

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: P209231

Luminaire Tested: **LDSQ4B20D010 EU4B10208050 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209231
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 EU4B10208050 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 5000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2057.3 lumens
Efficiency: N/A
Efficacy: 98.9 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

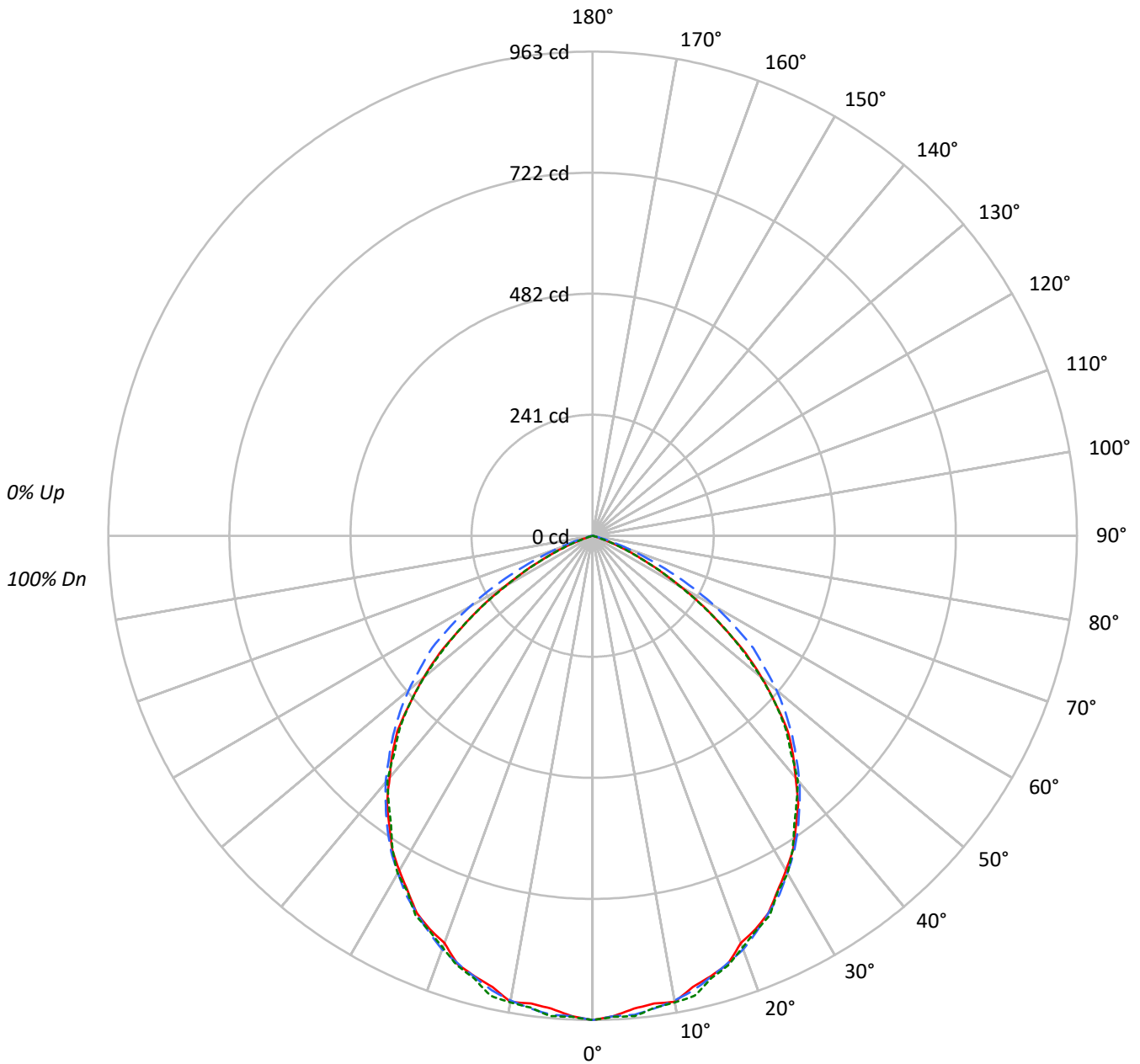
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209231

CATALOG NUMBER: LDSQ4B20D010 EU4B10208050 4LBCSSQ1MMS

Luminous Intensity Polar Plot





TEST NUMBER: P209231

CATALOG NUMBER: LDSQ4B20D010 EU4B10208050 4LBCSSQ1MMS

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°			



TEST NUMBER: P209231

CATALOG NUMBER: LDSQ4B20D010 EU4B10208050 4LBCSSQ1MMS

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.9	4.4
10°-20°	257.2	12.5
20°-30°	381.7	18.6
30°-40°	442.3	21.5
40°-50°	424.0	20.6
50°-60°	311.8	15.2
60°-70°	134.7	6.5
70°-80°	14.5	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°	729.8	35.5
0°-40°	1172.1	57.0
0°-60°	1907.9	92.7
0°-90°	2057.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2057.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	963	963	963	963	963	
5°	944	954	956	958	959	90
15°	907	912	908	910	911	256
25°	828	826	828	829	833	379
35°	704	709	711	710	699	441
45°	549	550	561	553	543	417
55°	317	350	390	349	319	286
65°	104	130	170	129	101	107
75°	3	4	15	3	3	8
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



TEST NUMBER: P209231

CATALOG NUMBER: LDSQ4B20D010 EU4B10208050 4LBCSSQ1MMS

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	963.1	963.1	963.1	963.1	963.1	963.1	963.1	963.1	963.1	963.1	963.1
2.5°	956.2	967.2	968.5	961.7	958.9	954.8	964.4	957.6	960.3	957.6	956.2
5°	943.9	956.2	957.6	957.6	954.8	953.5	957.6	956.2	954.8	952.1	956.2
7.5°	938.4	945.3	952.1	943.9	948.0	946.6	956.2	952.1	950.7	950.7	948.0
10°	941.2	939.8	945.3	937.1	939.8	937.1	945.3	945.3	942.5	939.8	938.4
12.5°	919.3	930.2	930.2	928.9	926.1	922.0	930.2	935.7	927.5	927.5	926.1
15°	907.0	909.7	911.1	911.1	909.7	912.4	916.5	911.1	912.4	905.6	908.3
17.5°	893.3	887.8	891.9	889.2	890.6	893.3	898.8	898.8	890.6	889.2	891.9
20°	861.8	878.2	879.6	871.4	872.8	872.8	882.3	874.1	879.6	872.8	875.5
22.5°	846.8	857.7	859.1	848.1	855.0	846.8	856.4	844.0	857.7	848.1	852.2
25°	827.6	826.3	830.4	824.9	826.3	826.3	833.1	827.6	831.7	826.3	827.6
27.5°	796.2	807.1	805.7	800.3	803.0	801.6	815.3	800.3	808.5	801.6	804.4
30°	768.8	778.4	775.6	770.2	770.2	766.1	781.1	777.0	775.6	775.6	774.3
32.5°	741.4	742.8	740.1	741.4	742.8	737.3	749.6	744.2	742.8	744.2	745.5
35°	704.5	704.5	707.2	703.1	708.6	708.6	719.6	712.7	711.3	707.2	711.3
37.5°	671.7	667.6	668.9	668.9	671.7	674.4	679.9	677.1	677.1	673.0	675.8
40°	627.9	625.2	629.3	629.3	633.4	633.4	638.8	636.1	640.2	640.2	640.2
42.5°	589.6	589.6	586.9	591.0	592.3	591.0	600.5	599.2	600.5	597.8	599.2
45°	548.6	548.6	545.8	544.5	551.3	549.9	560.9	556.8	562.2	559.5	560.9
47.5°	492.5	499.3	495.2	499.3	507.5	508.9	515.7	513.0	518.5	514.4	519.8
50°	439.1	439.1	443.2	448.7	456.9	458.3	466.5	472.0	474.7	476.1	477.4
52.5°	383.0	381.7	385.8	392.6	399.4	404.9	413.1	421.3	426.8	435.0	430.9
55°	317.4	320.1	324.2	332.4	343.4	350.2	357.0	368.0	377.6	381.7	389.9
57.5°	261.3	258.5	261.3	272.2	284.5	290.0	299.6	310.5	324.2	332.4	335.2
60°	202.5	203.8	206.6	216.1	225.7	233.9	238.0	255.8	268.1	276.3	281.8
62.5°	149.1	151.8	154.6	162.8	172.4	179.2	186.0	201.1	212.0	220.2	225.7
65°	104.0	105.3	109.4	113.5	123.1	130.0	135.4	147.7	158.7	165.5	169.6
67.5°	64.3	65.7	68.4	73.9	80.7	86.2	91.7	99.9	109.4	116.3	117.6
70°	32.8	34.2	35.6	39.7	45.1	47.9	52.0	58.8	65.7	71.1	73.9
72.5°	10.9	10.9	12.3	15.0	17.8	20.5	21.9	28.7	34.2	36.9	38.3
75°	2.7	2.7	2.7	2.7	2.7	4.1	4.1	8.2	10.9	13.7	15.0
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



TEST NUMBER: P209231

CATALOG NUMBER: LDSQ4B20D010 EU4B10208050 4LBCSSQ1MMS

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	963.1	963.1	963.1	963.1	963.1	963.1	963.1	963.1	963.1	963.1
2.5°	963.1	960.3	958.9	960.3	960.3	958.9	963.1	968.5	975.4	957.6
5°	961.7	958.9	961.7	953.5	957.6	954.8	960.3	958.9	964.4	958.9
7.5°	957.6	952.1	953.5	949.4	954.8	948.0	952.1	960.3	954.8	946.6
10°	943.9	941.2	950.7	937.1	934.3	939.8	950.7	942.5	939.8	942.5
12.5°	930.2	930.2	934.3	923.4	924.7	927.5	933.0	927.5	930.2	937.1
15°	915.2	912.4	919.3	911.1	909.7	907.0	912.4	912.4	915.2	911.1
17.5°	897.4	893.3	893.3	890.6	889.2	896.0	898.8	900.1	901.5	896.0
20°	875.5	874.1	878.2	874.1	875.5	876.9	876.9	874.1	886.4	871.4
22.5°	852.2	856.4	850.9	848.1	850.9	853.6	853.6	855.0	852.2	849.5
25°	829.0	831.7	833.1	824.9	829.0	824.9	834.5	835.8	830.4	833.1
27.5°	808.5	804.4	803.0	797.5	800.3	798.9	800.3	800.3	808.5	797.5
30°	777.0	772.9	774.3	770.2	771.5	770.2	771.5	771.5	777.0	775.6
32.5°	746.9	742.8	744.2	740.1	740.1	741.4	738.7	738.7	742.8	740.1
35°	718.2	708.6	710.0	708.6	710.0	704.5	704.5	703.1	705.9	699.0
37.5°	677.1	673.0	671.7	670.3	671.7	668.9	671.7	667.6	671.7	666.2
40°	640.2	637.5	638.8	630.6	630.6	632.0	629.3	627.9	629.3	634.7
42.5°	603.3	597.8	595.1	592.3	593.7	589.6	588.2	585.5	588.2	582.8
45°	559.5	559.5	558.1	551.3	552.7	552.7	547.2	541.7	543.1	543.1
47.5°	519.8	517.1	515.7	508.9	507.5	506.2	500.7	496.6	496.6	492.5
50°	476.1	473.3	469.2	462.4	459.6	451.4	447.3	441.9	436.4	436.4
52.5°	435.0	425.4	420.0	409.0	404.9	400.8	389.9	385.8	381.7	377.6
55°	385.8	377.6	366.6	354.3	348.8	342.0	331.0	322.8	317.4	318.7
57.5°	337.9	324.2	313.3	296.9	290.0	285.9	275.0	264.0	258.5	258.5
60°	279.1	268.1	254.4	239.4	233.9	227.1	213.4	206.6	202.5	198.4
62.5°	223.0	214.8	202.5	183.3	179.2	172.4	162.8	154.6	150.5	150.5
65°	166.9	158.7	147.7	134.1	128.6	123.1	114.9	106.7	102.6	101.2
67.5°	117.6	108.1	98.5	87.6	83.4	80.7	72.5	67.0	64.3	62.9
70°	71.1	65.7	58.8	50.6	46.5	43.8	38.3	34.2	32.8	31.5
72.5°	36.9	32.8	27.4	21.9	19.2	16.4	13.7	10.9	9.6	9.6
75°	13.7	10.9	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)