

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: P209149

Luminaire Tested: **LDSQ4B30D010 EU4B30509727 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209149  
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 EU4B30509727 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 2700 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1975.5 lumens  
Efficiency: N/A  
Efficacy: 70.6 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

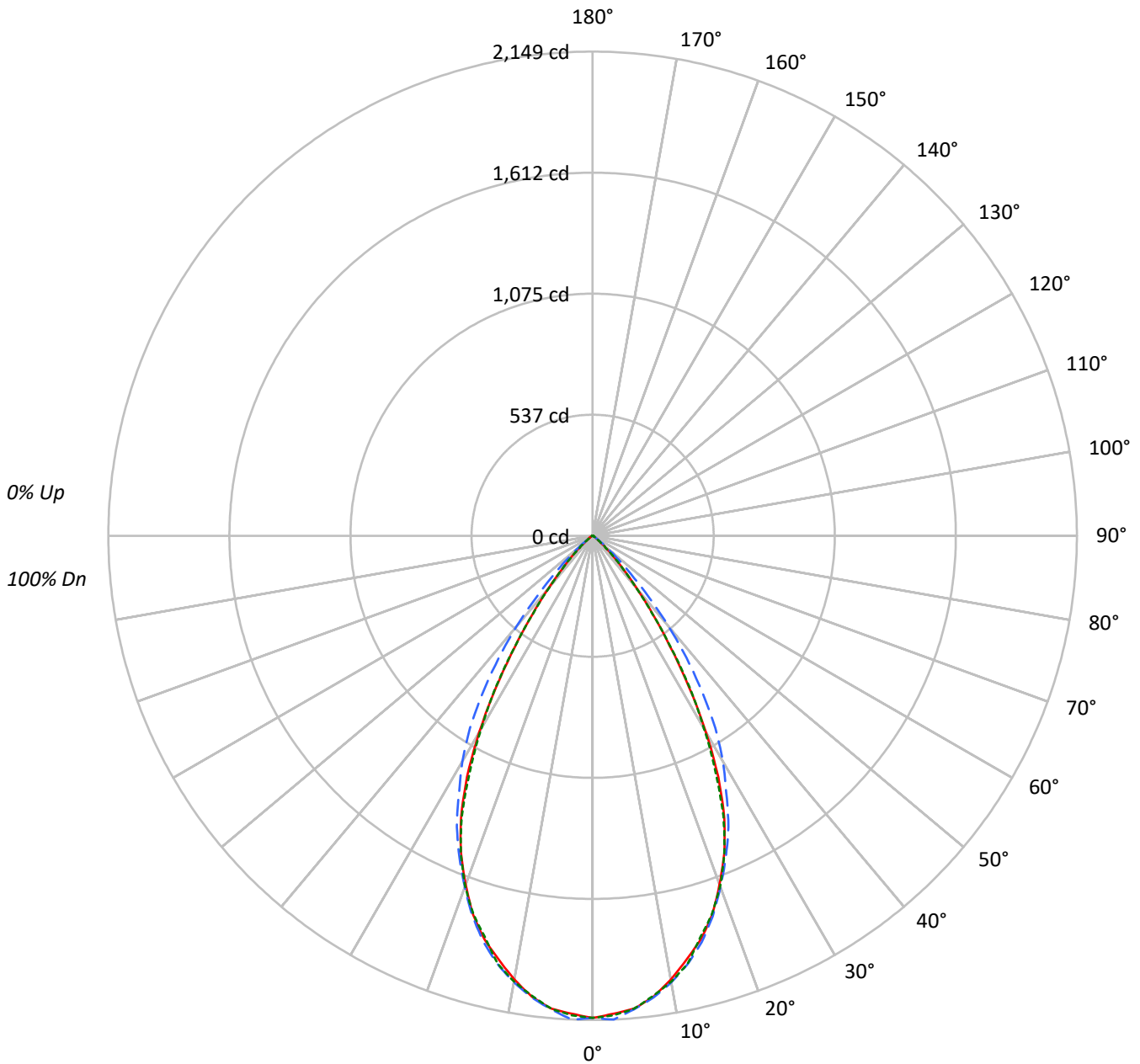
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	198.4	10.0
10°-20°	519.9	26.3
20°-30°	635.1	32.2
30°-40°	444.2	22.5
40°-50°	145.6	7.4
50°-60°	23.1	1.2
60°-70°	6.3	0.3
70°-80°	2.1	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°	1353.5	68.5
0°-40°	1797.7	91.0
0°-60°	1966.4	99.5
0°-90°	1975.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1975.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2140	2140	2140	2140	2140	
5°	2107	2108	2110	2097	2107	198
15°	1854	1862	1868	1856	1845	517
25°	1382	1404	1426	1400	1373	621
35°	598	706	850	695	604	382
45°	132	162	239	160	130	111
55°	19	20	23	20	18	19
65°	5	7	5	7	5	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°	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7
2.5°	2123.4	2138.4	2134.3	2143.8	2143.8	2132.9	2135.7	2139.7	2145.2	2149.3	2116.6
5°	2107.1	2120.7	2108.5	2122.1	2113.9	2101.7	2122.1	2111.2	2118.0	2109.8	2115.3
7.5°	2063.6	2085.4	2060.9	2077.2	2071.8	2065.0	2073.1	2070.4	2074.5	2067.7	2052.7
10°	1999.7	2017.4	2001.1	2024.2	2013.3	2006.5	2013.3	2020.1	2018.8	2012.0	2020.1
12.5°	1926.3	1946.7	1938.5	1952.1	1939.9	1939.9	1956.2	1952.1	1953.5	1948.1	1957.6
15°	1854.3	1869.2	1857.0	1874.7	1869.2	1854.3	1861.1	1861.1	1871.9	1867.9	1857.0
17.5°	1764.5	1776.8	1763.2	1767.3	1761.8	1759.1	1787.7	1768.6	1779.5	1771.3	1772.7
20°	1646.3	1651.7	1647.6	1658.5	1651.7	1659.9	1657.1	1654.4	1654.4	1658.5	1649.0
22.5°	1526.6	1526.6	1530.7	1533.4	1538.9	1530.7	1547.0	1533.4	1534.8	1544.3	1541.6
25°	1382.5	1378.5	1388.0	1401.6	1407.0	1400.2	1422.0	1411.1	1419.2	1426.0	1411.1
27.5°	1207.2	1207.2	1216.7	1239.8	1243.9	1252.0	1281.9	1281.9	1292.8	1283.3	1294.2
30°	1004.6	1019.6	1031.8	1061.7	1071.2	1088.9	1120.2	1135.1	1159.6	1155.5	1150.1
32.5°	796.6	817.0	818.4	849.6	875.5	905.4	947.5	982.9	1000.5	1012.8	999.2
35°	598.1	610.4	621.3	643.0	686.5	725.9	764.0	810.2	841.5	849.6	837.4
37.5°	437.7	440.5	451.3	471.7	504.3	542.4	588.6	638.9	671.6	683.8	670.2
40°	301.8	304.5	310.0	327.6	354.8	382.0	418.7	470.4	500.3	524.7	507.1
42.5°	202.6	205.3	210.7	224.3	239.3	265.1	293.6	326.3	354.8	365.7	356.2
45°	131.9	131.9	134.6	144.1	152.3	172.6	193.0	213.4	232.5	239.3	232.5
47.5°	77.5	78.8	81.6	88.4	97.9	106.0	121.0	134.6	140.0	145.5	142.7
50°	44.9	44.9	48.9	53.0	59.8	65.3	70.7	76.1	78.8	81.6	78.8
52.5°	24.5	25.8	27.2	28.5	31.3	36.7	40.8	40.8	42.1	43.5	42.1
55°	19.0	19.0	19.0	19.0	20.4	20.4	20.4	21.8	21.8	23.1	21.8
57.5°	13.6	13.6	13.6	15.0	15.0	15.0	13.6	13.6	13.6	13.6	13.6
60°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	9.5	9.5	9.5	9.5
62.5°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
65°	5.4	5.4	6.8	6.8	6.8	6.8	6.8	5.4	5.4	5.4	5.4
67.5°	4.1	4.1	4.1	4.1	5.4	5.4	4.1	4.1	4.1	4.1	4.1
70°	2.7	2.7	2.7	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
72.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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°	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7	2139.7
2.5°	2139.7	2116.6	2119.4	2131.6	2124.8	2131.6	2130.2	2130.2
5°	2116.6	2109.8	2099.0	2094.9	2103.0	2120.7	2118.0	2107.1
7.5°	2073.1	2055.5	2067.7	2073.1	2066.3	2077.2	2082.6	2059.5
10°	2021.5	2014.7	2012.0	2014.7	2012.0	2022.8	2009.2	2009.2
12.5°	1948.1	1937.2	1937.2	1953.5	1944.0	1935.8	1946.7	1945.3
15°	1874.7	1852.9	1852.9	1858.3	1862.4	1857.0	1858.3	1844.7
17.5°	1765.9	1759.1	1749.6	1764.5	1768.6	1763.2	1767.3	1760.5
20°	1663.9	1663.9	1646.3	1653.1	1658.5	1662.6	1665.3	1654.4
22.5°	1533.4	1536.2	1523.9	1537.5	1541.6	1528.0	1530.7	1528.0
25°	1413.8	1412.4	1402.9	1397.5	1400.2	1394.8	1393.4	1373.0
27.5°	1281.9	1268.3	1248.0	1253.4	1230.3	1211.3	1211.3	1180.0
30°	1139.2	1116.1	1088.9	1061.7	1041.3	1019.6	1007.3	989.7
32.5°	972.0	940.7	906.7	870.0	846.9	814.3	796.6	806.1
35°	806.1	759.9	713.7	677.0	641.7	622.6	600.9	603.6
37.5°	645.7	580.5	539.7	500.3	470.4	445.9	436.4	433.7
40°	471.7	420.1	379.3	350.7	330.3	311.3	300.4	296.4
42.5°	326.3	289.6	256.9	233.8	220.2	208.0	202.6	201.2
45°	212.1	190.3	168.6	152.3	141.4	133.2	131.9	130.5
47.5°	133.2	122.3	108.8	96.5	87.0	81.6	77.5	77.5
50°	76.1	72.0	65.3	58.5	53.0	50.3	46.2	44.9
52.5°	40.8	40.8	38.1	32.6	28.5	25.8	25.8	24.5
55°	21.8	21.8	20.4	20.4	19.0	19.0	19.0	17.7
57.5°	13.6	13.6	15.0	15.0	13.6	13.6	13.6	13.6
60°	9.5	10.9	10.9	10.9	10.9	10.9	10.9	10.9
62.5°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
65°	5.4	6.8	6.8	6.8	6.8	5.4	5.4	5.4
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	2.7	2.7	2.7
72.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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)