

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: P209264

Luminaire Tested: **LDSQ4B40D010 EU4B30509730 4LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209264  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35089)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQ4B40D010 EU4B30509730 4LBCSSQ1MMS  
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE SHALLOW CAST METALLIC SILVER TRIM  
MEDIUM DISTRIBUTION WITH MATTE METALLIC SILVER TRIM  
WATTAGE D010TR-43.02 W DE010-42.54 W D5LT-42.539 W DMX-41.87 W DL2-41.57 W DL3-44.71 W DLE-39.33 W  
Light Source: HIGH LUMEN LED 3000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2993.8 lumens  
Efficiency: N/A  
Efficacy: 69.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Direct

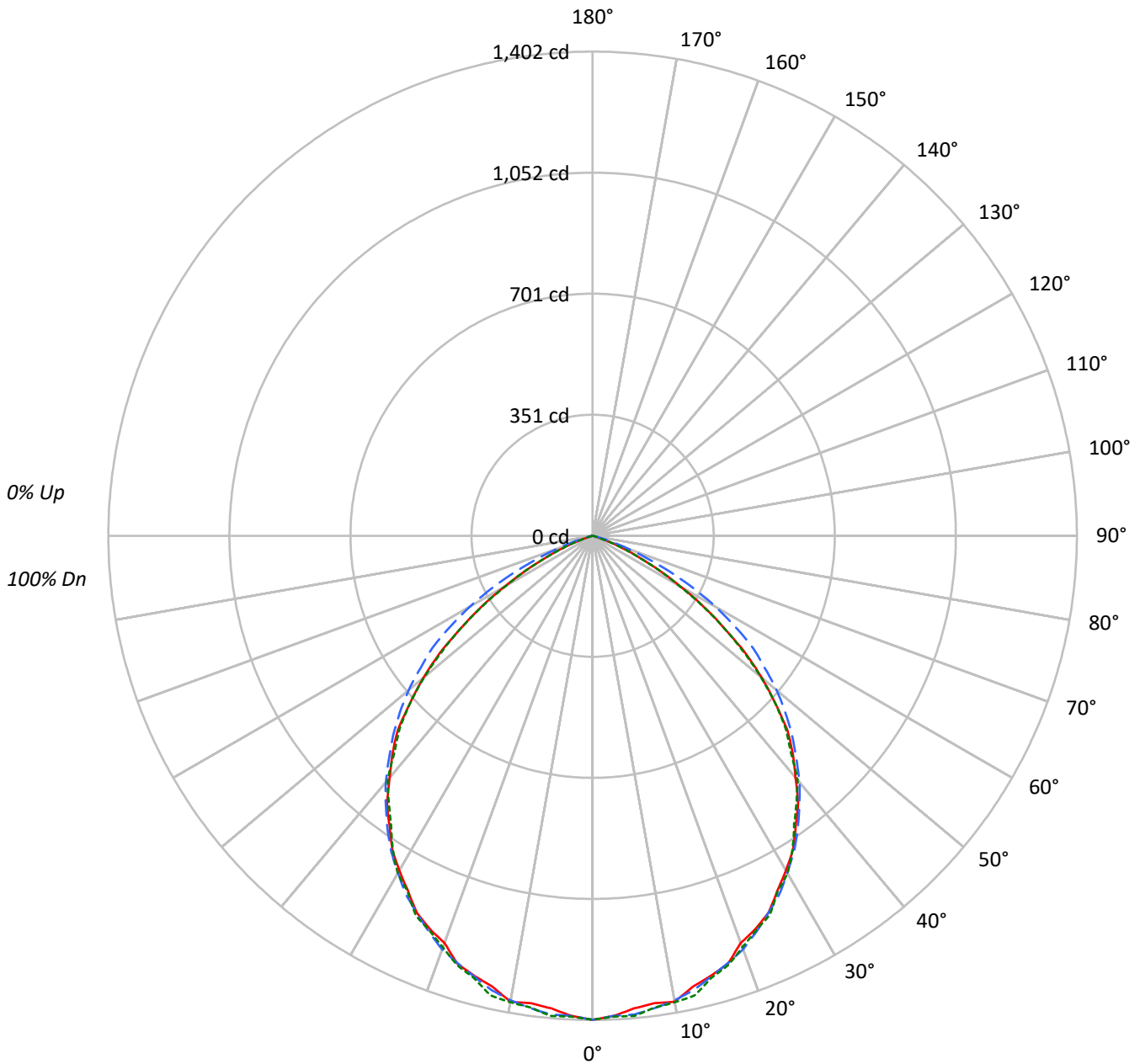
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P209264

CATALOG NUMBER: LDSQ4B40D010 EU4B30509730 4LBCSSQ1MMS

### Luminous Intensity Polar Plot





TEST NUMBER: P209264

CATALOG NUMBER: LDSQ4B40D010 EU4B30509730 4LBCSSQ1MMS

**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	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89																			
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77																			
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67																			
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41																			
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37																			
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33																			
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31																			

**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°			



TEST NUMBER: P209264

CATALOG NUMBER: LDSQ4B40D010 EU4B30509730 4LBCSSQ1MMS

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	132.3	4.4
10°-20°	374.3	12.5
20°-30°	555.4	18.6
30°-40°	643.6	21.5
40°-50°	617.1	20.6
50°-60°	453.7	15.2
60°-70°	196.0	6.5
70°-80°	21.1	0.7
80°-90°	0.3	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°	1062.1	35.5
0°-40°	1705.7	57.0
0°-60°	2776.4	92.7
0°-90°	2993.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2993.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1402	1402	1402	1402	1402	
5°	1374	1388	1392	1394	1396	131
15°	1320	1328	1322	1324	1326	372
25°	1204	1202	1204	1206	1212	551
35°	1025	1031	1035	1033	1017	641
45°	798	800	816	804	790	607
55°	462	510	567	508	464	416
65°	151	189	247	187	147	156
75°	4	6	22	4	4	12
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



TEST NUMBER: P209264

CATALOG NUMBER: LDSQ4B40D010 EU4B30509730 4LBCSSQ1MMS

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5
2.5°	1391.5	1407.4	1409.4	1399.5	1395.5	1389.5	1403.5	1393.5	1397.5	1393.5	1391.5
5°	1373.6	1391.5	1393.5	1393.5	1389.5	1387.5	1393.5	1391.5	1389.5	1385.5	1391.5
7.5°	1365.6	1375.6	1385.5	1373.6	1379.6	1377.6	1391.5	1385.5	1383.6	1383.6	1379.6
10°	1369.6	1367.6	1375.6	1363.6	1367.6	1363.6	1375.6	1375.6	1371.6	1367.6	1365.6
12.5°	1337.8	1353.7	1353.7	1351.7	1347.7	1341.7	1353.7	1361.7	1349.7	1349.7	1347.7
15°	1319.8	1323.8	1325.8	1325.8	1323.8	1327.8	1333.8	1325.8	1327.8	1317.9	1321.8
17.5°	1299.9	1292.0	1298.0	1294.0	1296.0	1299.9	1307.9	1307.9	1296.0	1294.0	1298.0
20°	1254.2	1278.0	1280.0	1268.1	1270.1	1270.1	1284.0	1272.1	1280.0	1270.1	1274.1
22.5°	1232.3	1248.2	1250.2	1234.2	1244.2	1232.3	1246.2	1228.3	1248.2	1234.2	1240.2
25°	1204.4	1202.4	1208.4	1200.4	1202.4	1202.4	1212.3	1204.4	1210.4	1202.4	1204.4
27.5°	1158.6	1174.5	1172.5	1164.6	1168.6	1166.6	1186.5	1164.6	1176.5	1166.6	1170.5
30°	1118.8	1132.7	1128.7	1120.8	1120.8	1114.8	1136.7	1130.7	1128.7	1128.7	1126.7
32.5°	1079.0	1081.0	1077.0	1079.0	1081.0	1073.0	1090.9	1083.0	1081.0	1083.0	1084.9
35°	1025.2	1025.2	1029.2	1023.2	1031.2	1031.2	1047.1	1037.2	1035.2	1029.2	1035.2
37.5°	977.4	971.5	973.5	973.5	977.4	981.4	989.4	985.4	985.4	979.4	983.4
40°	913.7	909.8	915.7	915.7	921.7	921.7	929.7	925.7	931.7	931.7	931.7
42.5°	858.0	858.0	854.0	860.0	862.0	860.0	873.9	871.9	873.9	869.9	871.9
45°	798.3	798.3	794.3	792.3	802.3	800.3	816.2	810.2	818.2	814.2	816.2
47.5°	716.7	726.6	720.6	726.6	738.6	740.5	750.5	746.5	754.5	748.5	756.5
50°	639.0	639.0	645.0	653.0	664.9	666.9	678.8	686.8	690.8	692.8	694.8
52.5°	557.4	555.4	561.4	571.3	581.3	589.3	601.2	613.1	621.1	633.0	627.1
55°	461.8	465.8	471.8	483.7	499.7	509.6	519.6	535.5	549.4	555.4	567.4
57.5°	380.2	376.2	380.2	396.2	414.1	422.0	436.0	451.9	471.8	483.7	487.7
60°	294.6	296.6	300.6	314.5	328.5	340.4	346.4	372.3	390.2	402.1	410.1
62.5°	217.0	221.0	225.0	236.9	250.8	260.8	270.7	292.6	308.6	320.5	328.5
65°	151.3	153.3	159.3	165.2	179.2	189.1	197.1	215.0	230.9	240.9	246.8
67.5°	93.6	95.6	99.5	107.5	117.5	125.4	133.4	145.3	159.3	169.2	171.2
70°	47.8	49.8	51.8	57.7	65.7	69.7	75.6	85.6	95.6	103.5	107.5
72.5°	15.9	15.9	17.9	21.9	25.9	29.9	31.9	41.8	49.8	53.7	55.7
75°	4.0	4.0	4.0	4.0	4.0	6.0	6.0	11.9	15.9	19.9	21.9
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	4.0	4.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	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	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P209264

CATALOG NUMBER: LDSQ4B40D010 EU4B30509730 4LBCSSQ1MMS

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5	1401.5
2.5°	1401.5	1397.5	1395.5	1397.5	1397.5	1395.5	1401.5	1409.4	1419.4	1393.5
5°	1399.5	1395.5	1399.5	1387.5	1393.5	1389.5	1397.5	1395.5	1403.5	1395.5
7.5°	1393.5	1385.5	1387.5	1381.6	1389.5	1379.6	1385.5	1397.5	1389.5	1377.6
10°	1373.6	1369.6	1383.6	1363.6	1359.7	1367.6	1383.6	1371.6	1367.6	1371.6
12.5°	1353.7	1353.7	1359.7	1343.7	1345.7	1349.7	1357.7	1349.7	1353.7	1363.6
15°	1331.8	1327.8	1337.8	1325.8	1323.8	1319.8	1327.8	1327.8	1331.8	1325.8
17.5°	1305.9	1299.9	1299.9	1296.0	1294.0	1303.9	1307.9	1309.9	1311.9	1303.9
20°	1274.1	1272.1	1278.0	1272.1	1274.1	1276.1	1276.1	1272.1	1290.0	1268.1
22.5°	1240.2	1246.2	1238.2	1234.2	1238.2	1242.2	1242.2	1244.2	1240.2	1236.2
25°	1206.4	1210.4	1212.3	1200.4	1206.4	1200.4	1214.3	1216.3	1208.4	1212.3
27.5°	1176.5	1170.5	1168.6	1160.6	1164.6	1162.6	1164.6	1164.6	1176.5	1160.6
30°	1130.7	1124.8	1126.7	1120.8	1122.8	1120.8	1122.8	1122.8	1130.7	1128.7
32.5°	1086.9	1081.0	1083.0	1077.0	1077.0	1079.0	1075.0	1075.0	1081.0	1077.0
35°	1045.1	1031.2	1033.2	1031.2	1033.2	1025.2	1025.2	1023.2	1027.2	1017.3
37.5°	985.4	979.4	977.4	975.5	977.4	973.5	977.4	971.5	977.4	969.5
40°	931.7	927.7	929.7	917.7	917.7	919.7	915.7	913.7	915.7	923.7
42.5°	877.9	869.9	866.0	862.0	864.0	858.0	856.0	852.0	856.0	848.0
45°	814.2	814.2	812.2	802.3	804.3	804.3	796.3	788.3	790.3	790.3
47.5°	756.5	752.5	750.5	740.5	738.6	736.6	728.6	722.6	722.6	716.7
50°	692.8	688.8	682.8	672.9	668.9	656.9	651.0	643.0	635.0	635.0
52.5°	633.0	619.1	611.2	595.2	589.3	583.3	567.4	561.4	555.4	549.4
55°	561.4	549.4	533.5	515.6	507.6	497.7	481.8	469.8	461.8	463.8
57.5°	491.7	471.8	455.9	432.0	422.0	416.1	400.1	384.2	376.2	376.2
60°	406.1	390.2	370.3	348.4	340.4	330.5	310.6	300.6	294.6	288.7
62.5°	324.5	312.5	294.6	266.8	260.8	250.8	236.9	225.0	219.0	219.0
65°	242.9	230.9	215.0	195.1	187.1	179.2	167.2	155.3	149.3	147.3
67.5°	171.2	157.3	143.3	127.4	121.4	117.5	105.5	97.5	93.6	91.6
70°	103.5	95.6	85.6	73.7	67.7	63.7	55.7	49.8	47.8	45.8
72.5°	53.7	47.8	39.8	31.9	27.9	23.9	19.9	15.9	13.9	13.9
75°	19.9	15.9	10.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	4.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	0.0	0.0	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	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	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)