

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: P182445

Luminaire Tested: **LDSQA4A28940D010TE LAR15SP 4LSQA1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182445
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26794)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A28940D010TE LAR15SP 4LSQA1H
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 15° SPOT
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2524.6 lumens
Efficiency: N/A
Efficacy: 56.7 lumens/watt
Spacing Criteria (0/90/45): 0.32 / 0.32 / 0.36
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

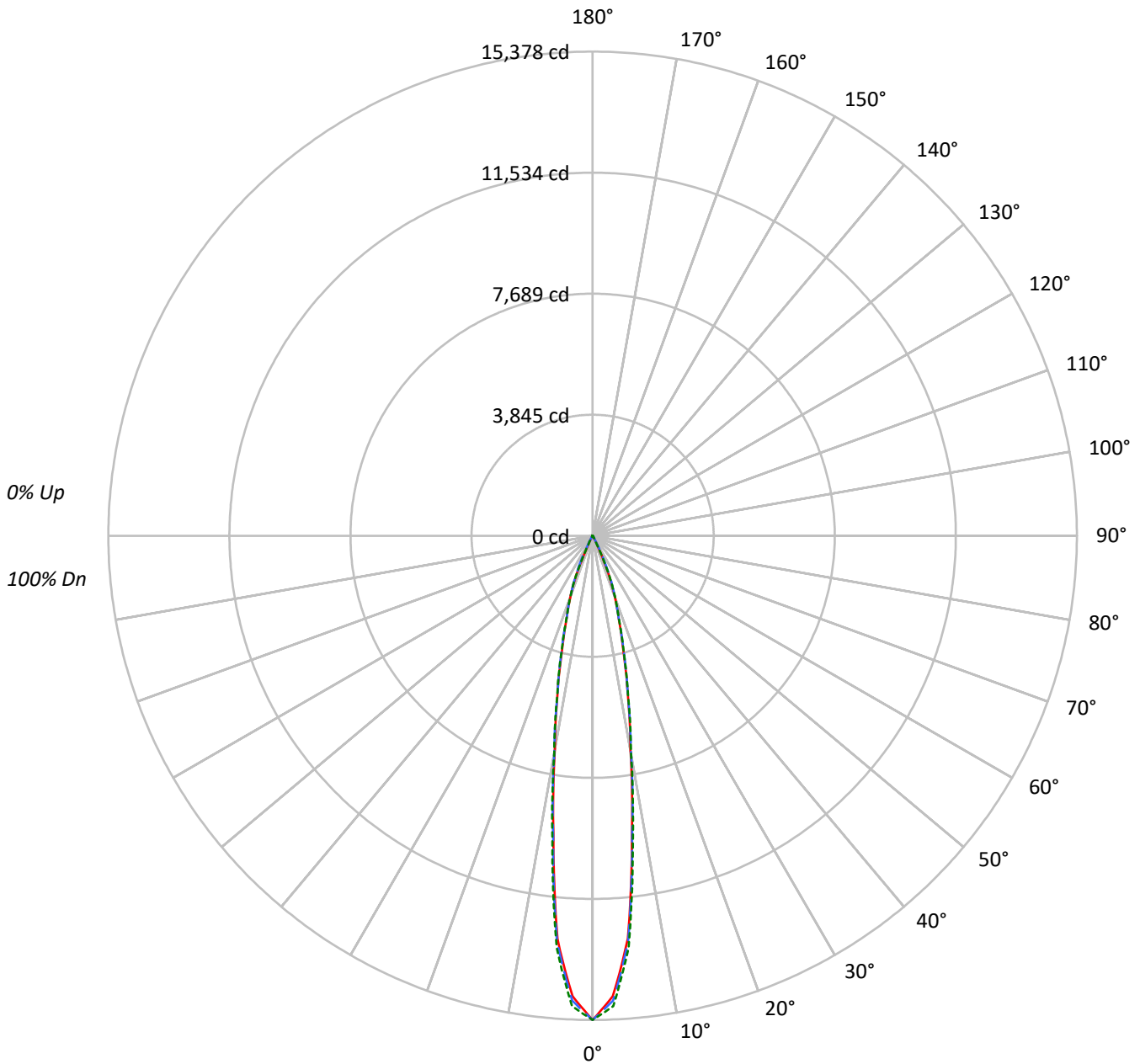
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | | | | 100 | | | | | | | | | | | | | | | |
| 1 | 115 | 113 | 111 | 110 | 113 | 111 | 110 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 100 | 99 | 99 | 97 | | | | 97 | | | | | | | | | | | | | | | |
| 2 | 112 | 108 | 105 | 103 | 110 | 107 | 104 | 102 | 104 | 102 | 100 | 101 | 99 | 98 | 98 | 97 | 96 | 94 | | | | 94 | | | | | | | | | | | | | | | |
| 3 | 108 | 104 | 101 | 98 | 107 | 103 | 100 | 97 | 100 | 98 | 96 | 98 | 96 | 94 | 96 | 94 | 93 | 92 | | | | 92 | | | | | | | | | | | | | | | |
| 4 | 105 | 100 | 97 | 94 | 104 | 99 | 96 | 93 | 97 | 95 | 92 | 96 | 93 | 91 | 94 | 92 | 90 | 89 | | | | 89 | | | | | | | | | | | | | | | |
| 5 | 103 | 97 | 93 | 90 | 101 | 96 | 93 | 90 | 95 | 92 | 89 | 93 | 91 | 89 | 92 | 90 | 88 | 87 | | | | 87 | | | | | | | | | | | | | | | |
| 6 | 100 | 94 | 90 | 87 | 99 | 93 | 90 | 87 | 92 | 89 | 87 | 91 | 88 | 86 | 90 | 87 | 86 | 85 | | | | 85 | | | | | | | | | | | | | | | |
| 7 | 97 | 91 | 88 | 85 | 96 | 91 | 87 | 85 | 90 | 87 | 84 | 89 | 86 | 84 | 88 | 85 | 83 | 82 | | | | 82 | | | | | | | | | | | | | | | |
| 8 | 95 | 89 | 85 | 82 | 94 | 88 | 85 | 82 | 88 | 84 | 82 | 87 | 84 | 82 | 86 | 83 | 81 | 80 | | | | 80 | | | | | | | | | | | | | | | |
| 9 | 93 | 87 | 83 | 80 | 92 | 86 | 83 | 80 | 85 | 82 | 80 | 85 | 82 | 80 | 84 | 81 | 79 | 79 | | | | 79 | | | | | | | | | | | | | | | |
| 10 | 91 | 84 | 81 | 78 | 90 | 84 | 81 | 78 | 83 | 80 | 78 | 83 | 80 | 78 | 82 | 80 | 78 | 77 | | | | 77 | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|---------|---------|---------|
| 0° | 1489702 | 1489702 | 1489702 |
| 5° | 1248622 | 1259183 | 1277485 |
| 10° | 679303 | 689396 | 692003 |
| 15° | 375637 | 381694 | 383139 |
| 20° | 212721 | 213340 | 214587 |
| 25° | 58041 | 90932 | 57005 |
| 30° | 9318 | 14173 | 9038 |
| 35° | 3134 | 5275 | 2992 |
| 40° | 1378 | 2137 | 1378 |
| 45° | 822 | 986 | 658 |
| 50° | 543 | 543 | 362 |
| 55° | 405 | 405 | 203 |
| 60° | 233 | 233 | 233 |
| 65° | 275 | 275 | 275 |
| 70° | 340 | 340 | 340 |
| 75° | 0 | 0 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 1025.0 | 40.6 |
| 10°-20° | 1083.9 | 42.9 |
| 20°-30° | 381.3 | 15.1 |
| 30°-40° | 25.7 | 1.0 |
| 40°-50° | 5.3 | 0.2 |
| 50°-60° | 1.7 | 0.1 |
| 60°-70° | 1.2 | 0.0 |
| 70°-80° | 0.4 | 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° | 2490.2 | 98.6 |
| 0°-40° | 2515.9 | 99.7 |
| 0°-60° | 2523.0 | 99.9 |
| 0°-90° | 2524.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2524.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0° | 15378 | 15378 | 15378 | 15378 | 15378 | |
| 5° | 12840 | 13033 | 12948 | 12973 | 13137 | 1013 |
| 15° | 3745 | 3808 | 3806 | 3797 | 3820 | 1073 |
| 25° | 543 | 824 | 851 | 811 | 533 | 336 |
| 35° | 26 | 33 | 45 | 33 | 25 | 20 |
| 45° | 6 | 6 | 7 | 6 | 5 | 5 |
| 55° | 2 | 2 | 2 | 1 | 1 | 2 |
| 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° | 15377.5 | 15377.5 | 15377.5 | 15377.5 | 15377.5 |
| 2.5° | 14639.0 | 14830.9 | 14782.6 | 14751.2 | 14952.7 |
| 5° | 12839.9 | 13033.0 | 12948.5 | 12972.6 | 13136.7 |
| 7.5° | 9545.8 | 9708.7 | 9621.8 | 9658.0 | 9783.5 |
| 10° | 6905.6 | 7067.3 | 7008.2 | 7027.5 | 7034.7 |
| 12.5° | 5148.7 | 5219.9 | 5172.9 | 5186.2 | 5210.3 |
| 15° | 3745.4 | 3808.2 | 3805.8 | 3797.3 | 3820.2 |
| 17.5° | 2748.7 | 2778.9 | 2748.7 | 2747.5 | 2763.2 |
| 20° | 2063.4 | 2105.6 | 2069.4 | 2074.2 | 2081.5 |
| 22.5° | 1386.4 | 1470.9 | 1456.4 | 1438.3 | 1419.0 |
| 25° | 543.0 | 824.1 | 850.7 | 810.9 | 533.3 |
| 27.5° | 155.7 | 257.0 | 365.6 | 252.2 | 150.8 |
| 30° | 83.3 | 98.9 | 126.7 | 96.5 | 80.8 |
| 32.5° | 44.6 | 56.7 | 72.4 | 55.5 | 43.4 |
| 35° | 26.5 | 32.6 | 44.6 | 32.6 | 25.3 |
| 37.5° | 16.9 | 20.5 | 27.8 | 20.5 | 16.9 |
| 40° | 10.9 | 13.3 | 16.9 | 13.3 | 10.9 |
| 42.5° | 8.4 | 9.7 | 10.9 | 8.4 | 7.2 |
| 45° | 6.0 | 6.0 | 7.2 | 6.0 | 4.8 |
| 47.5° | 4.8 | 4.8 | 4.8 | 3.6 | 3.6 |
| 50° | 3.6 | 3.6 | 3.6 | 2.4 | 2.4 |
| 52.5° | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| 55° | 2.4 | 2.4 | 2.4 | 1.2 | 1.2 |
| 57.5° | 2.4 | 1.2 | 1.2 | 1.2 | 1.2 |
| 60° | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 62.5° | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 65° | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 67.5° | 1.2 | 1.2 | 1.2 | 1.2 | 0.0 |
| 70° | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 72.5° | 1.2 | 1.2 | 1.2 | 0.0 | 0.0 |
| 75° | 0.0 | 1.2 | 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)