

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: P209230

Luminaire Tested: **LDSQ4B20D010 EU4B10208040 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209230
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 EU4B10208040 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 4000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2058.0 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

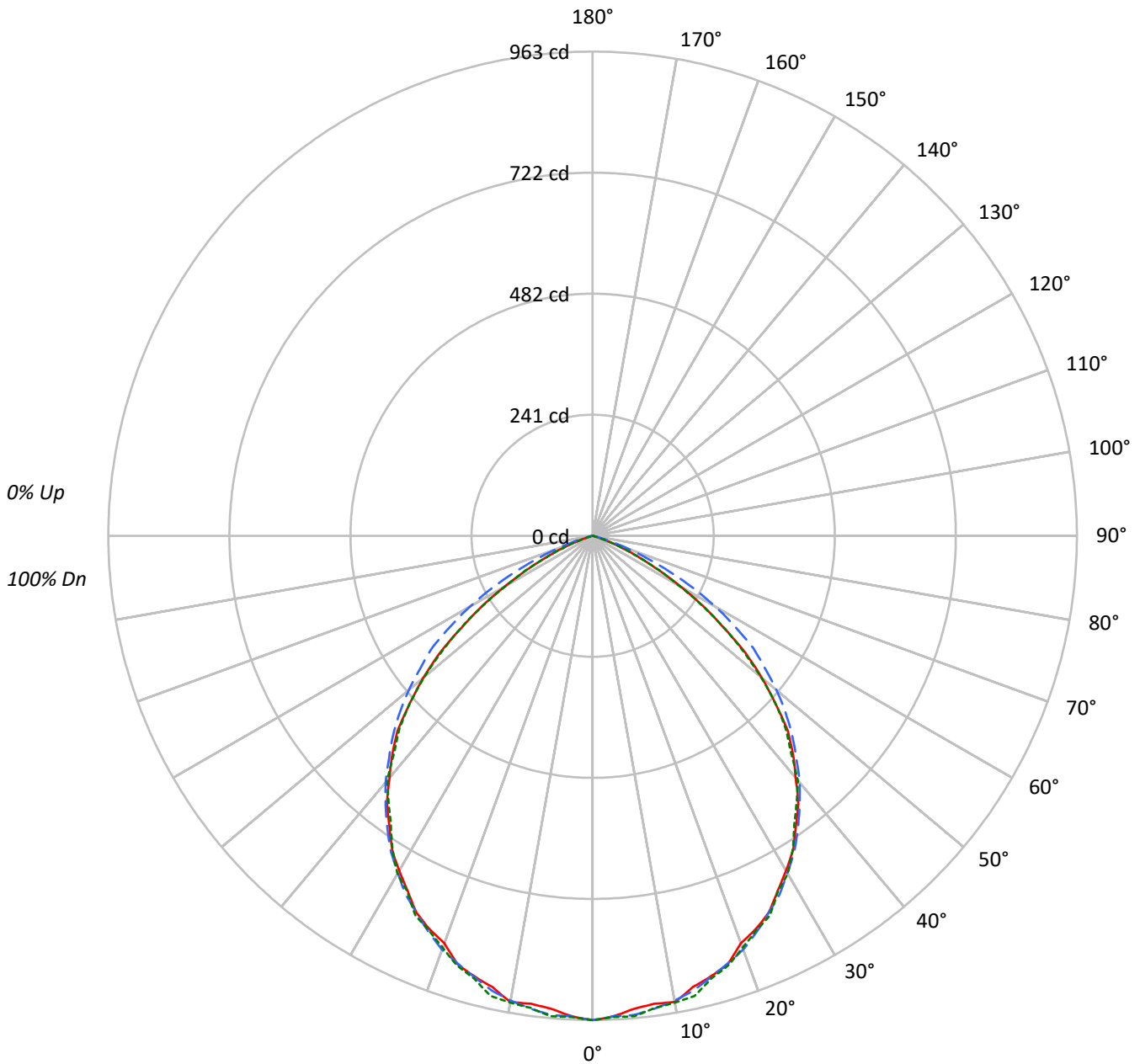
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	90.9	4.4
10°-20°	257.3	12.5
20°-30°	381.8	18.6
30°-40°	442.4	21.5
40°-50°	424.2	20.6
50°-60°	311.9	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°	730.1	35.5
0°-40°	1172.5	57.0
0°-60°	1908.6	92.7
0°-90°	2058.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2058.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	963	963	963	963	963	
5°	944	954	957	958	959	90
15°	907	913	909	910	911	256
25°	828	827	828	829	833	379
35°	705	709	712	710	699	441
45°	549	550	561	553	543	417
55°	318	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	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	963.4	963.4	963.4	963.4	963.4	963.4	963.4	963.4	963.4	963.4	963.4
2.5°	956.6	967.5	968.9	962.1	959.3	955.2	964.8	957.9	960.7	957.9	956.6
5°	944.3	956.6	957.9	957.9	955.2	953.8	957.9	956.6	955.2	952.5	956.6
7.5°	938.8	945.6	952.5	944.3	948.4	947.0	956.6	952.5	951.1	951.1	948.4
10°	941.5	940.2	945.6	937.4	940.2	937.4	945.6	945.6	942.9	940.2	938.8
12.5°	919.6	930.6	930.6	929.2	926.5	922.4	930.6	936.0	927.8	927.8	926.5
15°	907.3	910.0	911.4	911.4	910.0	912.8	916.9	911.4	912.8	905.9	908.7
17.5°	893.6	888.2	892.3	889.5	890.9	893.6	899.1	899.1	890.9	889.5	892.3
20°	862.2	878.6	879.9	871.7	873.1	873.1	882.7	874.5	879.9	873.1	875.8
22.5°	847.1	858.0	859.4	848.5	855.3	847.1	856.7	844.4	858.0	848.5	852.6
25°	827.9	826.6	830.7	825.2	826.6	826.6	833.4	827.9	832.0	826.6	827.9
27.5°	796.5	807.4	806.0	800.6	803.3	801.9	815.6	800.6	808.8	801.9	804.7
30°	769.1	778.7	775.9	770.5	770.5	766.4	781.4	777.3	775.9	775.9	774.6
32.5°	741.7	743.1	740.4	741.7	743.1	737.6	749.9	744.5	743.1	744.5	745.8
35°	704.8	704.8	707.5	703.4	708.9	708.9	719.8	713.0	711.6	707.5	711.6
37.5°	671.9	667.8	669.2	669.2	671.9	674.7	680.1	677.4	677.4	673.3	676.0
40°	628.1	625.4	629.5	629.5	633.6	633.6	639.1	636.3	640.5	640.5	640.5
42.5°	589.8	589.8	587.1	591.2	592.6	591.2	600.8	599.4	600.8	598.0	599.4
45°	548.8	548.8	546.0	544.7	551.5	550.1	561.1	557.0	562.5	559.7	561.1
47.5°	492.7	499.5	495.4	499.5	507.7	509.1	515.9	513.2	518.7	514.6	520.0
50°	439.3	439.3	443.4	448.9	457.1	458.4	466.7	472.1	474.9	476.2	477.6
52.5°	383.2	381.8	385.9	392.8	399.6	405.1	413.3	421.5	427.0	435.2	431.1
55°	317.5	320.2	324.3	332.5	343.5	350.3	357.2	368.1	377.7	381.8	390.0
57.5°	261.4	258.6	261.4	272.3	284.6	290.1	299.7	310.6	324.3	332.5	335.3
60°	202.5	203.9	206.6	216.2	225.8	234.0	238.1	255.9	268.2	276.4	281.9
62.5°	149.2	151.9	154.6	162.9	172.4	179.3	186.1	201.2	212.1	220.3	225.8
65°	104.0	105.4	109.5	113.6	123.2	130.0	135.5	147.8	158.7	165.6	169.7
67.5°	64.3	65.7	68.4	73.9	80.7	86.2	91.7	99.9	109.5	116.3	117.7
70°	32.8	34.2	35.6	39.7	45.2	47.9	52.0	58.8	65.7	71.2	73.9
72.5°	10.9	10.9	12.3	15.1	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	15.1
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°	963.4	963.4	963.4	963.4	963.4	963.4	963.4	963.4	963.4	963.4
2.5°	963.4	960.7	959.3	960.7	960.7	959.3	963.4	968.9	975.7	957.9
5°	962.1	959.3	962.1	953.8	957.9	955.2	960.7	959.3	964.8	959.3
7.5°	957.9	952.5	953.8	949.7	955.2	948.4	952.5	960.7	955.2	947.0
10°	944.3	941.5	951.1	937.4	934.7	940.2	951.1	942.9	940.2	942.9
12.5°	930.6	930.6	934.7	923.7	925.1	927.8	933.3	927.8	930.6	937.4
15°	915.5	912.8	919.6	911.4	910.0	907.3	912.8	912.8	915.5	911.4
17.5°	897.7	893.6	893.6	890.9	889.5	896.4	899.1	900.5	901.8	896.4
20°	875.8	874.5	878.6	874.5	875.8	877.2	877.2	874.5	886.8	871.7
22.5°	852.6	856.7	851.2	848.5	851.2	853.9	853.9	855.3	852.6	849.8
25°	829.3	832.0	833.4	825.2	829.3	825.2	834.8	836.1	830.7	833.4
27.5°	808.8	804.7	803.3	797.8	800.6	799.2	800.6	800.6	808.8	797.8
30°	777.3	773.2	774.6	770.5	771.8	770.5	771.8	771.8	777.3	775.9
32.5°	747.2	743.1	744.5	740.4	740.4	741.7	739.0	739.0	743.1	740.4
35°	718.5	708.9	710.2	708.9	710.2	704.8	704.8	703.4	706.1	699.3
37.5°	677.4	673.3	671.9	670.6	671.9	669.2	671.9	667.8	671.9	666.5
40°	640.5	637.7	639.1	630.9	630.9	632.2	629.5	628.1	629.5	635.0
42.5°	603.5	598.0	595.3	592.6	593.9	589.8	588.5	585.7	588.5	583.0
45°	559.7	559.7	558.3	551.5	552.9	552.9	547.4	541.9	543.3	543.3
47.5°	520.0	517.3	515.9	509.1	507.7	506.3	500.9	496.8	496.8	492.7
50°	476.2	473.5	469.4	462.6	459.8	451.6	447.5	442.0	436.5	436.5
52.5°	435.2	425.6	420.1	409.2	405.1	401.0	390.0	385.9	381.8	377.7
55°	385.9	377.7	366.8	354.4	349.0	342.1	331.2	323.0	317.5	318.9
57.5°	338.0	324.3	313.4	297.0	290.1	286.0	275.1	264.1	258.6	258.6
60°	279.2	268.2	254.5	239.5	234.0	227.2	213.5	206.6	202.5	198.4
62.5°	223.1	214.9	202.5	183.4	179.3	172.4	162.9	154.6	150.5	150.5
65°	167.0	158.7	147.8	134.1	128.6	123.2	115.0	106.7	102.6	101.3
67.5°	117.7	108.1	98.5	87.6	83.5	80.7	72.5	67.1	64.3	63.0
70°	71.2	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)