

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: P580232

Luminaire Tested: **HCC4S25D010SL-HM40525935-41RWWC**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580232  
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: HCC4S25D010SL-HM40525935-41RWWC  
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**

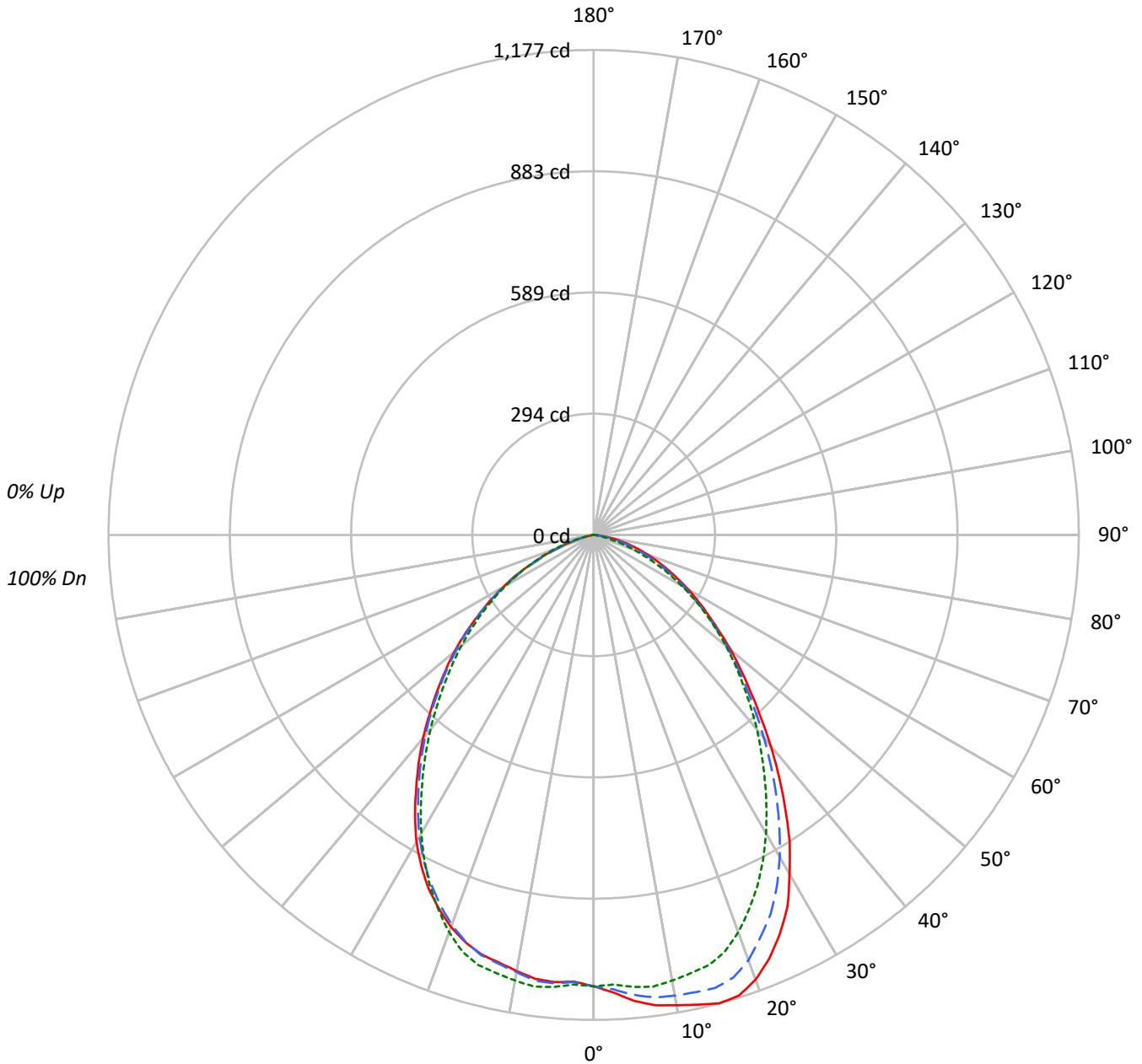
Lumens per Lamp: N/A  
Luminaire Lumens: 2282.5 lumens  
Efficiency: N/A  
Efficacy: 85.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.15 / 1.21  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 26.8  
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°  | 135113 | 135113 | 135113 |
| 5°  | 140569 | 136347 | 134886 |
| 10° | 145150 | 137560 | 134592 |
| 15° | 150274 | 137989 | 134580 |
| 20° | 150767 | 134648 | 132902 |
| 25° | 145447 | 127917 | 128925 |
| 30° | 135349 | 119112 | 122487 |
| 35° | 121907 | 108988 | 112993 |
| 40° | 107494 | 99154  | 103678 |
| 45° | 93987  | 89329  | 93725  |
| 50° | 83204  | 80383  | 84643  |
| 55° | 73202  | 70987  | 73847  |
| 60° | 65373  | 60612  | 62438  |
| 65° | 57467  | 49266  | 48361  |
| 70° | 50165  | 36316  | 33107  |
| 75° | 41652  | 21827  | 17633  |
| 80° | 31538  | 8453   | 5327   |
| 85° | 14718  | 2123   | 2123   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 105.6  | 4.6       |
| 10°-20°   | 308.3  | 13.5      |
| 20°-30°   | 446.5  | 19.6      |
| 30°-40°   | 471.1  | 20.6      |
| 40°-50°   | 407.7  | 17.9      |
| 50°-60°   | 302.0  | 13.2      |
| 60°-70°   | 174.1  | 7.6       |
| 70°-80°   | 60.8   | 2.7       |
| 80°-90°   | 6.4    | 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°    | 860.5  | 37.7      |
| 0°-40°    | 1331.5 | 58.3      |
| 0°-60°    | 2041.2 | 89.4      |
| 0°-90°    | 2282.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2282.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1095 | 1095 | 1095 | 1095 | 1095 |      |
| 5°  | 1135 | 1120 | 1101 | 1092 | 1089 | 109  |
| 15° | 1177 | 1138 | 1081 | 1055 | 1054 | 331  |
| 25° | 1069 | 1015 | 940  | 934  | 947  | 489  |
| 35° | 810  | 773  | 724  | 740  | 750  | 506  |
| 45° | 539  | 524  | 512  | 531  | 537  | 418  |
| 55° | 340  | 333  | 330  | 342  | 343  | 307  |
| 65° | 197  | 185  | 169  | 160  | 166  | 197  |
| 75° | 87   | 74   | 46   | 37   | 37   | 94   |
| 85° | 10   | 6    | 2    | 2    | 2    | 16   |
| 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°    | 1095.4 | 1095.4 | 1095.4 | 1095.4 | 1095.4 | 1095.4 | 1095.4 | 1095.4 | 1095.4 |
| 2.5°  | 1111.6 | 1108.7 | 1104.2 | 1098.3 | 1092.3 | 1087.9 | 1086.4 | 1085.0 | 1085.0 |
| 5°    | 1135.3 | 1129.3 | 1120.5 | 1108.7 | 1101.2 | 1096.8 | 1092.3 | 1089.4 | 1089.4 |
| 7.5°  | 1151.6 | 1145.6 | 1132.3 | 1116.0 | 1105.6 | 1096.8 | 1090.8 | 1086.4 | 1086.4 |
| 10°   | 1158.9 | 1151.6 | 1135.3 | 1114.5 | 1098.3 | 1086.4 | 1077.5 | 1074.6 | 1074.6 |
| 12.5° | 1167.8 | 1158.9 | 1136.8 | 1110.1 | 1089.4 | 1074.6 | 1065.8 | 1062.7 | 1062.7 |
| 15°   | 1176.8 | 1166.4 | 1138.3 | 1107.2 | 1080.6 | 1062.7 | 1055.4 | 1053.9 | 1053.9 |
| 17.5° | 1172.2 | 1158.9 | 1126.4 | 1089.4 | 1059.8 | 1042.1 | 1034.6 | 1034.6 | 1036.1 |
| 20°   | 1148.6 | 1135.3 | 1098.3 | 1056.9 | 1025.8 | 1012.5 | 1006.5 | 1009.4 | 1012.5 |
| 22.5° | 1113.1 | 1096.8 | 1056.9 | 1016.9 | 984.3  | 972.5  | 972.5  | 976.9  | 981.3  |
| 25°   | 1068.7 | 1053.9 | 1015.4 | 970.9  | 939.9  | 931.0  | 934.0  | 941.4  | 947.3  |
| 27.5° | 1018.4 | 1002.1 | 962.1  | 920.7  | 889.5  | 885.1  | 892.6  | 902.9  | 905.9  |
| 30°   | 950.3  | 937.0  | 902.9  | 862.9  | 836.3  | 834.8  | 845.2  | 852.6  | 860.0  |
| 32.5° | 885.1  | 870.3  | 837.8  | 799.3  | 780.0  | 781.5  | 793.3  | 802.3  | 806.7  |
| 35°   | 809.6  | 796.3  | 772.7  | 741.5  | 723.8  | 726.7  | 740.1  | 749.0  | 750.4  |
| 37.5° | 738.6  | 729.7  | 706.1  | 682.4  | 669.0  | 674.9  | 686.8  | 697.2  | 697.2  |
| 40°   | 667.6  | 660.1  | 642.4  | 623.1  | 615.8  | 623.1  | 634.9  | 643.9  | 643.9  |
| 42.5° | 599.5  | 595.0  | 580.2  | 566.9  | 562.5  | 572.9  | 583.2  | 590.6  | 589.1  |
| 45°   | 538.8  | 534.4  | 524.0  | 513.6  | 512.1  | 522.5  | 531.4  | 535.8  | 537.3  |
| 47.5° | 484.0  | 481.1  | 472.1  | 464.8  | 464.8  | 475.1  | 482.5  | 486.9  | 488.4  |
| 50°   | 433.6  | 430.7  | 423.4  | 417.4  | 418.9  | 429.2  | 435.1  | 439.6  | 441.1  |
| 52.5° | 383.4  | 381.8  | 376.0  | 368.5  | 373.0  | 380.4  | 387.8  | 390.7  | 392.2  |
| 55°   | 340.4  | 340.4  | 333.1  | 327.1  | 330.1  | 337.5  | 342.0  | 343.4  | 343.4  |
| 57.5° | 302.0  | 300.4  | 291.6  | 285.6  | 287.1  | 294.6  | 297.5  | 299.0  | 299.0  |
| 60°   | 265.0  | 263.5  | 254.6  | 245.7  | 245.7  | 250.2  | 251.7  | 253.1  | 253.1  |
| 62.5° | 229.4  | 227.9  | 217.6  | 210.2  | 207.2  | 205.7  | 205.7  | 208.8  | 214.6  |
| 65°   | 196.9  | 195.4  | 185.0  | 173.2  | 168.8  | 164.3  | 159.9  | 162.8  | 165.7  |
| 67.5° | 167.2  | 164.3  | 153.9  | 143.6  | 133.2  | 125.8  | 118.4  | 122.8  | 128.8  |
| 70°   | 139.1  | 136.2  | 124.3  | 112.4  | 100.7  | 88.9   | 82.9   | 88.9   | 91.8   |
| 72.5° | 112.4  | 109.5  | 97.7   | 85.8   | 71.0   | 59.2   | 57.7   | 59.2   | 60.7   |
| 75°   | 87.4   | 85.8   | 74.1   | 60.7   | 45.8   | 37.0   | 37.0   | 37.0   | 37.0   |
| 77.5° | 65.1   | 62.2   | 50.4   | 38.5   | 26.6   | 20.8   | 19.2   | 19.2   | 19.2   |
| 80°   | 44.4   | 41.4   | 31.0   | 22.2   | 11.9   | 8.9    | 8.9    | 7.5    | 7.5    |
| 82.5° | 25.2   | 23.7   | 16.3   | 8.9    | 4.4    | 2.9    | 2.9    | 2.9    | 2.9    |
| 85°   | 10.4   | 8.9    | 5.9    | 2.9    | 1.5    | 1.5    | 1.5    | 1.5    | 1.5    |
| 87.5° | 1.5    | 1.5    | 1.5    | 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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