

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: P209115

Luminaire Tested: **LDSQ4B15D010 EU4B10208040 4LBSQ1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209115  
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 EU4B10208040 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 4000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1468.4 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

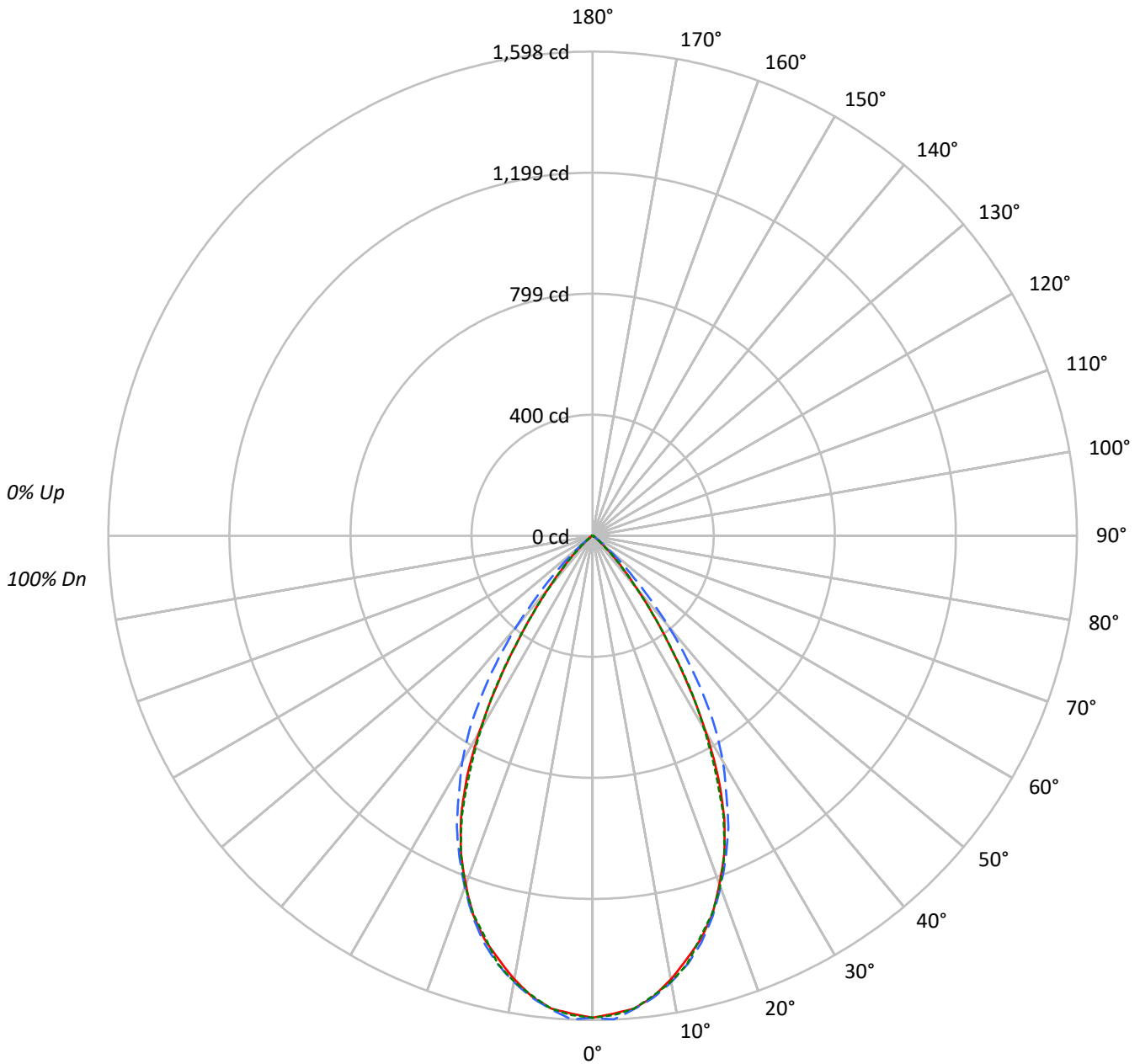
Input Watts (W): 14.39  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	17224	17224	17224
5°	17027	17049	17027
10°	16345	16445	16423
15°	15453	15566	15373
20°	14103	14207	14172
25°	12279	12666	12195
30°	9338	10741	9199
35°	5877	8349	5932
40°	3171	5514	3114
45°	1501	2724	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°	147.5	10.0
10°-20°	386.5	26.3
20°-30°	472.2	32.2
30°-40°	330.2	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°	1006.1	68.5
0°-40°	1336.4	91.0
0°-60°	1461.8	99.5
0°-90°	1468.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1468.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1591	1591	1591	1591	1591	
5°	1566	1567	1568	1559	1566	147
15°	1378	1384	1388	1379	1371	384
25°	1028	1043	1060	1041	1021	462
35°	445	525	632	517	449	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°	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6
2.5°	1578.5	1589.6	1586.6	1593.6	1593.6	1585.6	1587.6	1590.6	1594.7	1597.7	1573.4
5°	1566.4	1576.5	1567.4	1577.5	1571.4	1562.3	1577.5	1569.4	1574.4	1568.4	1572.4
7.5°	1534.0	1550.2	1532.0	1544.1	1540.1	1535.0	1541.1	1539.1	1542.1	1537.1	1525.9
10°	1486.5	1499.7	1487.5	1504.7	1496.6	1491.6	1496.6	1501.7	1500.7	1495.6	1501.7
12.5°	1432.0	1447.1	1441.1	1451.2	1442.1	1442.1	1454.2	1451.2	1452.2	1448.1	1455.2
15°	1378.4	1389.5	1380.4	1393.6	1389.5	1378.4	1383.5	1383.5	1391.5	1388.5	1380.4
17.5°	1311.7	1320.8	1310.7	1313.7	1309.7	1307.7	1328.9	1314.7	1322.8	1316.8	1317.8
20°	1223.8	1227.8	1224.8	1232.9	1227.8	1233.9	1231.9	1229.8	1229.8	1232.9	1225.8
22.5°	1134.9	1134.9	1137.9	1139.9	1144.0	1137.9	1150.0	1139.9	1140.9	1148.0	1146.0
25°	1027.7	1024.7	1031.8	1041.9	1045.9	1040.9	1057.0	1049.0	1055.0	1060.1	1049.0
27.5°	897.4	897.4	904.4	921.6	924.7	930.7	953.0	953.0	961.0	954.0	962.1
30°	746.8	757.9	767.0	789.2	796.3	809.5	832.7	843.8	862.0	859.0	854.9
32.5°	592.2	607.3	608.4	631.6	650.8	673.0	704.4	730.6	743.8	752.9	742.8
35°	444.6	453.7	461.8	478.0	510.3	539.6	567.9	602.3	625.5	631.6	622.5
37.5°	325.4	327.4	335.5	350.7	374.9	403.2	437.6	475.0	499.2	508.3	498.2
40°	224.3	226.4	230.4	243.5	263.8	284.0	311.3	349.7	371.9	390.1	376.9
42.5°	150.6	152.6	156.6	166.7	177.9	197.1	218.3	242.5	263.8	271.8	264.8
45°	98.0	98.0	100.0	107.1	113.2	128.3	143.5	158.7	172.8	177.9	172.8
47.5°	57.6	58.6	60.6	65.7	72.8	78.8	89.9	100.0	104.1	108.1	106.1
50°	33.3	33.3	36.4	39.4	44.5	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°	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6	1590.6
2.5°	1590.6	1573.4	1575.5	1584.6	1579.5	1584.6	1583.5	1583.5
5°	1573.4	1568.4	1560.3	1557.3	1563.3	1576.5	1574.4	1566.4
7.5°	1541.1	1528.0	1537.1	1541.1	1536.0	1544.1	1548.2	1531.0
10°	1502.7	1497.6	1495.6	1497.6	1495.6	1503.7	1493.6	1493.6
12.5°	1448.1	1440.0	1440.0	1452.2	1445.1	1439.0	1447.1	1446.1
15°	1393.6	1377.4	1377.4	1381.4	1384.5	1380.4	1381.4	1371.3
17.5°	1312.7	1307.7	1300.6	1311.7	1314.7	1310.7	1313.7	1308.7
20°	1236.9	1236.9	1223.8	1228.8	1232.9	1235.9	1237.9	1229.8
22.5°	1139.9	1141.9	1132.8	1142.9	1146.0	1135.9	1137.9	1135.9
25°	1051.0	1050.0	1042.9	1038.9	1040.9	1036.8	1035.8	1020.7
27.5°	953.0	942.8	927.7	931.7	914.6	900.4	900.4	877.2
30°	846.8	829.7	809.5	789.2	774.1	757.9	748.8	735.7
32.5°	722.5	699.3	674.0	646.8	629.6	605.3	592.2	599.3
35°	599.3	564.9	530.5	503.3	477.0	462.8	446.7	448.7
37.5°	480.0	431.5	401.2	371.9	349.7	331.5	324.4	322.4
40°	350.7	312.3	281.9	260.7	245.6	231.4	223.3	220.3
42.5°	242.5	215.2	191.0	173.8	163.7	154.6	150.6	149.6
45°	157.6	141.5	125.3	113.2	105.1	99.0	98.0	97.0
47.5°	99.0	91.0	80.8	71.7	64.7	60.6	57.6	57.6
50°	56.6	53.6	48.5	43.5	39.4	37.4	34.4	33.3
52.5°	30.3	30.3	28.3	24.3	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)