

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: P209240

Luminaire Tested: **LDSQ4B30D010 EU4B30508027 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209240
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 EU4B30508027 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 2700 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2738.8 lumens
Efficiency: N/A
Efficacy: 97.8 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

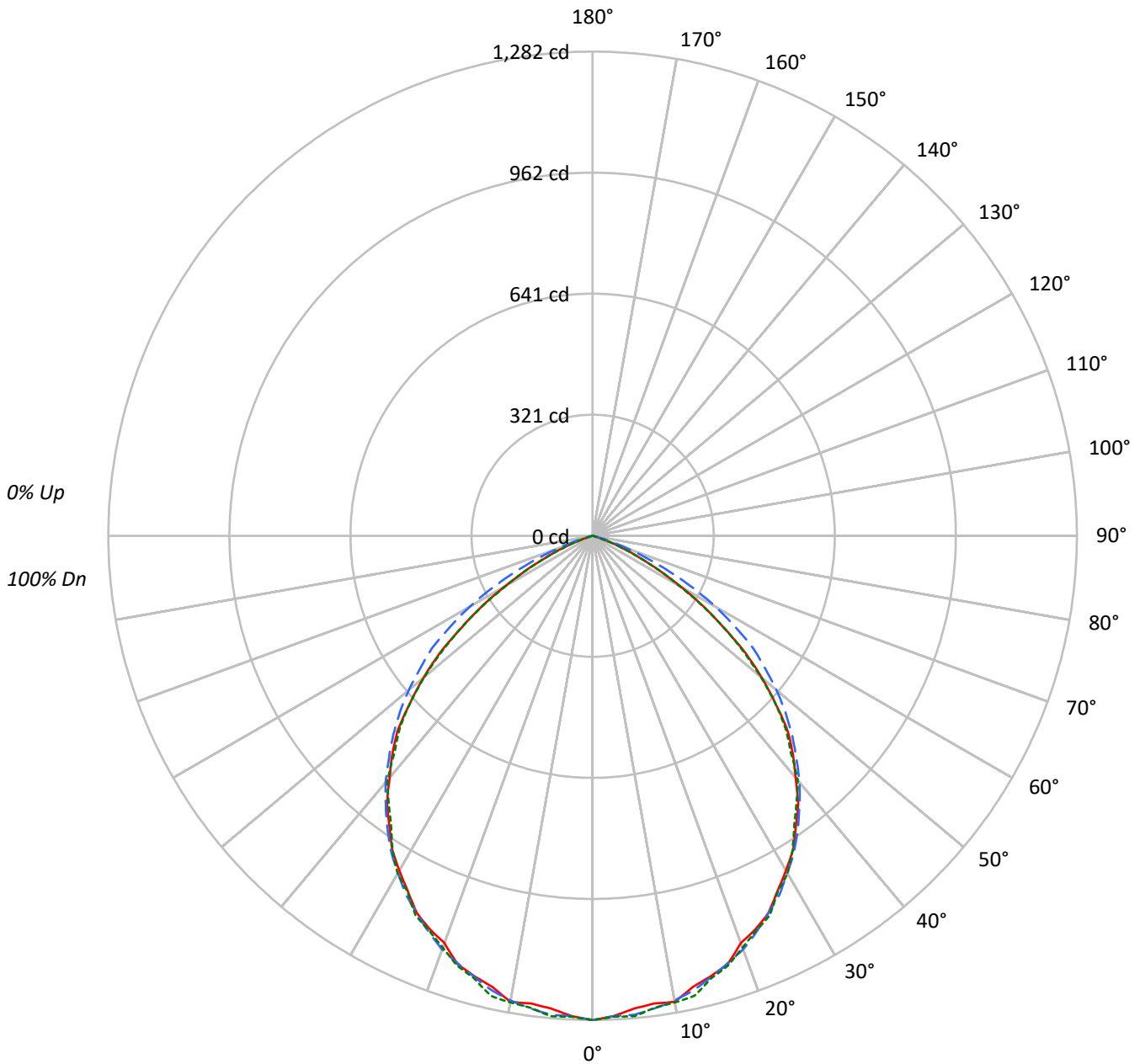
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	34																			
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°	121.0	4.4
10°-20°	342.5	12.5
20°-30°	508.1	18.6
30°-40°	588.8	21.5
40°-50°	564.5	20.6
50°-60°	415.1	15.2
60°-70°	179.3	6.5
70°-80°	19.3	0.7
80°-90°	0.2	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°	971.6	35.5
0°-40°	1560.4	57.0
0°-60°	2540.0	92.7
0°-90°	2738.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2738.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1282	1282	1282	1282	1282	
5°	1257	1269	1273	1275	1277	120
15°	1208	1215	1209	1211	1213	340
25°	1102	1100	1102	1104	1109	504
35°	938	943	947	945	931	586
45°	730	732	747	736	723	555
55°	422	466	519	464	424	380
65°	138	173	226	171	135	142
75°	4	6	20	4	4	11
85°	0	0	0	0	0	0
90°	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°	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1
2.5°	1273.0	1287.6	1289.4	1280.3	1276.7	1271.2	1284.0	1274.8	1278.5	1274.8	1273.0
5°	1256.6	1273.0	1274.8	1274.8	1271.2	1269.4	1274.8	1273.0	1271.2	1267.6	1273.0
7.5°	1249.3	1258.5	1267.6	1256.6	1262.1	1260.3	1273.0	1267.6	1265.7	1265.7	1262.1
10°	1253.0	1251.2	1258.5	1247.5	1251.2	1247.5	1258.5	1258.5	1254.8	1251.2	1249.3
12.5°	1223.9	1238.4	1238.4	1236.6	1233.0	1227.5	1238.4	1245.7	1234.8	1234.8	1233.0
15°	1207.5	1211.1	1212.9	1212.9	1211.1	1214.7	1220.2	1212.9	1214.7	1205.6	1209.3
17.5°	1189.2	1182.0	1187.4	1183.8	1185.6	1189.2	1196.5	1196.5	1185.6	1183.8	1187.4
20°	1147.4	1169.2	1171.0	1160.1	1161.9	1161.9	1174.7	1163.8	1171.0	1161.9	1165.6
22.5°	1127.3	1141.9	1143.7	1129.1	1138.3	1127.3	1140.1	1123.7	1141.9	1129.1	1134.6
25°	1101.8	1100.0	1105.5	1098.2	1100.0	1100.0	1109.1	1101.8	1107.3	1100.0	1101.8
27.5°	1059.9	1074.5	1072.7	1065.4	1069.0	1067.2	1085.4	1065.4	1076.3	1067.2	1070.9
30°	1023.5	1036.3	1032.6	1025.3	1025.3	1019.9	1039.9	1034.4	1032.6	1032.6	1030.8
32.5°	987.1	988.9	985.3	987.1	988.9	981.6	998.0	990.7	988.9	990.7	992.6
35°	937.9	937.9	941.6	936.1	943.4	943.4	958.0	948.8	947.0	941.6	947.0
37.5°	894.2	888.7	890.6	890.6	894.2	897.9	905.1	901.5	901.5	896.0	899.7
40°	835.9	832.3	837.8	837.8	843.2	843.2	850.5	846.9	852.3	852.3	852.3
42.5°	784.9	784.9	781.3	786.8	788.6	786.8	799.5	797.7	799.5	795.9	797.7
45°	730.3	730.3	726.7	724.8	733.9	732.1	746.7	741.2	748.5	744.9	746.7
47.5°	655.6	664.7	659.3	664.7	675.7	677.5	686.6	683.0	690.2	684.8	692.1
50°	584.6	584.6	590.1	597.4	608.3	610.1	621.0	628.3	632.0	633.8	635.6
52.5°	509.9	508.1	513.6	522.7	531.8	539.1	550.0	560.9	568.2	579.1	573.7
55°	422.5	426.2	431.6	442.6	457.1	466.2	475.3	489.9	502.7	508.1	519.0
57.5°	347.9	344.2	347.9	362.4	378.8	386.1	398.8	413.4	431.6	442.6	446.2
60°	269.5	271.4	275.0	287.8	300.5	311.4	316.9	340.6	357.0	367.9	375.2
62.5°	198.5	202.2	205.8	216.7	229.5	238.6	247.7	267.7	282.3	293.2	300.5
65°	138.4	140.2	145.7	151.2	163.9	173.0	180.3	196.7	211.3	220.4	225.8
67.5°	85.6	87.4	91.1	98.3	107.5	114.7	122.0	132.9	145.7	154.8	156.6
70°	43.7	45.5	47.4	52.8	60.1	63.7	69.2	78.3	87.4	94.7	98.3
72.5°	14.6	14.6	16.4	20.0	23.7	27.3	29.1	38.2	45.5	49.2	51.0
75°	3.6	3.6	3.6	3.6	3.6	5.5	5.5	10.9	14.6	18.2	20.0
77.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	3.6	3.6
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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°	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1
2.5°	1282.1	1278.5	1276.7	1278.5	1278.5	1276.7	1282.1	1289.4	1298.5	1274.8
5°	1280.3	1276.7	1280.3	1269.4	1274.8	1271.2	1278.5	1276.7	1284.0	1276.7
7.5°	1274.8	1267.6	1269.4	1263.9	1271.2	1262.1	1267.6	1278.5	1271.2	1260.3
10°	1256.6	1253.0	1265.7	1247.5	1243.9	1251.2	1265.7	1254.8	1251.2	1254.8
12.5°	1238.4	1238.4	1243.9	1229.3	1231.1	1234.8	1242.1	1234.8	1238.4	1247.5
15°	1218.4	1214.7	1223.9	1212.9	1211.1	1207.5	1214.7	1214.7	1218.4	1212.9
17.5°	1194.7	1189.2	1189.2	1185.6	1183.8	1192.9	1196.5	1198.4	1200.2	1192.9
20°	1165.6	1163.8	1169.2	1163.8	1165.6	1167.4	1167.4	1163.8	1180.1	1160.1
22.5°	1134.6	1140.1	1132.8	1129.1	1132.8	1136.4	1136.4	1138.3	1134.6	1131.0
25°	1103.7	1107.3	1109.1	1098.2	1103.7	1098.2	1110.9	1112.8	1105.5	1109.1
27.5°	1076.3	1070.9	1069.0	1061.8	1065.4	1063.6	1065.4	1065.4	1076.3	1061.8
30°	1034.4	1029.0	1030.8	1025.3	1027.2	1025.3	1027.2	1027.2	1034.4	1032.6
32.5°	994.4	988.9	990.7	985.3	985.3	987.1	983.5	983.5	988.9	985.3
35°	956.1	943.4	945.2	943.4	945.2	937.9	937.9	936.1	939.7	930.6
37.5°	901.5	896.0	894.2	892.4	894.2	890.6	894.2	888.7	894.2	886.9
40°	852.3	848.7	850.5	839.6	839.6	841.4	837.8	835.9	837.8	845.0
42.5°	803.2	795.9	792.2	788.6	790.4	784.9	783.1	779.5	783.1	775.8
45°	744.9	744.9	743.1	733.9	735.8	735.8	728.5	721.2	723.0	723.0
47.5°	692.1	688.4	686.6	677.5	675.7	673.8	666.6	661.1	661.1	655.6
50°	633.8	630.1	624.7	615.6	611.9	601.0	595.5	588.3	581.0	581.0
52.5°	579.1	566.4	559.1	544.5	539.1	533.6	519.0	513.6	508.1	502.7
55°	513.6	502.7	488.1	471.7	464.4	455.3	440.7	429.8	422.5	424.3
57.5°	449.8	431.6	417.1	395.2	386.1	380.6	366.1	351.5	344.2	344.2
60°	371.5	357.0	338.7	318.7	311.4	302.3	284.1	275.0	269.5	264.1
62.5°	296.9	285.9	269.5	244.0	238.6	229.5	216.7	205.8	200.3	200.3
65°	222.2	211.3	196.7	178.5	171.2	163.9	153.0	142.1	136.6	134.8
67.5°	156.6	143.9	131.1	116.6	111.1	107.5	96.5	89.2	85.6	83.8
70°	94.7	87.4	78.3	67.4	61.9	58.3	51.0	45.5	43.7	41.9
72.5°	49.2	43.7	36.4	29.1	25.5	21.9	18.2	14.6	12.7	12.7
75°	18.2	14.6	9.1	5.5	3.6	3.6	3.6	3.6	3.6	3.6
77.5°	3.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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)