

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: P580520

Luminaire Tested: **HCC4S35D010SL-HM43040935-41RWWC**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580520  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCC4S35D010SL-HM43040935-41RWWC  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

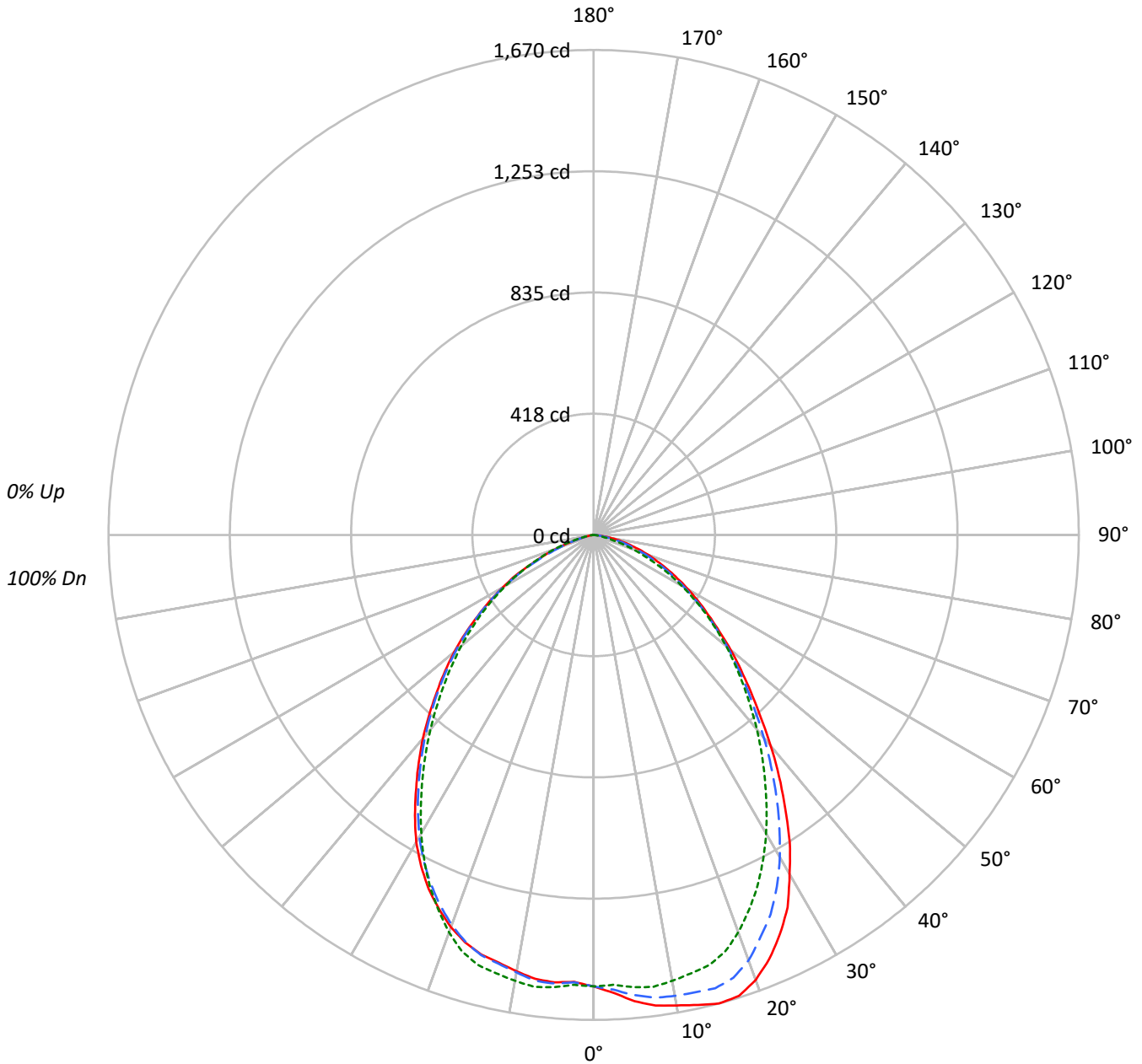
Lumens per Lamp: N/A  
Luminaire Lumens: 3240.1 lumens  
Efficiency: N/A  
Efficacy: 96.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.15 / 1.21  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.7  
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 | 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 | 107 | 103 | 100 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 93  | 92  | 90  | 88  |    |    |    |    | 88  |   |  |   |
| 2   | 102 | 95  | 90  | 85  | 100 | 94  | 88  | 84  | 90  | 86  | 82  | 87  | 83  | 80  | 84  | 81  | 78  | 76  |    |    |    |    | 76  |   |  |   |
| 3   | 95  | 85  | 78  | 73  | 92  | 84  | 77  | 72  | 81  | 75  | 71  | 78  | 74  | 70  | 76  | 72  | 69  | 67  |    |    |    |    | 67  |   |  |   |
| 4   | 87  | 77  | 69  | 63  | 85  | 76  | 68  | 63  | 73  | 67  | 62  | 71  | 66  | 61  | 69  | 64  | 60  | 58  |    |    |    |    | 58  |   |  |   |
| 5   | 81  | 70  | 61  | 56  | 79  | 68  | 61  | 55  | 66  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 52  |    |    |    |    | 52  |   |  |   |
| 6   | 75  | 63  | 55  | 49  | 74  | 62  | 55  | 49  | 61  | 54  | 49  | 59  | 53  | 48  | 58  | 52  | 48  | 46  |    |    |    |    | 46  |   |  |   |
| 7   | 70  | 58  | 50  | 44  | 69  | 57  | 49  | 44  | 56  | 49  | 44  | 54  | 48  | 44  | 53  | 47  | 43  | 41  |    |    |    |    | 41  |   |  |   |
| 8   | 66  | 53  | 45  | 40  | 64  | 53  | 45  | 40  | 51  | 44  | 40  | 50  | 44  | 39  | 49  | 43  | 39  | 37  |    |    |    |    | 37  |   |  |   |
| 9   | 62  | 49  | 42  | 36  | 60  | 49  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 36  | 45  | 40  | 36  | 34  |    |    |    |    | 34  |   |  |   |
| 10  | 58  | 46  | 38  | 33  | 57  | 45  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 42  | 37  | 33  | 31  |    |    |    |    | 31  |   |  |   |

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

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 191778 | 191778 | 191778 |
| 5°  | 199543 | 193563 | 191483 |
| 10° | 206059 | 195275 | 191066 |
| 15° | 213317 | 195874 | 191034 |
| 20° | 214022 | 191130 | 188662 |
| 25° | 206473 | 181594 | 183023 |
| 30° | 192120 | 169090 | 173875 |
| 35° | 173073 | 154703 | 160410 |
| 40° | 152579 | 140744 | 147169 |
| 45° | 133427 | 126816 | 133043 |
| 50° | 118129 | 114099 | 120163 |
| 55° | 103932 | 100771 | 104835 |
| 60° | 92781  | 86046  | 88636  |
| 65° | 81546  | 69901  | 68704  |
| 70° | 71226  | 51535  | 46991  |
| 75° | 59095  | 31072  | 25020  |
| 80° | 44821  | 12004  | 7458   |
| 85° | 20804  | 2972   | 2972   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 150.0  | 4.6       |
| 10°-20°   | 437.7  | 13.5      |
| 20°-30°   | 633.8  | 19.6      |
| 30°-40°   | 668.7  | 20.6      |
| 40°-50°   | 578.7  | 17.9      |
| 50°-60°   | 428.7  | 13.2      |
| 60°-70°   | 247.1  | 7.6       |
| 70°-80°   | 86.3   | 2.7       |
| 80°-90°   | 9.1    | 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°    | 1221.5 | 37.7      |
| 0°-40°    | 1890.2 | 58.3      |
| 0°-60°    | 2897.6 | 89.4      |
| 0°-90°    | 3240.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3240.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1555 | 1555 | 1555 | 1555 | 1555 |      |
| 5°  | 1612 | 1591 | 1563 | 1551 | 1546 | 155  |
| 15° | 1670 | 1616 | 1534 | 1498 | 1496 | 470  |
| 25° | 1517 | 1441 | 1334 | 1326 | 1345 | 694  |
| 35° | 1149 | 1097 | 1027 | 1051 | 1065 | 718  |
| 45° | 765  | 744  | 727  | 754  | 763  | 594  |
| 55° | 483  | 473  | 469  | 485  | 488  | 436  |
| 65° | 279  | 263  | 240  | 227  | 235  | 279  |
| 75° | 124  | 105  | 65   | 52   | 52   | 133  |
| 85° | 15   | 8    | 2    | 2    | 2    | 23   |
| 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°    | 1554.8 | 1554.8 | 1554.8 | 1554.8 | 1554.8 | 1554.8 | 1554.8 | 1554.8 | 1554.8 |
| 2.5°  | 1578.0 | 1573.8 | 1567.5 | 1559.1 | 1550.7 | 1544.4 | 1542.2 | 1540.2 | 1540.2 |
| 5°    | 1611.6 | 1603.2 | 1590.6 | 1573.8 | 1563.3 | 1557.0 | 1550.7 | 1546.5 | 1546.5 |
| 7.5°  | 1634.7 | 1626.3 | 1607.4 | 1584.3 | 1569.6 | 1557.0 | 1548.5 | 1542.2 | 1542.2 |
| 10°   | 1645.2 | 1634.7 | 1611.6 | 1582.3 | 1559.1 | 1542.2 | 1529.7 | 1525.5 | 1525.5 |
| 12.5° | 1657.8 | 1645.2 | 1613.7 | 1575.8 | 1546.5 | 1525.5 | 1512.9 | 1508.6 | 1508.6 |
| 15°   | 1670.5 | 1655.8 | 1615.9 | 1571.7 | 1533.9 | 1508.6 | 1498.2 | 1496.0 | 1496.0 |
| 17.5° | 1664.2 | 1645.2 | 1599.0 | 1546.5 | 1504.5 | 1479.3 | 1468.7 | 1468.7 | 1470.9 |
| 20°   | 1630.5 | 1611.6 | 1559.1 | 1500.2 | 1456.1 | 1437.3 | 1428.8 | 1433.0 | 1437.3 |
| 22.5° | 1580.1 | 1557.0 | 1500.2 | 1443.6 | 1397.2 | 1380.5 | 1380.5 | 1386.8 | 1393.1 |
| 25°   | 1517.1 | 1496.0 | 1441.4 | 1378.4 | 1334.3 | 1321.6 | 1325.9 | 1336.3 | 1344.8 |
| 27.5° | 1445.6 | 1422.5 | 1365.8 | 1307.0 | 1262.8 | 1256.5 | 1267.0 | 1281.7 | 1286.0 |
| 30°   | 1348.9 | 1330.0 | 1281.7 | 1225.0 | 1187.2 | 1185.0 | 1199.8 | 1210.3 | 1220.8 |
| 32.5° | 1256.5 | 1235.5 | 1189.3 | 1134.7 | 1107.4 | 1109.4 | 1126.2 | 1138.8 | 1145.1 |
| 35°   | 1149.4 | 1130.4 | 1096.8 | 1052.7 | 1027.4 | 1031.7 | 1050.6 | 1063.2 | 1065.3 |
| 37.5° | 1048.5 | 1035.9 | 1002.3 | 968.7  | 949.8  | 958.1  | 975.0  | 989.7  | 989.7  |
| 40°   | 947.6  | 937.1  | 911.9  | 884.6  | 874.1  | 884.6  | 901.4  | 914.0  | 914.0  |
| 42.5° | 851.0  | 844.7  | 823.7  | 804.8  | 798.5  | 813.2  | 827.8  | 838.4  | 836.3  |
| 45°   | 764.9  | 758.5  | 743.9  | 729.1  | 727.0  | 741.7  | 754.3  | 760.6  | 762.7  |
| 47.5° | 687.1  | 682.9  | 670.2  | 659.8  | 659.8  | 674.5  | 685.0  | 691.3  | 693.4  |
| 50°   | 615.6  | 611.5  | 600.9  | 592.6  | 594.6  | 609.3  | 617.8  | 624.0  | 626.2  |
| 52.5° | 544.2  | 542.1  | 533.7  | 523.2  | 529.5  | 540.0  | 550.5  | 554.7  | 556.8  |
| 55°   | 483.3  | 483.3  | 472.8  | 464.3  | 468.6  | 479.0  | 485.3  | 487.5  | 487.5  |
| 57.5° | 428.7  | 426.6  | 414.0  | 405.5  | 407.7  | 418.1  | 422.3  | 424.4  | 424.4  |
| 60°   | 376.1  | 374.1  | 361.4  | 348.8  | 348.8  | 355.1  | 357.2  | 359.3  | 359.3  |
| 62.5° | 325.7  | 323.6  | 308.9  | 298.4  | 294.2  | 292.0  | 292.0  | 296.3  | 304.7  |
| 65°   | 279.4  | 277.4  | 262.7  | 245.8  | 239.5  | 233.2  | 226.9  | 231.1  | 235.4  |
| 67.5° | 237.4  | 233.2  | 218.5  | 203.8  | 189.1  | 178.6  | 168.2  | 174.4  | 182.8  |
| 70°   | 197.5  | 193.3  | 176.5  | 159.7  | 142.9  | 126.1  | 117.7  | 126.1  | 130.3  |
| 72.5° | 159.7  | 155.4  | 138.7  | 121.8  | 100.8  | 84.1   | 81.9   | 84.1   | 86.1   |
| 75°   | 124.0  | 121.8  | 105.1  | 86.1   | 65.2   | 52.5   | 52.5   | 52.5   | 52.5   |
| 77.5° | 92.5   | 88.2   | 71.5   | 54.6   | 37.8   | 29.4   | 27.3   | 27.3   | 27.3   |
| 80°   | 63.1   | 58.8   | 44.2   | 31.5   | 16.9   | 12.6   | 12.6   | 10.5   | 10.5   |
| 82.5° | 35.7   | 33.6   | 23.2   | 12.6   | 6.3    | 4.2    | 4.2    | 4.2    | 4.2    |
| 85°   | 14.7   | 12.6   | 8.4    | 4.2    | 2.1    | 2.1    | 2.1    | 2.1    | 2.1    |
| 87.5° | 2.1    | 2.1    | 2.1    | 0.0    | 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





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Scaled Data Report



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

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