

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: P580307

Luminaire Tested: **HCC4S30D010BZ-HM43040835-41WWW**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580307
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: HCC4S30D010BZ-HM43040835-41WWW
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

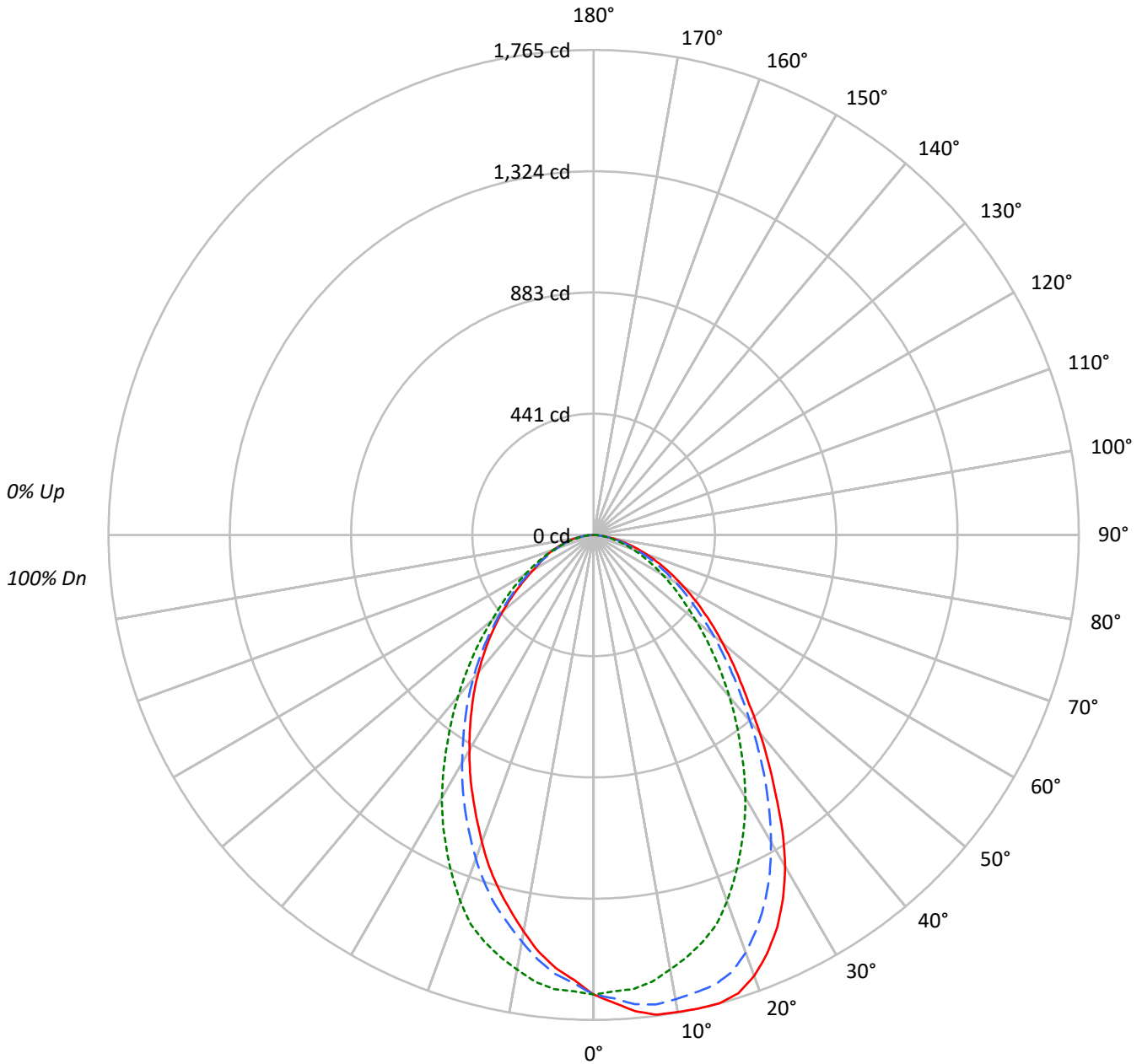
Lumens per Lamp: N/A
Luminaire Lumens: 2987.0 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 28
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 | | | | 100 | | | | |
| 1 | 111 | 106 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | 87 | | | | 87 | | | | |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 81 | 87 | 83 | 80 | 84 | 81 | 78 | 76 | | | | 76 | | | | |
| 3 | 94 | 85 | 78 | 72 | 92 | 84 | 77 | 72 | 81 | 75 | 71 | 78 | 73 | 69 | 76 | 72 | 68 | 66 | | | | 66 | | | | |
| 4 | 87 | 77 | 69 | 63 | 85 | 76 | 68 | 63 | 73 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 | | | | 58 | | | | |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 52 | | | | 52 | | | | |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 59 | 53 | 49 | 58 | 53 | 48 | 47 | | | | 47 | | | | |
| 7 | 71 | 58 | 50 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 44 | 55 | 49 | 44 | 53 | 48 | 44 | 42 | | | | 42 | | | | |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | | 38 | | | | |
| 9 | 62 | 50 | 42 | 37 | 61 | 49 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | | 35 | | | | |
| 10 | 59 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 | | | | 32 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 206308 | 206308 | 206308 |
| 5° | 215392 | 205387 | 195891 |
| 10° | 220838 | 201111 | 183627 |
| 15° | 225398 | 195759 | 170373 |
| 20° | 224208 | 186234 | 156018 |
| 25° | 214788 | 172203 | 141935 |
| 30° | 198430 | 157240 | 128640 |
| 35° | 173932 | 139856 | 116456 |
| 40° | 151452 | 123580 | 104870 |
| 45° | 131805 | 107785 | 93725 |
| 50° | 117419 | 92895 | 82705 |
| 55° | 104943 | 81675 | 71503 |
| 60° | 93693 | 71343 | 61673 |
| 65° | 83297 | 62604 | 58576 |
| 70° | 73101 | 53952 | 54637 |
| 75° | 61859 | 45941 | 50659 |
| 80° | 47520 | 39068 | 46171 |
| 85° | 27739 | 30711 | 38919 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 156.8 | 5.2 |
| 10°-20° | 432.5 | 14.5 |
| 20°-30° | 590.9 | 19.8 |
| 30°-40° | 593.3 | 19.9 |
| 40°-50° | 490.8 | 16.4 |
| 50°-60° | 355.7 | 11.9 |
| 60°-70° | 225.3 | 7.5 |
| 70°-80° | 113.9 | 3.8 |
| 80°-90° | 27.9 | 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° | 1180.1 | 39.5 |
| 0°-40° | 1773.4 | 59.4 |
| 0°-60° | 2619.9 | 87.7 |
| 0°-90° | 2987.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2987.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1673 | 1673 | 1673 | 1673 | 1673 | |
| 5° | 1740 | 1714 | 1659 | 1604 | 1582 | 167 |
| 15° | 1765 | 1696 | 1533 | 1391 | 1334 | 496 |
| 25° | 1578 | 1474 | 1265 | 1106 | 1043 | 721 |
| 35° | 1155 | 1086 | 929 | 815 | 773 | 724 |
| 45° | 756 | 712 | 618 | 557 | 537 | 588 |
| 55° | 488 | 445 | 380 | 346 | 332 | 439 |
| 65° | 285 | 254 | 214 | 193 | 201 | 284 |
| 75° | 130 | 112 | 96 | 100 | 106 | 139 |
| 85° | 20 | 20 | 22 | 26 | 28 | 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° | 1672.6 | 1672.6 | 1672.6 | 1672.6 | 1672.6 | 1672.6 | 1672.6 | 1672.6 | 1672.6 |
| 2.5° | 1704.2 | 1698.2 | 1688.4 | 1676.5 | 1662.8 | 1647.1 | 1633.3 | 1625.4 | 1621.5 |
| 5° | 1739.6 | 1731.7 | 1714.0 | 1688.4 | 1658.8 | 1629.4 | 1603.8 | 1588.0 | 1582.1 |
| 7.5° | 1761.3 | 1749.4 | 1723.8 | 1684.4 | 1639.2 | 1595.9 | 1558.6 | 1536.9 | 1530.9 |
| 10° | 1763.2 | 1749.4 | 1715.9 | 1662.8 | 1605.7 | 1548.6 | 1503.4 | 1471.9 | 1466.1 |
| 12.5° | 1765.1 | 1747.4 | 1706.1 | 1643.2 | 1572.3 | 1501.5 | 1446.3 | 1409.0 | 1399.2 |
| 15° | 1765.1 | 1747.4 | 1696.3 | 1621.5 | 1533.0 | 1452.3 | 1391.3 | 1348.0 | 1334.2 |
| 17.5° | 1749.4 | 1729.7 | 1668.8 | 1582.1 | 1485.7 | 1395.2 | 1324.4 | 1279.0 | 1265.3 |
| 20° | 1708.1 | 1686.5 | 1617.6 | 1523.1 | 1418.8 | 1324.4 | 1253.5 | 1206.3 | 1188.6 |
| 22.5° | 1649.0 | 1623.4 | 1550.7 | 1448.4 | 1344.0 | 1247.6 | 1178.8 | 1129.6 | 1113.8 |
| 25° | 1578.2 | 1552.6 | 1474.0 | 1373.6 | 1265.3 | 1174.8 | 1105.9 | 1060.7 | 1042.9 |
| 27.5° | 1491.7 | 1464.0 | 1387.3 | 1286.9 | 1186.7 | 1096.1 | 1033.1 | 991.7 | 974.0 |
| 30° | 1393.2 | 1363.8 | 1290.9 | 1194.4 | 1104.0 | 1017.3 | 956.3 | 922.9 | 903.2 |
| 32.5° | 1279.0 | 1253.5 | 1188.6 | 1101.9 | 1017.3 | 934.8 | 883.6 | 854.0 | 838.3 |
| 35° | 1155.1 | 1141.3 | 1086.3 | 1011.5 | 928.8 | 860.0 | 814.6 | 787.1 | 773.4 |
| 37.5° | 1044.9 | 1031.1 | 984.0 | 920.9 | 848.1 | 785.2 | 747.8 | 724.2 | 712.3 |
| 40° | 940.6 | 928.8 | 883.6 | 830.4 | 767.5 | 712.3 | 680.9 | 663.2 | 651.3 |
| 42.5° | 838.3 | 832.4 | 795.0 | 745.8 | 690.7 | 643.5 | 617.9 | 604.2 | 594.2 |
| 45° | 755.6 | 747.8 | 712.3 | 665.2 | 617.9 | 578.6 | 556.9 | 547.1 | 537.3 |
| 47.5° | 682.9 | 673.0 | 635.6 | 594.2 | 551.0 | 515.6 | 495.9 | 486.1 | 482.1 |
| 50° | 611.9 | 602.1 | 568.7 | 527.3 | 484.1 | 458.5 | 442.7 | 432.9 | 431.0 |
| 52.5° | 549.0 | 539.2 | 501.8 | 462.5 | 429.0 | 407.3 | 393.6 | 383.7 | 379.8 |
| 55° | 488.0 | 476.2 | 444.8 | 407.3 | 379.8 | 360.1 | 346.3 | 336.5 | 332.5 |
| 57.5° | 432.9 | 421.1 | 393.6 | 358.1 | 332.5 | 314.8 | 303.1 | 293.2 | 289.2 |
| 60° | 379.8 | 370.0 | 344.4 | 310.9 | 289.2 | 273.5 | 261.7 | 253.8 | 250.0 |
| 62.5° | 330.6 | 322.7 | 297.1 | 267.7 | 250.0 | 236.1 | 226.3 | 218.4 | 222.3 |
| 65° | 285.4 | 277.5 | 253.8 | 228.3 | 214.5 | 200.7 | 192.9 | 192.9 | 200.7 |
| 67.5° | 242.1 | 234.2 | 214.5 | 192.9 | 181.0 | 171.2 | 165.3 | 171.2 | 177.1 |
| 70° | 202.7 | 194.8 | 177.1 | 159.4 | 149.6 | 141.7 | 141.7 | 147.5 | 151.5 |
| 72.5° | 165.3 | 157.5 | 143.7 | 129.8 | 122.0 | 116.1 | 122.0 | 125.9 | 129.8 |
| 75° | 129.8 | 124.0 | 112.1 | 102.3 | 96.4 | 94.4 | 100.4 | 104.3 | 106.3 |
| 77.5° | 96.4 | 92.5 | 84.6 | 76.7 | 72.8 | 74.8 | 80.7 | 82.7 | 84.6 |
| 80° | 66.9 | 65.0 | 59.0 | 55.0 | 55.0 | 57.1 | 61.0 | 62.9 | 65.0 |
| 82.5° | 41.3 | 41.3 | 37.3 | 35.4 | 37.3 | 41.3 | 43.3 | 45.2 | 45.2 |
| 85° | 19.6 | 21.7 | 19.6 | 19.6 | 21.7 | 25.6 | 25.6 | 27.5 | 27.5 |
| 87.5° | 5.9 | 5.9 | 7.9 | 7.9 | 9.8 | 9.8 | 9.8 | 9.8 | 11.8 |
| 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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