

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: P209228

Luminaire Tested: **LDSQ4B20D010 EU4B10208030 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209228
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 EU4B10208030 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 3000 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1986.9 lumens
Efficiency: N/A
Efficacy: 95.5 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

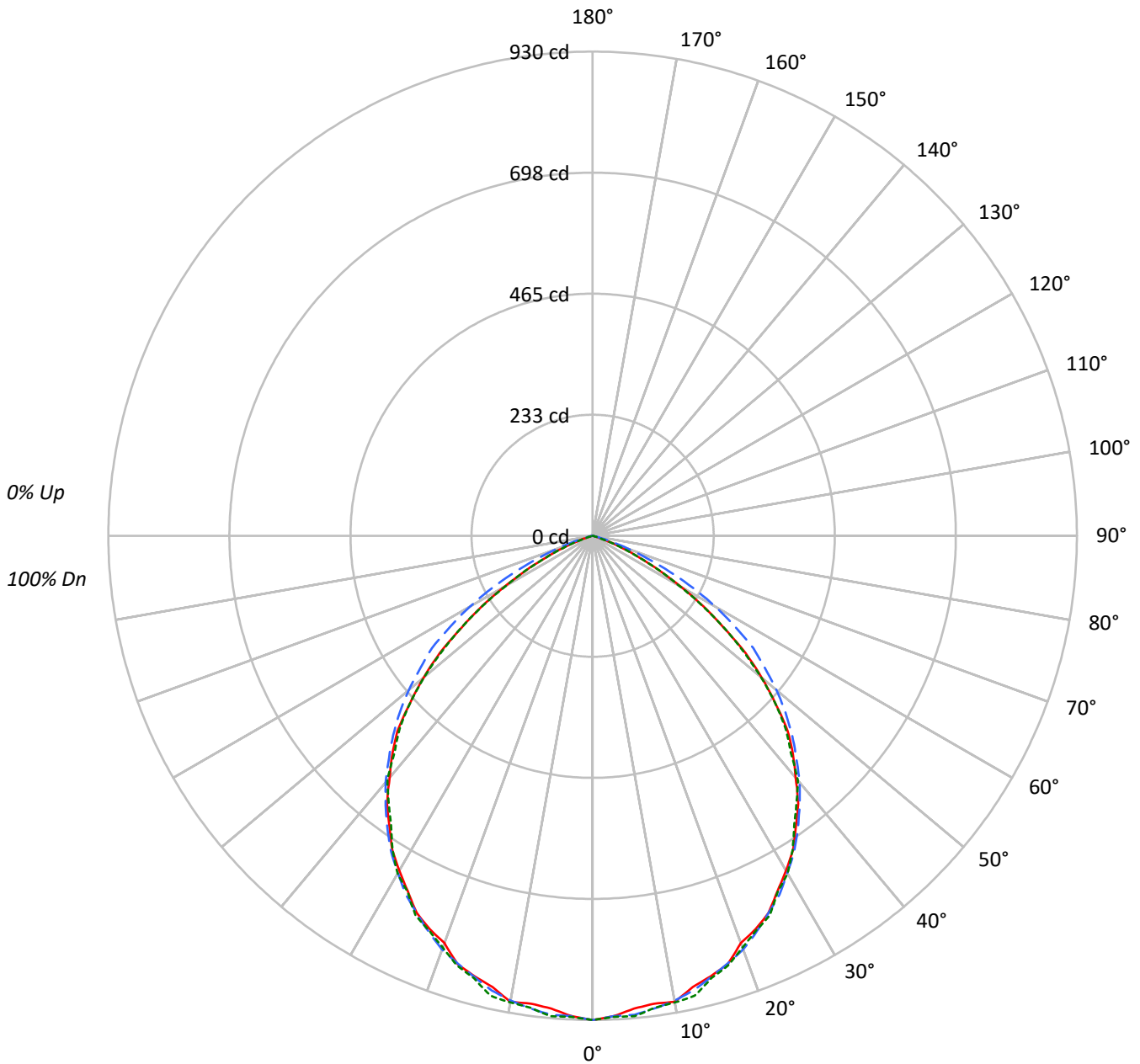
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	34																			
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°	87.8	4.4
10°-20°	248.4	12.5
20°-30°	368.6	18.6
30°-40°	427.1	21.5
40°-50°	409.5	20.6
50°-60°	301.1	15.2
60°-70°	130.1	6.5
70°-80°	14.0	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°	704.9	35.5
0°-40°	1132.0	57.0
0°-60°	1842.7	92.7
0°-90°	1986.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1986.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	930	930	930	930	930	
5°	912	921	924	925	926	87
15°	876	881	877	879	880	247
25°	799	798	799	801	805	366
35°	680	684	687	686	675	425
45°	530	531	542	534	524	403
55°	306	338	377	337	308	276
65°	100	126	164	124	98	103
75°	3	4	14	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°	930.1	930.1	930.1	930.1	930.1	930.1	930.1	930.1	930.1	930.1	930.1
2.5°	923.5	934.1	935.4	928.8	926.2	922.2	931.5	924.9	927.5	924.9	923.5
5°	911.6	923.5	924.9	924.9	922.2	920.9	924.9	923.5	922.2	919.6	923.5
7.5°	906.4	913.0	919.6	911.6	915.6	914.3	923.5	919.6	918.3	918.3	915.6
10°	909.0	907.7	913.0	905.0	907.7	905.0	913.0	913.0	910.3	907.7	906.4
12.5°	887.9	898.4	898.4	897.1	894.5	890.5	898.4	903.7	895.8	895.8	894.5
15°	876.0	878.6	879.9	879.9	878.6	881.3	885.2	879.9	881.3	874.7	877.3
17.5°	862.8	857.5	861.4	858.8	860.1	862.8	868.0	868.0	860.1	858.8	861.4
20°	832.4	848.2	849.6	841.6	842.9	842.9	852.2	844.3	849.6	842.9	845.6
22.5°	817.8	828.4	829.7	819.2	825.8	817.8	827.1	815.2	828.4	819.2	823.1
25°	799.3	798.0	802.0	796.7	798.0	798.0	804.6	799.3	803.3	798.0	799.3
27.5°	769.0	779.5	778.2	772.9	775.6	774.2	787.5	772.9	780.8	774.2	776.9
30°	742.5	751.8	749.1	743.9	743.9	739.9	754.4	750.5	749.1	749.1	747.8
32.5°	716.1	717.4	714.8	716.1	717.4	712.1	724.0	718.7	717.4	718.7	720.1
35°	680.4	680.4	683.1	679.1	684.4	684.4	695.0	688.4	687.0	683.1	687.0
37.5°	648.7	644.8	646.1	646.1	648.7	651.4	656.7	654.0	654.0	650.0	652.7
40°	606.4	603.8	607.8	607.8	611.7	611.7	617.0	614.4	618.3	618.3	618.3
42.5°	569.5	569.5	566.8	570.8	572.1	570.8	580.0	578.7	580.0	577.4	578.7
45°	529.8	529.8	527.2	525.9	532.5	531.1	541.7	537.7	543.0	540.4	541.7
47.5°	475.6	482.2	478.3	482.2	490.2	491.5	498.1	495.5	500.7	496.8	502.1
50°	424.1	424.1	428.1	433.4	441.3	442.6	450.5	455.8	458.5	459.8	461.1
52.5°	369.9	368.6	372.6	379.2	385.8	391.1	399.0	406.9	412.2	420.2	416.2
55°	306.5	309.2	313.1	321.1	331.6	338.2	344.8	355.4	364.7	368.6	376.6
57.5°	252.4	249.7	252.4	262.9	274.8	280.1	289.3	299.9	313.1	321.1	323.7
60°	195.5	196.9	199.5	208.8	218.0	225.9	229.9	247.1	259.0	266.9	272.2
62.5°	144.0	146.7	149.3	157.2	166.5	173.1	179.7	194.2	204.8	212.7	218.0
65°	100.4	101.7	105.7	109.7	118.9	125.5	130.8	142.7	153.3	159.9	163.8
67.5°	62.1	63.4	66.1	71.3	78.0	83.2	88.5	96.4	105.7	112.3	113.6
70°	31.7	33.0	34.4	38.3	43.6	46.2	50.2	56.8	63.4	68.7	71.3
72.5°	10.6	10.6	11.9	14.5	17.2	19.8	21.1	27.7	33.0	35.7	37.0
75°	2.6	2.6	2.6	2.6	2.6	4.0	4.0	7.9	10.6	13.2	14.5
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.6	2.6
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	930.1	930.1	930.1	930.1	930.1	930.1	930.1	930.1	930.1	930.1
2.5°	930.1	927.5	926.2	927.5	927.5	926.2	930.1	935.4	942.0	924.9
5°	928.8	926.2	928.8	920.9	924.9	922.2	927.5	926.2	931.5	926.2
7.5°	924.9	919.6	920.9	916.9	922.2	915.6	919.6	927.5	922.2	914.3
10°	911.6	909.0	918.3	905.0	902.4	907.7	918.3	910.3	907.7	910.3
12.5°	898.4	898.4	902.4	891.8	893.2	895.8	901.1	895.8	898.4	905.0
15°	883.9	881.3	887.9	879.9	878.6	876.0	881.3	881.3	883.9	879.9
17.5°	866.7	862.8	862.8	860.1	858.8	865.4	868.0	869.4	870.7	865.4
20°	845.6	844.3	848.2	844.3	845.6	846.9	846.9	844.3	856.2	841.6
22.5°	823.1	827.1	821.8	819.2	821.8	824.4	824.4	825.8	823.1	820.5
25°	800.7	803.3	804.6	796.7	800.7	796.7	806.0	807.3	802.0	804.6
27.5°	780.8	776.9	775.6	770.3	772.9	771.6	772.9	772.9	780.8	770.3
30°	750.5	746.5	747.8	743.9	745.2	743.9	745.2	745.2	750.5	749.1
32.5°	721.4	717.4	718.7	714.8	714.8	716.1	713.5	713.5	717.4	714.8
35°	693.6	684.4	685.7	684.4	685.7	680.4	680.4	679.1	681.8	675.1
37.5°	654.0	650.0	648.7	647.4	648.7	646.1	648.7	644.8	648.7	643.4
40°	618.3	615.7	617.0	609.1	609.1	610.4	607.8	606.4	607.8	613.1
42.5°	582.7	577.4	574.7	572.1	573.4	569.5	568.1	565.5	568.1	562.8
45°	540.4	540.4	539.1	532.5	533.8	533.8	528.5	523.2	524.5	524.5
47.5°	502.1	499.4	498.1	491.5	490.2	488.9	483.6	479.6	479.6	475.6
50°	459.8	457.1	453.2	446.6	443.9	436.0	432.0	426.8	421.5	421.5
52.5°	420.2	410.9	405.6	395.0	391.1	387.1	376.6	372.6	368.6	364.7
55°	372.6	364.7	354.1	342.2	336.9	330.3	319.7	311.8	306.5	307.8
57.5°	326.3	313.1	302.6	286.7	280.1	276.1	265.6	255.0	249.7	249.7
60°	269.5	259.0	245.7	231.2	225.9	219.3	206.1	199.5	195.5	191.6
62.5°	215.4	207.4	195.5	177.0	173.1	166.5	157.2	149.3	145.3	145.3
65°	161.2	153.3	142.7	129.5	124.2	118.9	111.0	103.1	99.1	97.8
67.5°	113.6	104.4	95.1	84.6	80.6	78.0	70.0	64.7	62.1	60.8
70°	68.7	63.4	56.8	48.9	44.9	42.3	37.0	33.0	31.7	30.4
72.5°	35.7	31.7	26.4	21.1	18.5	15.9	13.2	10.6	9.2	9.2
75°	13.2	10.6	6.6	4.0	2.6	2.6	2.6	2.6	2.6	2.6
77.5°	2.6	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)