

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: P581460

Luminaire Tested: **HC407D010-HM40525835-41WWWB**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P581460
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-18)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC407D010-HM40525835-41WWWB
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 895.6 lumens
Efficiency: N/A
Efficacy: 111.9 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.15
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

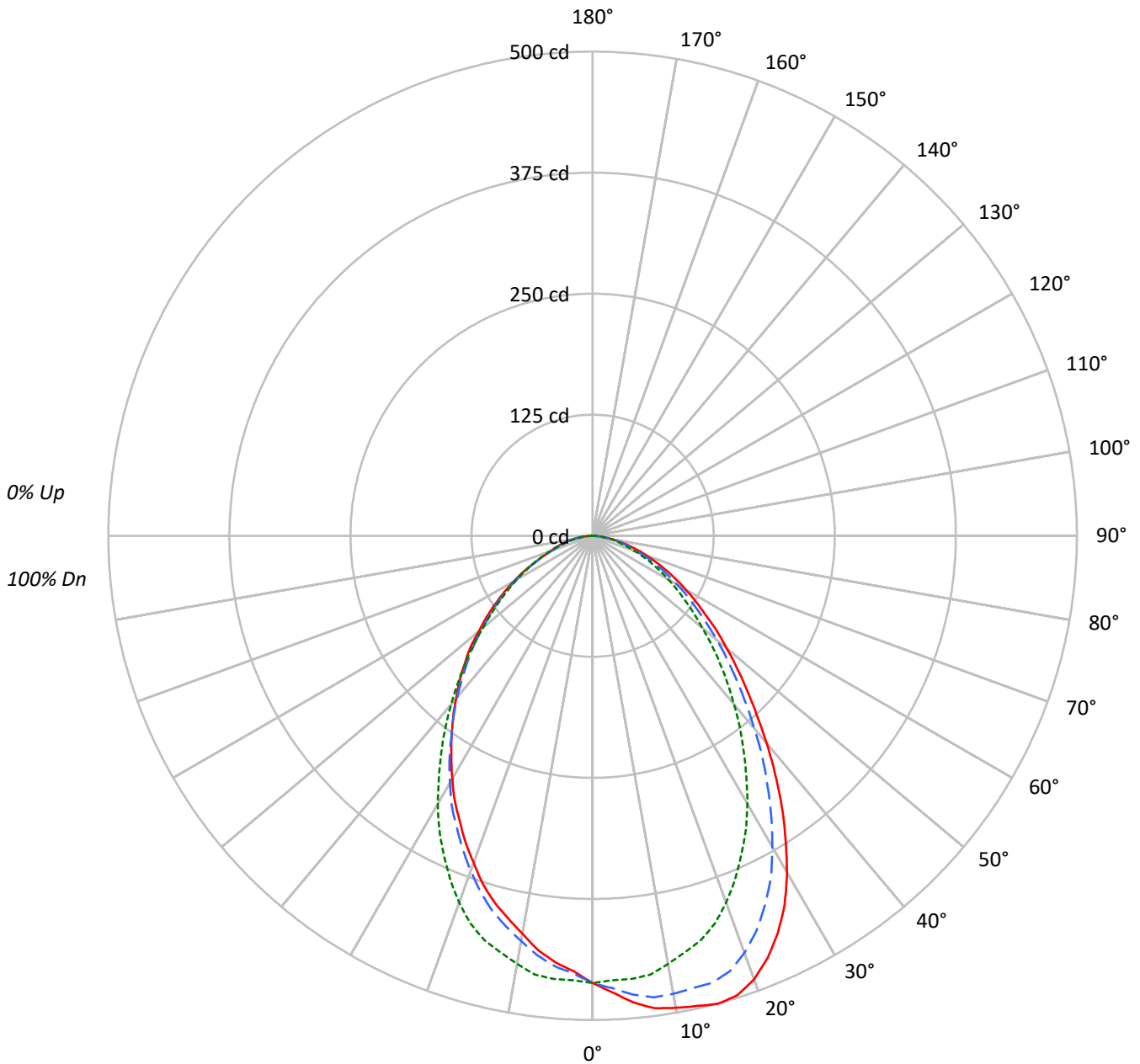
Input Watts (W): 8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 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 | | | | | | | | | | | | | | | | | | | |
| 1 | 110 | 106 | 103 | 99 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 92 | 91 | 89 | 87 | | | | | | | | | | | | | | | | | | | |
| 2 | 102 | 95 | 89 | 84 | 99 | 93 | 87 | 83 | 89 | 85 | 81 | 86 | 82 | 79 | 83 | 80 | 77 | 75 | | | | | | | | | | | | | | | | | | | |
| 3 | 94 | 85 | 77 | 72 | 92 | 83 | 76 | 71 | 80 | 75 | 70 | 78 | 73 | 69 | 75 | 71 | 68 | 66 | | | | | | | | | | | | | | | | | | | |
| 4 | 87 | 76 | 68 | 62 | 85 | 75 | 68 | 62 | 72 | 66 | 61 | 70 | 65 | 60 | 68 | 63 | 60 | 58 | | | | | | | | | | | | | | | | | | | |
| 5 | 81 | 69 | 61 | 55 | 79 | 68 | 60 | 55 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 51 | | | | | | | | | | | | | | | | | | | |
| 6 | 75 | 63 | 55 | 49 | 73 | 62 | 54 | 49 | 60 | 53 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 46 | | | | | | | | | | | | | | | | | | | |
| 7 | 70 | 58 | 50 | 44 | 68 | 57 | 49 | 44 | 55 | 48 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 | | | | | | | | | | | | | | | | | | | |
| 8 | 65 | 53 | 45 | 40 | 64 | 52 | 45 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 49 | 43 | 39 | 37 | | | | | | | | | | | | | | | | | | | |
| 9 | 61 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 36 | 45 | 40 | 36 | 34 | | | | | | | | | | | | | | | | | | | |
| 10 | 58 | 46 | 38 | 33 | 57 | 45 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 42 | 37 | 33 | 31 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|-------|-------|-------|
| 0° | 56961 | 56961 | 56961 |
| 5° | 59903 | 56881 | 54752 |
| 10° | 61998 | 56211 | 52266 |
| 15° | 63899 | 55191 | 50032 |
| 20° | 63964 | 52912 | 47162 |
| 25° | 61570 | 49458 | 44218 |
| 30° | 57170 | 45520 | 41275 |
| 35° | 51241 | 40972 | 38216 |
| 40° | 44972 | 36551 | 35311 |
| 45° | 39301 | 32376 | 32567 |
| 50° | 34694 | 28323 | 29340 |
| 55° | 30580 | 25117 | 26386 |
| 60° | 27333 | 22227 | 23115 |
| 65° | 24224 | 19555 | 19555 |
| 70° | 21169 | 16661 | 16661 |
| 75° | 18062 | 14106 | 15822 |
| 80° | 14277 | 12644 | 14277 |
| 85° | 9199 | 10897 | 13303 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 43.8 | 4.9 |
| 10°-20° | 123.2 | 13.8 |
| 20°-30° | 172.6 | 19.3 |
| 30°-40° | 177.8 | 19.9 |
| 40°-50° | 151.4 | 16.9 |
| 50°-60° | 112.2 | 12.5 |
| 60°-70° | 70.4 | 7.9 |
| 70°-80° | 35.0 | 3.9 |
| 80°-90° | 9.2 | 1.0 |
| 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° | 339.6 | 37.9 |
| 0°-40° | 517.4 | 57.8 |
| 0°-60° | 781.0 | 87.2 |
| 0°-90° | 895.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 895.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0° | 462 | 462 | 462 | 462 | 462 | |
| 5° | 484 | 476 | 459 | 446 | 442 | 47 |
| 15° | 500 | 478 | 432 | 401 | 392 | 141 |
| 25° | 452 | 421 | 363 | 332 | 325 | 207 |
| 35° | 340 | 315 | 272 | 254 | 254 | 212 |
| 45° | 225 | 210 | 186 | 182 | 187 | 175 |
| 55° | 142 | 131 | 117 | 119 | 123 | 129 |
| 65° | 83 | 75 | 67 | 66 | 67 | 83 |
| 75° | 38 | 34 | 30 | 32 | 33 | 40 |
| 85° | 6 | 6 | 8 | 9 | 9 | 8 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P581460

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0° | 461.8 | 461.8 | 461.8 | 461.8 | 461.8 | 461.8 | 461.8 | 461.8 | 461.8 |
| 2.5° | 471.9 | 470.1 | 467.7 | 463.6 | 459.4 | 455.9 | 452.4 | 450.5 | 450.0 |
| 5° | 483.8 | 480.2 | 475.5 | 467.7 | 459.4 | 452.4 | 446.4 | 443.5 | 442.2 |
| 7.5° | 492.1 | 488.5 | 480.8 | 469.0 | 457.0 | 446.4 | 436.9 | 432.8 | 431.5 |
| 10° | 495.0 | 490.8 | 480.2 | 464.2 | 448.8 | 435.7 | 425.0 | 419.7 | 417.3 |
| 12.5° | 497.4 | 492.1 | 478.4 | 459.4 | 440.5 | 424.5 | 413.2 | 406.0 | 404.3 |
| 15° | 500.4 | 494.5 | 477.8 | 454.7 | 432.2 | 413.2 | 400.8 | 394.2 | 391.8 |
| 17.5° | 497.4 | 490.8 | 471.4 | 445.2 | 419.7 | 399.0 | 385.3 | 379.4 | 377.0 |
| 20° | 487.3 | 480.2 | 458.3 | 430.4 | 403.1 | 381.8 | 368.1 | 362.2 | 359.3 |
| 22.5° | 471.9 | 464.2 | 441.7 | 412.1 | 384.2 | 363.4 | 350.4 | 344.5 | 342.7 |
| 25° | 452.4 | 444.6 | 420.9 | 390.7 | 363.4 | 343.2 | 332.0 | 326.6 | 324.9 |
| 27.5° | 429.3 | 421.5 | 398.4 | 368.7 | 342.7 | 323.6 | 314.8 | 309.4 | 308.3 |
| 30° | 401.4 | 393.6 | 371.1 | 343.8 | 319.6 | 301.8 | 294.6 | 290.5 | 289.8 |
| 32.5° | 370.5 | 364.0 | 343.2 | 318.3 | 295.2 | 280.4 | 275.1 | 272.1 | 271.5 |
| 35° | 340.3 | 333.2 | 314.8 | 292.2 | 272.1 | 259.1 | 254.3 | 253.8 | 253.8 |
| 37.5° | 309.4 | 302.4 | 287.6 | 266.7 | 249.6 | 237.7 | 235.9 | 236.6 | 236.6 |
| 40° | 279.3 | 272.7 | 259.7 | 242.5 | 227.0 | 218.2 | 217.6 | 218.7 | 219.3 |
| 42.5° | 250.8 | 245.5 | 233.6 | 218.7 | 205.8 | 198.6 | 199.1 | 201.5 | 203.4 |
| 45° | 225.3 | 220.5 | 209.8 | 196.9 | 185.6 | 180.3 | 182.0 | 184.9 | 186.7 |
| 47.5° | 202.1 | 198.0 | 187.9 | 176.0 | 166.6 | 163.1 | 165.4 | 169.0 | 171.4 |
| 50° | 180.8 | 177.3 | 167.7 | 155.3 | 147.6 | 145.2 | 148.2 | 151.8 | 152.9 |
| 52.5° | 161.8 | 158.3 | 148.2 | 137.6 | 131.6 | 130.4 | 133.4 | 136.3 | 138.2 |
| 55° | 142.2 | 139.3 | 131.0 | 121.5 | 116.8 | 116.2 | 119.1 | 121.5 | 122.7 |
| 57.5° | 126.3 | 123.4 | 115.6 | 107.3 | 103.1 | 102.5 | 105.5 | 107.3 | 107.9 |
| 60° | 110.8 | 107.9 | 100.8 | 93.1 | 90.1 | 90.1 | 91.8 | 93.1 | 93.7 |
| 62.5° | 96.6 | 93.7 | 87.2 | 80.6 | 78.3 | 78.3 | 78.3 | 78.9 | 80.6 |
| 65° | 83.0 | 80.6 | 74.7 | 68.7 | 67.0 | 65.8 | 65.8 | 65.8 | 67.0 |
| 67.5° | 70.6 | 68.2 | 63.4 | 58.2 | 56.3 | 54.5 | 53.9 | 55.1 | 55.1 |
| 70° | 58.7 | 56.9 | 52.1 | 48.0 | 46.2 | 44.5 | 43.8 | 46.2 | 46.2 |
| 72.5° | 48.0 | 46.2 | 43.2 | 39.1 | 37.3 | 36.8 | 37.9 | 39.1 | 39.7 |
| 75° | 37.9 | 36.2 | 33.8 | 31.4 | 29.6 | 30.3 | 32.0 | 32.7 | 33.2 |
| 77.5° | 28.4 | 27.9 | 25.5 | 23.7 | 23.7 | 24.4 | 25.5 | 26.6 | 27.3 |
| 80° | 20.1 | 19.6 | 18.3 | 17.2 | 17.8 | 19.0 | 19.6 | 20.7 | 20.1 |
| 82.5° | 12.4 | 12.4 | 11.8 | 11.8 | 12.4 | 13.7 | 14.2 | 14.8 | 15.4 |
| 85° | 6.5 | 6.5 | 6.5 | 7.2 | 7.7 | 8.3 | 8.9 | 9.4 | 9.4 |
| 87.5° | 1.8 | 2.4 | 2.4 | 3.0 | 3.5 | 3.5 | 4.1 | 4.1 | 4.1 |
| 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)