

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: P182508

Luminaire Tested: **LDSQA4A28935D010TE LAR35FL 4LSQA1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182508
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: LDSQA4A28935D010TE LAR35FL 4LSQA1H
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 35° FLOOD
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2628.8 lumens
Efficiency: N/A
Efficacy: 59.1 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

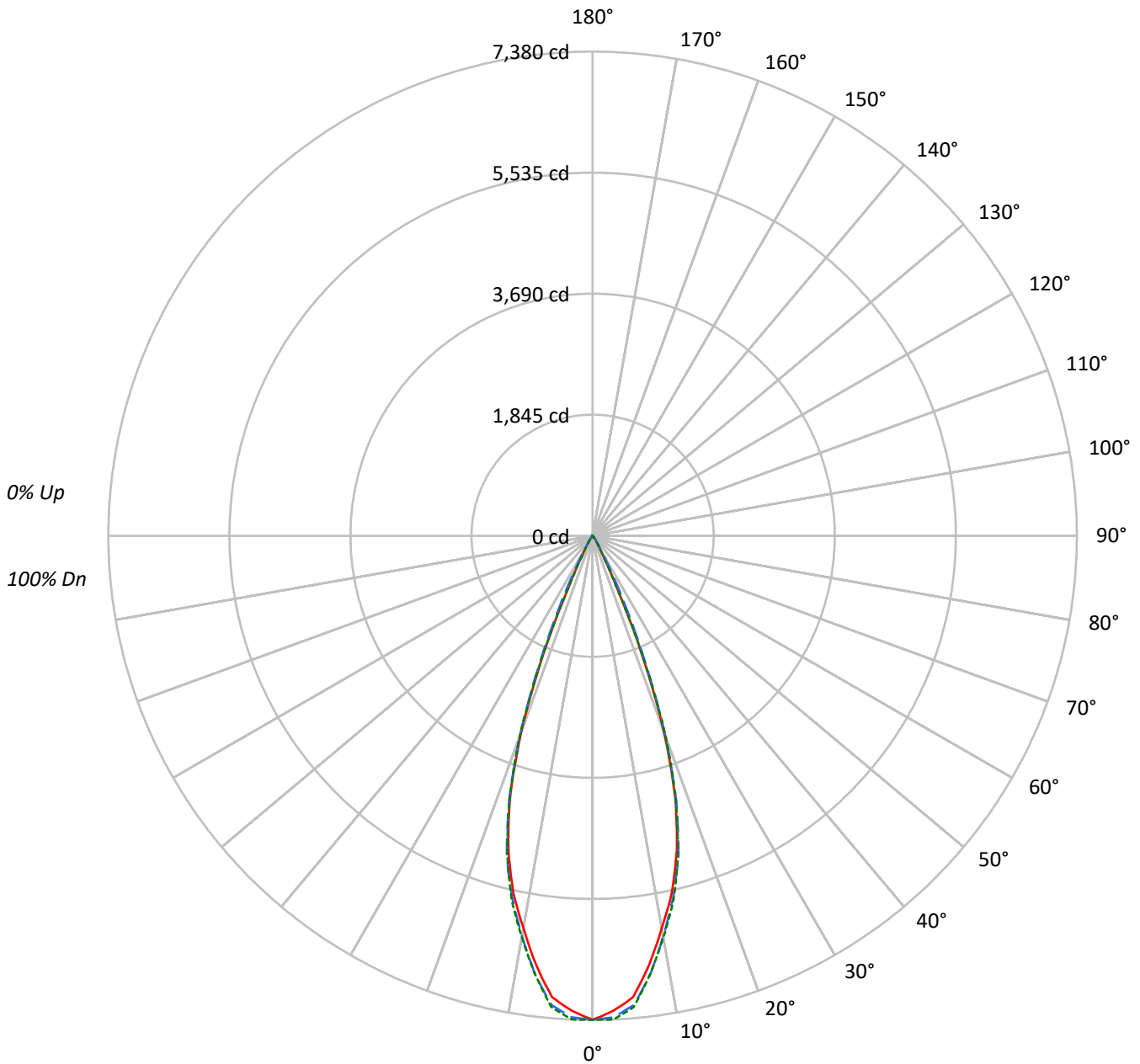
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | | | | | | | | | | | | | | | | | | | |
| 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° | 714698 | 714698 | 714698 |
| 5° | 686777 | 698300 | 701120 |
| 10° | 597204 | 609401 | 611162 |
| 15° | 497452 | 506760 | 504523 |
| 20° | 326876 | 334247 | 334711 |
| 25° | 90675 | 127467 | 89243 |
| 30° | 21757 | 27630 | 22126 |
| 35° | 5819 | 10041 | 5688 |
| 40° | 2125 | 3819 | 1973 |
| 45° | 1069 | 1384 | 918 |
| 50° | 678 | 678 | 512 |
| 55° | 372 | 372 | 186 |
| 60° | 426 | 213 | 213 |
| 65° | 252 | 252 | 252 |
| 70° | 312 | 312 | 0 |
| 75° | 0 | 0 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 648.3 | 24.7 |
| 10°-20° | 1344.3 | 51.1 |
| 20°-30° | 574.1 | 21.8 |
| 30°-40° | 50.7 | 1.9 |
| 40°-50° | 7.6 | 0.3 |
| 50°-60° | 2.1 | 0.1 |
| 60°-70° | 1.1 | 0.0 |
| 70°-80° | 0.5 | 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° | 2566.8 | 97.6 |
| 0°-40° | 2617.5 | 99.6 |
| 0°-60° | 2627.2 | 99.9 |
| 0°-90° | 2628.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2628.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 7378 | 7378 | 7378 | 7378 | 7378 | |
| 5° | 7062 | 7120 | 7181 | 7170 | 7210 | 640 |
| 15° | 4960 | 5008 | 5053 | 5016 | 5030 | 1330 |
| 25° | 848 | 1156 | 1192 | 1141 | 835 | 520 |
| 35° | 49 | 62 | 85 | 60 | 48 | 41 |
| 45° | 8 | 8 | 10 | 8 | 7 | 7 |
| 55° | 2 | 2 | 2 | 2 | 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° | 7377.5 | 7377.5 | 7377.5 | 7377.5 | 7377.5 |
| 2.5° | 7247.8 | 7299.3 | 7345.1 | 7341.7 | 7379.7 |
| 5° | 7062.3 | 7120.4 | 7180.8 | 7169.6 | 7209.8 |
| 7.5° | 6599.6 | 6658.8 | 6737.1 | 6706.9 | 6733.7 |
| 10° | 6071.0 | 6133.6 | 6195.0 | 6176.0 | 6212.9 |
| 12.5° | 5575.9 | 5611.6 | 5656.3 | 5653.0 | 5692.1 |
| 15° | 4960.0 | 5008.1 | 5052.8 | 5015.9 | 5030.5 |
| 17.5° | 4188.9 | 4207.9 | 4241.4 | 4204.5 | 4214.6 |
| 20° | 3170.7 | 3223.2 | 3242.2 | 3199.8 | 3246.7 |
| 22.5° | 1983.8 | 2110.1 | 2120.1 | 2097.8 | 2027.4 |
| 25° | 848.3 | 1155.6 | 1192.5 | 1141.1 | 834.9 |
| 27.5° | 343.1 | 438.1 | 567.8 | 429.2 | 334.2 |
| 30° | 194.5 | 211.2 | 247.0 | 207.9 | 197.8 |
| 32.5° | 92.8 | 118.5 | 141.9 | 115.1 | 93.9 |
| 35° | 49.2 | 61.5 | 84.9 | 60.4 | 48.1 |
| 37.5° | 27.9 | 35.8 | 51.4 | 33.5 | 27.9 |
| 40° | 16.8 | 21.2 | 30.2 | 20.1 | 15.6 |
| 42.5° | 11.2 | 13.4 | 16.8 | 12.3 | 10.1 |
| 45° | 7.8 | 7.8 | 10.1 | 7.8 | 6.7 |
| 47.5° | 5.6 | 5.6 | 6.7 | 4.5 | 4.5 |
| 50° | 4.5 | 4.5 | 4.5 | 3.4 | 3.4 |
| 52.5° | 3.4 | 3.4 | 3.4 | 2.2 | 2.2 |
| 55° | 2.2 | 2.2 | 2.2 | 2.2 | 1.1 |
| 57.5° | 2.2 | 2.2 | 2.2 | 1.1 | 1.1 |
| 60° | 2.2 | 2.2 | 1.1 | 1.1 | 1.1 |
| 62.5° | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 65° | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 67.5° | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 70° | 1.1 | 1.1 | 1.1 | 1.1 | 0.0 |
| 72.5° | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 75° | 0.0 | 1.1 | 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)