

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

Report Number: P300531

Luminaire Tested: **ML4D09_27D2WE - TIR50WFL55 - TL41RORB - TL42SORB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P300531
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1902-156-45)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML4D09_27D2WE - TIR50WFL55 - TL41RORB - TL42SORB
Description: ML4 2700K, 900LM DIM-TO-WARM, 55 DEG WFL OPTIC, WITH ROUND/SQUARE PINHOLE OIL RUBBED BRONZE FLANGE
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 542.0 lumens
Efficiency: N/A
Efficacy: 48.4 lumens/watt
Spacing Criteria (0/90/45): 0.73 / 0.73 / 0.73
Luminous Opening: Circular (Dia: 0.19' x H: 0')
CIE Type: Direct

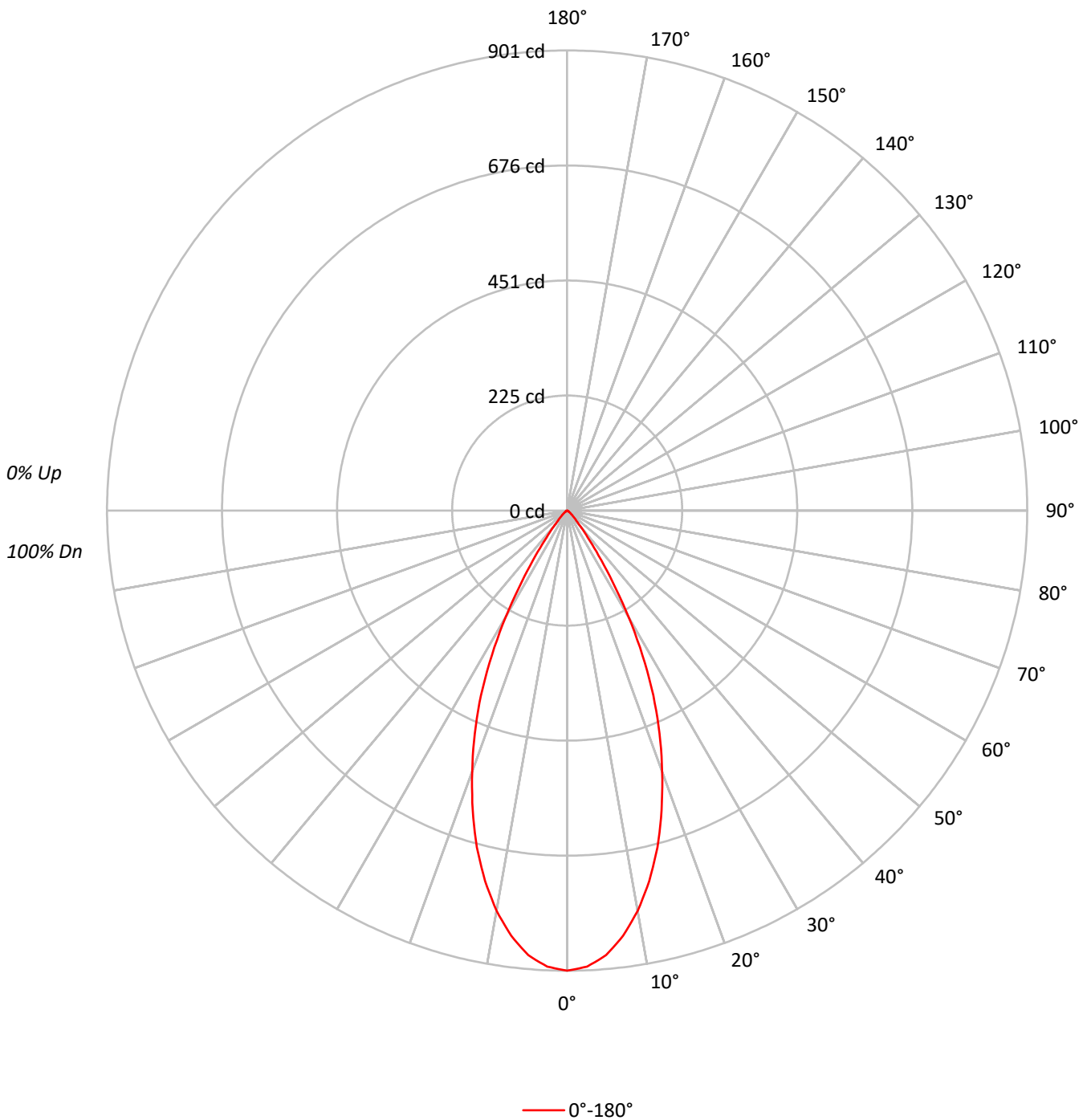
Input Watts (W): 11.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 114 | 111 | 109 | 107 | 112 | 109 | 107 | 105 | 105 | 104 | 102 | 102 | 100 | 99 | 98 | 97 | 96 | 95 |
| 2 | 109 | 105 | 101 | 98 | 107 | 103 | 100 | 97 | 100 | 97 | 95 | 97 | 95 | 93 | 94 | 92 | 91 | 89 |
| 3 | 104 | 98 | 94 | 90 | 102 | 97 | 93 | 90 | 94 | 91 | 88 | 92 | 89 | 87 | 90 | 87 | 85 | 84 |
| 4 | 100 | 93 | 88 | 84 | 98 | 92 | 87 | 83 | 90 | 86 | 82 | 88 | 84 | 81 | 86 | 83 | 81 | 79 |
| 5 | 95 | 88 | 82 | 78 | 94 | 87 | 82 | 78 | 85 | 81 | 77 | 83 | 80 | 77 | 82 | 79 | 76 | 75 |
| 6 | 91 | 83 | 78 | 74 | 90 | 82 | 77 | 73 | 81 | 76 | 73 | 79 | 76 | 72 | 78 | 75 | 72 | 71 |
| 7 | 87 | 79 | 73 | 70 | 86 | 78 | 73 | 69 | 77 | 72 | 69 | 76 | 72 | 69 | 75 | 71 | 68 | 67 |
| 8 | 83 | 75 | 69 | 66 | 82 | 74 | 69 | 66 | 73 | 69 | 65 | 72 | 68 | 65 | 71 | 68 | 65 | 64 |
| 9 | 80 | 71 | 66 | 62 | 79 | 71 | 66 | 62 | 70 | 65 | 62 | 69 | 65 | 62 | 68 | 64 | 62 | 60 |
| 10 | 77 | 68 | 63 | 59 | 76 | 68 | 63 | 59 | 67 | 62 | 59 | 66 | 62 | 59 | 65 | 61 | 59 | 58 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|--------|
| | 0° |
| 0° | 351161 |
| 5° | 341937 |
| 10° | 315014 |
| 15° | 275608 |
| 20° | 225637 |
| 25° | 171580 |
| 30° | 108439 |
| 35° | 50921 |
| 40° | 20356 |
| 45° | 9924 |
| 50° | 6065 |
| 55° | 3398 |
| 60° | 1559 |
| 65° | 922 |
| 70° | 0 |
| 75° | 0 |
| 80° | 0 |
| 85° | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 80.9 | 14.9 |
| 10°-20° | 188.4 | 34.8 |
| 20°-30° | 179.1 | 33.0 |
| 30°-40° | 72.7 | 13.4 |
| 40°-50° | 15.6 | 2.9 |
| 50°-60° | 4.6 | 0.9 |
| 60°-70° | 0.7 | 0.1 |
| 70°-80° | 0.0 | 0.0 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 448.4 | 82.7 |
| 0°-40° | 521.1 | 96.1 |
| 0°-60° | 541.3 | 99.9 |
| 0°-90° | 542.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 542.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|-----|------|
| 0° | 901 | |
| 5° | 874 | 81 |
| 15° | 683 | 188 |
| 25° | 399 | 179 |
| 35° | 107 | 73 |
| 45° | 18 | 16 |
| 55° | 5 | 5 |
| 65° | 1 | 1 |
| 75° | 0 | 0 |
| 85° | 0 | 0 |
| 90° | 0 | |



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CANDELA DISTRIBUTION (FULL):

| 0° | |
|-------|-------|
| 0° | 900.8 |
| 2.5° | 893.8 |
| 5° | 873.8 |
| 7.5° | 839.8 |
| 10° | 795.8 |
| 12.5° | 742.8 |
| 15° | 682.9 |
| 17.5° | 614.9 |
| 20° | 543.9 |
| 22.5° | 472.9 |
| 25° | 398.9 |
| 27.5° | 318.9 |
| 30° | 240.9 |
| 32.5° | 165.0 |
| 35° | 107.0 |
| 37.5° | 66.0 |
| 40° | 40.0 |
| 42.5° | 26.0 |
| 45° | 18.0 |
| 47.5° | 13.0 |
| 50° | 10.0 |
| 52.5° | 7.0 |
| 55° | 5.0 |
| 57.5° | 3.0 |
| 60° | 2.0 |
| 62.5° | 1.0 |
| 65° | 1.0 |
| 67.5° | 0.0 |
| 70° | 0.0 |
| 72.5° | 0.0 |
| 75° | 0.0 |
| 77.5° | 0.0 |
| 80° | 0.0 |
| 82.5° | 0.0 |
| 85° | 0.0 |
| 87.5° | 0.0 |
| 90° | 0.0 |

(END OF REPORT)