

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P392465

Luminaire Tested: **MWL-2-00-23-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392465
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-27)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-2-00-23-UNV-L940-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

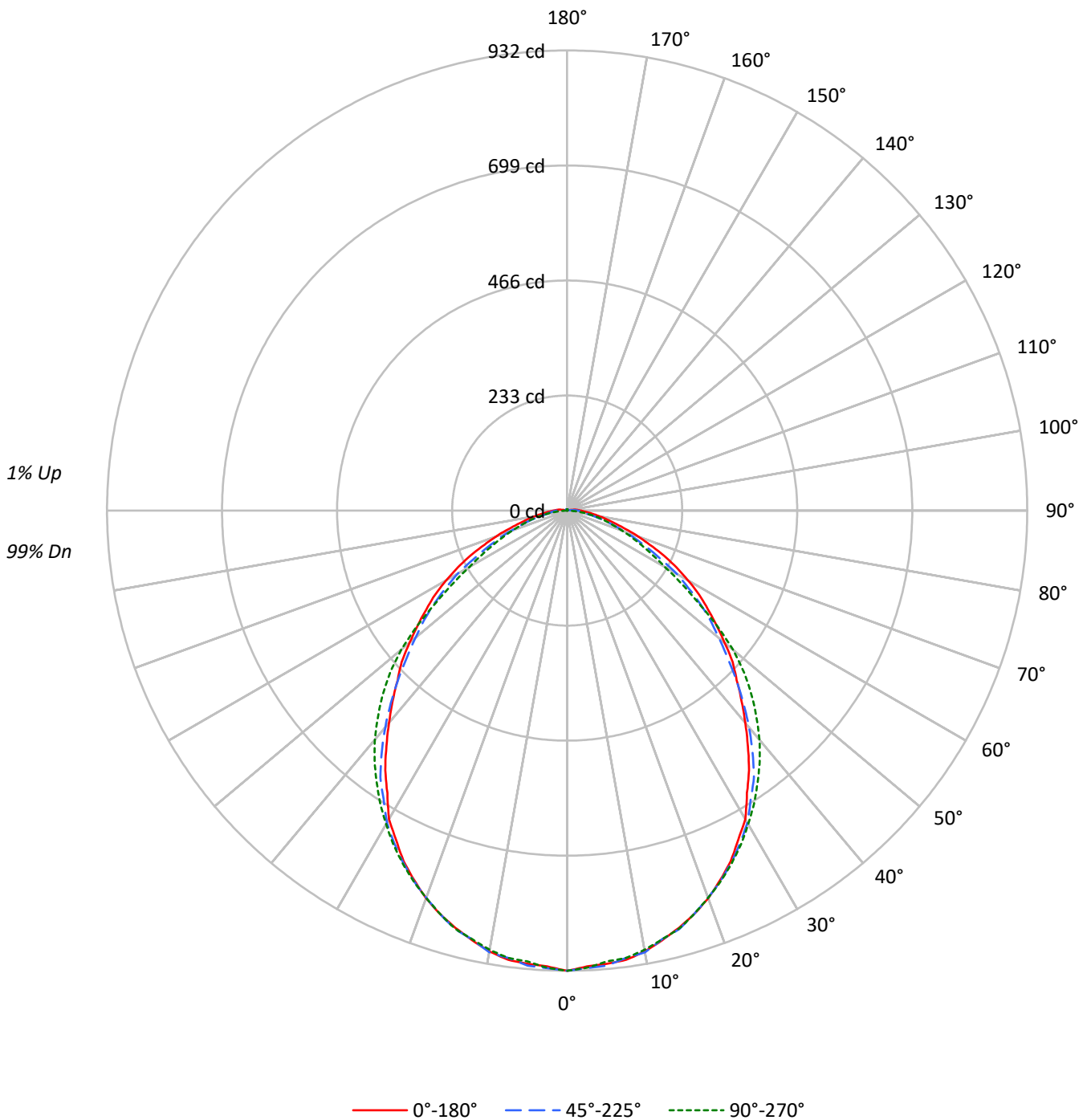
Lumens per Lamp: N/A
Luminaire Lumens: 2117.2 lumens
Efficiency: N/A
Efficacy: 92.3 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: Direct

Input Watts (W): 22.927
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



TEST NUMBER: P392465
CATALOG NUMBER: MWL-2-00-23-UNV-L940-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P392465

CATALOG NUMBER: MWL-2-00-23-UNV-L940-EDD

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 | 101 | 101 | 101 | 99 | | | | |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 98 | 96 | 93 | 94 | 92 | 90 | 91 | 89 | 87 | 85 | | | | |
| 2 | 101 | 93 | 87 | 82 | 98 | 91 | 85 | 80 | 87 | 83 | 78 | 84 | 80 | 77 | 81 | 78 | 75 | 73 | | | | |
| 3 | 92 | 83 | 75 | 69 | 90 | 81 | 74 | 68 | 78 | 72 | 67 | 75 | 70 | 66 | 73 | 68 | 65 | 63 | | | | |
| 4 | 85 | 74 | 66 | 60 | 83 | 73 | 65 | 59 | 70 | 63 | 58 | 68 | 62 | 57 | 65 | 61 | 56 | 54 | | | | |
| 5 | 79 | 67 | 58 | 52 | 77 | 65 | 58 | 52 | 63 | 56 | 51 | 61 | 55 | 50 | 59 | 54 | 50 | 48 | | | | |
| 6 | 73 | 60 | 52 | 46 | 71 | 59 | 51 | 46 | 58 | 50 | 45 | 56 | 49 | 45 | 54 | 49 | 44 | 42 | | | | |
| 7 | 68 | 55 | 47 | 41 | 66 | 54 | 46 | 41 | 53 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | | |
| 8 | 63 | 50 | 42 | 37 | 62 | 50 | 42 | 37 | 48 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 36 | 34 | | | | |
| 9 | 59 | 46 | 39 | 33 | 58 | 46 | 38 | 33 | 45 | 38 | 33 | 44 | 37 | 33 | 42 | 37 | 33 | 31 | | | | |
| 10 | 56 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 39 | 34 | 30 | 28 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 12040 | 12040 | 12040 |
| 5° | 11730 | 11158 | 10930 |
| 10° | 11470 | 10356 | 10068 |
| 15° | 11078 | 9548 | 9245 |
| 20° | 10676 | 8752 | 8412 |
| 25° | 10179 | 8015 | 7661 |
| 30° | 9607 | 7289 | 6935 |
| 35° | 8839 | 6508 | 6236 |
| 40° | 8055 | 5628 | 5555 |
| 45° | 7341 | 4766 | 4826 |
| 50° | 6703 | 3992 | 4018 |
| 55° | 6040 | 3336 | 2983 |
| 60° | 5361 | 2667 | 2163 |
| 65° | 4580 | 1956 | 1620 |
| 70° | 3677 | 1388 | 1193 |
| 75° | 2788 | 922 | 846 |
| 80° | 2237 | 568 | 518 |
| 85° | 1836 | 427 | 217 |



TEST NUMBER: P392465

CATALOG NUMBER: MWL-2-00-23-UNV-L940-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 87.6 | 4.1 |
| 10°-20° | 246.7 | 11.7 |
| 20°-30° | 361.9 | 17.1 |
| 30°-40° | 410.2 | 19.4 |
| 40°-50° | 382.4 | 18.1 |
| 50°-60° | 298.8 | 14.1 |
| 60°-70° | 185.0 | 8.7 |
| 70°-80° | 88.8 | 4.2 |
| 80°-90° | 35.5 | 1.7 |
| 90°-100° | 11.6 | 0.5 |
| 100°-110° | 1.3 | 0.1 |
| 110°-120° | 1.1 | 0.1 |
| 120°-130° | 1.6 | 0.1 |
| 130°-140° | 1.4 | 0.1 |
| 140°-150° | 1.4 | 0.1 |
| 150°-160° | 1.1 | 0.1 |
| 160°-170° | 0.6 | 0.0 |
| 170°-180° | 0.2 | 0.0 |
| 0°-30° | 696.2 | 32.9 |
| 0°-40° | 1106.4 | 52.3 |
| 0°-60° | 1787.6 | 84.4 |
| 0°-90° | 2097.0 | 99.0 |
| 90°-120° | 14.1 | 0.7 |
| 90°-150° | 18.5 | 0.9 |
| 90°-180° | 20.0 | 0.9 |
| 0°-180° | 2117.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0° | 932 | 932 | 932 | 932 | 932 | |
| 5° | 921 | 928 | 925 | 924 | 917 | 88 |
| 15° | 875 | 880 | 878 | 875 | 877 | 247 |
| 25° | 784 | 786 | 786 | 791 | 788 | 360 |
| 35° | 642 | 646 | 660 | 672 | 672 | 401 |
| 45° | 486 | 481 | 484 | 511 | 528 | 376 |
| 55° | 348 | 344 | 329 | 327 | 322 | 312 |
| 65° | 217 | 203 | 181 | 163 | 167 | 214 |
| 75° | 99 | 88 | 77 | 71 | 80 | 109 |
| 85° | 42 | 42 | 31 | 22 | 18 | 39 |
| 90° | 27 | 31 | 22 | 11 | 0 | 15 |
| 95° | 19 | 19 | 11 | 1 | 0 | 13 |
| 105° | 1 | 1 | 1 | 1 | 1 | 2 |
| 115° | 2 | 1 | 1 | 1 | 1 | 1 |
| 125° | 2 | 2 | 2 | 2 | 2 | 2 |
| 135° | 2 | 2 | 2 | 2 | 2 | 1 |
| 145° | 3 | 3 | 3 | 2 | 2 | 1 |
| 155° | 3 | 3 | 3 | 2 | 2 | 1 |
| 165° | 3 | 2 | 2 | 2 | 2 | 1 |
| 175° | 1 | 2 | 2 | 3 | 3 | 0 |
| 180° | 2 | 2 | 2 | 2 | 2 | |



TEST NUMBER: P392465

CATALOG NUMBER: MWL-2-00-23-UNV-L940-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 0° | 932.1 | 932.1 | 932.1 | 932.1 | 932.1 |
| 2.5° | 923.9 | 933.1 | 927.6 | 926.7 | 926.7 |
| 5° | 921.2 | 927.6 | 924.9 | 923.9 | 916.7 |
| 7.5° | 917.6 | 920.3 | 913.9 | 915.7 | 913.9 |
| 10° | 906.6 | 907.5 | 908.5 | 903.9 | 903.0 |
| 12.5° | 891.1 | 893.0 | 889.3 | 892.1 | 889.3 |
| 15° | 874.7 | 880.2 | 877.5 | 874.7 | 876.6 |
| 17.5° | 856.5 | 859.3 | 856.5 | 856.5 | 856.5 |
| 20° | 835.6 | 836.5 | 834.7 | 833.7 | 834.7 |
| 22.5° | 810.1 | 814.6 | 811.9 | 814.6 | 812.8 |
| 25° | 783.6 | 786.4 | 786.4 | 790.9 | 788.2 |
| 27.5° | 750.7 | 754.4 | 758.9 | 762.6 | 762.6 |
| 30° | 721.6 | 719.8 | 729.8 | 732.5 | 733.4 |
| 32.5° | 677.9 | 683.3 | 692.4 | 703.4 | 704.3 |
| 35° | 642.3 | 646.0 | 659.6 | 671.5 | 672.4 |
| 37.5° | 601.3 | 602.2 | 616.8 | 636.9 | 640.5 |
| 40° | 561.2 | 560.3 | 573.1 | 596.8 | 605.9 |
| 42.5° | 523.0 | 519.3 | 528.4 | 558.5 | 567.6 |
| 45° | 485.6 | 481.1 | 483.8 | 511.1 | 528.4 |
| 47.5° | 454.6 | 442.8 | 440.1 | 463.7 | 486.5 |
| 50° | 416.4 | 410.0 | 400.9 | 418.2 | 438.2 |
| 52.5° | 380.8 | 378.1 | 365.4 | 372.6 | 381.8 |
| 55° | 348.0 | 343.5 | 328.9 | 327.1 | 321.6 |
| 57.5° | 317.1 | 310.7 | 290.6 | 283.4 | 273.3 |
| 60° | 282.4 | 277.0 | 256.0 | 236.9 | 228.7 |
| 62.5° | 249.6 | 240.5 | 215.0 | 196.8 | 195.0 |
| 65° | 216.8 | 203.2 | 181.3 | 163.1 | 166.7 |
| 67.5° | 181.3 | 169.5 | 150.3 | 133.9 | 141.2 |
| 70° | 153.1 | 138.5 | 123.0 | 110.2 | 118.4 |
| 72.5° | 123.9 | 111.2 | 98.4 | 90.2 | 96.6 |
| 75° | 99.3 | 87.5 | 77.4 | 71.1 | 80.2 |
| 77.5° | 82.0 | 70.2 | 58.3 | 56.5 | 63.8 |
| 80° | 65.6 | 58.3 | 44.6 | 41.9 | 46.5 |
| 82.5° | 52.8 | 49.2 | 37.4 | 30.1 | 32.8 |
| 85° | 41.9 | 41.9 | 31.0 | 21.9 | 18.2 |
| 87.5° | 33.7 | 36.4 | 26.4 | 16.4 | 4.6 |
| 90° | 27.3 | 31.0 | 21.9 | 10.9 | 0.0 |
| 92.5° | 22.8 | 25.5 | 17.3 | 4.6 | 0.0 |
| 95° | 19.1 | 19.1 | 10.9 | 0.9 | 0.0 |
| 97.5° | 14.6 | 12.8 | 4.6 | 0.9 | 0.9 |
| 100° | 8.2 | 5.5 | 0.9 | 0.9 | 0.9 |
| 102.5° | 2.7 | 1.8 | 0.9 | 0.9 | 0.9 |
| 105° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 107.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 110° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |



TEST NUMBER: P392465

CATALOG NUMBER: MWL-2-00-23-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 115° | 1.8 | 0.9 | 0.9 | 0.9 | 0.9 |
| 117.5° | 1.8 | 1.8 | 0.9 | 0.9 | 0.9 |
| 120° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 122.5° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 125° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 127.5° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 130° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 132.5° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 135° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 137.5° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 140° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 142.5° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 145° | 2.7 | 2.7 | 2.7 | 1.8 | 1.8 |
| 147.5° | 2.7 | 2.7 | 2.7 | 2.7 | 1.8 |
| 150° | 2.7 | 2.7 | 2.7 | 1.8 | 1.8 |
| 152.5° | 2.7 | 2.7 | 2.7 | 1.8 | 1.8 |
| 155° | 2.7 | 2.7 | 2.7 | 1.8 | 1.8 |
| 157.5° | 2.7 | 2.7 | 1.8 | 1.8 | 1.8 |
| 160° | 2.7 | 2.7 | 1.8 | 1.8 | 1.8 |
| 162.5° | 2.7 | 2.7 | 1.8 | 1.8 | 1.8 |
| 165° | 2.7 | 1.8 | 1.8 | 1.8 | 1.8 |
| 167.5° | 2.7 | 1.8 | 1.8 | 1.8 | 1.8 |
| 170° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 172.5° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| 175° | 0.9 | 1.8 | 1.8 | 2.7 | 2.7 |
| 177.5° | 0.9 | 1.8 | 1.8 | 2.7 | 2.7 |
| 180° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |

(END OF REPORT)