

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: NEO-RAY

Report Number: 17901

Luminaire Tested: **MB-SC-3T5**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: 17901
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: MB-SC-3T5
Description: DIRECT/INDIRECT SUSPENDED LUMINAIRE - MINIGATOR WHITE INTERIOR WITH
SPECULAR REFLECTORS AND WHITE LENS OVER CONCAVE PERF PANEL
Light Source: THREE PHILIPS 54 WATT T5 LAMPS

F54T5.841HO. LUMEN RATING = 4500 LMS.

Ballast/Driver: -

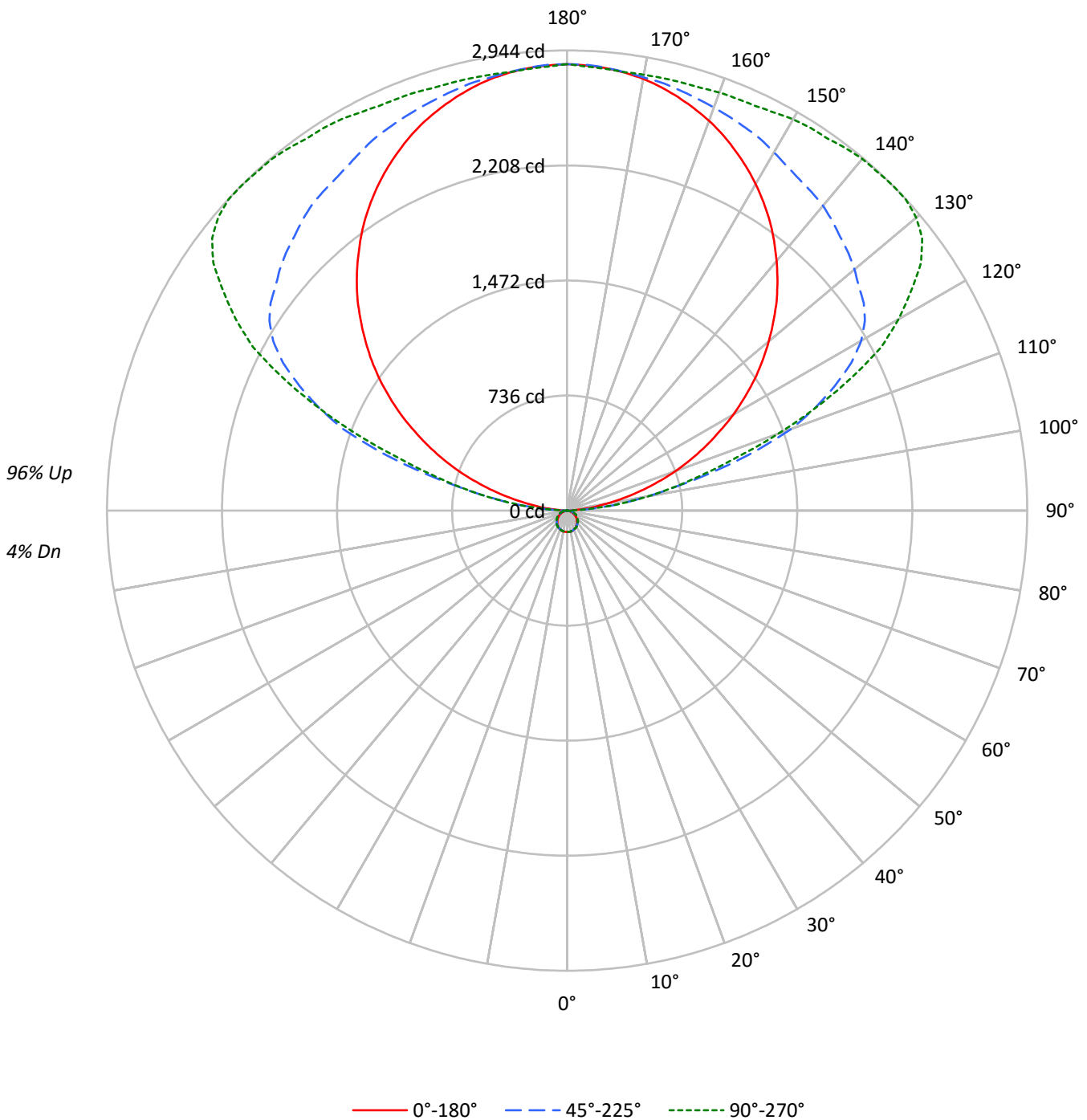
Summary

Lumens per Lamp: 4500 (3 lamps)
Luminaire Lumens: 11041.8 lumens
Efficiency: 81.8%
Efficacy: 61.3 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.4
Luminous Opening: Rectangular (W 0.22' x L: 3.59' x H: 0')
CIE Type: Indirect

Input Watts (W): 180
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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 79 | 79 | 79 | 79 | 68 | 68 | 68 | 68 | 47 | 47 | 47 | 28 | 28 | 28 | 11 | 11 | 11 | 3 |
| 1 | 71 | 68 | 65 | 63 | 61 | 59 | 56 | 54 | 41 | 40 | 38 | 25 | 24 | 23 | 10 | 9 | 9 | 3 |
| 2 | 65 | 59 | 55 | 51 | 56 | 51 | 47 | 44 | 36 | 34 | 32 | 22 | 20 | 19 | 9 | 8 | 8 | 2 |
| 3 | 59 | 52 | 47 | 42 | 51 | 45 | 40 | 37 | 32 | 29 | 26 | 19 | 18 | 16 | 8 | 7 | 7 | 2 |
| 4 | 54 | 46 | 40 | 35 | 46 | 40 | 35 | 31 | 28 | 25 | 22 | 17 | 15 | 14 | 7 | 6 | 6 | 1 |
| 5 | 49 | 41 | 35 | 30 | 42 | 35 | 30 | 26 | 25 | 21 | 19 | 15 | 13 | 12 | 6 | 5 | 5 | 1 |
| 6 | 45 | 36 | 30 | 26 | 39 | 31 | 26 | 23 | 22 | 19 | 16 | 13 | 12 | 10 | 5 | 5 | 4 | 1 |
| 7 | 42 | 32 | 26 | 22 | 36 | 28 | 23 | 19 | 20 | 17 | 14 | 12 | 10 | 9 | 5 | 4 | 4 | 1 |
| 8 | 38 | 29 | 23 | 19 | 33 | 25 | 20 | 17 | 18 | 15 | 12 | 11 | 9 | 8 | 4 | 4 | 3 | 1 |
| 9 | 36 | 26 | 21 | 17 | 31 | 23 | 18 | 15 | 16 | 13 | 11 | 10 | 8 | 7 | 4 | 3 | 3 | 1 |
| 10 | 33 | 24 | 19 | 15 | 28 | 21 | 16 | 13 | 15 | 12 | 10 | 9 | 7 | 6 | 4 | 3 | 2 | 1 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1853 | 1853 | 1853 |
| 5° | 1865 | 1878 | 1878 |
| 10° | 1900 | 1871 | 1871 |
| 15° | 1888 | 1869 | 1869 |
| 20° | 1851 | 1851 | 1846 |
| 25° | 1878 | 1857 | 1857 |
| 30° | 1802 | 1866 | 1906 |
| 35° | 1825 | 1842 | 1888 |
| 40° | 1749 | 1864 | 1834 |
| 45° | 1700 | 1821 | 1920 |
| 50° | 1681 | 1813 | 1870 |
| 55° | 1613 | 1825 | 1851 |
| 60° | 1540 | 1774 | 1954 |
| 65° | 1419 | 1899 | 1986 |
| 70° | 1231 | 1741 | 2000 |
| 75° | 1101 | 1843 | 1901 |
| 80° | 659 | 1664 | 1852 |
| 85° | 516 | 938 | 1532 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|---------|-----------|--------|
| 0°-10° | 13.0 | 0.1 | 0.1 |
| 10°-20° | 37.3 | 0.3 | 0.3 |
| 20°-30° | 56.7 | 0.5 | 0.4 |
| 30°-40° | 68.6 | 0.6 | 0.5 |
| 40°-50° | 72.3 | 0.7 | 0.5 |
| 50°-60° | 66.8 | 0.6 | 0.5 |
| 60°-70° | 53.7 | 0.5 | 0.4 |
| 70°-80° | 32.9 | 0.3 | 0.2 |
| 80°-90° | 9.4 | 0.1 | 0.1 |
| 90°-100° | 218.3 | 2.0 | 1.6 |
| 100°-110° | 946.5 | 8.6 | 7.0 |
| 110°-120° | 1673.8 | 15.2 | 12.4 |
| 120°-130° | 1968.4 | 17.8 | 14.6 |
| 130°-140° | 1890.4 | 17.1 | 14.0 |
| 140°-150° | 1624.7 | 14.7 | 12.0 |
| 150°-160° | 1249.2 | 11.3 | 9.3 |
| 160°-170° | 789.2 | 7.1 | 5.8 |
| 170°-180° | 270.7 | 2.5 | 2.0 |
| 0°-30° | 106.9 | 1.0 | 0.8 |
| 0°-40° | 175.5 | 1.6 | 1.3 |
| 0°-60° | 314.6 | 2.8 | 2.3 |
| 0°-90° | 410.6 | 3.7 | 3.0 |
| 90°-120° | 2838.6 | 25.7 | 21.0 |
| 90°-150° | 8322.1 | 75.4 | 61.6 |
| 90°-180° | 10631.0 | 96.3 | 78.7 |
| 0°-180° | 11041.8 | 100.0 | 81.8 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 136 | 136 | 136 | 136 | 136 | |
| 5° | 136 | 135 | 137 | 135 | 137 | 13 |
| 15° | 134 | 132 | 132 | 132 | 132 | 38 |
| 25° | 125 | 121 | 124 | 124 | 124 | 57 |
| 35° | 110 | 107 | 111 | 110 | 114 | 67 |
| 45° | 88 | 93 | 94 | 97 | 100 | 68 |
| 55° | 68 | 72 | 77 | 76 | 78 | 61 |
| 65° | 44 | 49 | 59 | 59 | 62 | 44 |
| 75° | 21 | 27 | 35 | 36 | 36 | 20 |
| 85° | 3 | 6 | 6 | 10 | 10 | 3 |
| 90° | 0 | 0 | 0 | 0 | 0 | 4 |
| 95° | 87 | 172 | 187 | 178 | 185 | 109 |
| 105° | 488 | 971 | 983 | 928 | 908 | 518 |
| 115° | 980 | 1433 | 1891 | 2008 | 2005 | 970 |
| 125° | 1464 | 1743 | 2317 | 2624 | 2764 | 1306 |
| 135° | 1895 | 2075 | 2473 | 2815 | 2944 | 1460 |
| 145° | 2261 | 2372 | 2588 | 2833 | 2906 | 1413 |
| 155° | 2543 | 2590 | 2702 | 2820 | 2856 | 1172 |
| 165° | 2739 | 2755 | 2784 | 2826 | 2835 | 773 |
| 175° | 2842 | 2852 | 2844 | 2844 | 2836 | 270 |
| 180° | 2856 | 2856 | 2856 | 2856 | 2856 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|--------|--------|--------|--------|
| 0° | 136.0 | 136.0 | 136.0 | 136.0 | 136.0 |
| 2.5° | 137.3 | 136.3 | 136.3 | 137.3 | 137.3 |
| 5° | 136.3 | 135.2 | 137.3 | 135.2 | 137.3 |
| 7.5° | 136.3 | 136.3 | 137.3 | 133.8 | 136.3 |
| 10° | 137.3 | 135.2 | 135.2 | 133.8 | 135.2 |
| 12.5° | 133.8 | 132.5 | 135.2 | 131.1 | 133.8 |
| 15° | 133.8 | 132.5 | 132.5 | 132.5 | 132.5 |
| 17.5° | 131.1 | 130.0 | 129.7 | 128.7 | 131.1 |
| 20° | 127.6 | 128.7 | 127.6 | 127.3 | 127.3 |
| 22.5° | 126.2 | 124.9 | 126.2 | 125.9 | 126.2 |
| 25° | 124.9 | 121.1 | 123.5 | 123.8 | 123.5 |
| 27.5° | 120.0 | 118.6 | 120.0 | 119.7 | 122.4 |
| 30° | 114.5 | 114.8 | 118.6 | 117.3 | 121.1 |
| 32.5° | 112.4 | 111.0 | 112.1 | 114.8 | 116.2 |
| 35° | 109.7 | 107.2 | 110.7 | 109.7 | 113.5 |
| 37.5° | 102.1 | 103.4 | 106.9 | 105.9 | 108.6 |
| 40° | 98.3 | 98.3 | 104.8 | 104.8 | 103.1 |
| 42.5° | 93.1 | 94.5 | 98.3 | 100.7 | 100.7 |
| 45° | 88.2 | 93.1 | 94.5 | 96.9 | 99.6 |
| 47.5° | 84.1 | 85.5 | 90.7 | 90.7 | 93.1 |
| 50° | 79.3 | 80.6 | 85.5 | 86.9 | 88.2 |
| 52.5° | 75.5 | 75.5 | 81.7 | 84.1 | 81.7 |
| 55° | 67.9 | 71.7 | 76.8 | 76.5 | 77.9 |
| 57.5° | 61.6 | 66.5 | 71.7 | 73.0 | 74.1 |
| 60° | 56.5 | 61.6 | 65.1 | 68.9 | 71.7 |
| 62.5° | 48.9 | 56.5 | 60.3 | 64.1 | 65.4 |
| 65° | 44.0 | 48.9 | 58.9 | 59.2 | 61.6 |
| 67.5° | 39.9 | 45.1 | 49.9 | 52.7 | 55.1 |
| 70° | 30.9 | 36.1 | 43.7 | 48.9 | 50.2 |
| 72.5° | 23.3 | 31.2 | 41.3 | 42.6 | 41.3 |
| 75° | 20.9 | 27.4 | 35.0 | 36.1 | 36.1 |
| 77.5° | 13.3 | 20.9 | 28.5 | 31.2 | 28.5 |
| 80° | 8.4 | 17.1 | 21.2 | 22.3 | 23.6 |
| 82.5° | 4.3 | 12.2 | 15.7 | 16.0 | 16.0 |
| 85° | 3.3 | 6.0 | 6.0 | 9.8 | 9.8 |
| 87.5° | 0.5 | 0.5 | 3.3 | 8.1 | 8.4 |
| 90° | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| 92.5° | 27.4 | 51.3 | 57.5 | 55.1 | 56.5 |
| 95° | 86.9 | 171.8 | 187.0 | 178.1 | 184.6 |
| 97.5° | 169.1 | 341.1 | 344.9 | 339.7 | 347.3 |
| 100° | 263.7 | 611.9 | 519.7 | 570.1 | 523.5 |
| 102.5° | 370.1 | 708.3 | 726.9 | 658.9 | 708.3 |
| 105° | 487.9 | 971.2 | 982.9 | 928.3 | 907.9 |
| 107.5° | 609.5 | 1120.7 | 1259.6 | 1183.9 | 1147.3 |
| 110° | 735.9 | 1248.5 | 1524.2 | 1461.0 | 1439.6 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 112.5° | 858.9 | 1347.0 | 1715.2 | 1756.0 | 1725.2 |
| 115° | 980.1 | 1433.3 | 1891.0 | 2007.8 | 2005.0 |
| 117.5° | 1101.7 | 1514.2 | 2050.6 | 2202.3 | 2264.8 |
| 120° | 1226.8 | 1598.8 | 2172.2 | 2397.1 | 2446.8 |
| 122.5° | 1345.6 | 1706.6 | 2258.2 | 2565.3 | 2607.1 |
| 125° | 1463.7 | 1743.2 | 2316.6 | 2623.7 | 2764.3 |
| 127.5° | 1576.4 | 1831.6 | 2351.8 | 2745.3 | 2863.1 |
| 130° | 1683.4 | 1908.7 | 2399.9 | 2795.7 | 2915.9 |
| 132.5° | 1789.8 | 1993.6 | 2439.2 | 2809.9 | 2941.5 |
| 135° | 1894.8 | 2074.8 | 2473.1 | 2815.1 | 2943.9 |
| 137.5° | 1992.3 | 2150.8 | 2511.1 | 2823.7 | 2937.7 |
| 140° | 2084.5 | 2220.2 | 2546.7 | 2819.9 | 2937.7 |
| 142.5° | 2174.6 | 2287.3 | 2568.1 | 2818.5 | 2923.5 |
| 145° | 2260.7 | 2372.2 | 2588.1 | 2832.7 | 2905.9 |
| 147.5° | 2339.1 | 2402.6 | 2613.7 | 2835.1 | 2901.1 |
| 150° | 2412.3 | 2480.7 | 2646.5 | 2821.3 | 2890.7 |
| 152.5° | 2480.7 | 2537.7 | 2679.7 | 2813.3 | 2870.7 |
| 155° | 2542.9 | 2589.5 | 2702.5 | 2819.9 | 2855.5 |
| 157.5° | 2602.3 | 2637.9 | 2723.9 | 2823.7 | 2850.3 |
| 160° | 2654.1 | 2682.1 | 2744.3 | 2823.7 | 2846.5 |
| 162.5° | 2698.7 | 2721.5 | 2764.3 | 2822.3 | 2836.5 |
| 165° | 2739.1 | 2755.3 | 2784.3 | 2826.1 | 2835.1 |
| 167.5° | 2775.3 | 2793.3 | 2803.7 | 2835.1 | 2833.7 |
| 170° | 2804.7 | 2806.1 | 2814.7 | 2836.1 | 2831.3 |
| 172.5° | 2826.1 | 2835.1 | 2828.9 | 2838.9 | 2828.9 |
| 175° | 2841.7 | 2851.7 | 2844.1 | 2844.1 | 2836.1 |
| 177.5° | 2850.3 | 2862.7 | 2854.1 | 2855.5 | 2843.7 |
| 180° | 2855.8 | 2855.8 | 2855.8 | 2855.8 | 2855.8 |

(END OF REPORT)