

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: P209116

Luminaire Tested: **LDSQ4B15D010 EU4B10208050 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209116  
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: LDSQ4B15D010 EU4B10208050 4LBSQ1LI  
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE LOW  
IRIDESCENT TRIM.  
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM  
WATTAGE D010TR-14.39 W DE010-14.29 W D5LT-14.34 W DMX-14.46 W DL2-15.8 W  
DL3-15.28 W DLE-15.432 W  
Light Source: HIGH LUMEN LED 5000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1467.7 lumens  
Efficiency: N/A  
Efficacy: 102.0 lumens/watt  
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
CIE Type: Direct

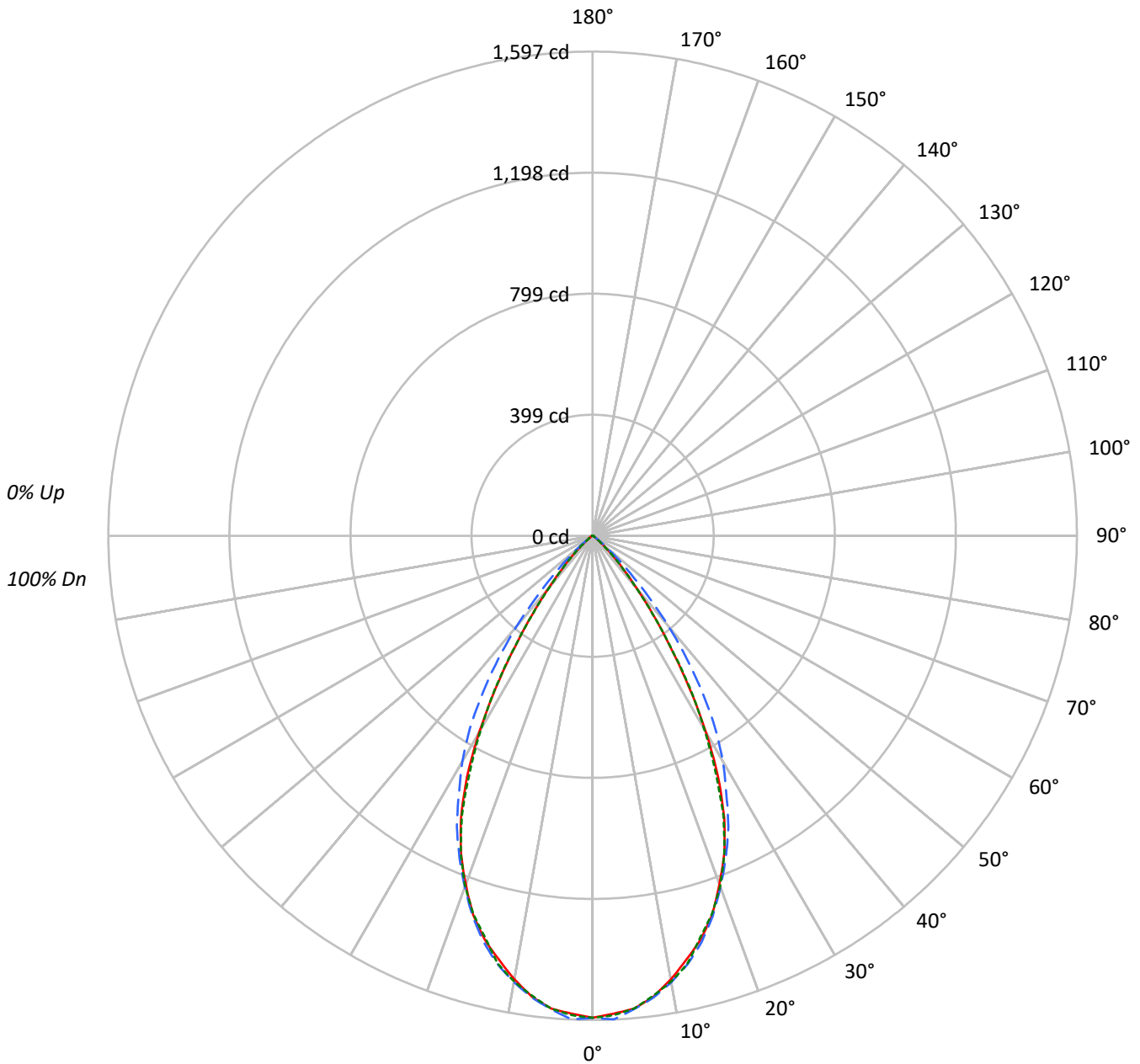
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	17215	17215	17215
5°	17017	17040	17017
10°	16336	16436	16414
15°	15445	15558	15365
20°	14095	14199	14165
25°	12273	12659	12188
30°	9333	10735	9194
35°	5875	8345	5929
40°	3169	5512	3113
45°	1501	2723	1485
50°	561	1021	561
55°	266	325	247
60°	175	154	175
65°	102	102	102
70°	63	95	63
75°	42	42	42
80°	62	62	62
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.4	10.0
10°-20°	386.3	26.3
20°-30°	471.9	32.2
30°-40°	330.1	22.5
40°-50°	108.2	7.4
50°-60°	17.2	1.2
60°-70°	4.7	0.3
70°-80°	1.5	0.1
80°-90°	0.4	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°	1005.6	68.5
0°-40°	1335.7	91.0
0°-60°	1461.0	99.5
0°-90°	1467.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1467.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1590	1590	1590	1590	1590	
5°	1566	1566	1568	1558	1566	147
15°	1378	1383	1388	1379	1371	384
25°	1027	1043	1060	1040	1020	461
35°	444	525	631	517	448	284
45°	98	121	178	119	97	82
55°	14	15	17	15	13	14
65°	4	5	4	5	4	4
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8
2.5°	1577.7	1588.8	1585.7	1592.8	1592.8	1584.7	1586.7	1589.8	1593.8	1596.8	1572.6
5°	1565.5	1575.6	1566.5	1576.6	1570.6	1561.5	1576.6	1568.6	1573.6	1567.6	1571.6
7.5°	1533.2	1549.4	1531.2	1543.3	1539.3	1534.2	1540.3	1538.3	1541.3	1536.2	1525.1
10°	1485.7	1498.9	1486.8	1503.9	1495.8	1490.8	1495.8	1500.9	1499.9	1494.8	1500.9
12.5°	1431.2	1446.4	1440.3	1450.4	1441.3	1441.3	1453.4	1450.4	1451.4	1447.4	1454.4
15°	1377.7	1388.8	1379.7	1392.8	1388.8	1377.7	1382.7	1382.7	1390.8	1387.8	1379.7
17.5°	1311.0	1320.1	1310.0	1313.0	1309.0	1307.0	1328.2	1314.0	1322.1	1316.1	1317.1
20°	1223.1	1227.2	1224.2	1232.2	1227.2	1233.2	1231.2	1229.2	1229.2	1232.2	1225.2
22.5°	1134.3	1134.3	1137.3	1139.3	1143.3	1137.3	1149.4	1139.3	1140.3	1147.4	1145.4
25°	1027.2	1024.2	1031.2	1041.3	1045.4	1040.3	1056.5	1048.4	1054.5	1059.5	1048.4
27.5°	896.9	896.9	904.0	921.1	924.2	930.2	952.5	952.5	960.5	953.5	961.5
30°	746.4	757.5	766.6	788.8	795.9	809.0	832.3	843.4	861.6	858.5	854.5
32.5°	591.9	607.0	608.0	631.3	650.5	672.7	704.0	730.2	743.4	752.5	742.4
35°	444.4	453.5	461.6	477.7	510.1	539.4	567.6	602.0	625.2	631.3	622.2
37.5°	325.2	327.2	335.3	350.5	374.7	403.0	437.3	474.7	499.0	508.0	497.9
40°	224.2	226.2	230.3	243.4	263.6	283.8	311.1	349.5	371.7	389.9	376.7
42.5°	150.5	152.5	156.6	166.7	177.8	197.0	218.2	242.4	263.6	271.7	264.6
45°	98.0	98.0	100.0	107.1	113.1	128.3	143.4	158.6	172.7	177.8	172.7
47.5°	57.6	58.6	60.6	65.7	72.7	78.8	89.9	100.0	104.0	108.1	106.1
50°	33.3	33.3	36.4	39.4	44.4	48.5	52.5	56.6	58.6	60.6	58.6
52.5°	18.2	19.2	20.2	21.2	23.2	27.3	30.3	30.3	31.3	32.3	31.3
55°	14.1	14.1	14.1	14.1	15.2	15.2	15.2	16.2	16.2	17.2	16.2
57.5°	10.1	10.1	10.1	11.1	11.1	11.1	10.1	10.1	10.1	10.1	10.1
60°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	7.1	7.1	7.1	7.1
62.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
65°	4.0	4.0	5.1	5.1	5.1	5.1	5.1	4.0	4.0	4.0	4.0
67.5°	3.0	3.0	3.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
70°	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	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°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8	1589.8
2.5°	1589.8	1572.6	1574.6	1583.7	1578.7	1583.7	1582.7	1582.7
5°	1572.6	1567.6	1559.5	1556.4	1562.5	1575.6	1573.6	1565.5
7.5°	1540.3	1527.2	1536.2	1540.3	1535.2	1543.3	1547.4	1530.2
10°	1501.9	1496.9	1494.8	1496.9	1494.8	1502.9	1492.8	1492.8
12.5°	1447.4	1439.3	1439.3	1451.4	1444.3	1438.3	1446.4	1445.3
15°	1392.8	1376.7	1376.7	1380.7	1383.7	1379.7	1380.7	1370.6
17.5°	1312.0	1307.0	1299.9	1311.0	1314.0	1310.0	1313.0	1308.0
20°	1236.3	1236.3	1223.1	1228.2	1232.2	1235.3	1237.3	1229.2
22.5°	1139.3	1141.3	1132.2	1142.3	1145.4	1135.3	1137.3	1135.3
25°	1050.4	1049.4	1042.3	1038.3	1040.3	1036.3	1035.3	1020.1
27.5°	952.5	942.4	927.2	931.2	914.1	899.9	899.9	876.7
30°	846.4	829.2	809.0	788.8	773.7	757.5	748.4	735.3
32.5°	722.2	698.9	673.7	646.4	629.2	605.0	591.9	598.9
35°	598.9	564.6	530.3	503.0	476.7	462.6	446.4	448.5
37.5°	479.8	431.3	401.0	371.7	349.5	331.3	324.2	322.2
40°	350.5	312.1	281.8	260.6	245.4	231.3	223.2	220.2
42.5°	242.4	215.1	190.9	173.7	163.6	154.5	150.5	149.5
45°	157.6	141.4	125.2	113.1	105.0	99.0	98.0	97.0
47.5°	99.0	90.9	80.8	71.7	64.6	60.6	57.6	57.6
50°	56.6	53.5	48.5	43.4	39.4	37.4	34.3	33.3
52.5°	30.3	30.3	28.3	24.2	21.2	19.2	19.2	18.2
55°	16.2	16.2	15.2	15.2	14.1	14.1	14.1	13.1
57.5°	10.1	10.1	11.1	11.1	10.1	10.1	10.1	10.1
60°	7.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
62.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
65°	4.0	5.1	5.1	5.1	5.1	4.0	4.0	4.0
67.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
70°	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093







— 0°-180°    - - 45°-225°    - - - - 90°-270°









(END OF REPORT)