

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: P182489

Luminaire Tested: **LDSQA4A09840D010TE LAR35FL 4LSQA1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182489
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: LDSQA4A09840D010TE LAR35FL 4LSQA1H
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 35° FLOOD
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1336.9 lumens
Efficiency: N/A
Efficacy: 96.6 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

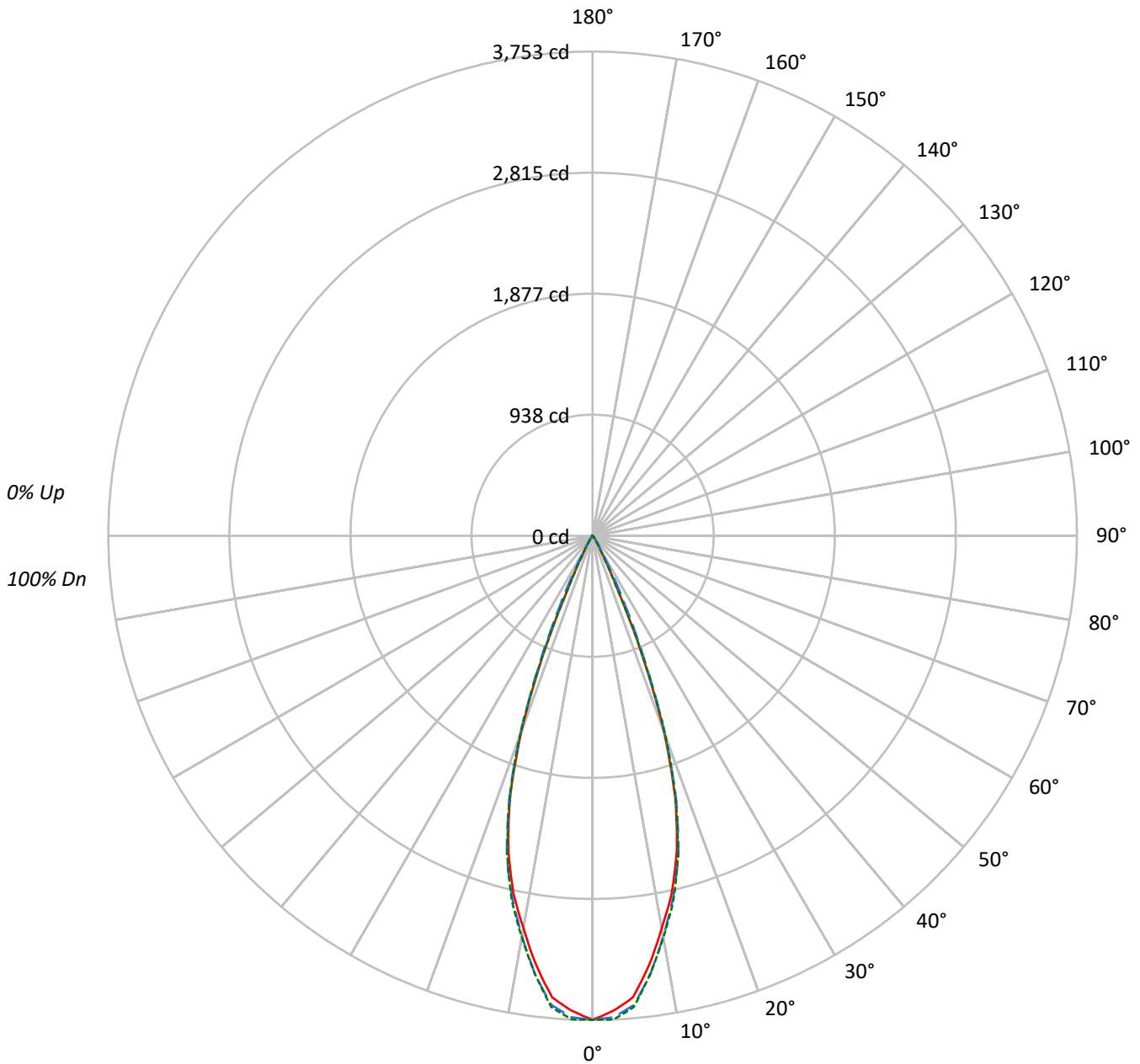
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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° | 363457 | 363457 | 363457 |
| 5° | 349257 | 355121 | 356551 |
| 10° | 303707 | 309914 | 310810 |
| 15° | 252979 | 257712 | 256569 |
| 20° | 166237 | 169979 | 170216 |
| 25° | 46112 | 64818 | 45386 |
| 30° | 11063 | 14050 | 11253 |
| 35° | 2957 | 5109 | 2886 |
| 40° | 1075 | 1935 | 1012 |
| 45° | 548 | 699 | 466 |
| 50° | 347 | 347 | 256 |
| 55° | 186 | 186 | 101 |
| 60° | 213 | 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° | 329.7 | 24.7 |
| 10°-20° | 683.6 | 51.1 |
| 20°-30° | 292.0 | 21.8 |
| 30°-40° | 25.8 | 1.9 |
| 40°-50° | 3.8 | 0.3 |
| 50°-60° | 1.1 | 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° | 1305.3 | 97.6 |
| 0°-40° | 1331.1 | 99.6 |
| 0°-60° | 1336.0 | 99.9 |
| 0°-90° | 1336.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1336.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3752 | 3752 | 3752 | 3752 | 3752 | |
| 5° | 3592 | 3621 | 3652 | 3646 | 3666 | 326 |
| 15° | 2522 | 2547 | 2570 | 2551 | 2558 | 676 |
| 25° | 431 | 588 | 606 | 580 | 425 | 264 |
| 35° | 25 | 31 | 43 | 31 | 24 | 21 |
| 45° | 4 | 4 | 5 | 4 | 3 | 3 |
| 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° | 3751.8 | 3751.8 | 3751.8 | 3751.8 | 3751.8 |
| 2.5° | 3685.9 | 3712.0 | 3735.3 | 3733.6 | 3752.9 |
| 5° | 3591.5 | 3621.1 | 3651.8 | 3646.1 | 3666.5 |
| 7.5° | 3356.2 | 3386.3 | 3426.1 | 3410.8 | 3424.4 |
| 10° | 3087.4 | 3119.2 | 3150.5 | 3140.8 | 3159.6 |
| 12.5° | 2835.6 | 2853.8 | 2876.5 | 2874.8 | 2894.7 |
| 15° | 2522.4 | 2546.9 | 2569.6 | 2550.8 | 2558.2 |
| 17.5° | 2130.2 | 2139.9 | 2157.0 | 2138.2 | 2143.3 |
| 20° | 1612.5 | 1639.2 | 1648.8 | 1627.2 | 1651.1 |
| 22.5° | 1008.9 | 1073.1 | 1078.2 | 1066.8 | 1031.0 |
| 25° | 431.4 | 587.7 | 606.4 | 580.3 | 424.6 |
| 27.5° | 174.5 | 222.8 | 288.7 | 218.3 | 169.9 |
| 30° | 98.9 | 107.4 | 125.6 | 105.7 | 100.6 |
| 32.5° | 47.2 | 60.2 | 72.2 | 58.5 | 47.7 |
| 35° | 25.0 | 31.3 | 43.2 | 30.7 | 24.4 |
| 37.5° | 14.2 | 18.2 | 26.1 | 17.1 | 14.2 |
| 40° | 8.5 | 10.8 | 15.3 | 10.2 | 8.0 |
| 42.5° | 5.7 | 6.8 | 8.5 | 6.3 | 5.1 |
| 45° | 4.0 | 4.0 | 5.1 | 4.0 | 3.4 |
| 47.5° | 2.8 | 2.8 | 3.4 | 2.3 | 2.3 |
| 50° | 2.3 | 2.3 | 2.3 | 1.7 | 1.7 |
| 52.5° | 1.7 | 1.7 | 1.7 | 1.1 | 1.1 |
| 55° | 1.1 | 1.1 | 1.1 | 1.1 | 0.6 |
| 57.5° | 1.1 | 1.1 | 1.1 | 0.6 | 0.6 |
| 60° | 1.1 | 1.1 | 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)