

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: P209237

Luminaire Tested: **LDSQ4B20D010 EU4B10209050 4LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209237  
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 EU4B10209050 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: 1731.6 lumens  
Efficiency: N/A  
Efficacy: 83.2 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

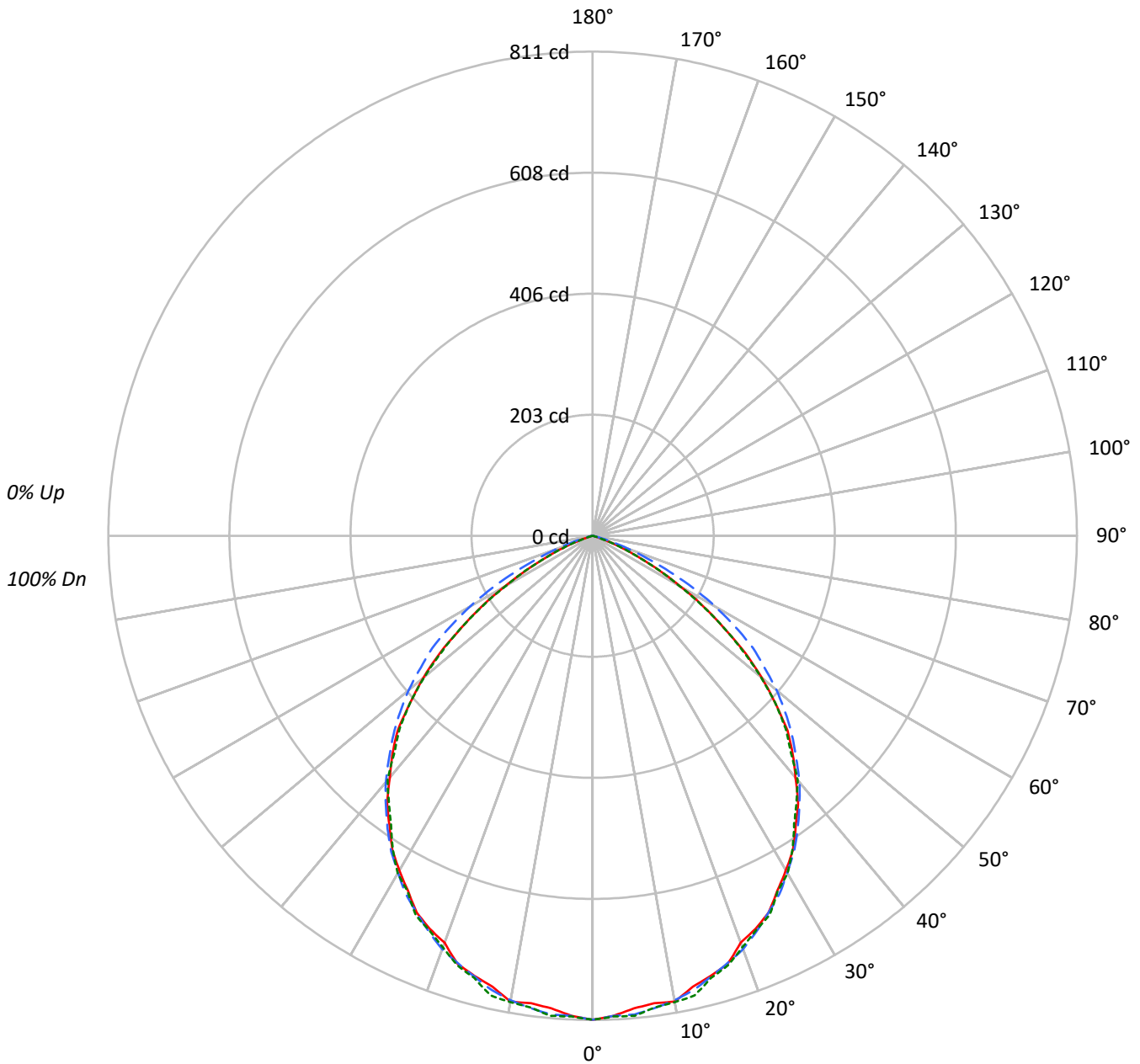
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	76.5	4.4
10°-20°	216.5	12.5
20°-30°	321.3	18.6
30°-40°	372.2	21.5
40°-50°	356.9	20.6
50°-60°	262.4	15.2
60°-70°	113.3	6.5
70°-80°	12.2	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°	614.3	35.5
0°-40°	986.5	57.0
0°-60°	1605.8	92.7
0°-90°	1731.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1731.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	811	811	811	811	811	
5°	794	802	805	806	807	76
15°	763	768	764	766	767	215
25°	697	695	697	698	701	319
35°	593	596	599	598	588	371
45°	462	463	472	465	457	351
55°	267	295	328	294	268	240
65°	88	109	143	108	85	90
75°	2	4	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°	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6
2.5°	804.8	814.0	815.2	809.4	807.1	803.7	811.7	806.0	808.3	806.0	804.8
5°	794.5	804.8	806.0	806.0	803.7	802.5	806.0	804.8	803.7	801.4	804.8
7.5°	789.9	795.6	801.4	794.5	797.9	796.8	804.8	801.4	800.2	800.2	797.9
10°	792.2	791.0	795.6	788.7	791.0	788.7	795.6	795.6	793.3	791.0	789.9
12.5°	773.7	783.0	783.0	781.8	779.5	776.0	783.0	787.6	780.7	780.7	779.5
15°	763.4	765.7	766.8	766.8	765.7	768.0	771.4	766.8	768.0	762.2	764.5
17.5°	751.9	747.3	750.7	748.4	749.6	751.9	756.5	756.5	749.6	748.4	750.7
20°	725.4	739.2	740.4	733.4	734.6	734.6	742.7	735.7	740.4	734.6	736.9
22.5°	712.7	721.9	723.1	713.9	719.6	712.7	720.8	710.4	721.9	713.9	717.3
25°	696.6	695.4	698.9	694.3	695.4	695.4	701.2	696.6	700.1	695.4	696.6
27.5°	670.1	679.3	678.2	673.6	675.9	674.7	686.2	673.6	680.5	674.7	677.0
30°	647.1	655.1	652.8	648.2	648.2	644.8	657.5	654.0	652.8	652.8	651.7
32.5°	624.1	625.2	622.9	624.1	625.2	620.6	631.0	626.4	625.2	626.4	627.5
35°	593.0	593.0	595.3	591.8	596.4	596.4	605.6	599.9	598.7	595.3	598.7
37.5°	565.3	561.9	563.0	563.0	565.3	567.6	572.2	569.9	569.9	566.5	568.8
40°	528.5	526.2	529.6	529.6	533.1	533.1	537.7	535.4	538.9	538.9	538.9
42.5°	496.3	496.3	494.0	497.4	498.6	497.4	505.5	504.3	505.5	503.2	504.3
45°	461.7	461.7	459.4	458.3	464.0	462.9	472.1	468.6	473.2	470.9	472.1
47.5°	414.5	420.3	416.8	420.3	427.2	428.3	434.1	431.8	436.4	432.9	437.5
50°	369.6	369.6	373.1	377.7	384.6	385.7	392.6	397.2	399.5	400.7	401.8
52.5°	322.4	321.2	324.7	330.5	336.2	340.8	347.7	354.6	359.2	366.1	362.7
55°	267.1	269.4	272.9	279.8	289.0	294.8	300.5	309.7	317.8	321.2	328.1
57.5°	219.9	217.6	219.9	229.1	239.5	244.1	252.2	261.4	272.9	279.8	282.1
60°	170.4	171.6	173.9	181.9	190.0	196.9	200.3	215.3	225.7	232.6	237.2
62.5°	125.5	127.8	130.1	137.0	145.1	150.8	156.6	169.3	178.5	185.4	190.0
65°	87.5	88.7	92.1	95.6	103.6	109.4	114.0	124.4	133.6	139.3	142.8
67.5°	54.1	55.3	57.6	62.2	67.9	72.5	77.1	84.1	92.1	97.9	99.0
70°	27.6	28.8	29.9	33.4	38.0	40.3	43.8	49.5	55.3	59.9	62.2
72.5°	9.2	9.2	10.4	12.7	15.0	17.3	18.4	24.2	28.8	31.1	32.2
75°	2.3	2.3	2.3	2.3	2.3	3.5	3.5	6.9	9.2	11.5	12.7
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.3	2.3
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6	810.6
2.5°	810.6	808.3	807.1	808.3	808.3	807.1	810.6	815.2	821.0	806.0
5°	809.4	807.1	809.4	802.5	806.0	803.7	808.3	807.1	811.7	807.1
7.5°	806.0	801.4	802.5	799.1	803.7	797.9	801.4	808.3	803.7	796.8
10°	794.5	792.2	800.2	788.7	786.4	791.0	800.2	793.3	791.0	793.3
12.5°	783.0	783.0	786.4	777.2	778.3	780.7	785.3	780.7	783.0	788.7
15°	770.3	768.0	773.7	766.8	765.7	763.4	768.0	768.0	770.3	766.8
17.5°	755.3	751.9	751.9	749.6	748.4	754.2	756.5	757.6	758.8	754.2
20°	736.9	735.7	739.2	735.7	736.9	738.0	738.0	735.7	746.1	733.4
22.5°	717.3	720.8	716.2	713.9	716.2	718.5	718.5	719.6	717.3	715.0
25°	697.8	700.1	701.2	694.3	697.8	694.3	702.4	703.5	698.9	701.2
27.5°	680.5	677.0	675.9	671.3	673.6	672.4	673.6	673.6	680.5	671.3
30°	654.0	650.5	651.7	648.2	649.4	648.2	649.4	649.4	654.0	652.8
32.5°	628.7	625.2	626.4	622.9	622.9	624.1	621.8	621.8	625.2	622.9
35°	604.5	596.4	597.6	596.4	597.6	593.0	593.0	591.8	594.1	588.4
37.5°	569.9	566.5	565.3	564.2	565.3	563.0	565.3	561.9	565.3	560.7
40°	538.9	536.6	537.7	530.8	530.8	531.9	529.6	528.5	529.6	534.3
42.5°	507.8	503.2	500.9	498.6	499.7	496.3	495.1	492.8	495.1	490.5
45°	470.9	470.9	469.8	464.0	465.2	465.2	460.6	456.0	457.1	457.1
47.5°	437.5	435.2	434.1	428.3	427.2	426.0	421.4	418.0	418.0	414.5
50°	400.7	398.4	394.9	389.2	386.9	380.0	376.5	371.9	367.3	367.3
52.5°	366.1	358.1	353.5	344.3	340.8	337.4	328.1	324.7	321.2	317.8
55°	324.7	317.8	308.6	298.2	293.6	287.9	278.6	271.7	267.1	268.3
57.5°	284.4	272.9	263.7	249.9	244.1	240.6	231.4	222.2	217.6	217.6
60°	234.9	225.7	214.2	201.5	196.9	191.1	179.6	173.9	170.4	167.0
62.5°	187.7	180.8	170.4	154.3	150.8	145.1	137.0	130.1	126.7	126.7
65°	140.5	133.6	124.4	112.8	108.2	103.6	96.7	89.8	86.4	85.2
67.5°	99.0	91.0	82.9	73.7	70.2	67.9	61.0	56.4	54.1	53.0
70°	59.9	55.3	49.5	42.6	39.1	36.8	32.2	28.8	27.6	26.5
72.5°	31.1	27.6	23.0	18.4	16.1	13.8	11.5	9.2	8.1	8.1
75°	11.5	9.2	5.8	3.5	2.3	2.3	2.3	2.3	2.3	2.3
77.5°	2.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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)