

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: P580361

Luminaire Tested: **HC430D010-HM43040930-41WWW**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580361
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: HC430D010-HM43040930-41WWW
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2553.3 lumens
Efficiency: N/A
Efficacy: 91.2 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

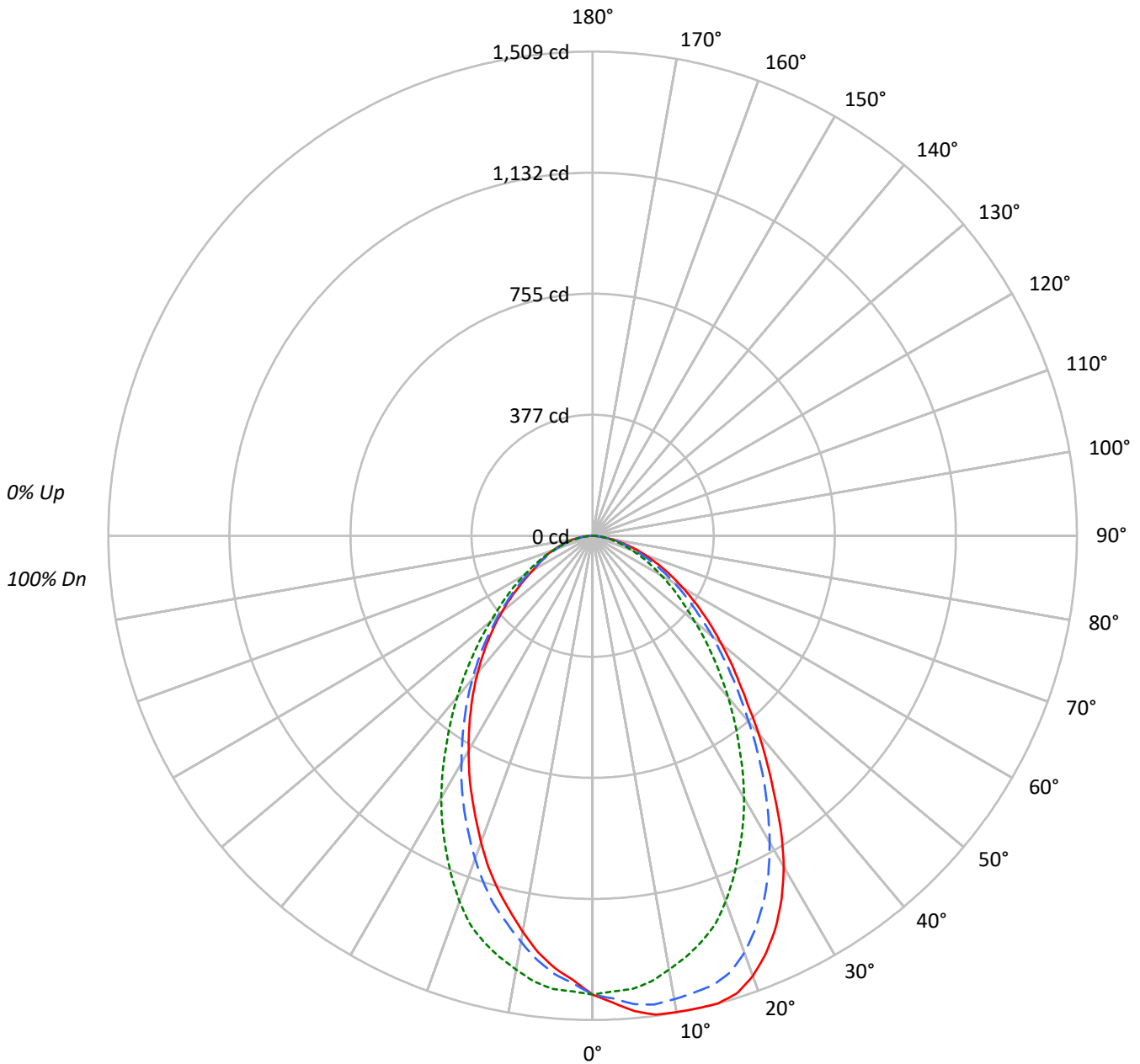
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 176347 | 176347 | 176347 |
| 5° | 184103 | 175572 | 167450 |
| 10° | 188762 | 171916 | 156949 |
| 15° | 192669 | 167321 | 145625 |
| 20° | 191655 | 159194 | 133362 |
| 25° | 183595 | 147189 | 121330 |
| 30° | 169617 | 134409 | 109968 |
| 35° | 148665 | 119543 | 99532 |
| 40° | 129457 | 105627 | 89654 |
| 45° | 112669 | 92120 | 80101 |
| 50° | 100398 | 79405 | 70693 |
| 55° | 89696 | 69804 | 61138 |
| 60° | 80076 | 61007 | 52693 |
| 65° | 71185 | 53498 | 50083 |
| 70° | 62499 | 46090 | 46703 |
| 75° | 52899 | 39317 | 43273 |
| 80° | 40630 | 33527 | 39423 |
| 85° | 23776 | 26182 | 33399 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 134.0 | 5.2 |
| 10°-20° | 369.7 | 14.5 |
| 20°-30° | 505.1 | 19.8 |
| 30°-40° | 507.2 | 19.9 |
| 40°-50° | 419.5 | 16.4 |
| 50°-60° | 304.0 | 11.9 |
| 60°-70° | 192.6 | 7.5 |
| 70°-80° | 97.4 | 3.8 |
| 80°-90° | 23.8 | 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° | 1008.8 | 39.5 |
| 0°-40° | 1515.9 | 59.4 |
| 0°-60° | 2239.5 | 87.7 |
| 0°-90° | 2553.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2553.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1430 | 1430 | 1430 | 1430 | 1430 | |
| 5° | 1487 | 1465 | 1418 | 1371 | 1352 | 142 |
| 15° | 1509 | 1450 | 1310 | 1189 | 1140 | 424 |
| 25° | 1349 | 1260 | 1082 | 945 | 892 | 616 |
| 35° | 987 | 928 | 794 | 696 | 661 | 619 |
| 45° | 646 | 609 | 528 | 476 | 459 | 502 |
| 55° | 417 | 380 | 325 | 296 | 284 | 375 |
| 65° | 244 | 217 | 183 | 165 | 172 | 243 |
| 75° | 111 | 96 | 82 | 86 | 91 | 119 |
| 85° | 17 | 17 | 18 | 22 | 24 | 23 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P580361

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1429.7 | 1429.7 | 1429.7 | 1429.7 | 1429.7 | 1429.7 | 1429.7 | 1429.7 | 1429.7 |
| 2.5° | 1456.7 | 1451.6 | 1443.3 | 1433.1 | 1421.4 | 1407.9 | 1396.1 | 1389.4 | 1386.1 |
| 5° | 1486.9 | 1480.3 | 1465.0 | 1443.3 | 1418.0 | 1392.7 | 1370.9 | 1357.4 | 1352.4 |
| 7.5° | 1505.4 | 1495.4 | 1473.5 | 1439.9 | 1401.2 | 1364.2 | 1332.2 | 1313.7 | 1308.7 |
| 10° | 1507.1 | 1495.4 | 1466.7 | 1421.4 | 1372.6 | 1323.8 | 1285.1 | 1258.2 | 1253.1 |
| 12.5° | 1508.8 | 1493.7 | 1458.4 | 1404.6 | 1344.0 | 1283.4 | 1236.3 | 1204.4 | 1195.9 |
| 15° | 1508.8 | 1493.7 | 1449.9 | 1386.1 | 1310.3 | 1241.4 | 1189.3 | 1152.3 | 1140.4 |
| 17.5° | 1495.4 | 1478.6 | 1426.4 | 1352.4 | 1270.0 | 1192.6 | 1132.1 | 1093.4 | 1081.5 |
| 20° | 1460.1 | 1441.6 | 1382.7 | 1301.9 | 1212.8 | 1132.1 | 1071.5 | 1031.1 | 1016.0 |
| 22.5° | 1409.5 | 1387.7 | 1325.5 | 1238.0 | 1148.9 | 1066.4 | 1007.5 | 965.5 | 952.0 |
| 25° | 1349.0 | 1327.2 | 1259.9 | 1174.1 | 1081.5 | 1004.1 | 945.4 | 906.7 | 891.5 |
| 27.5° | 1275.0 | 1251.5 | 1185.9 | 1100.0 | 1014.3 | 936.9 | 883.1 | 847.8 | 832.6 |
| 30° | 1190.9 | 1165.7 | 1103.4 | 1021.1 | 943.7 | 869.7 | 817.5 | 788.9 | 772.1 |
| 32.5° | 1093.4 | 1071.5 | 1016.0 | 942.0 | 869.7 | 799.0 | 755.2 | 730.0 | 716.6 |
| 35° | 987.3 | 975.6 | 928.5 | 864.6 | 793.9 | 735.1 | 696.4 | 672.9 | 661.0 |
| 37.5° | 893.2 | 881.4 | 841.0 | 787.2 | 725.0 | 671.2 | 639.2 | 619.0 | 608.9 |
| 40° | 804.0 | 793.9 | 755.2 | 709.9 | 656.0 | 608.9 | 582.0 | 566.8 | 556.8 |
| 42.5° | 716.6 | 711.5 | 679.5 | 637.5 | 590.4 | 550.0 | 528.1 | 516.4 | 507.9 |
| 45° | 645.9 | 639.2 | 608.9 | 568.5 | 528.1 | 494.5 | 476.0 | 467.7 | 459.2 |
| 47.5° | 583.6 | 575.3 | 543.4 | 507.9 | 470.9 | 440.7 | 423.9 | 415.4 | 412.1 |
| 50° | 523.2 | 514.7 | 486.2 | 450.7 | 413.8 | 391.9 | 378.4 | 370.1 | 368.4 |
| 52.5° | 469.2 | 460.9 | 429.0 | 395.3 | 366.7 | 348.2 | 336.4 | 328.0 | 324.6 |
| 55° | 417.1 | 407.1 | 380.1 | 348.2 | 324.6 | 307.8 | 296.1 | 287.6 | 284.3 |
| 57.5° | 370.1 | 359.9 | 336.4 | 306.1 | 284.3 | 269.1 | 259.0 | 250.6 | 247.3 |
| 60° | 324.6 | 316.2 | 294.4 | 265.8 | 247.3 | 233.8 | 223.7 | 217.0 | 213.6 |
| 62.5° | 282.6 | 275.9 | 254.0 | 228.8 | 213.6 | 201.8 | 193.5 | 186.7 | 190.1 |
| 65° | 243.9 | 237.2 | 217.0 | 195.1 | 183.3 | 171.6 | 164.8 | 164.8 | 171.6 |
| 67.5° | 206.9 | 200.2 | 183.3 | 164.8 | 154.8 | 146.3 | 141.3 | 146.3 | 151.4 |
| 70° | 173.3 | 166.5 | 151.4 | 136.3 | 127.8 | 121.1 | 121.1 | 126.1 | 129.5 |
| 72.5° | 141.3 | 134.6 | 122.8 | 111.0 | 104.3 | 99.3 | 104.3 | 107.6 | 111.0 |
| 75° | 111.0 | 105.9 | 95.9 | 87.4 | 82.5 | 80.8 | 85.8 | 89.1 | 90.8 |
| 77.5° | 82.5 | 79.1 | 72.3 | 65.6 | 62.3 | 64.0 | 68.9 | 70.6 | 72.3 |
| 80° | 57.2 | 55.5 | 50.4 | 47.2 | 47.2 | 48.7 | 52.1 | 53.8 | 55.5 |
| 82.5° | 35.3 | 35.3 | 31.9 | 30.2 | 31.9 | 35.3 | 37.0 | 38.7 | 38.7 |
| 85° | 16.8 | 18.5 | 16.8 | 16.8 | 18.5 | 21.9 | 21.9 | 23.6 | 23.6 |
| 87.5° | 5.1 | 5.1 | 6.8 | 6.8 | 8.5 | 8.5 | 8.5 | 8.5 | 10.0 |
| 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)