

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: P209246

Luminaire Tested: **LDSQ4B30D010 EU4B30509027 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209246
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 EU4B30509027 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: 2351.8 lumens
Efficiency: N/A
Efficacy: 84.0 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

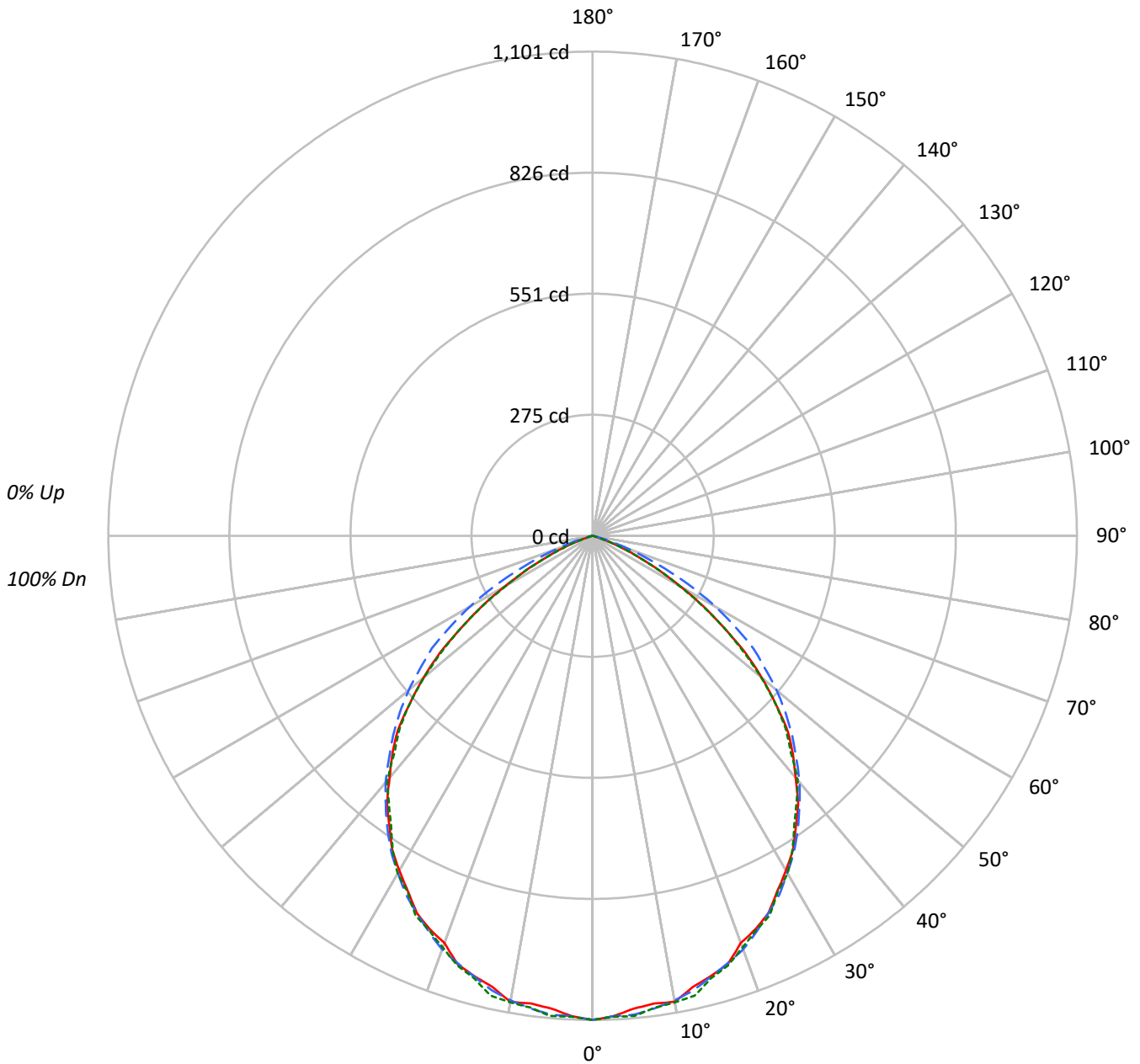
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89	89	89	89	89	89		
	2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77	77	77	77	77	77		
	3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67	67	67	67	67	67		
	4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59	59	59	59	59	59		
	5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52	52	52	52	52	52		
	6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46	46	46	46	46	46		
	7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41	41	41	41	41	41		
	8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37	37	37	37	37	37		
	9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33	33	33	33	33	33		
	10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31	31	31	31	31	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°	103.9	4.4
10°-20°	294.1	12.5
20°-30°	436.3	18.6
30°-40°	505.6	21.5
40°-50°	484.7	20.6
50°-60°	356.4	15.2
60°-70°	153.9	6.5
70°-80°	16.6	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°	834.3	35.5
0°-40°	1339.9	57.0
0°-60°	2181.0	92.7
0°-90°	2351.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2351.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1079	1090	1093	1095	1096	103
15°	1037	1043	1038	1040	1042	292
25°	946	944	946	948	952	433
35°	805	810	813	812	799	504
45°	627	629	641	632	621	477
55°	363	400	446	399	364	326
65°	119	149	194	147	116	122
75°	3	5	17	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°	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9
2.5°	1093.1	1105.6	1107.2	1099.4	1096.2	1091.5	1102.5	1094.7	1097.8	1094.7	1093.1
5°	1079.0	1093.1	1094.7	1094.7	1091.5	1090.0	1094.7	1093.1	1091.5	1088.4	1093.1
7.5°	1072.8	1080.6	1088.4	1079.0	1083.7	1082.2	1093.1	1088.4	1086.8	1086.8	1083.7
10°	1075.9	1074.3	1080.6	1071.2	1074.3	1071.2	1080.6	1080.6	1077.5	1074.3	1072.8
12.5°	1050.9	1063.4	1063.4	1061.8	1058.7	1054.0	1063.4	1069.6	1060.3	1060.3	1058.7
15°	1036.8	1039.9	1041.5	1041.5	1039.9	1043.1	1047.8	1041.5	1043.1	1035.2	1038.4
17.5°	1021.2	1014.9	1019.6	1016.5	1018.0	1021.2	1027.4	1027.4	1018.0	1016.5	1019.6
20°	985.2	1004.0	1005.5	996.1	997.7	997.7	1008.7	999.3	1005.5	997.7	1000.8
22.5°	968.0	980.5	982.1	969.6	977.4	968.0	978.9	964.9	980.5	969.6	974.3
25°	946.1	944.5	949.2	943.0	944.5	944.5	952.4	946.1	950.8	944.5	946.1
27.5°	910.1	922.6	921.1	914.8	918.0	916.4	932.0	914.8	924.2	916.4	919.5
30°	878.9	889.8	886.7	880.4	880.4	875.7	892.9	888.2	886.7	886.7	885.1
32.5°	847.6	849.1	846.0	847.6	849.1	842.9	857.0	850.7	849.1	850.7	852.3
35°	805.4	805.4	808.5	803.8	810.1	810.1	822.6	814.7	813.2	808.5	813.2
37.5°	767.8	763.1	764.7	764.7	767.8	771.0	777.2	774.1	774.1	769.4	772.5
40°	717.8	714.7	719.4	719.4	724.0	724.0	730.3	727.2	731.9	731.9	731.9
42.5°	674.0	674.0	670.9	675.6	677.1	675.6	686.5	684.9	686.5	683.4	684.9
45°	627.1	627.1	624.0	622.4	630.2	628.7	641.2	636.5	642.7	639.6	641.2
47.5°	563.0	570.8	566.1	570.8	580.2	581.7	589.6	586.4	592.7	588.0	594.2
50°	502.0	502.0	506.7	512.9	522.3	523.9	533.3	539.5	542.6	544.2	545.8
52.5°	437.9	436.3	441.0	448.8	456.6	462.9	472.3	481.7	487.9	497.3	492.6
55°	362.8	365.9	370.6	380.0	392.5	400.3	408.2	420.7	431.6	436.3	445.7
57.5°	298.7	295.6	298.7	311.2	325.3	331.5	342.5	355.0	370.6	380.0	383.1
60°	231.4	233.0	236.1	247.1	258.0	267.4	272.1	292.4	306.5	315.9	322.1
62.5°	170.5	173.6	176.7	186.1	197.0	204.9	212.7	229.9	242.4	251.8	258.0
65°	118.8	120.4	125.1	129.8	140.7	148.6	154.8	168.9	181.4	189.2	193.9
67.5°	73.5	75.1	78.2	84.4	92.3	98.5	104.8	114.2	125.1	132.9	134.5
70°	37.5	39.1	40.7	45.4	51.6	54.7	59.4	67.2	75.1	81.3	84.4
72.5°	12.5	12.5	14.1	17.2	20.3	23.5	25.0	32.8	39.1	42.2	43.8
75°	3.1	3.1	3.1	3.1	3.1	4.7	4.7	9.4	12.5	15.6	17.2
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	3.1	3.1
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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°	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9	1100.9
2.5°	1100.9	1097.8	1096.2	1097.8	1097.8	1096.2	1100.9	1107.2	1115.0	1094.7
5°	1099.4	1096.2	1099.4	1090.0	1094.7	1091.5	1097.8	1096.2	1102.5	1096.2
7.5°	1094.7	1088.4	1090.0	1085.3	1091.5	1083.7	1088.4	1097.8	1091.5	1082.2
10°	1079.0	1075.9	1086.8	1071.2	1068.1	1074.3	1086.8	1077.5	1074.3	1077.5
12.5°	1063.4	1063.4	1068.1	1055.6	1057.1	1060.3	1066.5	1060.3	1063.4	1071.2
15°	1046.2	1043.1	1050.9	1041.5	1039.9	1036.8	1043.1	1043.1	1046.2	1041.5
17.5°	1025.9	1021.2	1021.2	1018.0	1016.5	1024.3	1027.4	1029.0	1030.6	1024.3
20°	1000.8	999.3	1004.0	999.3	1000.8	1002.4	1002.4	999.3	1013.3	996.1
22.5°	974.3	978.9	972.7	969.6	972.7	975.8	975.8	977.4	974.3	971.1
25°	947.7	950.8	952.4	943.0	947.7	943.0	953.9	955.5	949.2	952.4
27.5°	924.2	919.5	918.0	911.7	914.8	913.3	914.8	914.8	924.2	911.7
30°	888.2	883.6	885.1	880.4	882.0	880.4	882.0	882.0	888.2	886.7
32.5°	853.8	849.1	850.7	846.0	846.0	847.6	844.5	844.5	849.1	846.0
35°	821.0	810.1	811.6	810.1	811.6	805.4	805.4	803.8	806.9	799.1
37.5°	774.1	769.4	767.8	766.3	767.8	764.7	767.8	763.1	767.8	761.6
40°	731.9	728.7	730.3	720.9	720.9	722.5	719.4	717.8	719.4	725.6
42.5°	689.6	683.4	680.3	677.1	678.7	674.0	672.4	669.3	672.4	666.2
45°	639.6	639.6	638.0	630.2	631.8	631.8	625.5	619.3	620.8	620.8
47.5°	594.2	591.1	589.6	581.7	580.2	578.6	572.4	567.7	567.7	563.0
50°	544.2	541.1	536.4	528.6	525.4	516.1	511.4	505.1	498.9	498.9
52.5°	497.3	486.3	480.1	467.6	462.9	458.2	445.7	441.0	436.3	431.6
55°	441.0	431.6	419.1	405.0	398.8	391.0	378.4	369.1	362.8	364.4
57.5°	386.3	370.6	358.1	339.3	331.5	326.8	314.3	301.8	295.6	295.6
60°	319.0	306.5	290.9	273.7	267.4	259.6	244.0	236.1	231.4	226.8
62.5°	254.9	245.5	231.4	209.6	204.9	197.0	186.1	176.7	172.0	172.0
65°	190.8	181.4	168.9	153.3	147.0	140.7	131.4	122.0	117.3	115.7
67.5°	134.5	123.5	112.6	100.1	95.4	92.3	82.9	76.6	73.5	71.9
70°	81.3	75.1	67.2	57.9	53.2	50.0	43.8	39.1	37.5	36.0
72.5°	42.2	37.5	31.3	25.0	21.9	18.8	15.6	12.5	10.9	10.9
75°	15.6	12.5	7.8	4.7	3.1	3.1	3.1	3.1	3.1	3.1
77.5°	3.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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)