

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: P209229

Luminaire Tested: **LDSQ4B20D010 EU4B10208035 4LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209229  
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: LDSQ4B20D010 EU4B10208035 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-21.86 W DE010-20.46 W D5LT-21.24 W DMX-20.89 W DL2-22.5 W DL3-21.8 6 W DLE-22.46 W  
Light Source: HIGH LUMEN LED 3500 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2036.2 lumens  
Efficiency: N/A  
Efficacy: 97.9 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

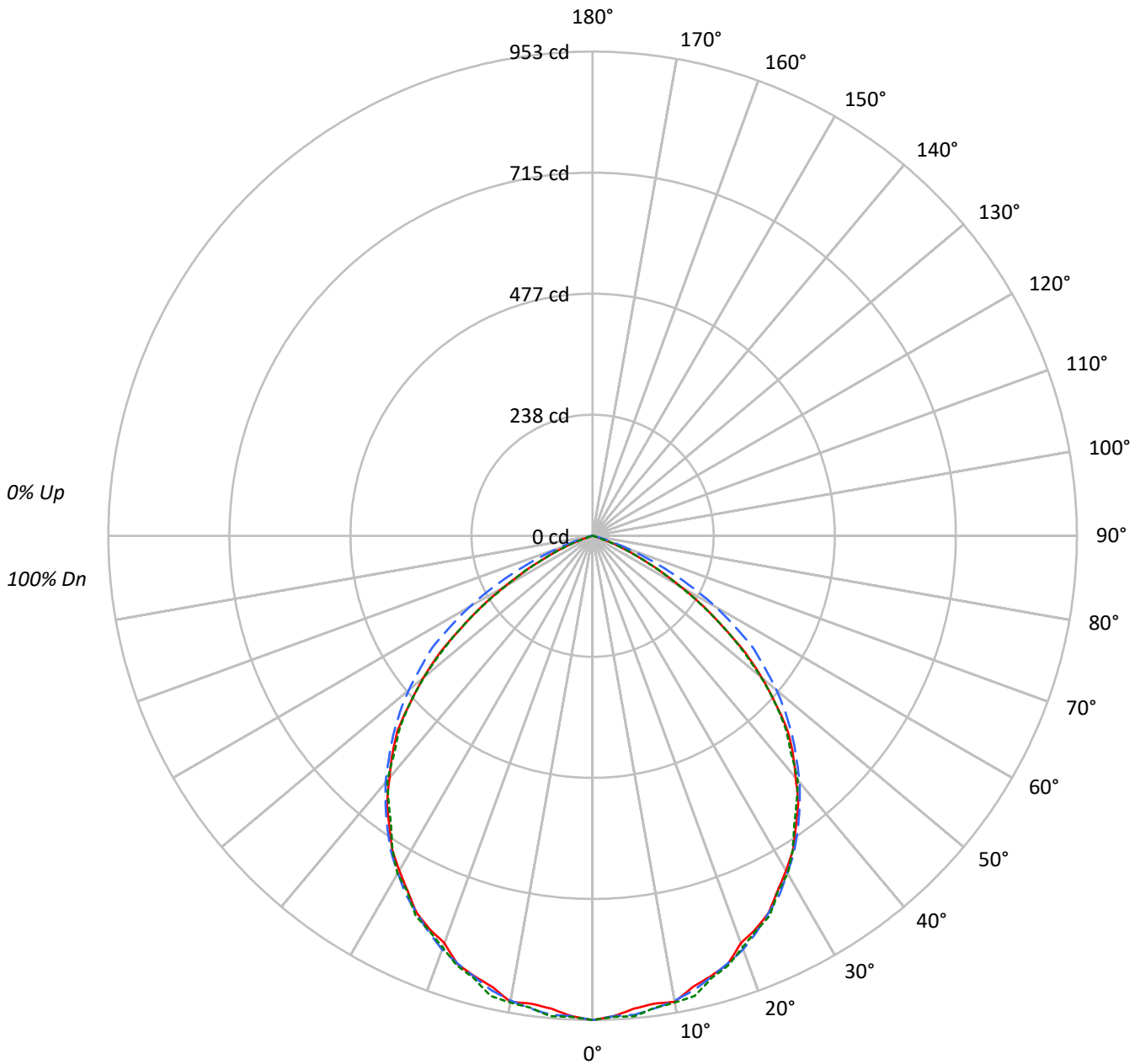
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	90.0	4.4
10°-20°	254.6	12.5
20°-30°	377.8	18.6
30°-40°	437.7	21.5
40°-50°	419.7	20.6
50°-60°	308.6	15.2
60°-70°	133.3	6.5
70°-80°	14.4	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°	722.3	35.5
0°-40°	1160.1	57.0
0°-60°	1888.3	92.7
0°-90°	2036.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2036.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	953	953	953	953	953	
5°	934	944	946	948	949	89
15°	898	903	899	900	902	253
25°	819	818	819	820	825	375
35°	697	701	704	703	692	436
45°	543	544	555	547	538	413
55°	314	347	386	345	316	283
65°	103	129	168	127	100	106
75°	3	4	15	3	3	8
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°	953.2	953.2	953.2	953.2	953.2	953.2	953.2	953.2	953.2	953.2	953.2
2.5°	946.4	957.2	958.6	951.8	949.1	945.1	954.5	947.8	950.5	947.8	946.4
5°	934.2	946.4	947.8	947.8	945.1	943.7	947.8	946.4	945.1	942.3	946.4
7.5°	928.8	935.6	942.3	934.2	938.3	936.9	946.4	942.3	941.0	941.0	938.3
10°	931.5	930.2	935.6	927.5	930.2	927.5	935.6	935.6	932.9	930.2	928.8
12.5°	909.9	920.7	920.7	919.3	916.6	912.6	920.7	926.1	918.0	918.0	916.6
15°	897.7	900.4	901.7	901.7	900.4	903.1	907.1	901.7	903.1	896.3	899.0
17.5°	884.1	878.7	882.8	880.1	881.4	884.1	889.5	889.5	881.4	880.1	882.8
20°	853.0	869.2	870.6	862.5	863.8	863.8	873.3	865.2	870.6	863.8	866.5
22.5°	838.1	848.9	850.3	839.4	846.2	838.1	847.6	835.4	848.9	839.4	843.5
25°	819.1	817.8	821.8	816.4	817.8	817.8	824.6	819.1	823.2	817.8	819.1
27.5°	788.0	798.8	797.5	792.1	794.8	793.4	807.0	792.1	800.2	793.4	796.1
30°	760.9	770.4	767.7	762.3	762.3	758.2	773.1	769.0	767.7	767.7	766.3
32.5°	733.8	735.2	732.5	733.8	735.2	729.8	742.0	736.5	735.2	736.5	737.9
35°	697.3	697.3	700.0	695.9	701.3	701.3	712.2	705.4	704.1	700.0	704.1
37.5°	664.8	660.7	662.1	662.1	664.8	667.5	672.9	670.2	670.2	666.1	668.9
40°	621.5	618.8	622.8	622.8	626.9	626.9	632.3	629.6	633.6	633.6	633.6
42.5°	583.6	583.6	580.8	584.9	586.3	584.9	594.4	593.0	594.4	591.7	593.0
45°	542.9	542.9	540.2	538.9	545.6	544.3	555.1	551.1	556.5	553.8	555.1
47.5°	487.4	494.2	490.1	494.2	502.3	503.7	510.4	507.7	513.1	509.1	514.5
50°	434.6	434.6	438.7	444.1	452.2	453.6	461.7	467.1	469.8	471.2	472.5
52.5°	379.1	377.8	381.8	388.6	395.4	400.8	408.9	417.0	422.4	430.6	426.5
55°	314.1	316.8	320.9	329.0	339.8	346.6	353.4	364.2	373.7	377.8	385.9
57.5°	258.6	255.9	258.6	269.4	281.6	287.0	296.5	307.3	320.9	329.0	331.7
60°	200.4	201.7	204.4	213.9	223.4	231.5	235.6	253.2	265.4	273.5	278.9
62.5°	147.6	150.3	153.0	161.1	170.6	177.4	184.1	199.0	209.9	218.0	223.4
65°	102.9	104.3	108.3	112.4	121.9	128.6	134.0	146.2	157.1	163.8	167.9
67.5°	63.6	65.0	67.7	73.1	79.9	85.3	90.7	98.8	108.3	115.1	116.4
70°	32.5	33.8	35.2	39.3	44.7	47.4	51.5	58.2	65.0	70.4	73.1
72.5°	10.8	10.8	12.2	14.9	17.6	20.3	21.7	28.4	33.8	36.6	37.9
75°	2.7	2.7	2.7	2.7	2.7	4.1	4.1	8.1	10.8	13.5	14.9
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	953.2	953.2	953.2	953.2	953.2	953.2	953.2	953.2	953.2	953.2
2.5°	953.2	950.5	949.1	950.5	950.5	949.1	953.2	958.6	965.4	947.8
5°	951.8	949.1	951.8	943.7	947.8	945.1	950.5	949.1	954.5	949.1
7.5°	947.8	942.3	943.7	939.6	945.1	938.3	942.3	950.5	945.1	936.9
10°	934.2	931.5	941.0	927.5	924.7	930.2	941.0	932.9	930.2	932.9
12.5°	920.7	920.7	924.7	913.9	915.3	918.0	923.4	918.0	920.7	927.5
15°	905.8	903.1	909.9	901.7	900.4	897.7	903.1	903.1	905.8	901.7
17.5°	888.2	884.1	884.1	881.4	880.1	886.8	889.5	890.9	892.3	886.8
20°	866.5	865.2	869.2	865.2	866.5	867.9	867.9	865.2	877.4	862.5
22.5°	843.5	847.6	842.2	839.4	842.2	844.9	844.9	846.2	843.5	840.8
25°	820.5	823.2	824.6	816.4	820.5	816.4	825.9	827.3	821.8	824.6
27.5°	800.2	796.1	794.8	789.4	792.1	790.7	792.1	792.1	800.2	789.4
30°	769.0	765.0	766.3	762.3	763.6	762.3	763.6	763.6	769.0	767.7
32.5°	739.3	735.2	736.5	732.5	732.5	733.8	731.1	731.1	735.2	732.5
35°	710.8	701.3	702.7	701.3	702.7	697.3	697.3	695.9	698.6	691.9
37.5°	670.2	666.1	664.8	663.4	664.8	662.1	664.8	660.7	664.8	659.4
40°	633.6	630.9	632.3	624.2	624.2	625.5	622.8	621.5	622.8	628.2
42.5°	597.1	591.7	589.0	586.3	587.6	583.6	582.2	579.5	582.2	576.8
45°	553.8	553.8	552.4	545.6	547.0	547.0	541.6	536.2	537.5	537.5
47.5°	514.5	511.8	510.4	503.7	502.3	501.0	495.5	491.5	491.5	487.4
50°	471.2	468.5	464.4	457.6	454.9	446.8	442.7	437.3	431.9	431.9
52.5°	430.6	421.1	415.7	404.8	400.8	396.7	385.9	381.8	377.8	373.7
55°	381.8	373.7	362.9	350.7	345.3	338.5	327.7	319.5	314.1	315.5
57.5°	334.4	320.9	310.1	293.8	287.0	283.0	272.1	261.3	255.9	255.9
60°	276.2	265.4	251.8	236.9	231.5	224.8	211.2	204.4	200.4	196.3
62.5°	220.7	212.6	200.4	181.4	177.4	170.6	161.1	153.0	148.9	148.9
65°	165.2	157.1	146.2	132.7	127.3	121.9	113.7	105.6	101.5	100.2
67.5°	116.4	107.0	97.5	86.7	82.6	79.9	71.8	66.3	63.6	62.3
70°	70.4	65.0	58.2	50.1	46.0	43.3	37.9	33.8	32.5	31.1
72.5°	36.6	32.5	27.1	21.7	19.0	16.2	13.5	10.8	9.5	9.5
75°	13.5	10.8	6.8	4.1	2.7	2.7	2.7	2.7	2.7	2.7
77.5°	2.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)