

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: P209146

Luminaire Tested: **LDSQ4B30D010 EU4B30509035 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209146  
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: LDSQ4B30D010 EU4B30509035 4LBSQ1LI  
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE LOW  
IRIDESCENT TRIM.  
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM  
WATTAGE D010TR-27.4 W DE010-27.95 W D5LT-27.65 W DMX-27.73 W DL2-29.56 W  
DL3-29.67 W DLE-29.73 W  
Light Source: HIGH LUMEN LED 3500 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2396.1 lumens  
Efficiency: N/A  
Efficacy: 85.6 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

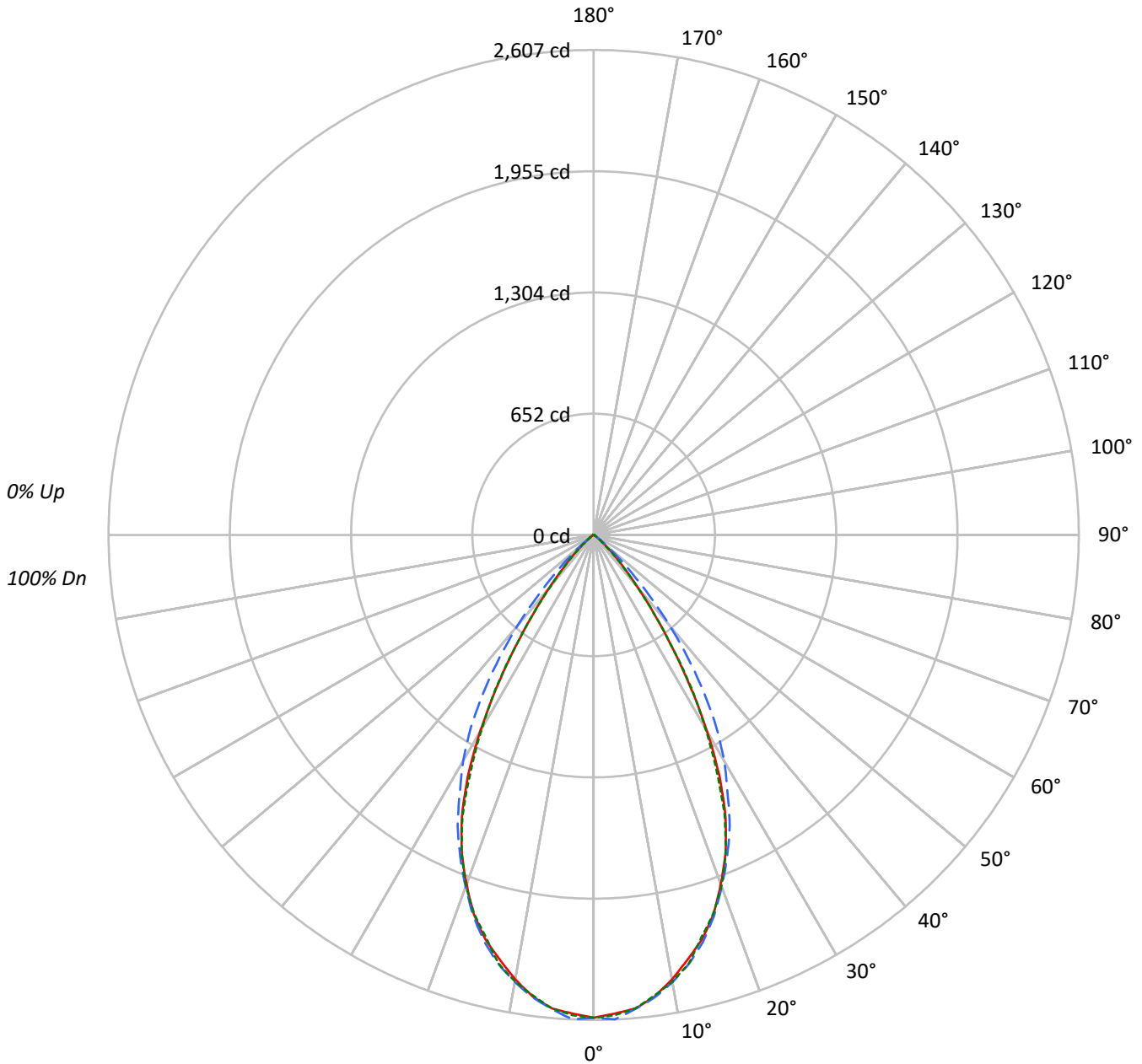
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	72	67	76	71	67	74	70	66	73	69	66	65																			
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°	240.6	10.0
10°-20°	630.7	26.3
20°-30°	770.4	32.2
30°-40°	538.8	22.5
40°-50°	176.6	7.4
50°-60°	28.1	1.2
60°-70°	7.6	0.3
70°-80°	2.5	0.1
80°-90°	0.7	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°	1641.7	68.5
0°-40°	2180.6	91.0
0°-60°	2385.2	99.5
0°-90°	2396.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2396.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2596	2596	2596	2596	2596	
5°	2556	2557	2559	2544	2556	240
15°	2249	2258	2266	2251	2238	627
25°	1677	1703	1730	1698	1665	753
35°	726	857	1031	843	732	463
45°	160	197	290	195	158	134
55°	23	25	28	25	21	23
65°	7	8	7	8	7	7
75°	2	2	2	2	2	2
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°	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5
2.5°	2575.7	2593.8	2588.9	2600.4	2600.4	2587.2	2590.5	2595.5	2602.0	2607.0	2567.4
5°	2555.9	2572.4	2557.5	2574.0	2564.1	2549.3	2574.0	2560.8	2569.1	2559.2	2565.8
7.5°	2503.1	2529.5	2499.8	2519.6	2513.0	2504.8	2514.7	2511.4	2516.3	2508.1	2489.9
10°	2425.6	2447.0	2427.3	2455.3	2442.1	2433.9	2442.1	2450.3	2448.7	2440.5	2450.3
12.5°	2336.6	2361.3	2351.4	2367.9	2353.1	2353.1	2372.8	2367.9	2369.5	2363.0	2374.5
15°	2249.2	2267.3	2252.5	2273.9	2267.3	2249.2	2257.4	2257.4	2270.6	2265.7	2252.5
17.5°	2140.3	2155.2	2138.7	2143.6	2137.0	2133.7	2168.4	2145.3	2158.5	2148.6	2150.2
20°	1996.9	2003.5	1998.5	2011.7	2003.5	2013.4	2010.1	2006.8	2006.8	2011.7	2000.2
22.5°	1851.8	1851.8	1856.7	1860.0	1866.6	1856.7	1876.5	1860.0	1861.7	1873.2	1869.9
25°	1677.0	1672.0	1683.6	1700.1	1706.7	1698.4	1724.8	1711.6	1721.5	1729.8	1711.6
27.5°	1464.3	1464.3	1475.8	1503.8	1508.8	1518.7	1555.0	1555.0	1568.2	1556.6	1569.8
30°	1218.6	1236.7	1251.6	1287.8	1299.4	1320.8	1358.7	1376.9	1406.6	1401.6	1395.0
32.5°	966.3	991.0	992.7	1030.6	1061.9	1098.2	1149.3	1192.2	1213.6	1228.5	1212.0
35°	725.5	740.4	753.6	780.0	832.7	880.5	926.7	982.8	1020.7	1030.6	1015.8
37.5°	531.0	534.3	547.5	572.2	611.8	657.9	714.0	775.0	814.6	829.4	812.9
40°	366.1	369.4	376.0	397.4	430.4	463.4	507.9	570.5	606.8	636.5	615.1
42.5°	245.7	249.0	255.6	272.1	290.2	321.5	356.2	395.7	430.4	443.6	432.0
45°	159.9	159.9	163.2	174.8	184.7	209.4	234.2	258.9	282.0	290.2	282.0
47.5°	94.0	95.6	98.9	107.2	118.7	128.6	146.8	163.2	169.8	176.4	173.1
50°	54.4	54.4	59.4	64.3	72.6	79.1	85.7	92.3	95.6	98.9	95.6
52.5°	29.7	31.3	33.0	34.6	37.9	44.5	49.5	49.5	51.1	52.8	51.1
55°	23.1	23.1	23.1	23.1	24.7	24.7	24.7	26.4	26.4	28.0	26.4
57.5°	16.5	16.5	16.5	18.1	18.1	18.1	16.5	16.5	16.5	16.5	16.5
60°	13.2	13.2	13.2	13.2	13.2	13.2	13.2	11.5	11.5	11.5	11.5
62.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
65°	6.6	6.6	8.2	8.2	8.2	8.2	8.2	6.6	6.6	6.6	6.6
67.5°	4.9	4.9	4.9	4.9	6.6	6.6	4.9	4.9	4.9	4.9	4.9
70°	3.3	3.3	3.3	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
72.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	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°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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°	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5	2595.5
2.5°	2595.5	2567.4	2570.7	2585.6	2577.3	2585.6	2583.9	2583.9
5°	2567.4	2559.2	2546.0	2541.0	2550.9	2572.4	2569.1	2555.9
7.5°	2514.7	2493.2	2508.1	2514.7	2506.4	2519.6	2526.2	2498.2
10°	2452.0	2443.7	2440.5	2443.7	2440.5	2453.6	2437.2	2437.2
12.5°	2363.0	2349.8	2349.8	2369.5	2358.0	2348.1	2361.3	2359.7
15°	2273.9	2247.5	2247.5	2254.1	2259.1	2252.5	2254.1	2237.6
17.5°	2142.0	2133.7	2122.2	2140.3	2145.3	2138.7	2143.6	2135.4
20°	2018.3	2018.3	1996.9	2005.1	2011.7	2016.7	2020.0	2006.8
22.5°	1860.0	1863.3	1848.5	1865.0	1869.9	1853.4	1856.7	1853.4
25°	1714.9	1713.3	1701.7	1695.1	1698.4	1691.8	1690.2	1665.4
27.5°	1555.0	1538.5	1513.7	1520.3	1492.3	1469.2	1469.2	1431.3
30°	1381.8	1353.8	1320.8	1287.8	1263.1	1236.7	1221.9	1200.4
32.5°	1179.0	1141.1	1099.9	1055.3	1027.3	987.7	966.3	977.8
35°	977.8	921.8	865.7	821.2	778.3	755.2	728.8	732.1
37.5°	783.3	704.1	654.6	606.8	570.5	540.9	529.3	526.0
40°	572.2	509.5	460.1	425.4	400.7	377.6	364.4	359.5
42.5°	395.7	351.2	311.7	283.6	267.1	252.3	245.7	244.0
45°	257.2	230.9	204.5	184.7	171.5	161.6	159.9	158.3
47.5°	161.6	148.4	131.9	117.1	105.5	98.9	94.0	94.0
50°	92.3	87.4	79.1	70.9	64.3	61.0	56.1	54.4
52.5°	49.5	49.5	46.2	39.6	34.6	31.3	31.3	29.7
55°	26.4	26.4	24.7	24.7	23.1	23.1	23.1	21.4
57.5°	16.5	16.5	18.1	18.1	16.5	16.5	16.5	16.5
60°	11.5	13.2	13.2	13.2	13.2	13.2	13.2	13.2
62.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
65°	6.6	8.2	8.2	8.2	8.2	6.6	6.6	6.6
67.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
70°	4.9	4.9	4.9	4.9	4.9	3.3	3.3	3.3
72.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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)