

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: P209249

Luminaire Tested: **LDSQ4B30D010 EU4B30509040 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209249
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 EU4B30509040 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 4000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2484.4 lumens
Efficiency: N/A
Efficacy: 88.7 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

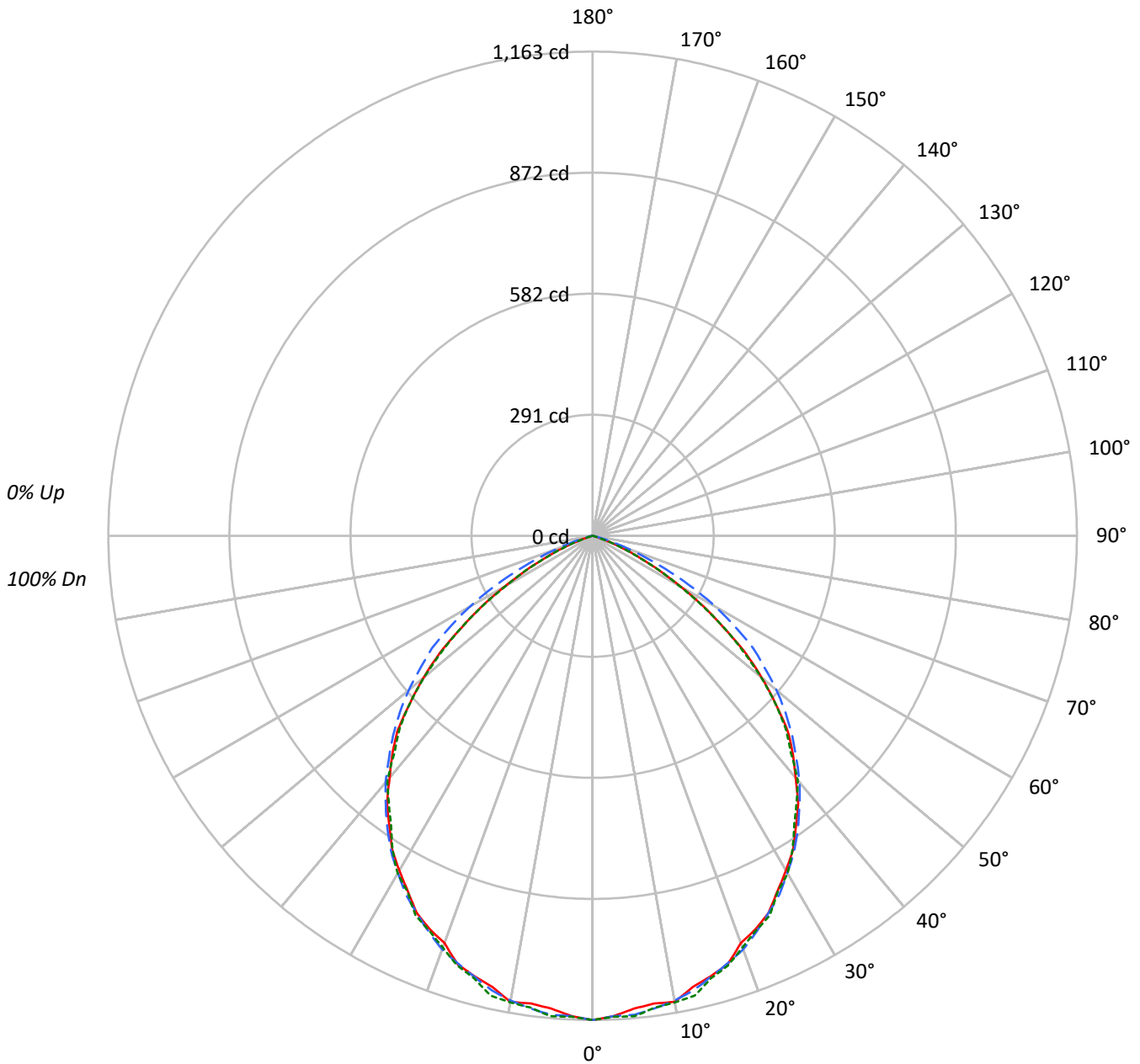
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	109.8	4.4
10°-20°	310.6	12.5
20°-30°	460.9	18.6
30°-40°	534.1	21.5
40°-50°	512.1	20.6
50°-60°	376.5	15.2
60°-70°	162.6	6.5
70°-80°	17.6	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°	881.4	35.5
0°-40°	1415.4	57.0
0°-60°	2304.0	92.7
0°-90°	2484.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2484.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1163	1163	1163	1163	1163	
5°	1140	1152	1155	1156	1158	109
15°	1095	1102	1097	1099	1100	309
25°	1000	998	1000	1001	1006	458
35°	851	856	859	857	844	532
45°	662	664	677	667	656	504
55°	383	423	471	421	385	345
65°	126	157	205	155	122	129
75°	3	5	18	3	3	10
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°	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0
2.5°	1154.8	1168.0	1169.6	1161.4	1158.1	1153.1	1164.7	1156.4	1159.7	1156.4	1154.8
5°	1139.9	1154.8	1156.4	1156.4	1153.1	1151.5	1156.4	1154.8	1153.1	1149.8	1154.8
7.5°	1133.3	1141.5	1149.8	1139.9	1144.8	1143.2	1154.8	1149.8	1148.1	1148.1	1144.8
10°	1136.6	1134.9	1141.5	1131.6	1134.9	1131.6	1141.5	1141.5	1138.2	1134.9	1133.3
12.5°	1110.2	1123.4	1123.4	1121.7	1118.4	1113.5	1123.4	1130.0	1120.1	1120.1	1118.4
15°	1095.3	1098.6	1100.2	1100.2	1098.6	1101.9	1106.8	1100.2	1101.9	1093.6	1096.9
17.5°	1078.8	1072.2	1077.1	1073.8	1075.5	1078.8	1085.4	1085.4	1075.5	1073.8	1077.1
20°	1040.8	1060.6	1062.2	1052.3	1054.0	1054.0	1065.5	1055.6	1062.2	1054.0	1057.3
22.5°	1022.6	1035.8	1037.5	1024.2	1032.5	1022.6	1034.2	1019.3	1035.8	1024.2	1029.2
25°	999.5	997.8	1002.8	996.2	997.8	997.8	1006.1	999.5	1004.4	997.8	999.5
27.5°	961.5	974.7	973.0	966.4	969.7	968.1	984.6	966.4	976.3	968.1	971.4
30°	928.4	940.0	936.7	930.1	930.1	925.1	943.3	938.3	936.7	936.7	935.0
32.5°	895.4	897.0	893.7	895.4	897.0	890.4	905.3	898.7	897.0	898.7	900.3
35°	850.8	850.8	854.1	849.1	855.7	855.7	869.0	860.7	859.0	854.1	859.0
37.5°	811.1	806.2	807.8	807.8	811.1	814.4	821.1	817.7	817.7	812.8	816.1
40°	758.3	755.0	759.9	759.9	764.9	764.9	771.5	768.2	773.1	773.1	773.1
42.5°	712.0	712.0	708.7	713.7	715.3	713.7	725.2	723.6	725.2	721.9	723.6
45°	662.5	662.5	659.2	657.5	665.8	664.1	677.3	672.4	679.0	675.7	677.3
47.5°	594.7	603.0	598.0	603.0	612.9	614.5	622.8	619.5	626.1	621.2	627.8
50°	530.3	530.3	535.3	541.9	551.8	553.4	563.3	569.9	573.2	574.9	576.6
52.5°	462.6	460.9	465.9	474.1	482.4	489.0	498.9	508.8	515.4	525.3	520.4
55°	383.3	386.6	391.5	401.4	414.7	422.9	431.2	444.4	456.0	460.9	470.8
57.5°	315.5	312.2	315.5	328.8	343.6	350.2	361.8	375.0	391.5	401.4	404.7
60°	244.5	246.1	249.5	261.0	272.6	282.5	287.5	308.9	323.8	333.7	340.3
62.5°	180.1	183.4	186.7	196.6	208.2	216.4	224.7	242.8	256.1	266.0	272.6
65°	125.6	127.2	132.2	137.1	148.7	156.9	163.5	178.4	191.6	199.9	204.8
67.5°	77.6	79.3	82.6	89.2	97.5	104.1	110.7	120.6	132.2	140.4	142.1
70°	39.6	41.3	43.0	47.9	54.5	57.8	62.8	71.0	79.3	85.9	89.2
72.5°	13.2	13.2	14.9	18.2	21.5	24.8	26.4	34.7	41.3	44.6	46.3
75°	3.3	3.3	3.3	3.3	3.3	5.0	5.0	9.9	13.2	16.5	18.2
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	3.3	3.3
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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°	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0	1163.0
2.5°	1163.0	1159.7	1158.1	1159.7	1159.7	1158.1	1163.0	1169.6	1177.9	1156.4
5°	1161.4	1158.1	1161.4	1151.5	1156.4	1153.1	1159.7	1158.1	1164.7	1158.1
7.5°	1156.4	1149.8	1151.5	1146.5	1153.1	1144.8	1149.8	1159.7	1153.1	1143.2
10°	1139.9	1136.6	1148.1	1131.6	1128.3	1134.9	1148.1	1138.2	1134.9	1138.2
12.5°	1123.4	1123.4	1128.3	1115.1	1116.8	1120.1	1126.7	1120.1	1123.4	1131.6
15°	1105.2	1101.9	1110.2	1100.2	1098.6	1095.3	1101.9	1101.9	1105.2	1100.2
17.5°	1083.7	1078.8	1078.8	1075.5	1073.8	1082.1	1085.4	1087.0	1088.7	1082.1
20°	1057.3	1055.6	1060.6	1055.6	1057.3	1058.9	1058.9	1055.6	1070.5	1052.3
22.5°	1029.2	1034.2	1027.6	1024.2	1027.6	1030.9	1030.9	1032.5	1029.2	1025.9
25°	1001.1	1004.4	1006.1	996.2	1001.1	996.2	1007.7	1009.4	1002.8	1006.1
27.5°	976.3	971.4	969.7	963.1	966.4	964.8	966.4	966.4	976.3	963.1
30°	938.3	933.4	935.0	930.1	931.7	930.1	931.7	931.7	938.3	936.7
32.5°	902.0	897.0	898.7	893.7	893.7	895.4	892.1	892.1	897.0	893.7
35°	867.3	855.7	857.4	855.7	857.4	850.8	850.8	849.1	852.4	844.2
37.5°	817.7	812.8	811.1	809.5	811.1	807.8	811.1	806.2	811.1	804.5
40°	773.1	769.8	771.5	761.6	761.6	763.2	759.9	758.3	759.9	766.5
42.5°	728.5	721.9	718.6	715.3	717.0	712.0	710.4	707.1	710.4	703.8
45°	675.7	675.7	674.0	665.8	667.4	667.4	660.8	654.2	655.8	655.8
47.5°	627.8	624.5	622.8	614.5	612.9	611.2	604.6	599.7	599.7	594.7
50°	574.9	571.6	566.6	558.4	555.1	545.2	540.2	533.6	527.0	527.0
52.5°	525.3	513.8	507.2	494.0	489.0	484.0	470.8	465.9	460.9	456.0
55°	465.9	456.0	442.7	427.9	421.3	413.0	399.8	389.9	383.3	384.9
57.5°	408.0	391.5	378.3	358.5	350.2	345.3	332.1	318.8	312.2	312.2
60°	337.0	323.8	307.3	289.1	282.5	274.2	257.7	249.5	244.5	239.5
62.5°	269.3	259.4	244.5	221.4	216.4	208.2	196.6	186.7	181.7	181.7
65°	201.5	191.6	178.4	161.9	155.3	148.7	138.8	128.9	123.9	122.2
67.5°	142.1	130.5	118.9	105.7	100.8	97.5	87.6	80.9	77.6	76.0
70°	85.9	79.3	71.0	61.1	56.2	52.9	46.3	41.3	39.6	38.0
72.5°	44.6	39.6	33.0	26.4	23.1	19.8	16.5	13.2	11.6	11.6
75°	16.5	13.2	8.3	5.0	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	3.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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)