

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: P209157

Luminaire Tested: **LDSQ4B40D010 EU4B30509030 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209157  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35088)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQ4B40D010 EU4B30509030 4LBSQ1LI  
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE LOW  
IRIDESCENT TRIM.  
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM  
WATTAGE D010TR-43.02 W DE010-42.54 W D5LT-42.539 W DMX-41.87 W DL2-41.57  
W DL3-44.71 W DLE-39.33 W  
Light Source: HIGH LUMEN LED 3000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3308.9 lumens  
Efficiency: N/A  
Efficacy: 76.9 lumens/watt  
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Direct

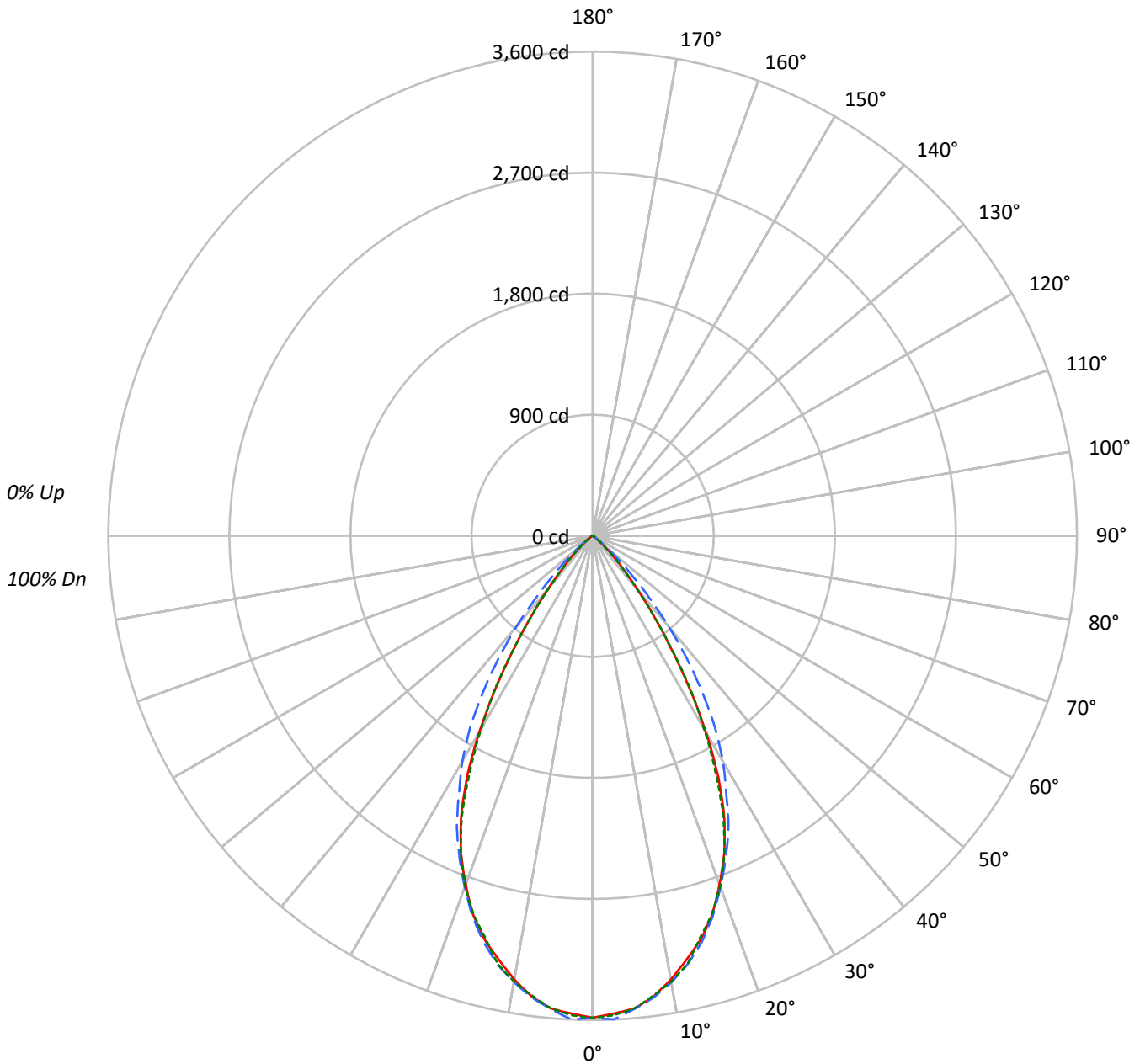
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93																			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87																			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80																			
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75																			
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69																			
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64																			
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60																			
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56																			
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53																			
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	332.3	10.0
10°-20°	870.9	26.3
20°-30°	1063.9	32.2
30°-40°	744.1	22.5
40°-50°	243.9	7.4
50°-60°	38.8	1.2
60°-70°	10.6	0.3
70°-80°	3.5	0.1
80°-90°	1.0	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°	2267.1	68.5
0°-40°	3011.2	91.0
0°-60°	3293.8	99.5
0°-90°	3308.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3308.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3584	3584	3584	3584	3584	
5°	3529	3531	3534	3512	3529	331
15°	3106	3118	3129	3108	3090	866
25°	2316	2351	2389	2345	2300	1040
35°	1002	1183	1423	1165	1011	639
45°	221	272	401	269	219	185
55°	32	34	39	34	30	32
65°	9	11	9	11	9	10
75°	2	2	2	2	2	3
85°	0	0	0	0	0	1
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1
2.5°	3556.7	3581.8	3575.0	3590.9	3590.9	3572.7	3577.2	3584.1	3593.2	3600.0	3545.4
5°	3529.4	3552.2	3531.7	3554.5	3540.8	3520.3	3554.5	3536.3	3547.6	3534.0	3543.1
7.5°	3456.6	3493.0	3452.0	3479.3	3470.2	3458.8	3472.5	3467.9	3474.8	3463.4	3438.3
10°	3349.5	3379.1	3351.8	3390.5	3372.3	3360.9	3372.3	3383.7	3381.4	3370.0	3383.7
12.5°	3226.6	3260.7	3247.1	3269.8	3249.3	3249.3	3276.7	3269.8	3272.1	3263.0	3278.9
15°	3105.9	3130.9	3110.4	3140.0	3130.9	3105.9	3117.3	3117.3	3135.5	3128.7	3110.4
17.5°	2955.6	2976.1	2953.3	2960.2	2951.1	2946.5	2994.3	2962.4	2980.7	2967.0	2969.3
20°	2757.5	2766.6	2759.8	2778.0	2766.6	2780.3	2775.7	2771.2	2771.2	2778.0	2762.1
22.5°	2557.1	2557.1	2564.0	2568.5	2577.6	2564.0	2591.3	2568.5	2570.8	2586.7	2582.2
25°	2315.8	2308.9	2324.9	2347.6	2356.7	2345.4	2381.8	2363.6	2377.2	2388.6	2363.6
27.5°	2022.0	2022.0	2038.0	2076.7	2083.5	2097.2	2147.3	2147.3	2165.5	2149.5	2167.7
30°	1682.7	1707.8	1728.3	1778.4	1794.3	1823.9	1876.3	1901.3	1942.3	1935.5	1926.4
32.5°	1334.3	1368.5	1370.8	1423.2	1466.4	1516.5	1587.1	1646.3	1675.9	1696.4	1673.6
35°	1001.9	1022.4	1040.6	1077.0	1149.9	1215.9	1279.7	1357.1	1409.5	1423.2	1402.7
37.5°	733.2	737.8	756.0	790.1	844.8	908.5	986.0	1070.2	1124.9	1145.4	1122.6
40°	505.5	510.1	519.2	548.8	594.3	639.9	701.3	787.9	838.0	878.9	849.3
42.5°	339.3	343.8	352.9	375.7	400.8	444.0	491.8	546.5	594.3	612.5	596.6
45°	220.9	220.9	225.4	241.4	255.0	289.2	323.3	357.5	389.4	400.8	389.4
47.5°	129.8	132.1	136.6	148.0	163.9	177.6	202.7	225.4	234.5	243.6	239.1
50°	75.1	75.1	82.0	88.8	100.2	109.3	118.4	127.5	132.1	136.6	132.1
52.5°	41.0	43.3	45.5	47.8	52.4	61.5	68.3	68.3	70.6	72.9	70.6
55°	31.9	31.9	31.9	31.9	34.2	34.2	34.2	36.4	36.4	38.7	36.4
57.5°	22.8	22.8	22.8	25.0	25.0	25.0	22.8	22.8	22.8	22.8	22.8
60°	18.2	18.2	18.2	18.2	18.2	18.2	18.2	15.9	15.9	15.9	15.9
62.5°	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
65°	9.1	9.1	11.4	11.4	11.4	11.4	11.4	9.1	9.1	9.1	9.1
67.5°	6.8	6.8	6.8	6.8	9.1	9.1	6.8	6.8	6.8	6.8	6.8
70°	4.6	4.6	4.6	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
72.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	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	0.0	0.0
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1	3584.1
2.5°	3584.1	3545.4	3549.9	3570.4	3559.0	3570.4	3568.1	3568.1
5°	3545.4	3534.0	3515.8	3508.9	3522.6	3552.2	3547.6	3529.4
7.5°	3472.5	3442.9	3463.4	3472.5	3461.1	3479.3	3488.4	3449.7
10°	3386.0	3374.6	3370.0	3374.6	3370.0	3388.2	3365.5	3365.5
12.5°	3263.0	3244.8	3244.8	3272.1	3256.2	3242.5	3260.7	3258.5
15°	3140.0	3103.6	3103.6	3112.7	3119.6	3110.4	3112.7	3090.0
17.5°	2957.9	2946.5	2930.6	2955.6	2962.4	2953.3	2960.2	2948.8
20°	2787.1	2787.1	2757.5	2768.9	2778.0	2784.8	2789.4	2771.2
22.5°	2568.5	2573.1	2552.6	2575.3	2582.2	2559.4	2564.0	2559.4
25°	2368.1	2365.9	2349.9	2340.8	2345.4	2336.3	2334.0	2299.8
27.5°	2147.3	2124.5	2090.3	2099.4	2060.7	2028.8	2028.8	1976.5
30°	1908.2	1869.5	1823.9	1778.4	1744.2	1707.8	1687.3	1657.7
32.5°	1628.1	1575.7	1518.8	1457.3	1418.6	1364.0	1334.3	1350.3
35°	1350.3	1272.9	1195.4	1134.0	1074.8	1042.9	1006.5	1011.0
37.5°	1081.6	972.3	904.0	838.0	787.9	746.9	730.9	726.4
40°	790.1	703.6	635.3	587.5	553.3	521.4	503.2	496.4
42.5°	546.5	485.0	430.4	391.7	368.9	348.4	339.3	337.0
45°	355.2	318.8	282.4	255.0	236.8	223.2	220.9	218.6
47.5°	223.2	204.9	182.2	161.7	145.7	136.6	129.8	129.8
50°	127.5	120.7	109.3	97.9	88.8	84.3	77.4	75.1
52.5°	68.3	68.3	63.8	54.6	47.8	43.3	43.3	41.0
55°	36.4	36.4	34.2	34.2	31.9	31.9	31.9	29.6
57.5°	22.8	22.8	25.0	25.0	22.8	22.8	22.8	22.8
60°	15.9	18.2	18.2	18.2	18.2	18.2	18.2	18.2
62.5°	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
65°	9.1	11.4	11.4	11.4	11.4	9.1	9.1	9.1
67.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
70°	6.8	6.8	6.8	6.8	6.8	4.6	4.6	4.6
72.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	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
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
90°	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°









(END OF REPORT)