

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: P209247

Luminaire Tested: **LDSQ4B30D010 EU4B30509030 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209247
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 EU4B30509030 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 3000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2445.2 lumens
Efficiency: N/A
Efficacy: 87.3 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

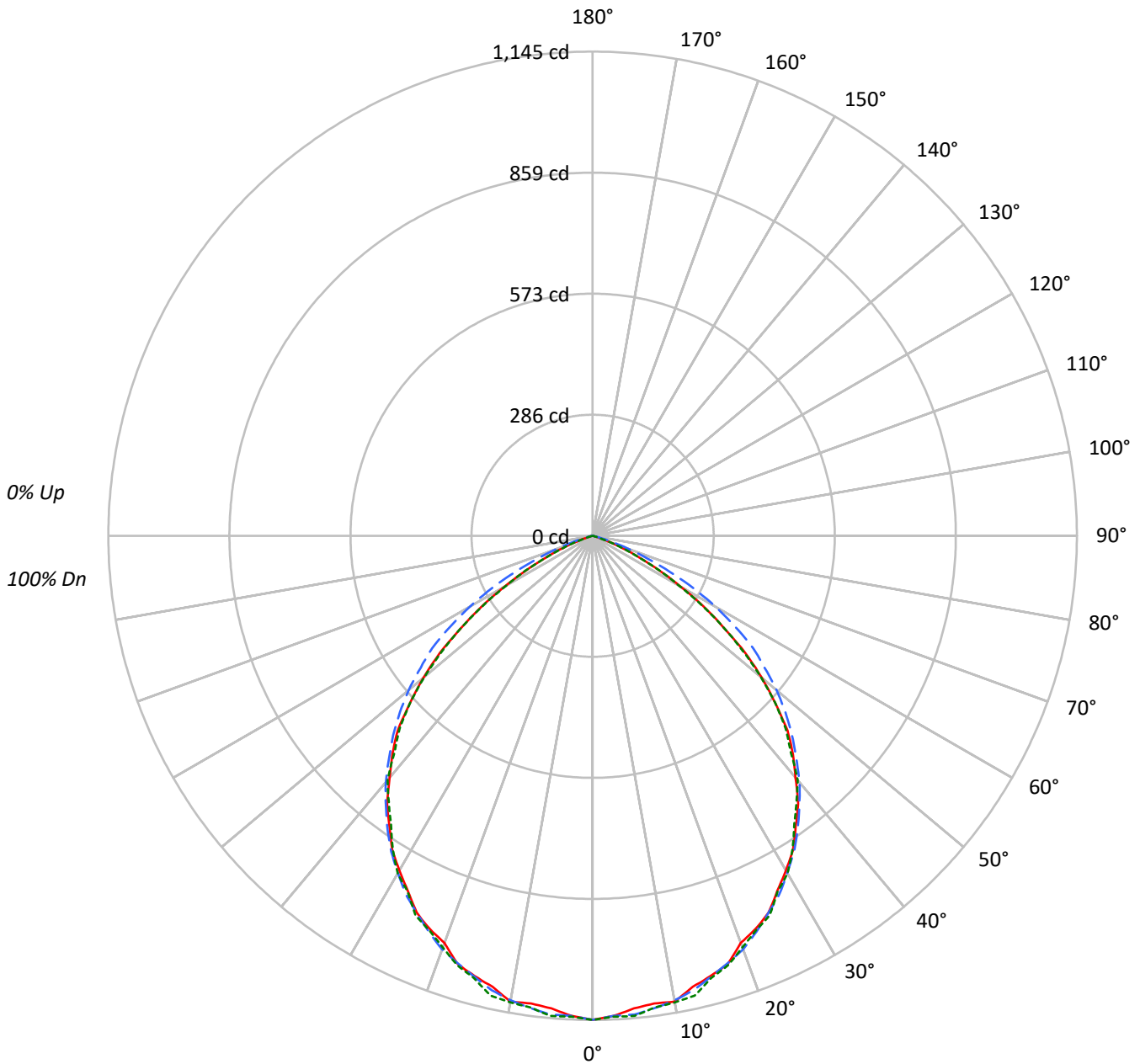
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	108.0	4.4
10°-20°	305.7	12.5
20°-30°	453.7	18.6
30°-40°	525.7	21.5
40°-50°	504.0	20.6
50°-60°	370.6	15.2
60°-70°	160.0	6.5
70°-80°	17.3	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°	867.5	35.5
0°-40°	1393.1	57.0
0°-60°	2267.7	92.7
0°-90°	2445.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2445.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1145	1145	1145	1145	1145	
5°	1122	1133	1136	1138	1140	107
15°	1078	1084	1080	1081	1083	304
25°	984	982	984	985	990	450
35°	837	842	846	844	831	524
45°	652	654	667	657	646	496
55°	377	416	463	415	379	339
65°	124	154	202	153	120	127
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°	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7
2.5°	1136.5	1149.5	1151.2	1143.0	1139.8	1134.9	1146.3	1138.2	1141.4	1138.2	1136.5
5°	1121.9	1136.5	1138.2	1138.2	1134.9	1133.3	1138.2	1136.5	1134.9	1131.7	1136.5
7.5°	1115.4	1123.5	1131.7	1121.9	1126.8	1125.2	1136.5	1131.7	1130.0	1130.0	1126.8
10°	1118.6	1117.0	1123.5	1113.8	1117.0	1113.8	1123.5	1123.5	1120.3	1117.0	1115.4
12.5°	1092.6	1105.6	1105.6	1104.0	1100.8	1095.9	1105.6	1112.1	1102.4	1102.4	1100.8
15°	1078.0	1081.3	1082.9	1082.9	1081.3	1084.5	1089.4	1082.9	1084.5	1076.4	1079.6
17.5°	1061.7	1055.2	1060.1	1056.9	1058.5	1061.7	1068.2	1068.2	1058.5	1056.9	1060.1
20°	1024.3	1043.9	1045.5	1035.7	1037.3	1037.3	1048.7	1039.0	1045.5	1037.3	1040.6
22.5°	1006.5	1019.5	1021.1	1008.1	1016.2	1006.5	1017.8	1003.2	1019.5	1008.1	1013.0
25°	983.7	982.1	986.9	980.4	982.1	982.1	990.2	983.7	988.6	982.1	983.7
27.5°	946.3	959.3	957.7	951.2	954.4	952.8	969.1	951.2	960.9	952.8	956.1
30°	913.8	925.2	921.9	915.4	915.4	910.5	928.4	923.5	921.9	921.9	920.3
32.5°	881.3	882.9	879.6	881.3	882.9	876.4	891.0	884.5	882.9	884.5	886.1
35°	837.4	837.4	840.6	835.7	842.2	842.2	855.2	847.1	845.5	840.6	845.5
37.5°	798.3	793.5	795.1	795.1	798.3	801.6	808.1	804.8	804.8	800.0	803.2
40°	746.3	743.1	747.9	747.9	752.8	752.8	759.3	756.1	760.9	760.9	760.9
42.5°	700.8	700.8	697.5	702.4	704.0	702.4	713.8	712.2	713.8	710.5	712.2
45°	652.0	652.0	648.8	647.1	655.3	653.6	666.6	661.8	668.3	665.0	666.6
47.5°	585.3	593.5	588.6	593.5	603.2	604.8	613.0	609.7	616.2	611.4	617.9
50°	521.9	521.9	526.8	533.3	543.1	544.7	554.4	560.9	564.2	565.8	567.5
52.5°	455.3	453.6	458.5	466.6	474.8	481.3	491.0	500.8	507.3	517.0	512.2
55°	377.2	380.5	385.3	395.1	408.1	416.2	424.4	437.4	448.8	453.6	463.4
57.5°	310.6	307.3	310.6	323.6	338.2	344.7	356.1	369.1	385.3	395.1	398.4
60°	240.6	242.3	245.5	256.9	268.3	278.0	282.9	304.1	318.7	328.4	334.9
62.5°	177.2	180.5	183.7	193.5	204.9	213.0	221.1	239.0	252.0	261.8	268.3
65°	123.6	125.2	130.1	135.0	146.3	154.5	161.0	175.6	188.6	196.7	201.6
67.5°	76.4	78.0	81.3	87.8	95.9	102.4	108.9	118.7	130.1	138.2	139.8
70°	39.0	40.6	42.3	47.2	53.7	56.9	61.8	69.9	78.0	84.5	87.8
72.5°	13.0	13.0	14.6	17.9	21.1	24.4	26.0	34.1	40.6	43.9	45.5
75°	3.3	3.3	3.3	3.3	3.3	4.9	4.9	9.8	13.0	16.3	17.9
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	3.3	3.3
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°	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7	1144.7
2.5°	1144.7	1141.4	1139.8	1141.4	1141.4	1139.8	1144.7	1151.2	1159.3	1138.2
5°	1143.0	1139.8	1143.0	1133.3	1138.2	1134.9	1141.4	1139.8	1146.3	1139.8
7.5°	1138.2	1131.7	1133.3	1128.4	1134.9	1126.8	1131.7	1141.4	1134.9	1125.2
10°	1121.9	1118.6	1130.0	1113.8	1110.5	1117.0	1130.0	1120.3	1117.0	1120.3
12.5°	1105.6	1105.6	1110.5	1097.5	1099.1	1102.4	1108.9	1102.4	1105.6	1113.8
15°	1087.8	1084.5	1092.6	1082.9	1081.3	1078.0	1084.5	1084.5	1087.8	1082.9
17.5°	1066.6	1061.7	1061.7	1058.5	1056.9	1065.0	1068.2	1069.9	1071.5	1065.0
20°	1040.6	1039.0	1043.9	1039.0	1040.6	1042.2	1042.2	1039.0	1053.6	1035.7
22.5°	1013.0	1017.8	1011.3	1008.1	1011.3	1014.6	1014.6	1016.2	1013.0	1009.7
25°	985.3	988.6	990.2	980.4	985.3	980.4	991.8	993.4	986.9	990.2
27.5°	960.9	956.1	954.4	947.9	951.2	949.5	951.2	951.2	960.9	947.9
30°	923.5	918.7	920.3	915.4	917.0	915.4	917.0	917.0	923.5	921.9
32.5°	887.8	882.9	884.5	879.6	879.6	881.3	878.0	878.0	882.9	879.6
35°	853.6	842.2	843.9	842.2	843.9	837.4	837.4	835.7	839.0	830.9
37.5°	804.8	800.0	798.3	796.7	798.3	795.1	798.3	793.5	798.3	791.8
40°	760.9	757.7	759.3	749.6	749.6	751.2	747.9	746.3	747.9	754.4
42.5°	717.0	710.5	707.3	704.0	705.7	700.8	699.2	695.9	699.2	692.7
45°	665.0	665.0	663.4	655.3	656.9	656.9	650.4	643.9	645.5	645.5
47.5°	617.9	614.6	613.0	604.8	603.2	601.6	595.1	590.2	590.2	585.3
50°	565.8	562.6	557.7	549.6	546.3	536.6	531.7	525.2	518.7	518.7
52.5°	517.0	505.7	499.2	486.2	481.3	476.4	463.4	458.5	453.6	448.8
55°	458.5	448.8	435.8	421.1	414.6	406.5	393.5	383.7	377.2	378.8
57.5°	401.6	385.3	372.3	352.8	344.7	339.8	326.8	313.8	307.3	307.3
60°	331.7	318.7	302.4	284.5	278.0	269.9	253.6	245.5	240.6	235.8
62.5°	265.0	255.3	240.6	217.9	213.0	204.9	193.5	183.7	178.9	178.9
65°	198.4	188.6	175.6	159.3	152.8	146.3	136.6	126.8	121.9	120.3
67.5°	139.8	128.4	117.1	104.1	99.2	95.9	86.2	79.7	76.4	74.8
70°	84.5	78.0	69.9	60.2	55.3	52.0	45.5	40.6	39.0	37.4
72.5°	43.9	39.0	32.5	26.0	22.8	19.5	16.3	13.0	11.4	11.4
75°	16.3	13.0	8.1	4.9	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	3.3	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)