

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: P209242

Luminaire Tested: **LDSQ4B30D010 EU4B30508035 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209242
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 EU4B30508035 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 3500 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2934.1 lumens
Efficiency: N/A
Efficacy: 104.8 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

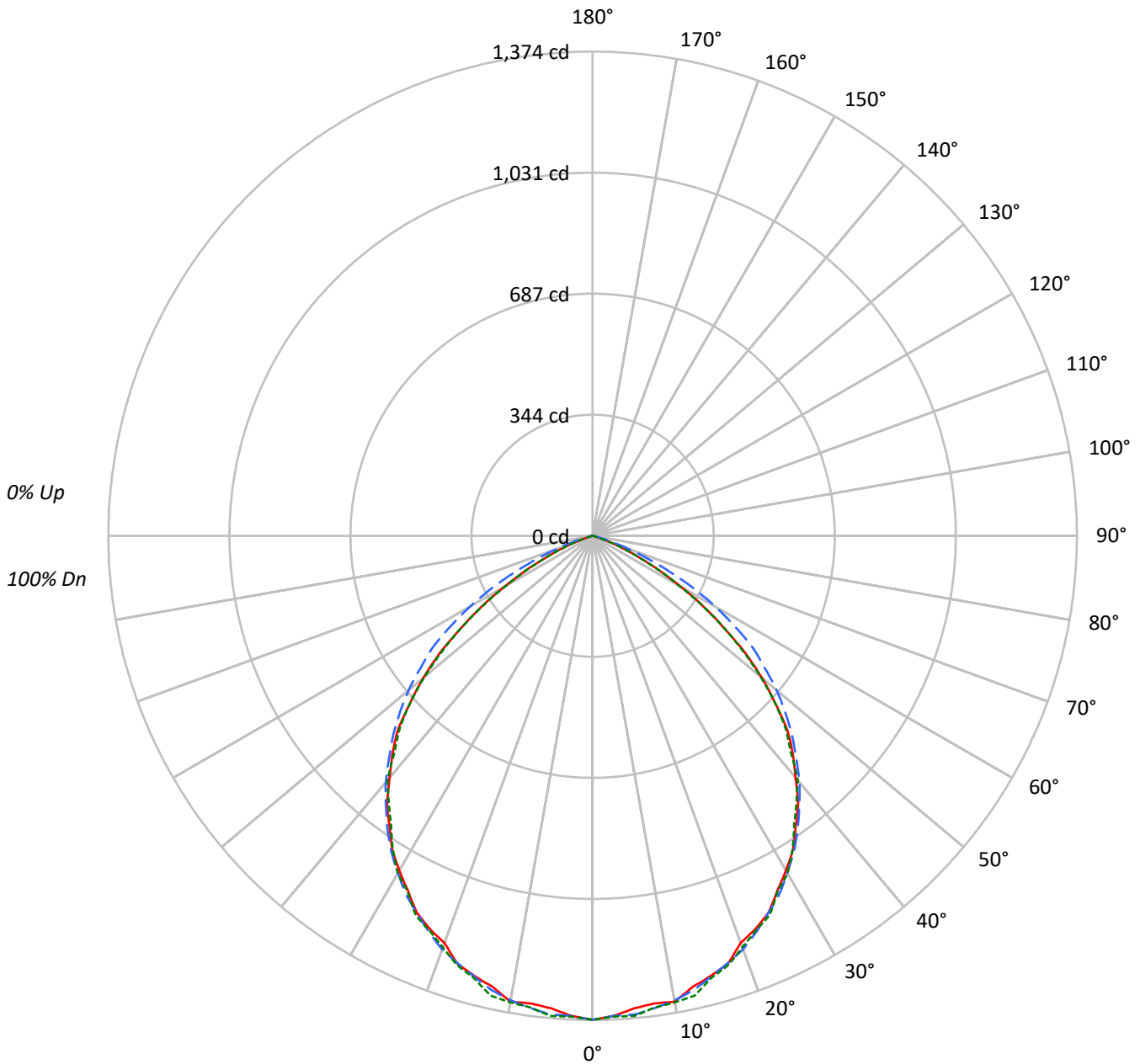
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	129.7	4.4
10°-20°	366.9	12.5
20°-30°	544.4	18.6
30°-40°	630.8	21.5
40°-50°	604.8	20.6
50°-60°	444.6	15.2
60°-70°	192.0	6.5
70°-80°	20.7	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°	1040.9	35.5
0°-40°	1671.6	57.0
0°-60°	2721.0	92.7
0°-90°	2934.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2934.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1374	1374	1374	1374	1374	
5°	1346	1360	1364	1366	1368	128
15°	1294	1301	1296	1297	1299	365
25°	1180	1178	1180	1182	1188	540
35°	1005	1011	1014	1013	997	628
45°	782	784	800	788	775	595
55°	453	500	556	498	455	407
65°	148	185	242	183	144	152
75°	4	6	22	4	4	12
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°	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5
2.5°	1363.8	1379.4	1381.3	1371.6	1367.7	1361.8	1375.5	1365.7	1369.6	1365.7	1363.8
5°	1346.2	1363.8	1365.7	1365.7	1361.8	1359.9	1365.7	1363.8	1361.8	1357.9	1363.8
7.5°	1338.4	1348.2	1357.9	1346.2	1352.1	1350.1	1363.8	1357.9	1356.0	1356.0	1352.1
10°	1342.3	1340.3	1348.2	1336.4	1340.3	1336.4	1348.2	1348.2	1344.3	1340.3	1338.4
12.5°	1311.1	1326.7	1326.7	1324.7	1320.8	1315.0	1326.7	1334.5	1322.8	1322.8	1320.8
15°	1293.5	1297.4	1299.4	1299.4	1297.4	1301.3	1307.2	1299.4	1301.3	1291.6	1295.5
17.5°	1274.0	1266.2	1272.1	1268.2	1270.1	1274.0	1281.8	1281.8	1270.1	1268.2	1272.1
20°	1229.1	1252.6	1254.5	1242.8	1244.7	1244.7	1258.4	1246.7	1254.5	1244.7	1248.7
22.5°	1207.7	1223.3	1225.2	1209.6	1219.4	1207.7	1221.3	1203.8	1223.3	1209.6	1215.5
25°	1180.4	1178.4	1184.3	1176.5	1178.4	1178.4	1188.2	1180.4	1186.2	1178.4	1180.4
27.5°	1135.5	1151.1	1149.1	1141.3	1145.2	1143.3	1162.8	1141.3	1153.1	1143.3	1147.2
30°	1096.5	1110.1	1106.2	1098.4	1098.4	1092.6	1114.0	1108.2	1106.2	1106.2	1104.3
32.5°	1057.5	1059.4	1055.5	1057.5	1059.4	1051.6	1069.2	1061.4	1059.4	1061.4	1063.3
35°	1004.8	1004.8	1008.7	1002.8	1010.6	1010.6	1026.2	1016.5	1014.5	1008.7	1014.5
37.5°	957.9	952.1	954.0	954.0	957.9	961.9	969.7	965.8	965.8	959.9	963.8
40°	895.5	891.6	897.5	897.5	903.3	903.3	911.1	907.2	913.1	913.1	913.1
42.5°	840.9	840.9	837.0	842.8	844.8	842.8	856.5	854.5	856.5	852.6	854.5
45°	782.4	782.4	778.5	776.5	786.3	784.3	799.9	794.1	801.9	798.0	799.9
47.5°	702.4	712.1	706.3	712.1	723.8	725.8	735.5	731.6	739.4	733.6	741.4
50°	626.3	626.3	632.1	639.9	651.6	653.6	665.3	673.1	677.0	679.0	680.9
52.5°	546.3	544.3	550.2	559.9	569.7	577.5	589.2	600.9	608.7	620.4	614.6
55°	452.6	456.5	462.4	474.1	489.7	499.5	509.2	524.8	538.5	544.3	556.0
57.5°	372.6	368.7	372.6	388.3	405.8	413.6	427.3	442.9	462.4	474.1	478.0
60°	288.8	290.7	294.6	308.3	321.9	333.6	339.5	364.8	382.4	394.1	401.9
62.5°	212.7	216.6	220.5	232.2	245.8	255.6	265.3	286.8	302.4	314.1	321.9
65°	148.3	150.2	156.1	161.9	175.6	185.3	193.2	210.7	226.3	236.1	241.9
67.5°	91.7	93.6	97.6	105.4	115.1	122.9	130.7	142.4	156.1	165.8	167.8
70°	46.8	48.8	50.7	56.6	64.4	68.3	74.1	83.9	93.6	101.5	105.4
72.5°	15.6	15.6	17.6	21.5	25.4	29.3	31.2	41.0	48.8	52.7	54.6
75°	3.9	3.9	3.9	3.9	3.9	5.9	5.9	11.7	15.6	19.5	21.5
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°	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5	1373.5
2.5°	1373.5	1369.6	1367.7	1369.6	1369.6	1367.7	1373.5	1381.3	1391.1	1365.7
5°	1371.6	1367.7	1371.6	1359.9	1365.7	1361.8	1369.6	1367.7	1375.5	1367.7
7.5°	1365.7	1357.9	1359.9	1354.0	1361.8	1352.1	1357.9	1369.6	1361.8	1350.1
10°	1346.2	1342.3	1356.0	1336.4	1332.5	1340.3	1356.0	1344.3	1340.3	1344.3
12.5°	1326.7	1326.7	1332.5	1316.9	1318.9	1322.8	1330.6	1322.8	1326.7	1336.4
15°	1305.2	1301.3	1311.1	1299.4	1297.4	1293.5	1301.3	1301.3	1305.2	1299.4
17.5°	1279.9	1274.0	1274.0	1270.1	1268.2	1277.9	1281.8	1283.8	1285.7	1277.9
20°	1248.7	1246.7	1252.6	1246.7	1248.7	1250.6	1250.6	1246.7	1264.3	1242.8
22.5°	1215.5	1221.3	1213.5	1209.6	1213.5	1217.4	1217.4	1219.4	1215.5	1211.6
25°	1182.3	1186.2	1188.2	1176.5	1182.3	1176.5	1190.1	1192.1	1184.3	1188.2
27.5°	1153.1	1147.2	1145.2	1137.4	1141.3	1139.4	1141.3	1141.3	1153.1	1137.4
30°	1108.2	1102.3	1104.3	1098.4	1100.4	1098.4	1100.4	1100.4	1108.2	1106.2
32.5°	1065.3	1059.4	1061.4	1055.5	1055.5	1057.5	1053.5	1053.5	1059.4	1055.5
35°	1024.3	1010.6	1012.6	1010.6	1012.6	1004.8	1004.8	1002.8	1006.7	997.0
37.5°	965.8	959.9	957.9	956.0	957.9	954.0	957.9	952.1	957.9	950.1
40°	913.1	909.2	911.1	899.4	899.4	901.4	897.5	895.5	897.5	905.3
42.5°	860.4	852.6	848.7	844.8	846.7	840.9	838.9	835.0	838.9	831.1
45°	798.0	798.0	796.0	786.3	788.2	788.2	780.4	772.6	774.6	774.6
47.5°	741.4	737.5	735.5	725.8	723.8	721.9	714.1	708.2	708.2	702.4
50°	679.0	675.1	669.2	659.4	655.5	643.8	638.0	630.2	622.4	622.4
52.5°	620.4	606.8	599.0	583.4	577.5	571.6	556.0	550.2	544.3	538.5
55°	550.2	538.5	522.9	505.3	497.5	487.8	472.1	460.4	452.6	454.6
57.5°	481.9	462.4	446.8	423.4	413.6	407.8	392.2	376.5	368.7	368.7
60°	398.0	382.4	362.9	341.4	333.6	323.9	304.4	294.6	288.8	282.9
62.5°	318.0	306.3	288.8	261.4	255.6	245.8	232.2	220.5	214.6	214.6
65°	238.0	226.3	210.7	191.2	183.4	175.6	163.9	152.2	146.3	144.4
67.5°	167.8	154.1	140.5	124.9	119.0	115.1	103.4	95.6	91.7	89.7
70°	101.5	93.6	83.9	72.2	66.3	62.4	54.6	48.8	46.8	44.9
72.5°	52.7	46.8	39.0	31.2	27.3	23.4	19.5	15.6	13.7	13.7
75°	19.5	15.6	9.8	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)