

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: P209143

Luminaire Tested: **LDSQ4B30D010 EU4B30509024 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209143  
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 EU4B30509024 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 2400 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1998.8 lumens  
Efficiency: N/A  
Efficacy: 71.4 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

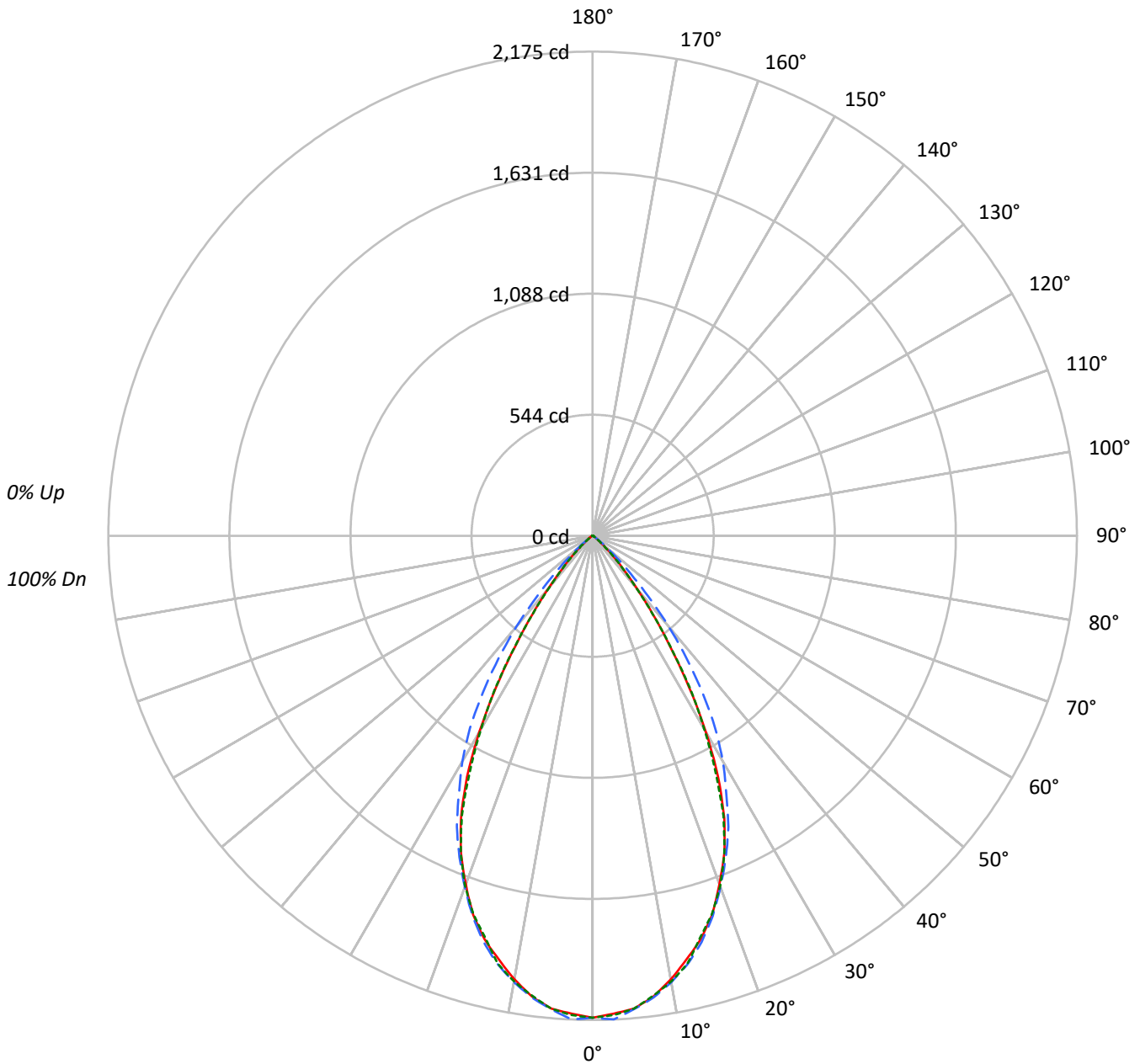
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	200.7	10.0
10°-20°	526.1	26.3
20°-30°	642.7	32.2
30°-40°	449.5	22.5
40°-50°	147.3	7.4
50°-60°	23.4	1.2
60°-70°	6.4	0.3
70°-80°	2.2	0.1
80°-90°	0.6	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°	1369.5	68.5
0°-40°	1819.0	91.0
0°-60°	1989.7	99.5
0°-90°	1998.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1998.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2165	2165	2165	2165	2165	
5°	2132	2133	2135	2122	2132	200
15°	1876	1884	1890	1878	1867	523
25°	1399	1420	1443	1417	1389	628
35°	605	715	860	704	611	386
45°	133	164	242	162	132	112
55°	19	21	23	21	18	19
65°	6	7	6	7	6	6
75°	1	1	1	1	1	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°	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1
2.5°	2148.6	2163.7	2159.6	2169.2	2169.2	2158.2	2160.9	2165.1	2170.6	2174.7	2141.7
5°	2132.0	2145.8	2133.4	2147.2	2138.9	2126.5	2147.2	2136.2	2143.1	2134.8	2140.3
7.5°	2088.0	2110.0	2085.3	2101.8	2096.3	2089.4	2097.7	2094.9	2099.0	2092.2	2077.0
10°	2023.4	2041.3	2024.8	2048.1	2037.1	2030.3	2037.1	2044.0	2042.6	2035.8	2044.0
12.5°	1949.1	1969.7	1961.5	1975.2	1962.9	1962.9	1979.4	1975.2	1976.6	1971.1	1980.7
15°	1876.2	1891.3	1879.0	1896.8	1891.3	1876.2	1883.1	1883.1	1894.1	1890.0	1879.0
17.5°	1785.4	1797.8	1784.0	1788.2	1782.7	1779.9	1808.8	1789.5	1800.5	1792.3	1793.7
20°	1665.7	1671.3	1667.1	1678.1	1671.3	1679.5	1676.8	1674.0	1674.0	1678.1	1668.5
22.5°	1544.7	1544.7	1548.8	1551.6	1557.1	1548.8	1565.3	1551.6	1553.0	1562.6	1559.8
25°	1398.9	1394.8	1404.4	1418.2	1423.7	1416.8	1438.8	1427.8	1436.0	1442.9	1427.8
27.5°	1221.5	1221.5	1231.1	1254.5	1258.6	1266.8	1297.1	1297.1	1308.1	1298.5	1309.5
30°	1016.5	1031.6	1044.0	1074.3	1083.9	1101.8	1133.4	1148.6	1173.3	1169.2	1163.7
32.5°	806.1	826.7	828.1	859.7	885.8	916.1	958.7	994.5	1012.4	1024.8	1011.0
35°	605.2	617.6	628.6	650.6	694.6	734.5	773.0	819.8	851.4	859.7	847.3
37.5°	442.9	445.7	456.7	477.3	510.3	548.8	595.6	646.5	679.5	691.9	678.1
40°	305.4	308.1	313.6	331.5	359.0	386.5	423.7	475.9	506.2	530.9	513.1
42.5°	205.0	207.7	213.2	227.0	242.1	268.2	297.1	330.1	359.0	370.0	360.4
45°	133.4	133.4	136.2	145.8	154.1	174.7	195.3	216.0	235.2	242.1	235.2
47.5°	78.4	79.8	82.5	89.4	99.0	107.3	122.4	136.2	141.7	147.2	144.4
50°	45.4	45.4	49.5	53.6	60.5	66.0	71.5	77.0	79.8	82.5	79.8
52.5°	24.8	26.1	27.5	28.9	31.6	37.1	41.3	41.3	42.6	44.0	42.6
55°	19.3	19.3	19.3	19.3	20.6	20.6	20.6	22.0	22.0	23.4	22.0
57.5°	13.8	13.8	13.8	15.1	15.1	15.1	13.8	13.8	13.8	13.8	13.8
60°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	9.6	9.6	9.6	9.6
62.5°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
65°	5.5	5.5	6.9	6.9	6.9	6.9	6.9	5.5	5.5	5.5	5.5
67.5°	4.1	4.1	4.1	4.1	5.5	5.5	4.1	4.1	4.1	4.1	4.1
70°	2.8	2.8	2.8	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
72.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	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°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1	2165.1
2.5°	2165.1	2141.7	2144.4	2156.8	2149.9	2156.8	2155.4	2155.4
5°	2141.7	2134.8	2123.8	2119.7	2127.9	2145.8	2143.1	2132.0
7.5°	2097.7	2079.8	2092.2	2097.7	2090.8	2101.8	2107.3	2083.9
10°	2045.4	2038.5	2035.8	2038.5	2035.8	2046.8	2033.0	2033.0
12.5°	1971.1	1960.1	1960.1	1976.6	1967.0	1958.7	1969.7	1968.4
15°	1896.8	1874.8	1874.8	1880.3	1884.5	1879.0	1880.3	1866.6
17.5°	1786.8	1779.9	1770.3	1785.4	1789.5	1784.0	1788.2	1781.3
20°	1683.6	1683.6	1665.7	1672.6	1678.1	1682.3	1685.0	1674.0
22.5°	1551.6	1554.3	1542.0	1555.7	1559.8	1546.1	1548.8	1546.1
25°	1430.5	1429.2	1419.5	1414.0	1416.8	1411.3	1409.9	1389.3
27.5°	1297.1	1283.4	1262.7	1268.2	1244.8	1225.6	1225.6	1193.9
30°	1152.7	1129.3	1101.8	1074.3	1053.6	1031.6	1019.3	1001.4
32.5°	983.5	951.9	917.5	880.3	856.9	823.9	806.1	815.7
35°	815.7	768.9	722.1	685.0	649.2	630.0	608.0	610.7
37.5°	653.4	587.3	546.1	506.2	475.9	451.2	441.5	438.8
40°	477.3	425.0	383.8	354.9	334.3	315.0	304.0	299.9
42.5°	330.1	293.0	260.0	236.6	222.8	210.5	205.0	203.6
45°	214.6	192.6	170.6	154.1	143.1	134.8	133.4	132.0
47.5°	134.8	123.8	110.0	97.7	88.0	82.5	78.4	78.4
50°	77.0	72.9	66.0	59.1	53.6	50.9	46.8	45.4
52.5°	41.3	41.3	38.5	33.0	28.9	26.1	26.1	24.8
55°	22.0	22.0	20.6	20.6	19.3	19.3	19.3	17.9
57.5°	13.8	13.8	15.1	15.1	13.8	13.8	13.8	13.8
60°	9.6	11.0	11.0	11.0	11.0	11.0	11.0	11.0
62.5°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
65°	5.5	6.9	6.9	6.9	6.9	5.5	5.5	5.5
67.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
70°	4.1	4.1	4.1	4.1	4.1	2.8	2.8	2.8
72.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)