

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: P209235

Luminaire Tested: **LDSQ4B20D010 EU4B10209035 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209235
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 EU4B10209035 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: 1721.4 lumens
Efficiency: N/A
Efficacy: 82.8 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

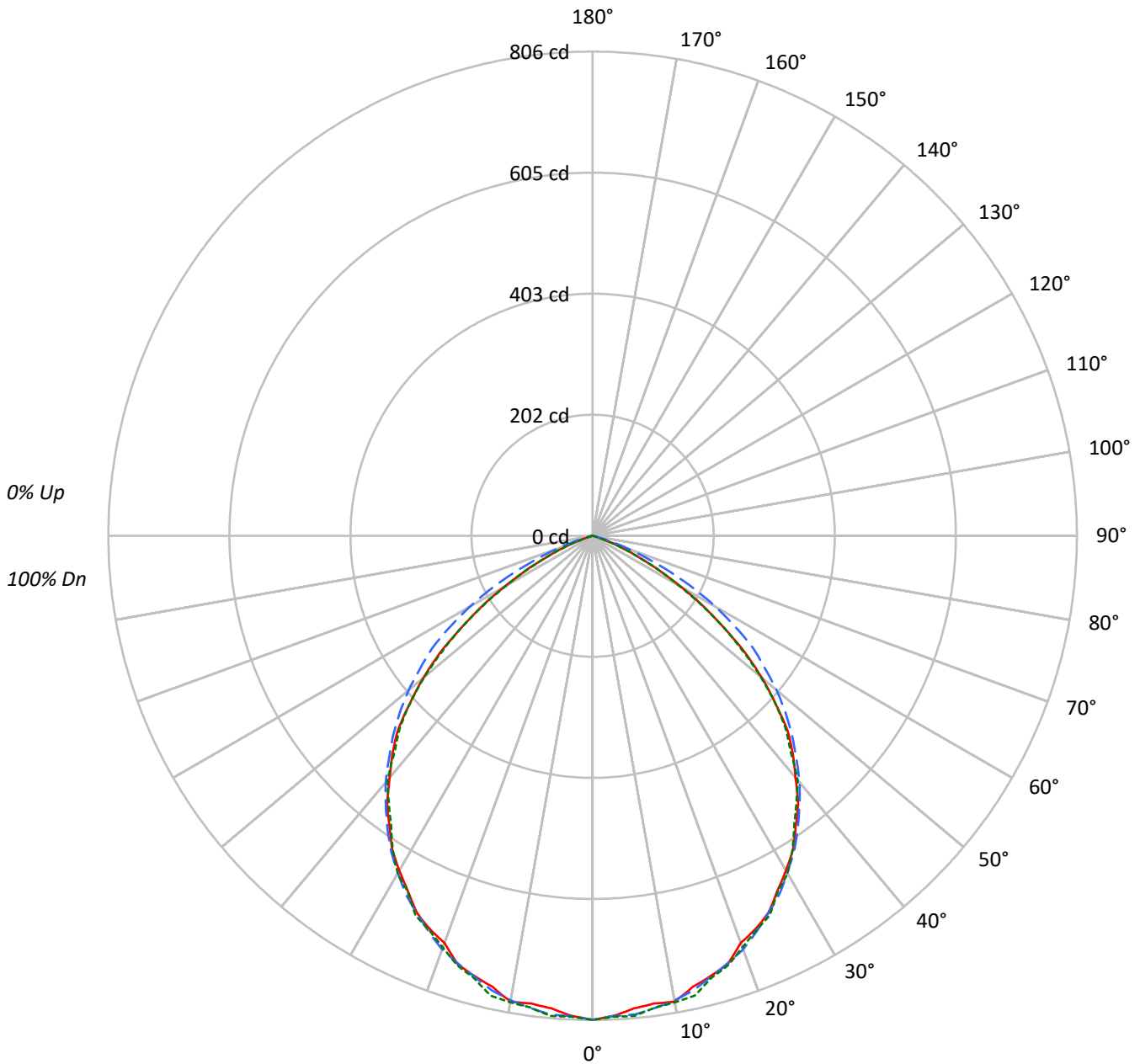
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	76.1	4.4
10°-20°	215.2	12.5
20°-30°	319.4	18.6
30°-40°	370.1	21.5
40°-50°	354.8	20.6
50°-60°	260.9	15.2
60°-70°	112.7	6.5
70°-80°	12.1	0.7
80°-90°	0.1	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°	610.7	35.5
0°-40°	980.7	57.0
0°-60°	1596.4	92.7
0°-90°	1721.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1721.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	806	806	806	806	806	
5°	790	798	800	801	802	75
15°	759	764	760	761	762	214
25°	692	691	692	694	697	317
35°	590	593	595	594	585	369
45°	459	460	469	462	454	349
55°	266	293	326	292	267	239
65°	87	109	142	108	85	89
75°	2	3	13	2	2	7
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°	805.8	805.8	805.8	805.8	805.8	805.8	805.8	805.8	805.8	805.8	805.8
2.5°	800.1	809.3	810.4	804.7	802.4	799.0	807.0	801.3	803.5	801.3	800.1
5°	789.8	800.1	801.3	801.3	799.0	797.8	801.3	800.1	799.0	796.7	800.1
7.5°	785.2	791.0	796.7	789.8	793.2	792.1	800.1	796.7	795.5	795.5	793.2
10°	787.5	786.4	791.0	784.1	786.4	784.1	791.0	791.0	788.7	786.4	785.2
12.5°	769.2	778.4	778.4	777.2	774.9	771.5	778.4	782.9	776.1	776.1	774.9
15°	758.9	761.2	762.3	762.3	761.2	763.5	766.9	762.3	763.5	757.8	760.0
17.5°	747.5	742.9	746.3	744.0	745.2	747.5	752.0	752.0	745.2	744.0	746.3
20°	721.1	734.9	736.0	729.1	730.3	730.3	738.3	731.4	736.0	730.3	732.6
22.5°	708.5	717.7	718.8	709.7	715.4	708.5	716.6	706.3	717.7	709.7	713.1
25°	692.5	691.4	694.8	690.2	691.4	691.4	697.1	692.5	695.9	691.4	692.5
27.5°	666.2	675.3	674.2	669.6	671.9	670.8	682.2	669.6	676.5	670.8	673.1
30°	643.3	651.3	649.0	644.4	644.4	641.0	653.6	650.2	649.0	649.0	647.9
32.5°	620.4	621.5	619.3	620.4	621.5	617.0	627.3	622.7	621.5	622.7	623.8
35°	589.5	589.5	591.8	588.4	592.9	592.9	602.1	596.4	595.2	591.8	595.2
37.5°	562.0	558.6	559.7	559.7	562.0	564.3	568.9	566.6	566.6	563.2	565.5
40°	525.4	523.1	526.5	526.5	530.0	530.0	534.6	532.3	535.7	535.7	535.7
42.5°	493.3	493.3	491.1	494.5	495.6	494.5	502.5	501.4	502.5	500.2	501.4
45°	459.0	459.0	456.7	455.6	461.3	460.2	469.3	465.9	470.5	468.2	469.3
47.5°	412.1	417.8	414.4	417.8	424.7	425.8	431.5	429.2	433.8	430.4	435.0
50°	367.4	367.4	370.9	375.4	382.3	383.5	390.3	394.9	397.2	398.3	399.5
52.5°	320.5	319.4	322.8	328.5	334.2	338.8	345.7	352.6	357.1	364.0	360.6
55°	265.6	267.8	271.3	278.2	287.3	293.0	298.8	307.9	315.9	319.4	326.2
57.5°	218.6	216.3	218.6	227.8	238.1	242.7	250.7	259.8	271.3	278.2	280.4
60°	169.4	170.6	172.8	180.9	188.9	195.7	199.2	214.0	224.4	231.2	235.8
62.5°	124.8	127.1	129.3	136.2	144.2	149.9	155.7	168.3	177.4	184.3	188.9
65°	87.0	88.1	91.6	95.0	103.0	108.7	113.3	123.6	132.8	138.5	141.9
67.5°	53.8	54.9	57.2	61.8	67.5	72.1	76.7	83.6	91.6	97.3	98.4
70°	27.5	28.6	29.8	33.2	37.8	40.1	43.5	49.2	54.9	59.5	61.8
72.5°	9.2	9.2	10.3	12.6	14.9	17.2	18.3	24.0	28.6	30.9	32.1
75°	2.3	2.3	2.3	2.3	2.3	3.4	3.4	6.9	9.2	11.4	12.6
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.3	2.3
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	805.8	805.8	805.8	805.8	805.8	805.8	805.8	805.8	805.8	805.8
2.5°	805.8	803.5	802.4	803.5	803.5	802.4	805.8	810.4	816.1	801.3
5°	804.7	802.4	804.7	797.8	801.3	799.0	803.5	802.4	807.0	802.4
7.5°	801.3	796.7	797.8	794.4	799.0	793.2	796.7	803.5	799.0	792.1
10°	789.8	787.5	795.5	784.1	781.8	786.4	795.5	788.7	786.4	788.7
12.5°	778.4	778.4	781.8	772.6	773.8	776.1	780.7	776.1	778.4	784.1
15°	765.8	763.5	769.2	762.3	761.2	758.9	763.5	763.5	765.8	762.3
17.5°	750.9	747.5	747.5	745.2	744.0	749.7	752.0	753.2	754.3	749.7
20°	732.6	731.4	734.9	731.4	732.6	733.7	733.7	731.4	741.7	729.1
22.5°	713.1	716.6	712.0	709.7	712.0	714.3	714.3	715.4	713.1	710.8
25°	693.7	695.9	697.1	690.2	693.7	690.2	698.2	699.4	694.8	697.1
27.5°	676.5	673.1	671.9	667.3	669.6	668.5	669.6	669.6	676.5	667.3
30°	650.2	646.7	647.9	644.4	645.6	644.4	645.6	645.6	650.2	649.0
32.5°	625.0	621.5	622.7	619.3	619.3	620.4	618.1	618.1	621.5	619.3
35°	600.9	592.9	594.1	592.9	594.1	589.5	589.5	588.4	590.6	584.9
37.5°	566.6	563.2	562.0	560.9	562.0	559.7	562.0	558.6	562.0	557.4
40°	535.7	533.4	534.6	527.7	527.7	528.8	526.5	525.4	526.5	531.1
42.5°	504.8	500.2	497.9	495.6	496.8	493.3	492.2	489.9	492.2	487.6
45°	468.2	468.2	467.0	461.3	462.4	462.4	457.9	453.3	454.4	454.4
47.5°	435.0	432.7	431.5	425.8	424.7	423.5	418.9	415.5	415.5	412.1
50°	398.3	396.0	392.6	386.9	384.6	377.7	374.3	369.7	365.1	365.1
52.5°	364.0	356.0	351.4	342.3	338.8	335.4	326.2	322.8	319.4	315.9
55°	322.8	315.9	306.8	296.5	291.9	286.2	277.0	270.1	265.6	266.7
57.5°	282.7	271.3	262.1	248.4	242.7	239.2	230.1	220.9	216.3	216.3
60°	233.5	224.4	212.9	200.3	195.7	190.0	178.6	172.8	169.4	166.0
62.5°	186.6	179.7	169.4	153.4	149.9	144.2	136.2	129.3	125.9	125.9
65°	139.6	132.8	123.6	112.2	107.6	103.0	96.2	89.3	85.8	84.7
67.5°	98.4	90.4	82.4	73.3	69.8	67.5	60.7	56.1	53.8	52.7
70°	59.5	54.9	49.2	42.4	38.9	36.6	32.1	28.6	27.5	26.3
72.5°	30.9	27.5	22.9	18.3	16.0	13.7	11.4	9.2	8.0	8.0
75°	11.4	9.2	5.7	3.4	2.3	2.3	2.3	2.3	2.3	2.3
77.5°	2.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)