

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: P209156

Luminaire Tested: **LDSQ4B40D010 EU4B30509027 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209156  
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 EU4B30509027 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 2700 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3182.4 lumens  
Efficiency: N/A  
Efficacy: 74.0 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

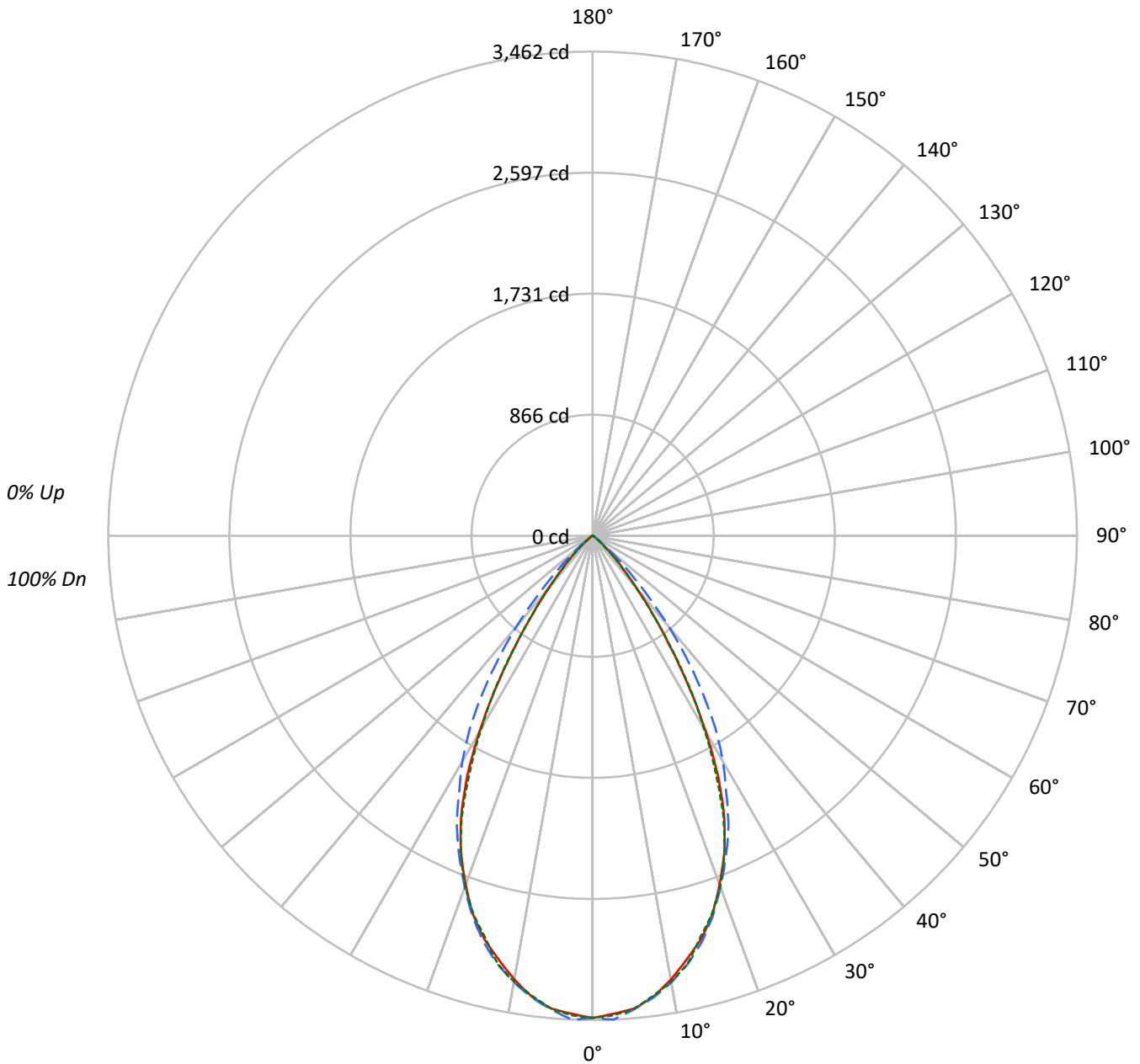
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	319.6	10.0
10°-20°	837.6	26.3
20°-30°	1023.2	32.2
30°-40°	715.7	22.5
40°-50°	234.5	7.4
50°-60°	37.3	1.2
60°-70°	10.2	0.3
70°-80°	3.4	0.1
80°-90°	0.9	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°	2180.4	68.5
0°-40°	2896.1	91.0
0°-60°	3167.9	99.5
0°-90°	3182.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3182.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3447	3447	3447	3447	3447	
5°	3395	3396	3399	3378	3395	318
15°	2987	2999	3009	2989	2972	833
25°	2227	2261	2297	2256	2212	1000
35°	964	1138	1369	1120	972	615
45°	212	262	385	258	210	178
55°	31	33	37	33	28	30
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°	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1
2.5°	3420.8	3444.9	3438.4	3453.7	3453.7	3436.2	3440.5	3447.1	3455.9	3462.4	3409.9
5°	3394.6	3416.5	3396.7	3418.6	3405.5	3385.8	3418.6	3401.1	3412.1	3398.9	3407.7
7.5°	3324.5	3359.5	3320.1	3346.4	3337.6	3326.7	3339.8	3335.4	3342.0	3331.0	3307.0
10°	3221.5	3250.0	3223.7	3261.0	3243.4	3232.5	3243.4	3254.4	3252.2	3241.3	3254.4
12.5°	3103.3	3136.1	3123.0	3144.9	3125.2	3125.2	3151.5	3144.9	3147.1	3138.3	3153.7
15°	2987.2	3011.3	2991.6	3020.1	3011.3	2987.2	2998.2	2998.2	3015.7	3009.1	2991.6
17.5°	2842.7	2862.4	2840.5	2847.0	2838.3	2833.9	2879.9	2849.2	2866.8	2853.6	2855.8
20°	2652.1	2660.9	2654.3	2671.8	2660.9	2674.0	2669.7	2665.3	2665.3	2671.8	2656.5
22.5°	2459.4	2459.4	2466.0	2470.4	2479.1	2466.0	2492.3	2470.4	2472.6	2487.9	2483.5
25°	2227.3	2220.7	2236.0	2257.9	2266.7	2255.7	2290.8	2273.3	2286.4	2297.3	2273.3
27.5°	1944.8	1944.8	1960.1	1997.3	2003.9	2017.0	2065.2	2065.2	2082.7	2067.4	2084.9
30°	1618.4	1642.5	1662.2	1710.4	1725.7	1754.2	1804.6	1828.7	1868.1	1861.5	1852.8
32.5°	1283.4	1316.2	1318.4	1368.8	1410.4	1458.6	1526.5	1583.4	1611.9	1631.6	1609.7
35°	963.6	983.3	1000.8	1035.9	1106.0	1169.5	1230.8	1305.3	1355.6	1368.8	1349.1
37.5°	705.2	709.6	727.1	759.9	812.5	873.8	948.3	1029.3	1081.9	1101.6	1079.7
40°	486.2	490.6	499.3	527.8	571.6	615.4	674.5	757.8	805.9	845.4	816.9
42.5°	326.3	330.7	339.5	361.4	385.4	427.1	473.0	525.6	571.6	589.1	573.8
45°	212.4	212.4	216.8	232.1	245.3	278.1	311.0	343.8	374.5	385.4	374.5
47.5°	124.8	127.0	131.4	142.4	157.7	170.8	194.9	216.8	225.6	234.3	230.0
50°	72.3	72.3	78.8	85.4	96.4	105.1	113.9	122.6	127.0	131.4	127.0
52.5°	39.4	41.6	43.8	46.0	50.4	59.1	65.7	65.7	67.9	70.1	67.9
55°	30.7	30.7	30.7	30.7	32.9	32.9	32.9	35.0	35.0	37.2	35.0
57.5°	21.9	21.9	21.9	24.1	24.1	24.1	21.9	21.9	21.9	21.9	21.9
60°	17.5	17.5	17.5	17.5	17.5	17.5	17.5	15.3	15.3	15.3	15.3
62.5°	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
65°	8.8	8.8	11.0	11.0	11.0	11.0	11.0	8.8	8.8	8.8	8.8
67.5°	6.6	6.6	6.6	6.6	8.8	8.8	6.6	6.6	6.6	6.6	6.6
70°	4.4	4.4	4.4	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
72.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	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°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1	3447.1
2.5°	3447.1	3409.9	3414.3	3434.0	3423.0	3434.0	3431.8	3431.8
5°	3409.9	3398.9	3381.4	3374.8	3388.0	3416.5	3412.1	3394.6
7.5°	3339.8	3311.3	3331.0	3339.8	3328.9	3346.4	3355.1	3317.9
10°	3256.6	3245.6	3241.3	3245.6	3241.3	3258.8	3236.9	3236.9
12.5°	3138.3	3120.8	3120.8	3147.1	3131.8	3118.6	3136.1	3133.9
15°	3020.1	2985.0	2985.0	2993.8	3000.3	2991.6	2993.8	2971.9
17.5°	2844.9	2833.9	2818.6	2842.7	2849.2	2840.5	2847.0	2836.1
20°	2680.6	2680.6	2652.1	2663.1	2671.8	2678.4	2682.8	2665.3
22.5°	2470.4	2474.7	2455.0	2476.9	2483.5	2461.6	2466.0	2461.6
25°	2277.6	2275.4	2260.1	2251.4	2255.7	2247.0	2244.8	2211.9
27.5°	2065.2	2043.3	2010.5	2019.2	1982.0	1951.3	1951.3	1901.0
30°	1835.3	1798.0	1754.2	1710.4	1677.6	1642.5	1622.8	1594.3
32.5°	1565.9	1515.5	1460.8	1401.6	1364.4	1311.8	1283.4	1298.7
35°	1298.7	1224.2	1149.8	1090.6	1033.7	1003.0	968.0	972.4
37.5°	1040.3	935.1	869.4	805.9	757.8	718.3	703.0	698.6
40°	759.9	676.7	611.0	565.0	532.2	501.5	484.0	477.4
42.5°	525.6	466.5	413.9	376.7	354.8	335.1	326.3	324.1
45°	341.6	306.6	271.6	245.3	227.8	214.6	212.4	210.2
47.5°	214.6	197.1	175.2	155.5	140.2	131.4	124.8	124.8
50°	122.6	116.1	105.1	94.2	85.4	81.0	74.5	72.3
52.5°	65.7	65.7	61.3	52.6	46.0	41.6	41.6	39.4
55°	35.0	35.0	32.9	32.9	30.7	30.7	30.7	28.5
57.5°	21.9	21.9	24.1	24.1	21.9	21.9	21.9	21.9
60°	15.3	17.5	17.5	17.5	17.5	17.5	17.5	17.5
62.5°	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
65°	8.8	11.0	11.0	11.0	11.0	8.8	8.8	8.8
67.5°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
70°	6.6	6.6	6.6	6.6	6.6	4.4	4.4	4.4
72.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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)