

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: P208808

Luminaire Tested: **LDSQA6A30927D010TE LAR35FL 6LSQA1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P208808
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29057)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A30927D010TE LAR35FL 6LSQA1H
Description: PORTFOLIO 6" 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: 2517.6 lumens
Efficiency: N/A
Efficacy: 56.4 lumens/watt
Spacing Criteria (0/90/45): 0.6 / 0.59 / 0.55
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

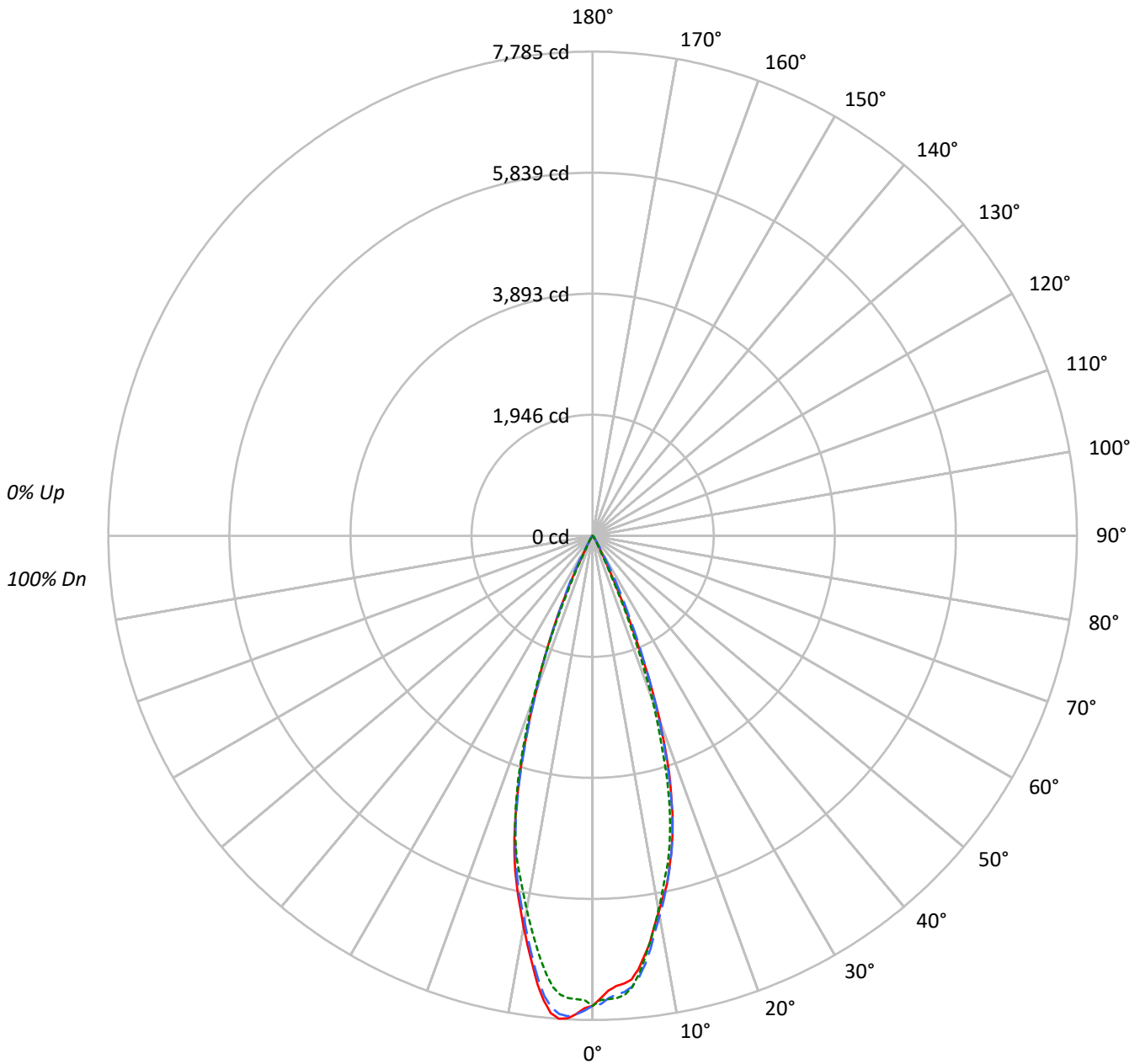
Input Watts (W): 44.62
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 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 | 102 | 102 | 102 | 100 | 100 | 100 | 100 |
| 1 | 115 | 113 | 111 | 109 | 113 | 111 | 109 | 107 | 107 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 96 | 96 | 96 | 96 |
| 2 | 111 | 107 | 104 | 102 | 109 | 106 | 103 | 101 | 103 | 100 | 98 | 100 | 98 | 96 | 97 | 96 | 94 | 93 | 93 | 93 | 93 |
| 3 | 107 | 103 | 99 | 96 | 106 | 101 | 98 | 95 | 99 | 96 | 94 | 96 | 94 | 92 | 94 | 92 | 91 | 90 | 90 | 90 | 90 |
| 4 | 104 | 98 | 94 | 91 | 102 | 97 | 93 | 91 | 95 | 92 | 90 | 93 | 91 | 89 | 92 | 89 | 88 | 86 | 86 | 86 | 86 |
| 5 | 101 | 94 | 90 | 87 | 99 | 94 | 90 | 87 | 92 | 89 | 86 | 90 | 88 | 85 | 89 | 87 | 85 | 83 | 83 | 83 | 83 |
| 6 | 97 | 91 | 87 | 84 | 96 | 90 | 86 | 83 | 89 | 85 | 83 | 88 | 85 | 82 | 87 | 84 | 82 | 81 | 81 | 81 | 81 |
| 7 | 94 | 88 | 83 | 80 | 93 | 87 | 83 | 80 | 86 | 82 | 80 | 85 | 82 | 79 | 84 | 81 | 79 | 78 | 78 | 78 | 78 |
| 8 | 92 | 85 | 80 | 77 | 91 | 84 | 80 | 77 | 83 | 80 | 77 | 82 | 79 | 77 | 82 | 79 | 76 | 75 | 75 | 75 | 75 |
| 9 | 89 | 82 | 78 | 75 | 88 | 82 | 78 | 75 | 81 | 77 | 75 | 80 | 77 | 74 | 79 | 76 | 74 | 73 | 73 | 73 | 73 |
| 10 | 86 | 79 | 75 | 72 | 86 | 79 | 75 | 72 | 78 | 75 | 72 | 78 | 74 | 72 | 77 | 74 | 72 | 71 | 71 | 71 | 71 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 325458 | 325458 | 325458 |
| 5° | 309612 | 314984 | 332946 |
| 10° | 268248 | 266796 | 279186 |
| 15° | 221504 | 214550 | 215446 |
| 20° | 144068 | 128352 | 122336 |
| 25° | 43298 | 33098 | 44067 |
| 30° | 9446 | 6876 | 7293 |
| 35° | 3369 | 2071 | 2276 |
| 40° | 1000 | 652 | 781 |
| 45° | 280 | 189 | 237 |
| 50° | 54 | 54 | 100 |
| 55° | 60 | 0 | 113 |
| 60° | 69 | 0 | 0 |
| 65° | 82 | 0 | 0 |
| 70° | 101 | 0 | 0 |
| 75° | 0 | 0 | 0 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 665.9 | 26.4 |
| 10°-20° | 1292.5 | 51.3 |
| 20°-30° | 510.7 | 20.3 |
| 30°-40° | 42.0 | 1.7 |
| 40°-50° | 5.7 | 0.2 |
| 50°-60° | 0.7 | 0.0 |
| 60°-70° | 0.2 | 0.0 |
| 70°-80° | 0.1 | 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° | 2469.0 | 98.1 |
| 0°-40° | 2511.0 | 99.7 |
| 0°-60° | 2517.4 | 100.0 |
| 0°-90° | 2517.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2517.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 7559 | 7559 | 7559 | 7559 | 7559 | |
| 5° | 7164 | 7278 | 7288 | 7615 | 7704 | 648 |
| 15° | 4969 | 4956 | 4813 | 4774 | 4833 | 1328 |
| 25° | 911 | 1232 | 697 | 1021 | 928 | 512 |
| 35° | 64 | 65 | 39 | 55 | 43 | 48 |
| 45° | 5 | 11 | 3 | 8 | 4 | 5 |
| 55° | 1 | 1 | 0 | 1 | 2 | 1 |
| 65° | 1 | 0 | 0 | 0 | 0 | 1 |
| 75° | 0 | 0 | 0 | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 |



TEST NUMBER: P208808

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 7559.0 | 7559.0 | 7559.0 | 7559.0 | 7559.0 | 7559.0 | 7559.0 | 7559.0 | 7559.0 |
| 1° | 7437.0 | 7352.0 | 7529.7 | 7522.7 | 7467.1 | 7623.9 | 7640.1 | 7741.3 | 7597.7 |
| 2° | 7317.3 | 7250.1 | 7437.0 | 7456.3 | 7456.3 | 7651.7 | 7702.7 | 7829.4 | 7697.3 |
| 3° | 7247.8 | 7192.2 | 7386.8 | 7437.8 | 7443.2 | 7661.0 | 7735.9 | 7878.0 | 7769.9 |
| 4° | 7217.7 | 7166.7 | 7351.3 | 7390.7 | 7398.4 | 7628.6 | 7707.3 | 7869.5 | 7784.6 |
| 5° | 7163.6 | 7106.4 | 7277.9 | 7284.1 | 7287.9 | 7523.5 | 7615.4 | 7776.1 | 7703.5 |
| 6° | 7010.7 | 6980.5 | 7137.3 | 7103.3 | 7092.5 | 7344.3 | 7437.8 | 7587.6 | 7514.2 |
| 7° | 6810.6 | 6790.5 | 6938.1 | 6886.3 | 6859.3 | 7094.1 | 7180.6 | 7322.7 | 7264.8 |
| 8° | 6606.0 | 6557.3 | 6697.9 | 6653.1 | 6607.5 | 6809.9 | 6885.5 | 7016.8 | 6962.8 |
| 9° | 6350.3 | 6325.6 | 6429.9 | 6415.2 | 6353.4 | 6561.2 | 6589.0 | 6717.2 | 6673.1 |
| 10° | 6135.6 | 6105.5 | 6210.5 | 6182.7 | 6102.4 | 6283.9 | 6303.2 | 6426.0 | 6385.8 |
| 11° | 5927.1 | 5887.7 | 5977.3 | 5941.7 | 5851.4 | 6014.3 | 6027.5 | 6141.8 | 6100.8 |
| 12° | 5735.5 | 5671.4 | 5741.7 | 5699.2 | 5603.4 | 5747.1 | 5753.3 | 5860.6 | 5822.8 |
| 13° | 5482.2 | 5439.7 | 5495.3 | 5449.7 | 5388.7 | 5469.8 | 5457.5 | 5559.4 | 5524.7 |
| 14° | 5238.1 | 5184.8 | 5235.8 | 5181.0 | 5116.9 | 5170.9 | 5135.4 | 5224.2 | 5197.2 |
| 15° | 4969.3 | 4916.0 | 4956.2 | 4889.0 | 4813.3 | 4833.4 | 4773.9 | 4856.6 | 4833.4 |
| 16° | 4656.5 | 4603.2 | 4638.0 | 4556.1 | 4466.5 | 4454.9 | 4376.2 | 4448.8 | 4424.8 |
| 17° | 4303.6 | 4264.9 | 4288.9 | 4186.2 | 4091.9 | 4051.8 | 3947.5 | 4011.6 | 3987.7 |
| 18° | 3967.6 | 3891.9 | 3901.9 | 3787.6 | 3644.0 | 3619.3 | 3501.9 | 3562.9 | 3538.9 |
| 19° | 3527.3 | 3491.8 | 3497.2 | 3368.2 | 3223.0 | 3177.5 | 3060.8 | 3114.9 | 3087.9 |
| 20° | 3144.3 | 3090.2 | 3085.6 | 2945.8 | 2801.3 | 2753.4 | 2640.7 | 2696.3 | 2670.0 |
| 21° | 2706.3 | 2739.5 | 2681.6 | 2534.1 | 2355.7 | 2360.3 | 2260.7 | 2266.1 | 2283.9 |
| 22° | 2213.6 | 2334.8 | 2285.4 | 2110.8 | 1887.6 | 1990.4 | 1900.8 | 1906.9 | 1922.4 |
| 23° | 1726.2 | 1852.1 | 1896.9 | 1685.3 | 1442.8 | 1647.4 | 1576.4 | 1581.0 | 1591.1 |
| 24° | 1281.3 | 1459.0 | 1539.3 | 1296.8 | 1038.8 | 1325.4 | 1285.2 | 1290.6 | 1279.8 |
| 25° | 911.4 | 1119.9 | 1231.9 | 957.7 | 696.7 | 1029.5 | 1021.1 | 1029.5 | 927.6 |
| 26° | 615.6 | 844.2 | 971.6 | 671.9 | 431.0 | 760.8 | 812.5 | 794.0 | 601.7 |
| 27° | 393.9 | 641.8 | 746.9 | 439.5 | 273.4 | 523.7 | 606.3 | 600.9 | 345.2 |
| 28° | 277.3 | 445.6 | 551.5 | 270.3 | 210.9 | 329.0 | 433.3 | 395.4 | 220.9 |
| 29° | 234.0 | 289.6 | 384.6 | 192.3 | 171.5 | 194.6 | 290.4 | 230.9 | 180.7 |
| 30° | 190.0 | 192.3 | 252.6 | 155.2 | 138.3 | 139.0 | 185.4 | 151.4 | 146.7 |
| 32.5° | 115.9 | 115.1 | 108.9 | 91.1 | 81.1 | 81.1 | 90.4 | 87.3 | 86.5 |
| 35° | 64.1 | 70.3 | 64.9 | 54.8 | 39.4 | 48.7 | 54.8 | 51.7 | 43.3 |
| 37.5° | 34.8 | 40.9 | 44.8 | 30.1 | 21.6 | 28.6 | 37.1 | 30.1 | 24.7 |
| 40° | 17.8 | 22.4 | 31.7 | 17.0 | 11.6 | 16.2 | 25.5 | 17.0 | 13.9 |
| 42.5° | 9.3 | 12.4 | 20.1 | 9.3 | 5.4 | 9.3 | 16.2 | 9.3 | 7.0 |
| 45° | 4.6 | 6.2 | 10.8 | 4.6 | 3.1 | 4.6 | 8.5 | 5.4 | 3.9 |
| 47.5° | 2.3 | 3.1 | 5.4 | 2.3 | 0.8 | 2.3 | 4.6 | 2.3 | 2.3 |
| 50° | 0.8 | 1.5 | 3.1 | 0.8 | 0.8 | 0.8 | 2.3 | 1.5 | 1.5 |
| 52.5° | 0.8 | 0.8 | 1.5 | 0.8 | 0.0 | 0.8 | 1.5 | 0.8 | 1.5 |
| 55° | 0.8 | 0.8 | 0.8 | 0.0 | 0.0 | 0.8 | 0.8 | 0.8 | 1.5 |
| 57.5° | 0.8 | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.8 | 0.8 | 1.5 |
| 60° | 0.8 | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|-----|-------|-----|-------|-----|--------|------|--------|------|
| 67.5° | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70° | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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







| | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 62.5° | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65° | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



(END OF REPORT)