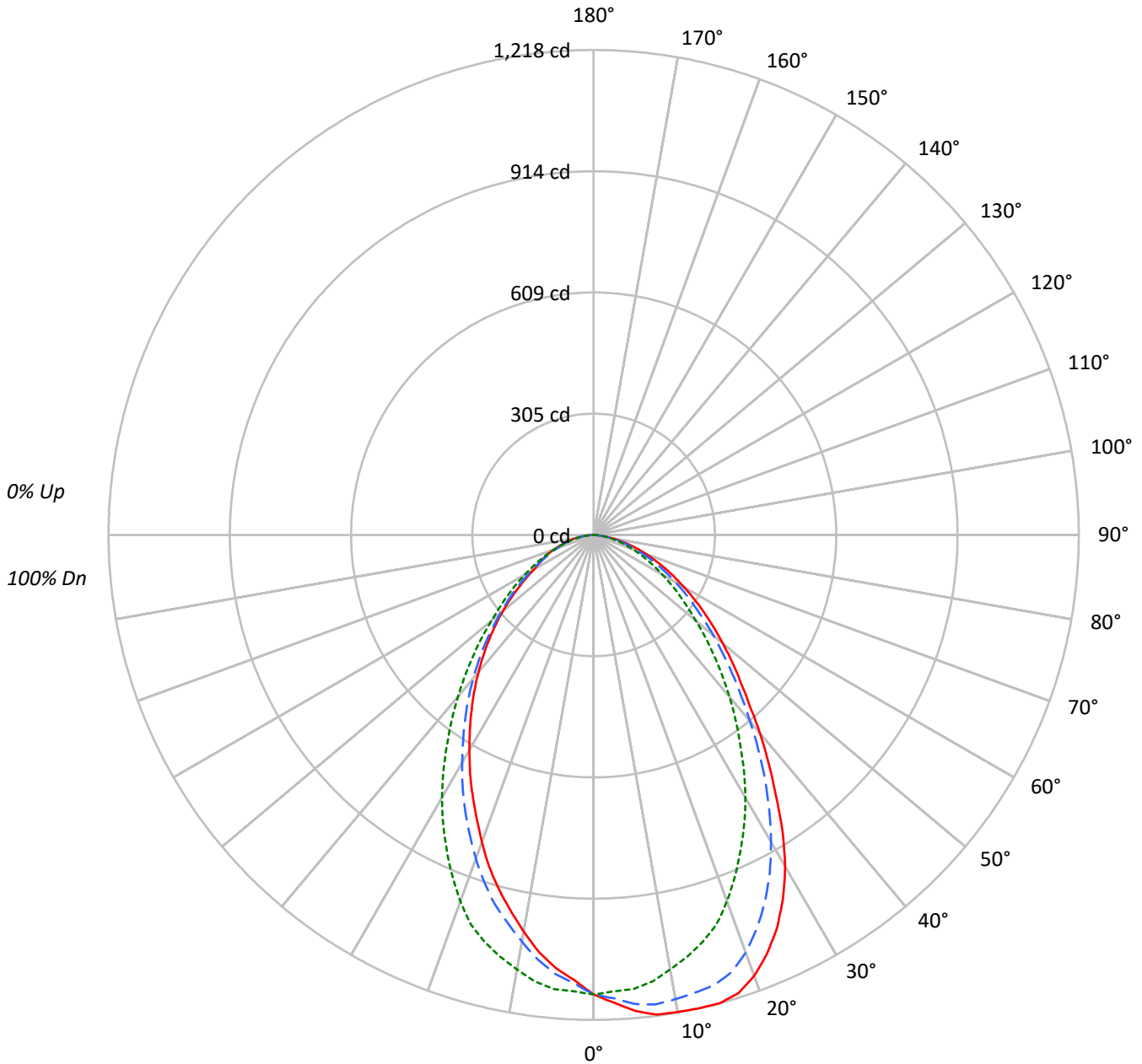
Lumens per Lamp: N/A
Luminaire Lumens: 2061.1 lumens
Efficiency: N/A
Efficacy: 103.1 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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° | 142353 | 142353 | 142353 |
| 5° | 148617 | 141733 | 135171 |
| 10° | 152377 | 138775 | 126689 |
| 15° | 155535 | 135078 | 117558 |
| 20° | 154718 | 128505 | 107648 |
| 25° | 148209 | 118826 | 97935 |
| 30° | 136915 | 108487 | 88775 |
| 35° | 120025 | 96505 | 80348 |
| 40° | 104516 | 85274 | 72361 |
| 45° | 90951 | 74363 | 64664 |
| 50° | 81036 | 64092 | 57069 |
| 55° | 72428 | 56364 | 49353 |
| 60° | 64658 | 49240 | 42530 |
| 65° | 57467 | 43195 | 40394 |
| 70° | 50417 | 37218 | 37723 |
| 75° | 42701 | 31692 | 34933 |
| 80° | 32746 | 26992 | 31822 |
| 85° | 19106 | 21087 | 26889 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 108.2 | 5.2 |
| 10°-20° | 298.4 | 14.5 |
| 20°-30° | 407.7 | 19.8 |
| 30°-40° | 409.4 | 19.9 |
| 40°-50° | 338.7 | 16.4 |
| 50°-60° | 245.4 | 11.9 |
| 60°-70° | 155.4 | 7.5 |
| 70°-80° | 78.6 | 3.8 |
| 80°-90° | 19.2 | 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° | 814.3 | 39.5 |
| 0°-40° | 1223.7 | 59.4 |
| 0°-60° | 1807.8 | 87.7 |
| 0°-90° | 2061.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2061.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1154 | 1154 | 1154 | 1154 | 1154 | |
| 5° | 1200 | 1183 | 1145 | 1107 | 1092 | 115 |
| 15° | 1218 | 1170 | 1058 | 960 | 921 | 343 |
| 25° | 1089 | 1017 | 873 | 763 | 720 | 498 |
| 35° | 797 | 750 | 641 | 562 | 534 | 500 |
| 45° | 521 | 492 | 426 | 384 | 371 | 406 |
| 55° | 337 | 307 | 262 | 239 | 230 | 303 |
| 65° | 197 | 175 | 148 | 133 | 138 | 196 |
| 75° | 90 | 77 | 66 | 69 | 73 | 96 |
| 85° | 14 | 14 | 15 | 18 | 19 | 19 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P580019

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1154.1 | 1154.1 | 1154.1 | 1154.1 | 1154.1 | 1154.1 | 1154.1 | 1154.1 | 1154.1 |
| 2.5° | 1175.9 | 1171.8 | 1165.0 | 1156.9 | 1147.3 | 1136.6 | 1127.0 | 1121.5 | 1118.9 |
| 5° | 1200.3 | 1194.9 | 1182.7 | 1165.0 | 1144.7 | 1124.3 | 1106.6 | 1095.7 | 1091.7 |
| 7.5° | 1215.2 | 1207.1 | 1189.4 | 1162.4 | 1131.1 | 1101.2 | 1075.4 | 1060.5 | 1056.4 |
| 10° | 1216.6 | 1207.1 | 1184.0 | 1147.3 | 1108.0 | 1068.7 | 1037.3 | 1015.7 | 1011.5 |
| 12.5° | 1218.0 | 1205.7 | 1177.3 | 1133.8 | 1084.9 | 1036.1 | 998.0 | 972.2 | 965.4 |
| 15° | 1218.0 | 1205.7 | 1170.5 | 1118.9 | 1057.8 | 1002.1 | 960.0 | 930.1 | 920.6 |
| 17.5° | 1207.1 | 1193.6 | 1151.5 | 1091.7 | 1025.2 | 962.7 | 913.8 | 882.6 | 873.1 |
| 20° | 1178.7 | 1163.6 | 1116.1 | 1051.0 | 979.0 | 913.8 | 865.0 | 832.4 | 820.1 |
| 22.5° | 1137.8 | 1120.3 | 1070.0 | 999.4 | 927.5 | 860.8 | 813.3 | 779.4 | 768.5 |
| 25° | 1089.0 | 1071.3 | 1017.0 | 947.8 | 873.1 | 810.6 | 763.1 | 731.9 | 719.6 |
| 27.5° | 1029.2 | 1010.3 | 957.3 | 888.0 | 818.7 | 756.3 | 712.9 | 684.3 | 672.1 |
| 30° | 961.3 | 941.0 | 890.8 | 824.2 | 761.7 | 702.0 | 659.9 | 636.8 | 623.3 |
| 32.5° | 882.6 | 865.0 | 820.1 | 760.3 | 702.0 | 645.0 | 609.6 | 589.3 | 578.4 |
| 35° | 797.1 | 787.5 | 749.6 | 697.9 | 640.9 | 593.3 | 562.1 | 543.1 | 533.6 |
| 37.5° | 721.0 | 711.5 | 678.9 | 635.4 | 585.2 | 541.7 | 516.0 | 499.6 | 491.5 |
| 40° | 649.1 | 640.9 | 609.6 | 573.0 | 529.6 | 491.5 | 469.8 | 457.5 | 449.4 |
| 42.5° | 578.4 | 574.4 | 548.6 | 514.7 | 476.6 | 444.0 | 426.3 | 416.8 | 410.1 |
| 45° | 521.4 | 516.0 | 491.5 | 458.9 | 426.3 | 399.2 | 384.2 | 377.5 | 370.7 |
| 47.5° | 471.2 | 464.4 | 438.6 | 410.1 | 380.2 | 355.8 | 342.2 | 335.4 | 332.6 |
| 50° | 422.3 | 415.4 | 392.4 | 363.9 | 334.0 | 316.3 | 305.6 | 298.7 | 297.4 |
| 52.5° | 378.9 | 372.1 | 346.3 | 319.1 | 296.0 | 281.1 | 271.6 | 264.7 | 262.1 |
| 55° | 336.8 | 328.6 | 306.8 | 281.1 | 262.1 | 248.4 | 239.0 | 232.2 | 229.5 |
| 57.5° | 298.7 | 290.5 | 271.6 | 247.2 | 229.5 | 217.2 | 209.1 | 202.3 | 199.6 |
| 60° | 262.1 | 255.3 | 237.7 | 214.5 | 199.6 | 188.8 | 180.5 | 175.1 | 172.4 |
| 62.5° | 228.1 | 222.6 | 205.1 | 184.7 | 172.4 | 163.0 | 156.1 | 150.7 | 153.5 |
| 65° | 196.9 | 191.4 | 175.1 | 157.5 | 148.0 | 138.4 | 133.1 | 133.1 | 138.4 |
| 67.5° | 167.0 | 161.6 | 148.0 | 133.1 | 124.9 | 118.1 | 114.0 | 118.1 | 122.2 |
| 70° | 139.8 | 134.4 | 122.2 | 110.0 | 103.2 | 97.7 | 97.7 | 101.9 | 104.6 |
| 72.5° | 114.0 | 108.6 | 99.1 | 89.6 | 84.2 | 80.1 | 84.2 | 86.9 | 89.6 |
| 75° | 89.6 | 85.6 | 77.4 | 70.7 | 66.5 | 65.1 | 69.3 | 71.9 | 73.3 |
| 77.5° | 66.5 | 63.8 | 58.4 | 53.0 | 50.2 | 51.6 | 55.6 | 57.0 | 58.4 |
| 80° | 46.1 | 44.8 | 40.7 | 38.0 | 38.0 | 39.3 | 42.1 | 43.5 | 44.8 |
| 82.5° | 28.6 | 28.6 | 25.8 | 24.4 | 25.8 | 28.6 | 29.8 | 31.2 | 31.2 |
| 85° | 13.5 | 14.9 | 13.5 | 13.5 | 14.9 | 17.7 | 17.7 | 19.0 | 19.0 |
| 87.5° | 4.1 | 4.1 | 5.4 | 5.4 | 6.8 | 6.8 | 6.8 | 6.8 | 8.1 |
| 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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— 0°-180° - - 45°-225° - - - - 90°-270°

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