

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: P209251

Luminaire Tested: **LDSQ4B30D010 EU4B30509727 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209251
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 EU4B30509727 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: 2864.1 lumens
Efficiency: N/A
Efficacy: 102.3 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

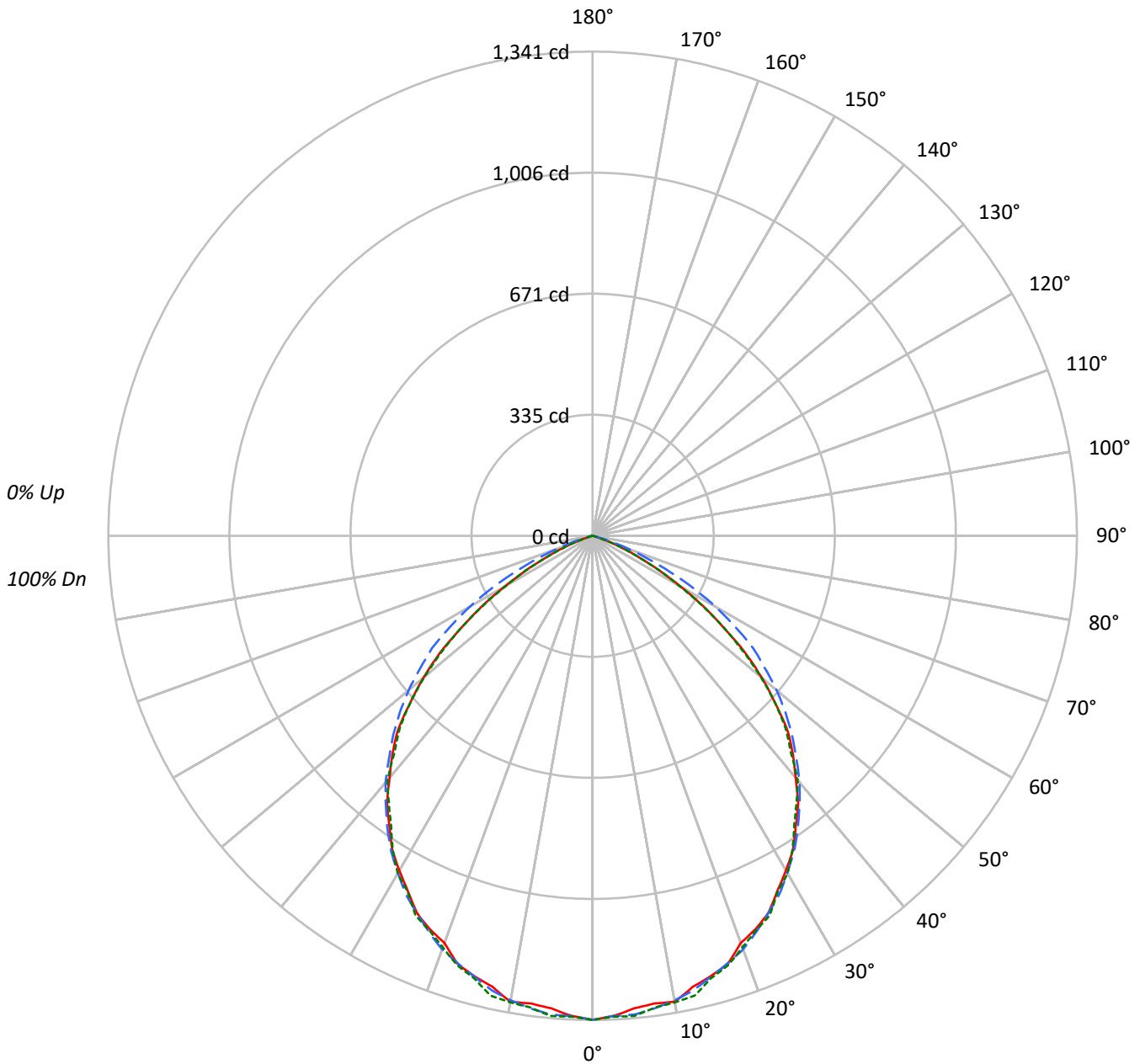
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	126.6	4.4
10°-20°	358.1	12.5
20°-30°	531.4	18.6
30°-40°	615.7	21.5
40°-50°	590.3	20.6
50°-60°	434.0	15.2
60°-70°	187.5	6.5
70°-80°	20.2	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°	1016.0	35.5
0°-40°	1631.8	57.0
0°-60°	2656.1	92.7
0°-90°	2864.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2864.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1341	1341	1341	1341	1341	
5°	1314	1327	1331	1333	1335	125
15°	1263	1270	1265	1266	1268	356
25°	1152	1150	1152	1154	1160	528
35°	981	986	990	988	973	613
45°	764	766	781	769	756	581
55°	442	488	543	486	444	398
65°	145	181	236	179	141	149
75°	4	6	21	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°	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7
2.5°	1331.2	1346.5	1348.4	1338.8	1335.0	1329.3	1342.7	1333.1	1336.9	1333.1	1331.2
5°	1314.1	1331.2	1333.1	1333.1	1329.3	1327.4	1333.1	1331.2	1329.3	1325.5	1331.2
7.5°	1306.5	1316.0	1325.5	1314.1	1319.8	1317.9	1331.2	1325.5	1323.6	1323.6	1319.8
10°	1310.3	1308.4	1316.0	1304.6	1308.4	1304.6	1316.0	1316.0	1312.2	1308.4	1306.5
12.5°	1279.8	1295.0	1295.0	1293.1	1289.3	1283.6	1295.0	1302.7	1291.2	1291.2	1289.3
15°	1262.7	1266.5	1268.4	1268.4	1266.5	1270.3	1276.0	1268.4	1270.3	1260.8	1264.6
17.5°	1243.6	1236.0	1241.7	1237.9	1239.8	1243.6	1251.2	1251.2	1239.8	1237.9	1241.7
20°	1199.8	1222.7	1224.6	1213.1	1215.1	1215.1	1228.4	1217.0	1224.6	1215.1	1218.9
22.5°	1178.9	1194.1	1196.0	1180.8	1190.3	1178.9	1192.2	1175.1	1194.1	1180.8	1186.5
25°	1152.2	1150.3	1156.0	1148.4	1150.3	1150.3	1159.8	1152.2	1157.9	1150.3	1152.2
27.5°	1108.4	1123.6	1121.7	1114.1	1117.9	1116.0	1135.1	1114.1	1125.5	1116.0	1119.8
30°	1070.3	1083.6	1079.8	1072.2	1072.2	1066.5	1087.5	1081.7	1079.8	1079.8	1077.9
32.5°	1032.2	1034.1	1030.3	1032.2	1034.1	1026.5	1043.7	1036.0	1034.1	1036.0	1037.9
35°	980.8	980.8	984.6	978.9	986.5	986.5	1001.8	992.2	990.3	984.6	990.3
37.5°	935.1	929.4	931.3	931.3	935.1	938.9	946.5	942.7	942.7	937.0	940.8
40°	874.2	870.3	876.1	876.1	881.8	881.8	889.4	885.6	891.3	891.3	891.3
42.5°	820.8	820.8	817.0	822.7	824.6	822.7	836.1	834.2	836.1	832.3	834.2
45°	763.7	763.7	759.9	758.0	767.5	765.6	780.8	775.1	782.7	778.9	780.8
47.5°	685.6	695.1	689.4	695.1	706.6	708.5	718.0	714.2	721.8	716.1	723.7
50°	611.3	611.3	617.0	624.7	636.1	638.0	649.4	657.0	660.9	662.8	664.7
52.5°	533.3	531.3	537.1	546.6	556.1	563.7	575.2	586.6	594.2	605.6	599.9
55°	441.8	445.6	451.4	462.8	478.0	487.5	497.1	512.3	525.6	531.3	542.8
57.5°	363.8	359.9	363.8	379.0	396.1	403.7	417.1	432.3	451.4	462.8	466.6
60°	281.9	283.8	287.6	300.9	314.2	325.7	331.4	356.1	373.3	384.7	392.3
62.5°	207.6	211.4	215.2	226.6	240.0	249.5	259.0	280.0	295.2	306.6	314.2
65°	144.7	146.6	152.4	158.1	171.4	180.9	188.5	205.7	220.9	230.4	236.2
67.5°	89.5	91.4	95.2	102.8	112.4	120.0	127.6	139.0	152.4	161.9	163.8
70°	45.7	47.6	49.5	55.2	62.8	66.7	72.4	81.9	91.4	99.0	102.8
72.5°	15.2	15.2	17.1	20.9	24.8	28.6	30.5	40.0	47.6	51.4	53.3
75°	3.8	3.8	3.8	3.8	3.8	5.7	5.7	11.4	15.2	19.0	20.9
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.8	3.8
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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°	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7	1340.7
2.5°	1340.7	1336.9	1335.0	1336.9	1336.9	1335.0	1340.7	1348.4	1357.9	1333.1
5°	1338.8	1335.0	1338.8	1327.4	1333.1	1329.3	1336.9	1335.0	1342.7	1335.0
7.5°	1333.1	1325.5	1327.4	1321.7	1329.3	1319.8	1325.5	1336.9	1329.3	1317.9
10°	1314.1	1310.3	1323.6	1304.6	1300.8	1308.4	1323.6	1312.2	1308.4	1312.2
12.5°	1295.0	1295.0	1300.8	1285.5	1287.4	1291.2	1298.9	1291.2	1295.0	1304.6
15°	1274.1	1270.3	1279.8	1268.4	1266.5	1262.7	1270.3	1270.3	1274.1	1268.4
17.5°	1249.3	1243.6	1243.6	1239.8	1237.9	1247.4	1251.2	1253.1	1255.0	1247.4
20°	1218.9	1217.0	1222.7	1217.0	1218.9	1220.8	1220.8	1217.0	1234.1	1213.1
22.5°	1186.5	1192.2	1184.6	1180.8	1184.6	1188.4	1188.4	1190.3	1186.5	1182.7
25°	1154.1	1157.9	1159.8	1148.4	1154.1	1148.4	1161.7	1163.6	1156.0	1159.8
27.5°	1125.5	1119.8	1117.9	1110.3	1114.1	1112.2	1114.1	1114.1	1125.5	1110.3
30°	1081.7	1076.0	1077.9	1072.2	1074.1	1072.2	1074.1	1074.1	1081.7	1079.8
32.5°	1039.8	1034.1	1036.0	1030.3	1030.3	1032.2	1028.4	1028.4	1034.1	1030.3
35°	999.8	986.5	988.4	986.5	988.4	980.8	980.8	978.9	982.7	973.2
37.5°	942.7	937.0	935.1	933.2	935.1	931.3	935.1	929.4	935.1	927.5
40°	891.3	887.5	889.4	878.0	878.0	879.9	876.1	874.2	876.1	883.7
42.5°	839.9	832.3	828.4	824.6	826.5	820.8	818.9	815.1	818.9	811.3
45°	778.9	778.9	777.0	767.5	769.4	769.4	761.8	754.2	756.1	756.1
47.5°	723.7	719.9	718.0	708.5	706.6	704.7	697.0	691.3	691.3	685.6
50°	662.8	658.9	653.2	643.7	639.9	628.5	622.8	615.1	607.5	607.5
52.5°	605.6	592.3	584.7	569.4	563.7	558.0	542.8	537.1	531.3	525.6
55°	537.1	525.6	510.4	493.3	485.6	476.1	460.9	449.5	441.8	443.7
57.5°	470.4	451.4	436.1	413.3	403.7	398.0	382.8	367.6	359.9	359.9
60°	388.5	373.3	354.2	333.3	325.7	316.1	297.1	287.6	281.9	276.1
62.5°	310.4	299.0	281.9	255.2	249.5	240.0	226.6	215.2	209.5	209.5
65°	232.3	220.9	205.7	186.6	179.0	171.4	160.0	148.5	142.8	140.9
67.5°	163.8	150.5	137.1	121.9	116.2	112.4	100.9	93.3	89.5	87.6
70°	99.0	91.4	81.9	70.5	64.8	60.9	53.3	47.6	45.7	43.8
72.5°	51.4	45.7	38.1	30.5	26.7	22.9	19.0	15.2	13.3	13.3
75°	19.0	15.2	9.5	5.7	3.8	3.8	3.8	3.8	3.8	3.8
77.5°	3.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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)