

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: P209233

Luminaire Tested: **LDSQ4B20D010 EU4B10209027 4LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209233  
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 EU4B10209027 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: 1631.6 lumens  
Efficiency: N/A  
Efficacy: 78.4 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

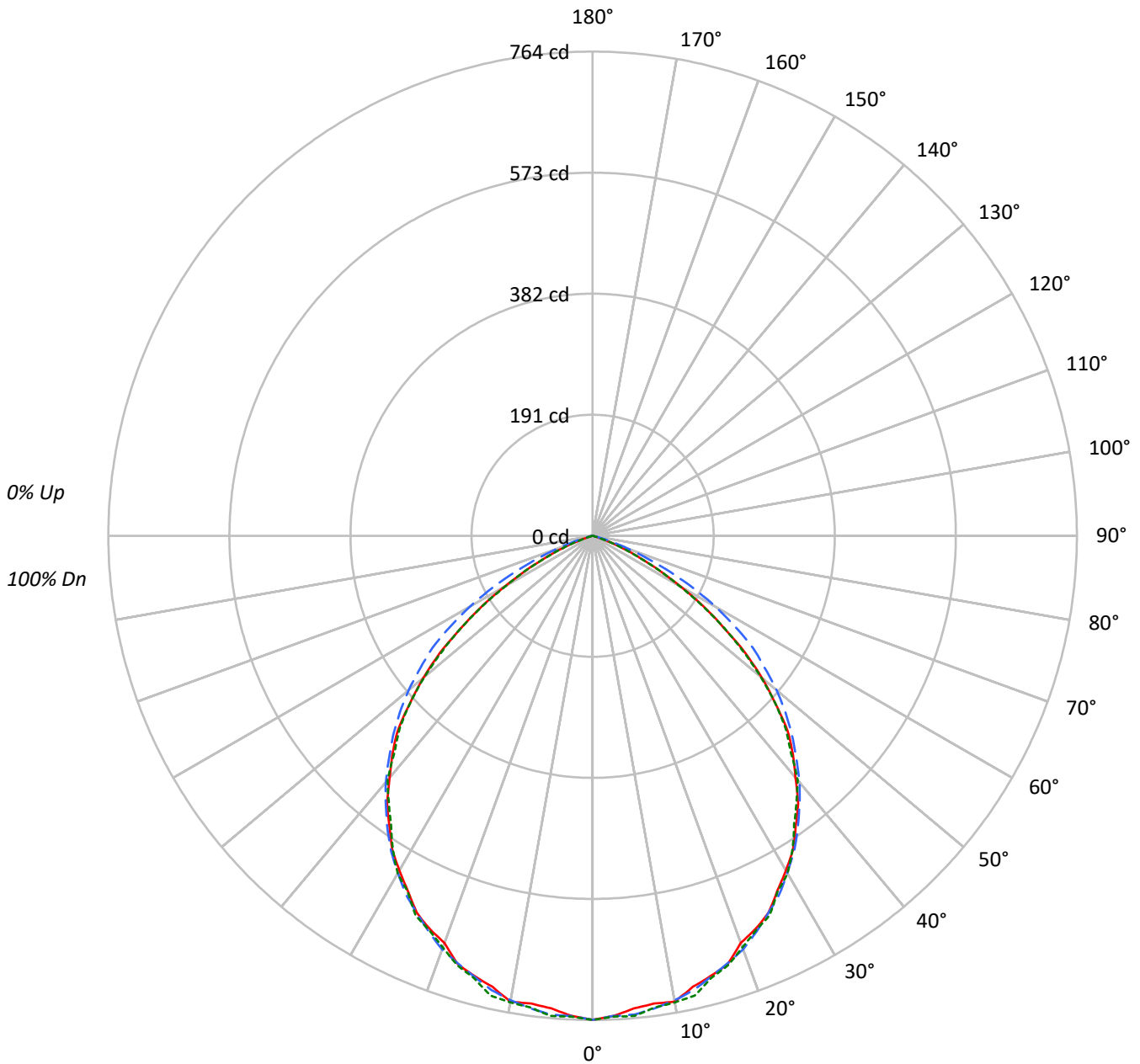
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	72.1	4.4
10°-20°	204.0	12.5
20°-30°	302.7	18.6
30°-40°	350.8	21.5
40°-50°	336.3	20.6
50°-60°	247.3	15.2
60°-70°	106.8	6.5
70°-80°	11.5	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°	578.8	35.5
0°-40°	929.6	57.0
0°-60°	1513.1	92.7
0°-90°	1631.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1631.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	764	764	764	764	764	
5°	749	756	758	759	760	71
15°	719	724	720	722	723	203
25°	656	655	656	658	661	301
35°	559	562	564	563	554	349
45°	435	436	445	438	431	331
55°	252	278	309	277	253	227
65°	82	103	134	102	80	85
75°	2	3	12	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°	763.8	763.8	763.8	763.8	763.8	763.8	763.8	763.8	763.8	763.8	763.8
2.5°	758.4	767.0	768.1	762.7	760.5	757.3	764.9	759.4	761.6	759.4	758.4
5°	748.6	758.4	759.4	759.4	757.3	756.2	759.4	758.4	757.3	755.1	758.4
7.5°	744.3	749.7	755.1	748.6	751.9	750.8	758.4	755.1	754.0	754.0	751.9
10°	746.4	745.3	749.7	743.2	745.3	743.2	749.7	749.7	747.5	745.3	744.3
12.5°	729.1	737.7	737.7	736.7	734.5	731.2	737.7	742.1	735.6	735.6	734.5
15°	719.3	721.5	722.6	722.6	721.5	723.6	726.9	722.6	723.6	718.2	720.4
17.5°	708.5	704.1	707.4	705.2	706.3	708.5	712.8	712.8	706.3	705.2	707.4
20°	683.5	696.5	697.6	691.1	692.2	692.2	699.8	693.3	697.6	692.2	694.4
22.5°	671.6	680.2	681.3	672.7	678.1	671.6	679.2	669.4	680.2	672.7	675.9
25°	656.4	655.3	658.6	654.2	655.3	655.3	660.7	656.4	659.6	655.3	656.4
27.5°	631.4	640.1	639.0	634.7	636.9	635.8	646.6	634.7	641.2	635.8	637.9
30°	609.7	617.3	615.2	610.8	610.8	607.6	619.5	616.2	615.2	615.2	614.1
32.5°	588.0	589.1	586.9	588.0	589.1	584.8	594.5	590.2	589.1	590.2	591.3
35°	558.7	558.7	560.9	557.7	562.0	562.0	570.7	565.2	564.2	560.9	564.2
37.5°	532.7	529.4	530.5	530.5	532.7	534.9	539.2	537.0	537.0	533.8	536.0
40°	498.0	495.8	499.1	499.1	502.3	502.3	506.7	504.5	507.7	507.7	507.7
42.5°	467.6	467.6	465.4	468.7	469.8	468.7	476.3	475.2	476.3	474.1	475.2
45°	435.1	435.1	432.9	431.8	437.2	436.1	444.8	441.6	445.9	443.7	444.8
47.5°	390.6	396.0	392.7	396.0	402.5	403.6	409.0	406.8	411.2	407.9	412.3
50°	348.3	348.3	351.5	355.9	362.4	363.5	370.0	374.3	376.5	377.6	378.6
52.5°	303.8	302.7	305.9	311.4	316.8	321.1	327.6	334.2	338.5	345.0	341.8
55°	251.7	253.9	257.1	263.6	272.3	277.7	283.2	291.8	299.4	302.7	309.2
57.5°	207.2	205.1	207.2	215.9	225.7	230.0	237.6	246.3	257.1	263.6	265.8
60°	160.6	161.7	163.8	171.4	179.0	185.5	188.8	202.9	212.6	219.2	223.5
62.5°	118.3	120.4	122.6	129.1	136.7	142.1	147.5	159.5	168.2	174.7	179.0
65°	82.5	83.5	86.8	90.0	97.6	103.1	107.4	117.2	125.9	131.3	134.5
67.5°	51.0	52.1	54.2	58.6	64.0	68.4	72.7	79.2	86.8	92.2	93.3
70°	26.0	27.1	28.2	31.5	35.8	38.0	41.2	46.7	52.1	56.4	58.6
72.5°	8.7	8.7	9.8	11.9	14.1	16.3	17.4	22.8	27.1	29.3	30.4
75°	2.2	2.2	2.2	2.2	2.2	3.3	3.3	6.5	8.7	10.8	11.9
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	2.2
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°	763.8	763.8	763.8	763.8	763.8	763.8	763.8	763.8	763.8	763.8
2.5°	763.8	761.6	760.5	761.6	761.6	760.5	763.8	768.1	773.6	759.4
5°	762.7	760.5	762.7	756.2	759.4	757.3	761.6	760.5	764.9	760.5
7.5°	759.4	755.1	756.2	752.9	757.3	751.9	755.1	761.6	757.3	750.8
10°	748.6	746.4	754.0	743.2	741.0	745.3	754.0	747.5	745.3	747.5
12.5°	737.7	737.7	741.0	732.3	733.4	735.6	739.9	735.6	737.7	743.2
15°	725.8	723.6	729.1	722.6	721.5	719.3	723.6	723.6	725.8	722.6
17.5°	711.7	708.5	708.5	706.3	705.2	710.6	712.8	713.9	715.0	710.6
20°	694.4	693.3	696.5	693.3	694.4	695.4	695.4	693.3	703.0	691.1
22.5°	675.9	679.2	674.8	672.7	674.8	677.0	677.0	678.1	675.9	673.7
25°	657.5	659.6	660.7	654.2	657.5	654.2	661.8	662.9	658.6	660.7
27.5°	641.2	637.9	636.9	632.5	634.7	633.6	634.7	634.7	641.2	632.5
30°	616.2	613.0	614.1	610.8	611.9	610.8	611.9	611.9	616.2	615.2
32.5°	592.4	589.1	590.2	586.9	586.9	588.0	585.9	585.9	589.1	586.9
35°	569.6	562.0	563.1	562.0	563.1	558.7	558.7	557.7	559.8	554.4
37.5°	537.0	533.8	532.7	531.6	532.7	530.5	532.7	529.4	532.7	528.4
40°	507.7	505.6	506.7	500.2	500.2	501.2	499.1	498.0	499.1	503.4
42.5°	478.5	474.1	471.9	469.8	470.9	467.6	466.5	464.3	466.5	462.2
45°	443.7	443.7	442.6	437.2	438.3	438.3	434.0	429.6	430.7	430.7
47.5°	412.3	410.1	409.0	403.6	402.5	401.4	397.1	393.8	393.8	390.6
50°	377.6	375.4	372.1	366.7	364.5	358.0	354.8	350.4	346.1	346.1
52.5°	345.0	337.4	333.1	324.4	321.1	317.9	309.2	305.9	302.7	299.4
55°	305.9	299.4	290.8	281.0	276.7	271.2	262.6	256.0	251.7	252.8
57.5°	268.0	257.1	248.4	235.4	230.0	226.7	218.1	209.4	205.1	205.1
60°	221.3	212.6	201.8	189.9	185.5	180.1	169.2	163.8	160.6	157.3
62.5°	176.8	170.3	160.6	145.4	142.1	136.7	129.1	122.6	119.3	119.3
65°	132.4	125.9	117.2	106.3	102.0	97.6	91.1	84.6	81.4	80.3
67.5°	93.3	85.7	78.1	69.4	66.2	64.0	57.5	53.2	51.0	49.9
70°	56.4	52.1	46.7	40.1	36.9	34.7	30.4	27.1	26.0	25.0
72.5°	29.3	26.0	21.7	17.4	15.2	13.0	10.8	8.7	7.6	7.6
75°	10.8	8.7	5.4	3.3	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	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)