

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: P434780

Luminaire Tested: **HCMR2R40940ED010MMS**

Issue Date: 11/24/2020

Test Information

Test Method: LM-41-14
Report Number: P434780
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2008-933-3)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 11/24/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HCMR2R40940ED010MMS
Description: HALO COMMERCIAL 4INCH ADJUSTABLE MULTIPLE, 40 DEG REFLECTOR OPTIC
Light Source: HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2408.0 lumens
Efficiency: N/A
Efficacy: 84.8 lumens/watt
Spacing Criteria (0/90/45): 0.72 / 0.72 / 0.76
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

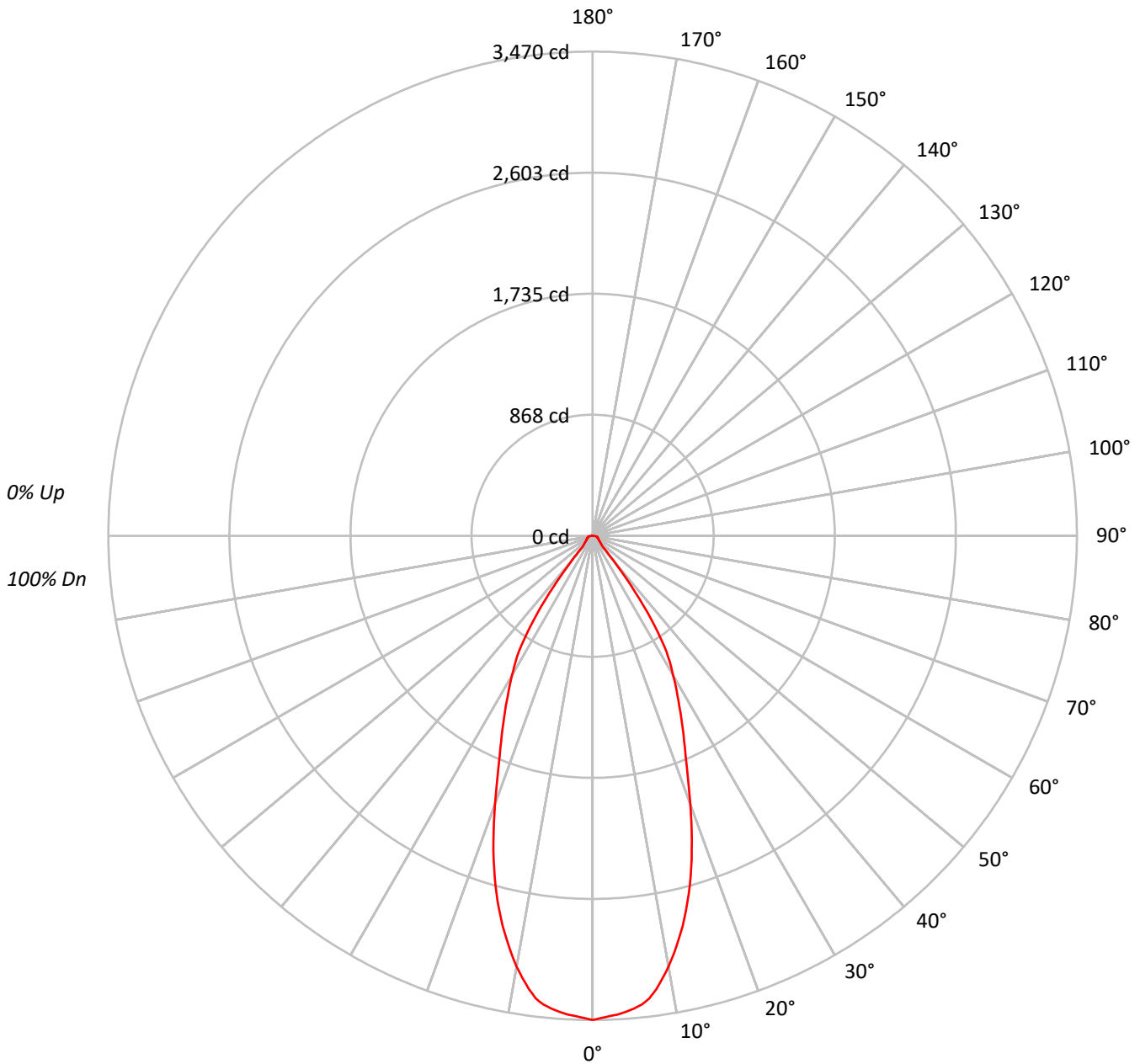
Input Watts (W): 28.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 113 | 110 | 108 | 105 | 111 | 108 | 106 | 104 | 104 | 102 | 100 | 100 | 99 | 97 | 97 | 96 | 95 | 93 |
| 2 | 107 | 102 | 98 | 95 | 105 | 101 | 97 | 94 | 97 | 94 | 92 | 94 | 92 | 90 | 92 | 90 | 88 | 86 |
| 3 | 102 | 95 | 90 | 86 | 100 | 94 | 89 | 86 | 91 | 88 | 84 | 89 | 86 | 83 | 87 | 84 | 82 | 80 |
| 4 | 97 | 89 | 84 | 80 | 95 | 88 | 83 | 79 | 86 | 82 | 78 | 84 | 80 | 77 | 82 | 79 | 76 | 75 |
| 5 | 92 | 84 | 78 | 74 | 91 | 83 | 78 | 73 | 81 | 76 | 73 | 80 | 75 | 72 | 78 | 74 | 72 | 70 |
| 6 | 88 | 79 | 73 | 69 | 86 | 78 | 73 | 69 | 77 | 72 | 68 | 75 | 71 | 68 | 74 | 70 | 67 | 66 |
| 7 | 84 | 75 | 69 | 65 | 82 | 74 | 68 | 64 | 73 | 68 | 64 | 72 | 67 | 64 | 70 | 66 | 63 | 62 |
| 8 | 80 | 71 | 65 | 61 | 79 | 70 | 64 | 61 | 69 | 64 | 60 | 68 | 63 | 60 | 67 | 63 | 60 | 58 |
| 9 | 76 | 67 | 61 | 57 | 75 | 66 | 61 | 57 | 66 | 61 | 57 | 65 | 60 | 57 | 64 | 60 | 57 | 55 |
| 10 | 73 | 64 | 58 | 54 | 72 | 63 | 58 | 54 | 62 | 57 | 54 | 62 | 57 | 54 | 61 | 57 | 54 | 52 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° |
|-----|---------|
| 0° | 1712076 |
| 5° | 1684542 |
| 10° | 1570456 |
| 15° | 1358481 |
| 20° | 1073557 |
| 25° | 831002 |
| 30° | 657782 |
| 35° | 442875 |
| 40° | 145429 |
| 45° | 61541 |
| 50° | 52808 |
| 55° | 48084 |
| 60° | 46674 |
| 65° | 50200 |
| 70° | 52797 |
| 75° | 65576 |
| 80° | 79555 |
| 85° | 12454 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 316.7 | 13.2 |
| 10°-20° | 730.0 | 30.3 |
| 20°-30° | 705.2 | 29.3 |
| 30°-40° | 438.8 | 18.2 |
| 40°-50° | 80.1 | 3.3 |
| 50°-60° | 50.5 | 2.1 |
| 60°-70° | 41.8 | 1.7 |
| 70°-80° | 35.8 | 1.5 |
| 80°-90° | 9.1 | 0.4 |
| 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° | 1751.9 | 72.8 |
| 0°-40° | 2190.7 | 91.0 |
| 0°-60° | 2321.3 | 96.4 |
| 0°-90° | 2408.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2408.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|------|------|
| 0° | 3470 | |
| 5° | 3401 | 317 |
| 15° | 2660 | 730 |
| 25° | 1526 | 705 |
| 35° | 735 | 439 |
| 45° | 88 | 80 |
| 55° | 56 | 50 |
| 65° | 43 | 42 |
| 75° | 34 | 36 |
| 85° | 2 | 9 |
| 90° | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° |
|-------|--------|
| 0° | 3470.1 |
| 1° | 3457.2 |
| 2° | 3444.3 |
| 3° | 3435.7 |
| 4° | 3420.7 |
| 5° | 3401.3 |
| 6° | 3377.7 |
| 7° | 3341.1 |
| 8° | 3280.9 |
| 9° | 3210.0 |
| 10° | 3134.7 |
| 11° | 3050.9 |
| 12° | 2960.6 |
| 13° | 2868.1 |
| 14° | 2767.1 |
| 15° | 2659.6 |
| 16° | 2545.6 |
| 17° | 2425.2 |
| 18° | 2300.5 |
| 19° | 2173.7 |
| 20° | 2044.7 |
| 21° | 1922.1 |
| 22° | 1806.0 |
| 23° | 1702.8 |
| 24° | 1612.5 |
| 25° | 1526.5 |
| 26° | 1447.0 |
| 27° | 1369.6 |
| 28° | 1294.3 |
| 29° | 1223.4 |
| 30° | 1154.6 |
| 32.5° | 986.9 |
| 35° | 735.3 |
| 37.5° | 458.0 |
| 40° | 225.8 |
| 42.5° | 107.5 |
| 45° | 88.2 |
| 47.5° | 77.4 |
| 50° | 68.8 |
| 52.5° | 60.2 |
| 55° | 55.9 |
| 57.5° | 51.6 |
| 60° | 47.3 |



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CANDELA DISTRIBUTION (continued):

| | 0° |
|-------|------|
| 67.5° | 38.7 |
| 70° | 36.6 |
| 72.5° | 36.6 |
| 75° | 34.4 |
| 77.5° | 32.3 |
| 80° | 28.0 |
| 82.5° | 17.2 |
| 85° | 2.2 |
| 87.5° | 0.0 |
| 90° | 0.0 |



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— 0°-180°







| | | |
|-------|--|------|
| 62.5° | | 45.2 |
| 65° | | 43.0 |



(END OF REPORT)