

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: P209227

Luminaire Tested: **LDSQ4B20D010 EU4B10208027 4LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209227  
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 EU4B10208027 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 2700 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1901.1 lumens  
Efficiency: N/A  
Efficacy: 91.4 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

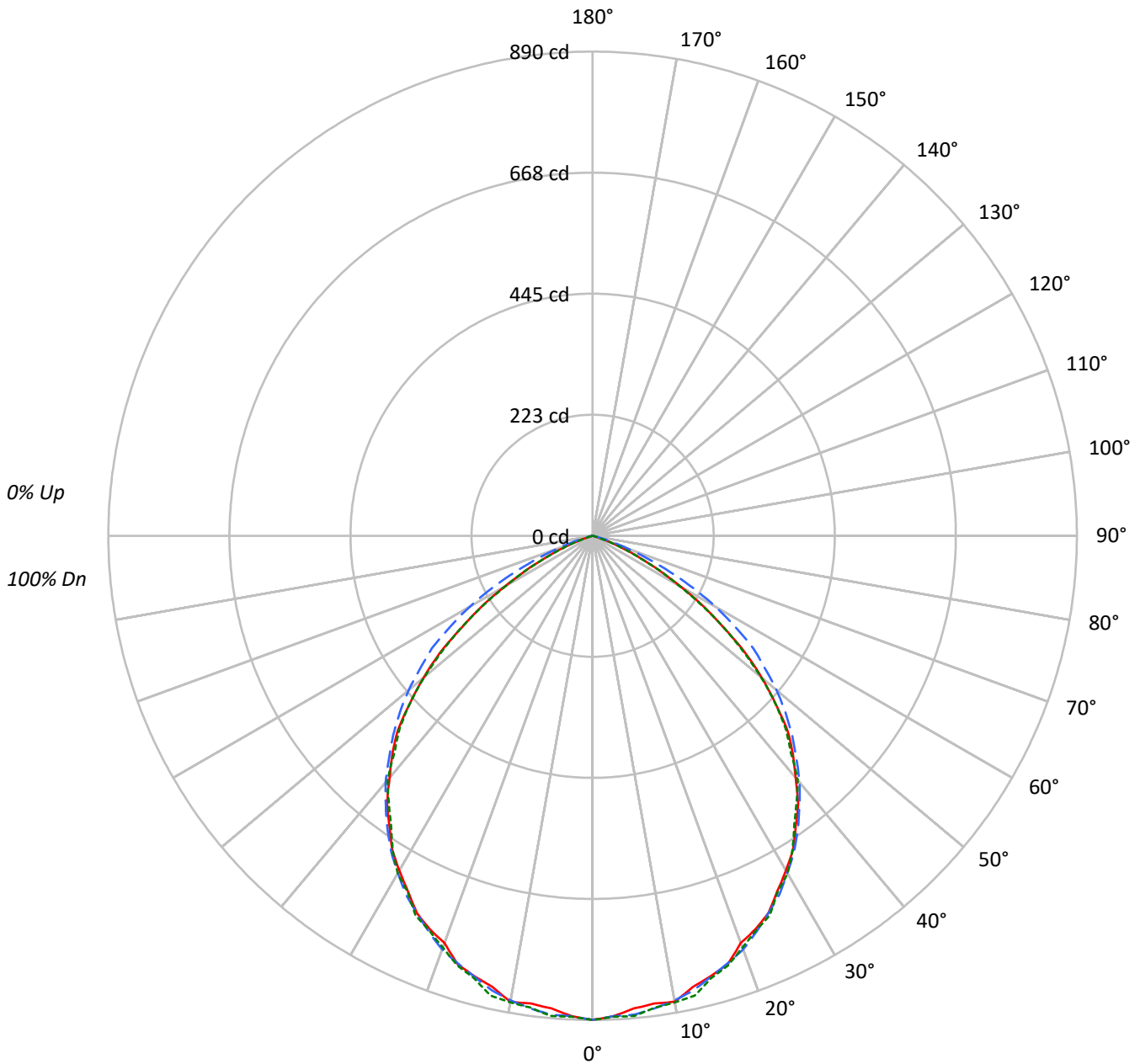
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	84.0	4.4
10°-20°	237.7	12.5
20°-30°	352.7	18.6
30°-40°	408.7	21.5
40°-50°	391.8	20.6
50°-60°	288.1	15.2
60°-70°	124.4	6.5
70°-80°	13.4	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°	674.4	35.5
0°-40°	1083.1	57.0
0°-60°	1763.0	92.7
0°-90°	1901.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1901.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	890	890	890	890	890	
5°	872	881	884	885	886	83
15°	838	843	839	841	842	236
25°	765	764	765	766	770	350
35°	651	655	657	656	646	407
45°	507	508	518	511	502	385
55°	293	324	360	322	294	264
65°	96	120	157	119	94	99
75°	2	4	14	2	2	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°	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9
2.5°	883.6	893.7	895.0	888.7	886.1	882.3	891.2	884.9	887.4	884.9	883.6
5°	872.2	883.6	884.9	884.9	882.3	881.1	884.9	883.6	882.3	879.8	883.6
7.5°	867.2	873.5	879.8	872.2	876.0	874.8	883.6	879.8	878.6	878.6	876.0
10°	869.7	868.4	873.5	865.9	868.4	865.9	873.5	873.5	871.0	868.4	867.2
12.5°	849.5	859.6	859.6	858.3	855.8	852.0	859.6	864.6	857.1	857.1	855.8
15°	838.1	840.6	841.9	841.9	840.6	843.2	846.9	841.9	843.2	836.8	839.4
17.5°	825.5	820.4	824.2	821.7	822.9	825.5	830.5	830.5	822.9	821.7	824.2
20°	796.4	811.6	812.8	805.2	806.5	806.5	815.3	807.8	812.8	806.5	809.0
22.5°	782.5	792.6	793.9	783.7	790.1	782.5	791.3	780.0	792.6	783.7	787.5
25°	764.8	763.5	767.3	762.3	763.5	763.5	769.8	764.8	768.6	763.5	764.8
27.5°	735.7	745.8	744.6	739.5	742.0	740.8	753.4	739.5	747.1	740.8	743.3
30°	710.4	719.3	716.7	711.7	711.7	707.9	721.8	718.0	716.7	716.7	715.5
32.5°	685.1	686.4	683.9	685.1	686.4	681.4	692.7	687.7	686.4	687.7	688.9
35°	651.0	651.0	653.5	649.7	654.8	654.8	664.9	658.6	657.3	653.5	657.3
37.5°	620.7	616.9	618.1	618.1	620.7	623.2	628.3	625.7	625.7	621.9	624.5
40°	580.2	577.7	581.5	581.5	585.3	585.3	590.3	587.8	591.6	591.6	591.6
42.5°	544.8	544.8	542.3	546.1	547.4	546.1	554.9	553.7	554.9	552.4	553.7
45°	506.9	506.9	504.4	503.1	509.4	508.2	518.3	514.5	519.5	517.0	518.3
47.5°	455.1	461.4	457.6	461.4	469.0	470.2	476.6	474.0	479.1	475.3	480.4
50°	405.8	405.8	409.6	414.6	422.2	423.5	431.1	436.1	438.6	439.9	441.2
52.5°	353.9	352.7	356.5	362.8	369.1	374.2	381.8	389.3	394.4	402.0	398.2
55°	293.3	295.8	299.6	307.2	317.3	323.6	329.9	340.0	348.9	352.7	360.3
57.5°	241.4	238.9	241.4	251.6	262.9	268.0	276.8	287.0	299.6	307.2	309.7
60°	187.1	188.4	190.9	199.7	208.6	216.2	220.0	236.4	247.8	255.3	260.4
62.5°	137.8	140.3	142.8	150.4	159.3	165.6	171.9	185.8	195.9	203.5	208.6
65°	96.1	97.3	101.1	104.9	113.8	120.1	125.1	136.5	146.6	153.0	156.7
67.5°	59.4	60.7	63.2	68.3	74.6	79.6	84.7	92.3	101.1	107.4	108.7
70°	30.3	31.6	32.9	36.7	41.7	44.2	48.0	54.4	60.7	65.7	68.3
72.5°	10.1	10.1	11.4	13.9	16.4	19.0	20.2	26.5	31.6	34.1	35.4
75°	2.5	2.5	2.5	2.5	2.5	3.8	3.8	7.6	10.1	12.6	13.9
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.5	2.5
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°	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9
2.5°	889.9	887.4	886.1	887.4	887.4	886.1	889.9	895.0	901.3	884.9
5°	888.7	886.1	888.7	881.1	884.9	882.3	887.4	886.1	891.2	886.1
7.5°	884.9	879.8	881.1	877.3	882.3	876.0	879.8	887.4	882.3	874.8
10°	872.2	869.7	878.6	865.9	863.4	868.4	878.6	871.0	868.4	871.0
12.5°	859.6	859.6	863.4	853.3	854.5	857.1	862.1	857.1	859.6	865.9
15°	845.7	843.2	849.5	841.9	840.6	838.1	843.2	843.2	845.7	841.9
17.5°	829.3	825.5	825.5	822.9	821.7	828.0	830.5	831.8	833.0	828.0
20°	809.0	807.8	811.6	807.8	809.0	810.3	810.3	807.8	819.1	805.2
22.5°	787.5	791.3	786.3	783.7	786.3	788.8	788.8	790.1	787.5	785.0
25°	766.0	768.6	769.8	762.3	766.0	762.3	771.1	772.4	767.3	769.8
27.5°	747.1	743.3	742.0	737.0	739.5	738.2	739.5	739.5	747.1	737.0
30°	718.0	714.2	715.5	711.7	713.0	711.7	713.0	713.0	718.0	716.7
32.5°	690.2	686.4	687.7	683.9	683.9	685.1	682.6	682.6	686.4	683.9
35°	663.7	654.8	656.1	654.8	656.1	651.0	651.0	649.7	652.3	646.0
37.5°	625.7	621.9	620.7	619.4	620.7	618.1	620.7	616.9	620.7	615.6
40°	591.6	589.1	590.3	582.8	582.8	584.0	581.5	580.2	581.5	586.5
42.5°	557.5	552.4	549.9	547.4	548.6	544.8	543.6	541.0	543.6	538.5
45°	517.0	517.0	515.8	509.4	510.7	510.7	505.6	500.6	501.8	501.8
47.5°	480.4	477.8	476.6	470.2	469.0	467.7	462.7	458.9	458.9	455.1
50°	439.9	437.4	433.6	427.3	424.7	417.2	413.4	408.3	403.2	403.2
52.5°	402.0	393.1	388.1	378.0	374.2	370.4	360.3	356.5	352.7	348.9
55°	356.5	348.9	338.8	327.4	322.3	316.0	305.9	298.3	293.3	294.5
57.5°	312.2	299.6	289.5	274.3	268.0	264.2	254.1	244.0	238.9	238.9
60°	257.9	247.8	235.1	221.2	216.2	209.8	197.2	190.9	187.1	183.3
62.5°	206.0	198.5	187.1	169.4	165.6	159.3	150.4	142.8	139.1	139.1
65°	154.2	146.6	136.5	123.9	118.8	113.8	106.2	98.6	94.8	93.5
67.5°	108.7	99.9	91.0	80.9	77.1	74.6	67.0	61.9	59.4	58.1
70°	65.7	60.7	54.4	46.8	43.0	40.5	35.4	31.6	30.3	29.1
72.5°	34.1	30.3	25.3	20.2	17.7	15.2	12.6	10.1	8.8	8.8
75°	12.6	10.1	6.3	3.8	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	2.5	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)