

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: io LED

Report Number: P182498

Luminaire Tested: **LDSQA4A13927D010TE LAR35FL 4LSQA1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182498
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26795)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A13927D010TE LAR35FL 4LSQA1H
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 35° FLOOD
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1458.4 lumens
Efficiency: N/A
Efficacy: 65.5 lumens/watt
Spacing Criteria (0/90/45): 0.62 / 0.63 / 0.57
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

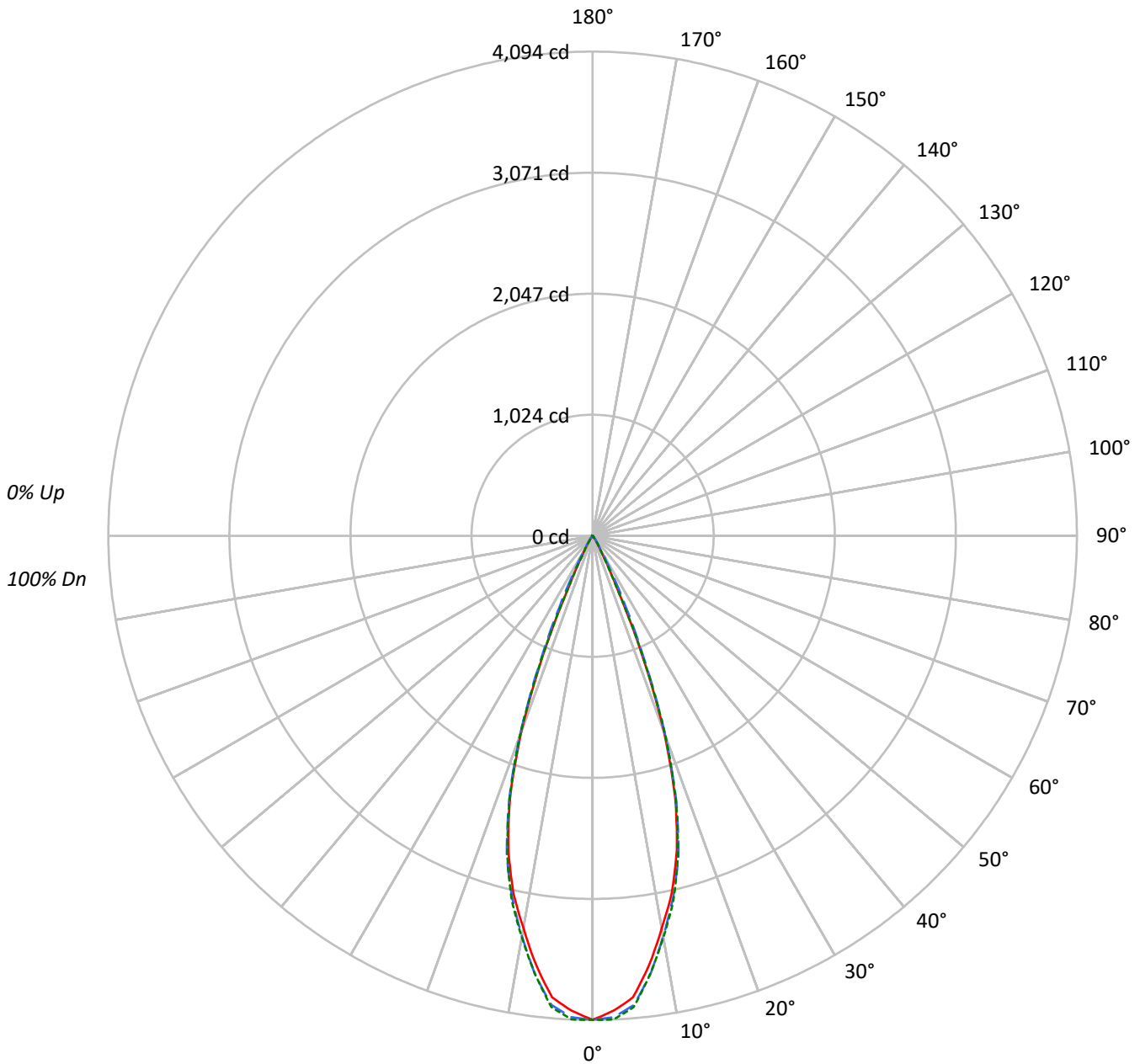
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| 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 | 115 | 113 | 111 | 109 | 112 | 110 | 109 | 107 | 107 | 105 | 104 | 103 | 102 | 101 | 99 | 99 | 98 | 96 | | | | | | | | | | | | | | | | | | | |
| 2 | 111 | 107 | 104 | 101 | 109 | 105 | 103 | 100 | 102 | 100 | 98 | 99 | 98 | 96 | 97 | 95 | 94 | 93 | | | | | | | | | | | | | | | | | | | |
| 3 | 107 | 102 | 98 | 95 | 105 | 101 | 97 | 95 | 98 | 96 | 93 | 96 | 94 | 92 | 94 | 92 | 90 | 89 | | | | | | | | | | | | | | | | | | | |
| 4 | 103 | 98 | 94 | 91 | 102 | 97 | 93 | 90 | 95 | 92 | 89 | 93 | 90 | 88 | 91 | 89 | 87 | 86 | | | | | | | | | | | | | | | | | | | |
| 5 | 100 | 94 | 90 | 86 | 99 | 93 | 89 | 86 | 91 | 88 | 85 | 90 | 87 | 85 | 88 | 86 | 84 | 83 | | | | | | | | | | | | | | | | | | | |
| 6 | 97 | 90 | 86 | 83 | 96 | 90 | 85 | 82 | 88 | 85 | 82 | 87 | 84 | 81 | 86 | 83 | 81 | 80 | | | | | | | | | | | | | | | | | | | |
| 7 | 94 | 87 | 83 | 79 | 93 | 86 | 82 | 79 | 85 | 82 | 79 | 84 | 81 | 79 | 83 | 80 | 78 | 77 | | | | | | | | | | | | | | | | | | | |
| 8 | 91 | 84 | 80 | 77 | 90 | 83 | 79 | 76 | 82 | 79 | 76 | 82 | 78 | 76 | 81 | 78 | 76 | 74 | | | | | | | | | | | | | | | | | | | |
| 9 | 88 | 81 | 77 | 74 | 87 | 81 | 77 | 74 | 80 | 76 | 73 | 79 | 76 | 73 | 78 | 75 | 73 | 72 | | | | | | | | | | | | | | | | | | | |
| 10 | 86 | 78 | 74 | 71 | 85 | 78 | 74 | 71 | 77 | 74 | 71 | 77 | 73 | 71 | 76 | 73 | 71 | 70 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 396501 | 396501 | 396501 |
| 5° | 381008 | 387407 | 388972 |
| 10° | 331320 | 338087 | 339061 |
| 15° | 275976 | 281141 | 279897 |
| 20° | 181350 | 185433 | 185691 |
| 25° | 50303 | 70719 | 49512 |
| 30° | 12070 | 15325 | 12271 |
| 35° | 3229 | 5570 | 3158 |
| 40° | 1176 | 2112 | 1100 |
| 45° | 589 | 767 | 507 |
| 50° | 377 | 377 | 286 |
| 55° | 203 | 203 | 101 |
| 60° | 233 | 116 | 116 |
| 65° | 138 | 138 | 138 |
| 70° | 170 | 170 | 0 |
| 75° | 0 | 0 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 359.7 | 24.7 |
| 10°-20° | 745.8 | 51.1 |
| 20°-30° | 318.5 | 21.8 |
| 30°-40° | 28.1 | 1.9 |
| 40°-50° | 4.2 | 0.3 |
| 50°-60° | 1.2 | 0.1 |
| 60°-70° | 0.6 | 0.0 |
| 70°-80° | 0.3 | 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° | 1424.0 | 97.6 |
| 0°-40° | 1452.1 | 99.6 |
| 0°-60° | 1457.5 | 99.9 |
| 0°-90° | 1458.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1458.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4093 | 4093 | 4093 | 4093 | 4093 | |
| 5° | 3918 | 3950 | 3984 | 3978 | 4000 | 355 |
| 15° | 2752 | 2778 | 2803 | 2783 | 2791 | 738 |
| 25° | 471 | 641 | 662 | 633 | 463 | 289 |
| 35° | 27 | 34 | 47 | 34 | 27 | 23 |
| 45° | 4 | 4 | 6 | 4 | 4 | 4 |
| 55° | 1 | 1 | 1 | 1 | 1 | 1 |
| 65° | 1 | 1 | 1 | 1 | 1 | 1 |
| 75° | 0 | 1 | 0 | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 4092.9 | 4092.9 | 4092.9 | 4092.9 | 4092.9 |
| 2.5° | 4021.0 | 4049.5 | 4074.9 | 4073.1 | 4094.1 |
| 5° | 3918.0 | 3950.3 | 3983.8 | 3977.6 | 3999.9 |
| 7.5° | 3661.3 | 3694.2 | 3737.6 | 3720.9 | 3735.8 |
| 10° | 3368.1 | 3402.8 | 3436.9 | 3426.4 | 3446.8 |
| 12.5° | 3093.4 | 3113.2 | 3138.0 | 3136.2 | 3157.9 |
| 15° | 2751.7 | 2778.4 | 2803.2 | 2782.7 | 2790.8 |
| 17.5° | 2323.9 | 2334.5 | 2353.1 | 2332.6 | 2338.2 |
| 20° | 1759.1 | 1788.2 | 1798.7 | 1775.2 | 1801.2 |
| 22.5° | 1100.6 | 1170.6 | 1176.2 | 1163.8 | 1124.8 |
| 25° | 470.6 | 641.1 | 661.6 | 633.1 | 463.2 |
| 27.5° | 190.4 | 243.1 | 315.0 | 238.1 | 185.4 |
| 30° | 107.9 | 117.2 | 137.0 | 115.3 | 109.7 |
| 32.5° | 51.5 | 65.7 | 78.7 | 63.9 | 52.1 |
| 35° | 27.3 | 34.1 | 47.1 | 33.5 | 26.7 |
| 37.5° | 15.5 | 19.8 | 28.5 | 18.6 | 15.5 |
| 40° | 9.3 | 11.8 | 16.7 | 11.2 | 8.7 |
| 42.5° | 6.2 | 7.4 | 9.3 | 6.8 | 5.6 |
| 45° | 4.3 | 4.3 | 5.6 | 4.3 | 3.7 |
| 47.5° | 3.1 | 3.1 | 3.7 | 2.5 | 2.5 |
| 50° | 2.5 | 2.5 | 2.5 | 1.9 | 1.9 |
| 52.5° | 1.9 | 1.9 | 1.9 | 1.2 | 1.2 |
| 55° | 1.2 | 1.2 | 1.2 | 1.2 | 0.6 |
| 57.5° | 1.2 | 1.2 | 1.2 | 0.6 | 0.6 |
| 60° | 1.2 | 1.2 | 0.6 | 0.6 | 0.6 |
| 62.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 65° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 67.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 70° | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 |
| 72.5° | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 75° | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 |
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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— 0°-180° - - 45°-225° - - - - 90°-270°







(END OF REPORT)