

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: P209244

Luminaire Tested: **LDSQ4B30D010 EU4B30508050 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209244
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: LDSQ4B30D010 EU4B30508050 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-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 5000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2964.1 lumens
Efficiency: N/A
Efficacy: 105.9 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

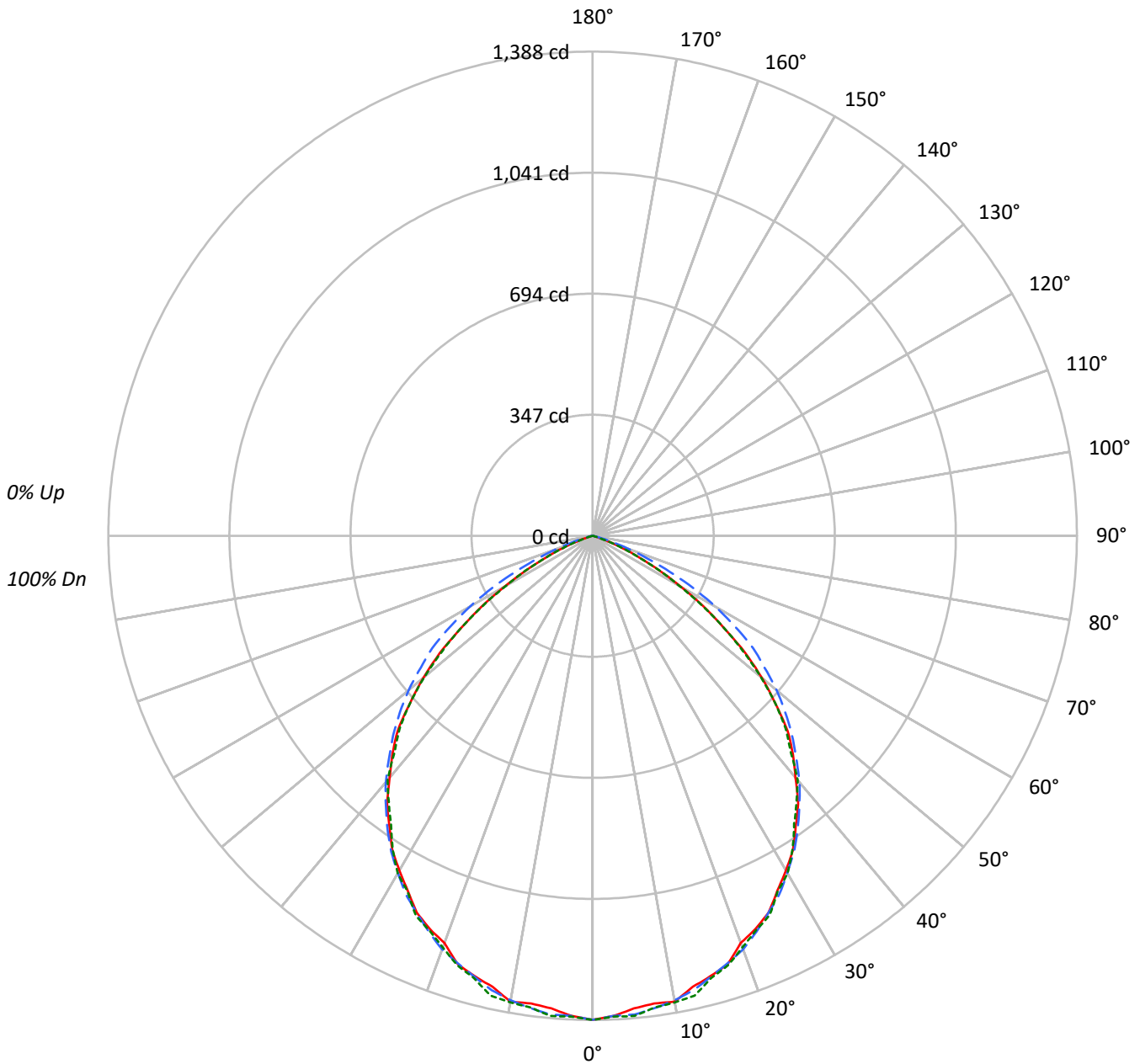
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°			



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.0	4.4
10°-20°	370.6	12.5
20°-30°	549.9	18.6
30°-40°	637.2	21.5
40°-50°	610.9	20.6
50°-60°	449.2	15.2
60°-70°	194.0	6.5
70°-80°	20.9	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°	1051.5	35.5
0°-40°	1688.8	57.0
0°-60°	2748.9	92.7
0°-90°	2964.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2964.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1360	1374	1378	1380	1382	130
15°	1307	1315	1309	1311	1313	368
25°	1192	1190	1192	1194	1200	546
35°	1015	1021	1025	1023	1007	635
45°	790	792	808	796	782	601
55°	457	505	562	503	459	412
65°	150	187	244	185	146	154
75°	4	6	22	4	4	12
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°	22.5°	25°	30°	35°	40°	45°
0°	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6
2.5°	1377.7	1393.5	1395.5	1385.6	1381.7	1375.7	1389.5	1379.7	1383.6	1379.7	1377.7
5°	1360.0	1377.7	1379.7	1379.7	1375.7	1373.8	1379.7	1377.7	1375.7	1371.8	1377.7
7.5°	1352.1	1362.0	1371.8	1360.0	1365.9	1363.9	1377.7	1371.8	1369.8	1369.8	1365.9
10°	1356.0	1354.1	1362.0	1350.1	1354.1	1350.1	1362.0	1362.0	1358.0	1354.1	1352.1
12.5°	1324.5	1340.3	1340.3	1338.3	1334.4	1328.4	1340.3	1348.2	1336.3	1336.3	1334.4
15°	1306.8	1310.7	1312.7	1312.7	1310.7	1314.6	1320.6	1312.7	1314.6	1304.8	1308.7
17.5°	1287.1	1279.2	1285.1	1281.1	1283.1	1287.1	1294.9	1294.9	1283.1	1281.1	1285.1
20°	1241.7	1265.4	1267.3	1255.5	1257.5	1257.5	1271.3	1259.5	1267.3	1257.5	1261.4
22.5°	1220.0	1235.8	1237.8	1222.0	1231.9	1220.0	1233.8	1216.1	1235.8	1222.0	1227.9
25°	1192.4	1190.5	1196.4	1188.5	1190.5	1190.5	1200.3	1192.4	1198.4	1190.5	1192.4
27.5°	1147.1	1162.9	1160.9	1153.0	1157.0	1155.0	1174.7	1153.0	1164.9	1155.0	1158.9
30°	1107.7	1121.5	1117.5	1109.7	1109.7	1103.8	1125.4	1119.5	1117.5	1117.5	1115.6
32.5°	1068.3	1070.2	1066.3	1068.3	1070.2	1062.4	1080.1	1072.2	1070.2	1072.2	1074.2
35°	1015.1	1015.1	1019.0	1013.1	1021.0	1021.0	1036.7	1026.9	1024.9	1019.0	1024.9
37.5°	967.8	961.8	963.8	963.8	967.8	971.7	979.6	975.6	975.6	969.7	973.7
40°	904.7	900.7	906.7	906.7	912.6	912.6	920.5	916.5	922.4	922.4	922.4
42.5°	849.5	849.5	845.6	851.5	853.4	851.5	865.3	863.3	865.3	861.3	863.3
45°	790.4	790.4	786.4	784.5	794.3	792.3	808.1	802.2	810.1	806.1	808.1
47.5°	709.6	719.4	713.5	719.4	731.2	733.2	743.1	739.1	747.0	741.1	749.0
50°	632.7	632.7	638.6	646.5	658.3	660.3	672.1	680.0	683.9	685.9	687.9
52.5°	551.9	549.9	555.8	565.7	575.5	583.4	595.2	607.1	614.9	626.8	620.9
55°	457.3	461.2	467.1	478.9	494.7	504.6	514.4	530.2	544.0	549.9	561.7
57.5°	376.5	372.5	376.5	392.2	410.0	417.8	431.6	447.4	467.1	478.9	482.9
60°	291.7	293.7	297.6	311.4	325.2	337.0	343.0	368.6	386.3	398.1	406.0
62.5°	214.8	218.8	222.7	234.5	248.3	258.2	268.1	289.7	305.5	317.3	325.2
65°	149.8	151.8	157.7	163.6	177.4	187.2	195.1	212.9	228.6	238.5	244.4
67.5°	92.6	94.6	98.5	106.4	116.3	124.2	132.1	143.9	157.7	167.5	169.5
70°	47.3	49.3	51.2	57.2	65.0	69.0	74.9	84.8	94.6	102.5	106.4
72.5°	15.8	15.8	17.7	21.7	25.6	29.6	31.5	41.4	49.3	53.2	55.2
75°	3.9	3.9	3.9	3.9	3.9	5.9	5.9	11.8	15.8	19.7	21.7
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.9	3.9
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6	1387.6
2.5°	1387.6	1383.6	1381.7	1383.6	1383.6	1381.7	1387.6	1395.5	1405.3	1379.7
5°	1385.6	1381.7	1385.6	1373.8	1379.7	1375.7	1383.6	1381.7	1389.5	1381.7
7.5°	1379.7	1371.8	1373.8	1367.9	1375.7	1365.9	1371.8	1383.6	1375.7	1363.9
10°	1360.0	1356.0	1369.8	1350.1	1346.2	1354.1	1369.8	1358.0	1354.1	1358.0
12.5°	1340.3	1340.3	1346.2	1330.4	1332.4	1336.3	1344.2	1336.3	1340.3	1350.1
15°	1318.6	1314.6	1324.5	1312.7	1310.7	1306.8	1314.6	1314.6	1318.6	1312.7
17.5°	1293.0	1287.1	1287.1	1283.1	1281.1	1291.0	1294.9	1296.9	1298.9	1291.0
20°	1261.4	1259.5	1265.4	1259.5	1261.4	1263.4	1263.4	1259.5	1277.2	1255.5
22.5°	1227.9	1233.8	1226.0	1222.0	1226.0	1229.9	1229.9	1231.9	1227.9	1224.0
25°	1194.4	1198.4	1200.3	1188.5	1194.4	1188.5	1202.3	1204.3	1196.4	1200.3
27.5°	1164.9	1158.9	1157.0	1149.1	1153.0	1151.1	1153.0	1153.0	1164.9	1149.1
30°	1119.5	1113.6	1115.6	1109.7	1111.6	1109.7	1111.6	1111.6	1119.5	1117.5
32.5°	1076.2	1070.2	1072.2	1066.3	1066.3	1068.3	1064.3	1064.3	1070.2	1066.3
35°	1034.8	1021.0	1022.9	1021.0	1022.9	1015.1	1015.1	1013.1	1017.0	1007.2
37.5°	975.6	969.7	967.8	965.8	967.8	963.8	967.8	961.8	967.8	959.9
40°	922.4	918.5	920.5	908.6	908.6	910.6	906.7	904.7	906.7	914.5
42.5°	869.2	861.3	857.4	853.4	855.4	849.5	847.5	843.6	847.5	839.6
45°	806.1	806.1	804.2	794.3	796.3	796.3	788.4	780.5	782.5	782.5
47.5°	749.0	745.0	743.1	733.2	731.2	729.3	721.4	715.5	715.5	709.6
50°	685.9	682.0	676.0	666.2	662.3	650.4	644.5	636.6	628.7	628.7
52.5°	626.8	613.0	605.1	589.3	583.4	577.5	561.7	555.8	549.9	544.0
55°	555.8	544.0	528.2	510.5	502.6	492.7	477.0	465.2	457.3	459.2
57.5°	486.8	467.1	451.4	427.7	417.8	411.9	396.2	380.4	372.5	372.5
60°	402.1	386.3	366.6	344.9	337.0	327.2	307.5	297.6	291.7	285.8
62.5°	321.3	309.4	291.7	264.1	258.2	248.3	234.5	222.7	216.8	216.8
65°	240.5	228.6	212.9	193.2	185.3	177.4	165.6	153.7	147.8	145.9
67.5°	169.5	155.7	141.9	126.1	120.2	116.3	104.5	96.6	92.6	90.7
70°	102.5	94.6	84.8	72.9	67.0	63.1	55.2	49.3	47.3	45.3
72.5°	53.2	47.3	39.4	31.5	27.6	23.7	19.7	15.8	13.8	13.8
75°	19.7	15.8	9.9	5.9	3.9	3.9	3.9	3.9	3.9	3.9
77.5°	3.9	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)