

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: P580178

Luminaire Tested: **HC425D010-HM40525840-41RWWC**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580178  
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: HC425D010-HM40525840-41RWWC  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2626.4 lumens  
Efficiency: N/A  
Efficacy: 98.0 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

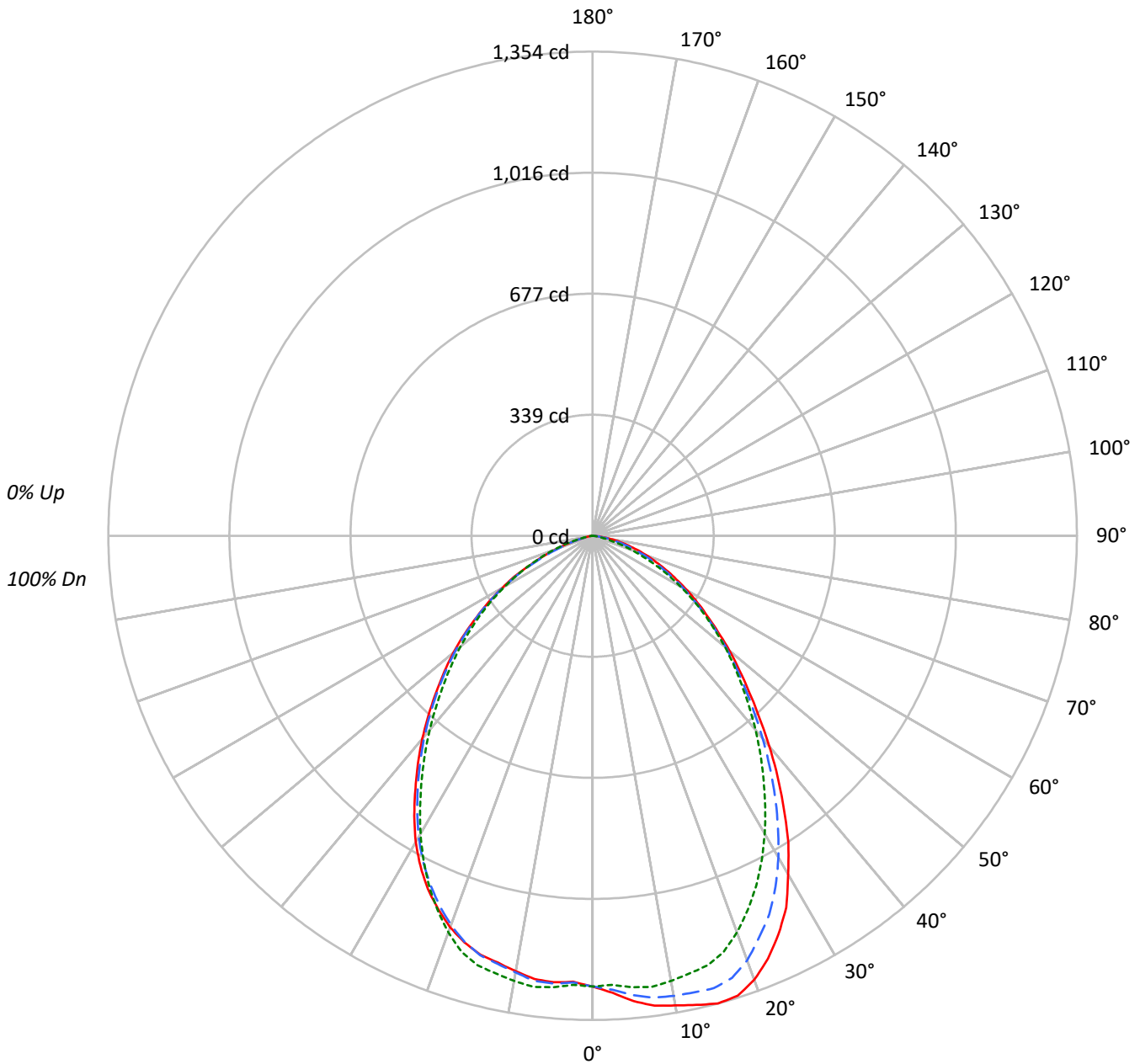
Input Watts (W): 26.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | 100 | 100 | 100 |
| 1   | 111 | 107 | 103 | 100 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 93  | 92  | 90  | 88  | 88  | 88  | 88  |
| 2   | 102 | 95  | 90  | 85  | 100 | 94  | 88  | 84  | 90  | 86  | 82  | 87  | 83  | 80  | 84  | 81  | 78  | 76  | 76  | 76  | 76  |
| 3   | 95  | 85  | 78  | 73  | 92  | 84  | 77  | 72  | 81  | 75  | 71  | 78  | 74  | 70  | 76  | 72  | 69  | 67  | 67  | 67  | 67  |
| 4   | 87  | 77  | 69  | 63  | 85  | 76  | 68  | 63  | 73  | 67  | 62  | 71  | 66  | 61  | 69  | 64  | 60  | 58  | 58  | 58  | 58  |
| 5   | 81  | 70  | 61  | 56  | 79  | 68  | 61  | 55  | 66  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 52  | 52  | 52  | 52  |
| 6   | 75  | 63  | 55  | 49  | 74  | 62  | 55  | 49  | 61  | 54  | 49  | 59  | 53  | 48  | 58  | 52  | 48  | 46  | 46  | 46  | 46  |
| 7   | 70  | 58  | 50  | 44  | 69  | 57  | 49  | 44  | 56  | 49  | 44  | 54  | 48  | 44  | 53  | 47  | 43  | 41  | 41  | 41  | 41  |
| 8   | 66  | 53  | 45  | 40  | 64  | 53  | 45  | 40  | 51  | 44  | 40  | 50  | 44  | 39  | 49  | 43  | 39  | 37  | 37  | 37  | 37  |
| 9   | 62  | 49  | 42  | 36  | 60  | 49  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 36  | 45  | 40  | 36  | 34  | 34  | 34  | 34  |
| 10  | 58  | 46  | 38  | 33  | 57  | 45  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 42  | 37  | 33  | 31  | 31  | 31  | 31  |

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

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 155452 | 155452 | 155452 |
| 5°  | 161754 | 156901 | 155204 |
| 10° | 167031 | 158289 | 154870 |
| 15° | 172901 | 158778 | 154858 |
| 20° | 173475 | 154928 | 152920 |
| 25° | 167358 | 147189 | 148346 |
| 30° | 155730 | 137044 | 140946 |
| 35° | 140293 | 125416 | 130023 |
| 40° | 123693 | 114096 | 119281 |
| 45° | 108134 | 102796 | 107837 |
| 50° | 95754  | 92492  | 97404  |
| 55° | 84255  | 81675  | 84986  |
| 60° | 75191  | 69740  | 71861  |
| 65° | 66106  | 56679  | 55687  |
| 70° | 57738  | 41762  | 38083  |
| 75° | 47895  | 25163  | 20302  |
| 80° | 36297  | 9731   | 6038   |
| 85° | 16983  | 2406   | 2406   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 121.6  | 4.6       |
| 10°-20°   | 354.8  | 13.5      |
| 20°-30°   | 513.8  | 19.6      |
| 30°-40°   | 542.0  | 20.6      |
| 40°-50°   | 469.1  | 17.9      |
| 50°-60°   | 347.5  | 13.2      |
| 60°-70°   | 200.3  | 7.6       |
| 70°-80°   | 70.0   | 2.7       |
| 80°-90°   | 7.4    | 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°    | 990.1  | 37.7      |
| 0°-40°    | 1532.1 | 58.3      |
| 0°-60°    | 2348.7 | 89.4      |
| 0°-90°    | 2626.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2626.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1260 | 1260 | 1260 | 1260 | 1260 |      |
| 5°  | 1306 | 1289 | 1267 | 1257 | 1254 | 125  |
| 15° | 1354 | 1310 | 1243 | 1214 | 1213 | 381  |
| 25° | 1230 | 1168 | 1082 | 1075 | 1090 | 563  |
| 35° | 932  | 889  | 833  | 852  | 864  | 582  |
| 45° | 620  | 603  | 589  | 612  | 618  | 481  |
| 55° | 392  | 383  | 380  | 394  | 395  | 353  |
| 65° | 226  | 213  | 194  | 184  | 191  | 226  |
| 75° | 100  | 85   | 53   | 43   | 43   | 108  |
| 85° | 12   | 7    | 2    | 2    | 2    | 19   |
| 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°    | 1260.3 | 1260.3 | 1260.3 | 1260.3 | 1260.3 | 1260.3 | 1260.3 | 1260.3 | 1260.3 |
| 2.5°  | 1279.0 | 1275.7 | 1270.6 | 1263.8 | 1256.9 | 1251.8 | 1250.1 | 1248.4 | 1248.4 |
| 5°    | 1306.4 | 1299.5 | 1289.3 | 1275.7 | 1267.2 | 1262.0 | 1256.9 | 1253.5 | 1253.5 |
| 7.5°  | 1325.1 | 1318.2 | 1302.9 | 1284.2 | 1272.3 | 1262.0 | 1255.2 | 1250.1 | 1250.1 |
| 10°   | 1333.6 | 1325.1 | 1306.4 | 1282.4 | 1263.8 | 1250.1 | 1239.9 | 1236.5 | 1236.5 |
| 12.5° | 1343.8 | 1333.6 | 1308.1 | 1277.4 | 1253.5 | 1236.5 | 1226.3 | 1222.8 | 1222.8 |
| 15°   | 1354.0 | 1342.0 | 1309.8 | 1274.0 | 1243.4 | 1222.8 | 1214.4 | 1212.7 | 1212.7 |
| 17.5° | 1348.9 | 1333.6 | 1296.1 | 1253.5 | 1219.4 | 1199.0 | 1190.5 | 1190.5 | 1192.2 |
| 20°   | 1321.6 | 1306.4 | 1263.8 | 1216.0 | 1180.3 | 1165.0 | 1158.1 | 1161.5 | 1165.0 |
| 22.5° | 1280.7 | 1262.0 | 1216.0 | 1170.1 | 1132.6 | 1119.0 | 1119.0 | 1124.1 | 1129.2 |
| 25°   | 1229.7 | 1212.7 | 1168.4 | 1117.3 | 1081.5 | 1071.3 | 1074.7 | 1083.2 | 1090.0 |
| 27.5° | 1171.8 | 1153.0 | 1107.1 | 1059.3 | 1023.6 | 1018.5 | 1027.1 | 1038.9 | 1042.3 |
| 30°   | 1093.4 | 1078.1 | 1038.9 | 993.0  | 962.2  | 960.6  | 972.5  | 981.0  | 989.6  |
| 32.5° | 1018.5 | 1001.4 | 963.9  | 919.7  | 897.6  | 899.2  | 912.9  | 923.1  | 928.3  |
| 35°   | 931.7  | 916.3  | 889.1  | 853.3  | 832.9  | 836.3  | 851.6  | 861.8  | 863.5  |
| 37.5° | 849.9  | 839.6  | 812.4  | 785.1  | 769.9  | 776.6  | 790.3  | 802.2  | 802.2  |
| 40°   | 768.2  | 759.6  | 739.2  | 717.0  | 708.6  | 717.0  | 730.7  | 740.8  | 740.8  |
| 42.5° | 689.8  | 684.6  | 667.7  | 652.3  | 647.3  | 659.1  | 671.1  | 679.5  | 677.9  |
| 45°   | 619.9  | 614.9  | 602.9  | 591.0  | 589.3  | 601.2  | 611.5  | 616.5  | 618.2  |
| 47.5° | 556.9  | 553.5  | 543.3  | 534.8  | 534.8  | 546.7  | 555.2  | 560.3  | 562.0  |
| 50°   | 499.0  | 495.6  | 487.1  | 480.3  | 482.0  | 493.9  | 500.7  | 505.8  | 507.6  |
| 52.5° | 441.1  | 439.4  | 432.6  | 424.1  | 429.2  | 437.7  | 446.2  | 449.7  | 451.4  |
| 55°   | 391.8  | 391.8  | 383.2  | 376.4  | 379.8  | 388.4  | 393.5  | 395.2  | 395.2  |
| 57.5° | 347.4  | 345.7  | 335.5  | 328.8  | 330.5  | 338.9  | 342.3  | 344.0  | 344.0  |
| 60°   | 304.8  | 303.1  | 293.0  | 282.7  | 282.7  | 287.8  | 289.6  | 291.3  | 291.3  |
| 62.5° | 264.0  | 262.3  | 250.4  | 241.8  | 238.4  | 236.8  | 236.8  | 240.1  | 246.9  |
| 65°   | 226.5  | 224.8  | 212.9  | 199.3  | 194.2  | 189.1  | 183.9  | 187.3  | 190.8  |
| 67.5° | 192.5  | 189.1  | 177.1  | 165.2  | 153.3  | 144.7  | 136.3  | 141.4  | 148.1  |
| 70°   | 160.1  | 156.7  | 143.0  | 129.5  | 115.8  | 102.2  | 95.4   | 102.2  | 105.6  |
| 72.5° | 129.5  | 126.0  | 112.4  | 98.8   | 81.7   | 68.1   | 66.4   | 68.1   | 69.9   |
| 75°   | 100.5  | 98.8   | 85.1   | 69.9   | 52.8   | 42.6   | 42.6   | 42.6   | 42.6   |
| 77.5° | 75.0   | 71.6   | 57.9   | 44.3   | 30.7   | 23.8   | 22.1   | 22.1   | 22.1   |
| 80°   | 51.1   | 47.6   | 35.8   | 25.5   | 13.7   | 10.3   | 10.3   | 8.5    | 8.5    |
| 82.5° | 28.9   | 27.2   | 18.7   | 10.3   | 5.1    | 3.4    | 3.4    | 3.4    | 3.4    |
| 85°   | 12.0   | 10.3   | 6.8    | 3.4    | 1.7    | 1.7    | 1.7    | 1.7    | 1.7    |
| 87.5° | 1.7    | 1.7    | 1.7    | 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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— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)