

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: P209234

Luminaire Tested: **LDSQ4B20D010 EU4B10209030 4LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209234  
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 EU4B10209030 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: 1697.2 lumens  
Efficiency: N/A  
Efficacy: 81.6 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

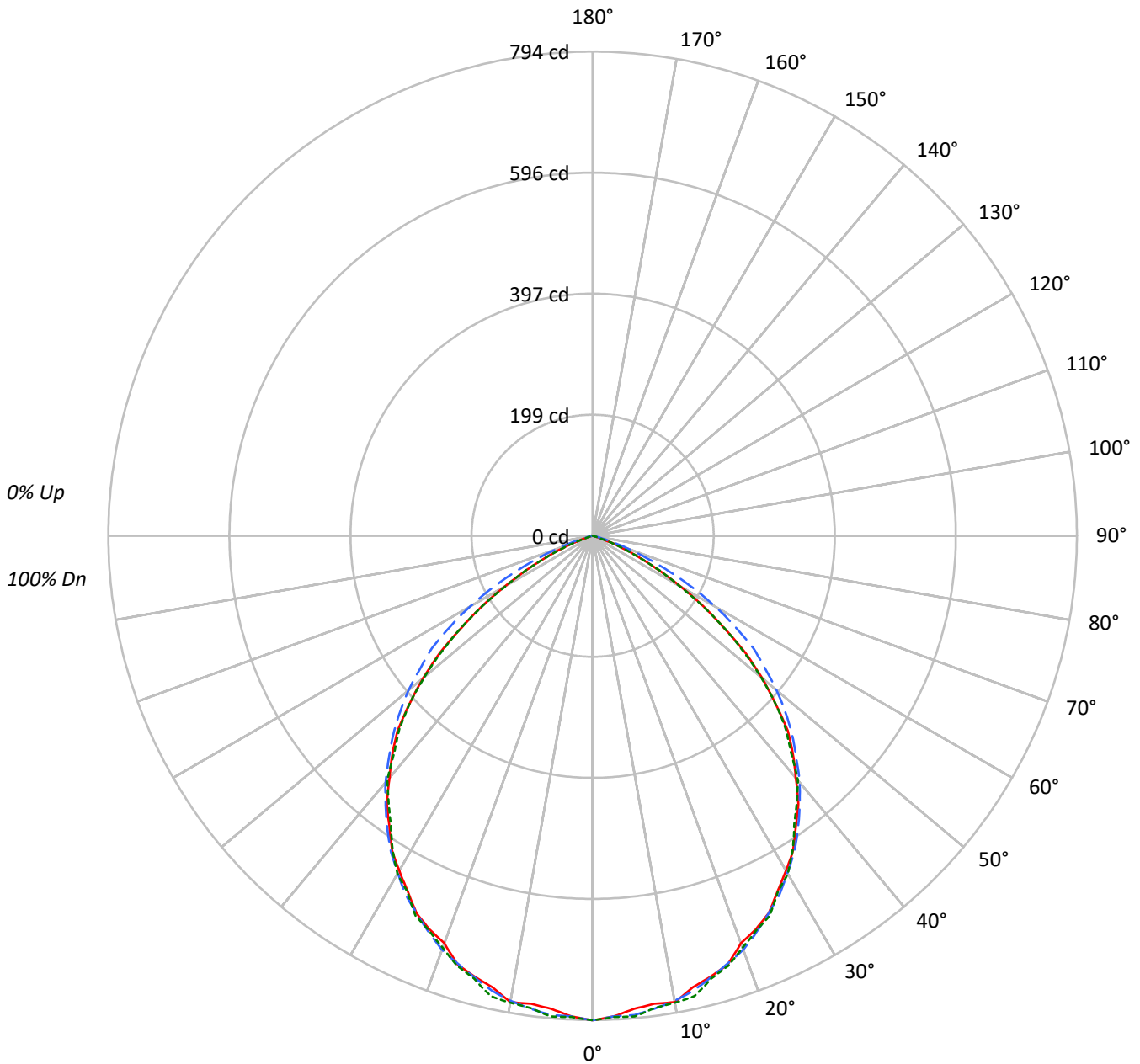
Input Watts (W): 20.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	75.0	4.4
10°-20°	212.2	12.5
20°-30°	314.9	18.6
30°-40°	364.9	21.5
40°-50°	349.8	20.6
50°-60°	257.2	15.2
60°-70°	111.1	6.5
70°-80°	12.0	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°	602.1	35.5
0°-40°	966.9	57.0
0°-60°	1574.0	92.7
0°-90°	1697.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1697.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	794	794	794	794	794	
5°	779	787	789	790	791	74
15°	748	753	749	750	752	211
25°	683	682	683	684	687	313
35°	581	585	587	586	577	363
45°	452	454	463	456	448	344
55°	262	289	322	288	263	236
65°	86	107	140	106	84	88
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°	794.5	794.5	794.5	794.5	794.5	794.5	794.5	794.5	794.5	794.5	794.5
2.5°	788.9	797.9	799.0	793.4	791.1	787.7	795.6	790.0	792.2	790.0	788.9
5°	778.7	788.9	790.0	790.0	787.7	786.6	790.0	788.9	787.7	785.5	788.9
7.5°	774.2	779.8	785.5	778.7	782.1	781.0	788.9	785.5	784.3	784.3	782.1
10°	776.4	775.3	779.8	773.1	775.3	773.1	779.8	779.8	777.6	775.3	774.2
12.5°	758.4	767.4	767.4	766.3	764.0	760.6	767.4	771.9	765.2	765.2	764.0
15°	748.2	750.5	751.6	751.6	750.5	752.7	756.1	751.6	752.7	747.1	749.4
17.5°	736.9	732.4	735.8	733.6	734.7	736.9	741.5	741.5	734.7	733.6	735.8
20°	711.0	724.5	725.7	718.9	720.0	720.0	727.9	721.1	725.7	720.0	722.3
22.5°	698.6	707.6	708.7	699.7	705.3	698.6	706.5	696.3	707.6	699.7	703.1
25°	682.8	681.6	685.0	680.5	681.6	681.6	687.3	682.8	686.2	681.6	682.8
27.5°	656.8	665.8	664.7	660.2	662.5	661.3	672.6	660.2	667.0	661.3	663.6
30°	634.2	642.1	639.9	635.4	635.4	632.0	644.4	641.0	639.9	639.9	638.8
32.5°	611.7	612.8	610.5	611.7	612.8	608.3	618.4	613.9	612.8	613.9	615.1
35°	581.2	581.2	583.5	580.1	584.6	584.6	593.6	588.0	586.8	583.5	586.8
37.5°	554.1	550.7	551.9	551.9	554.1	556.4	560.9	558.6	558.6	555.2	557.5
40°	518.0	515.7	519.1	519.1	522.5	522.5	527.0	524.8	528.2	528.2	528.2
42.5°	486.4	486.4	484.1	487.5	488.7	487.5	495.4	494.3	495.4	493.2	494.3
45°	452.5	452.5	450.3	449.2	454.8	453.7	462.7	459.3	463.8	461.6	462.7
47.5°	406.3	411.9	408.5	411.9	418.7	419.8	425.5	423.2	427.7	424.3	428.8
50°	362.3	362.3	365.7	370.2	376.9	378.1	384.8	389.4	391.6	392.7	393.9
52.5°	316.0	314.9	318.3	323.9	329.5	334.1	340.8	347.6	352.1	358.9	355.5
55°	261.8	264.1	267.5	274.2	283.3	288.9	294.6	303.6	311.5	314.9	321.6
57.5°	215.6	213.3	215.6	224.6	234.7	239.3	247.2	256.2	267.5	274.2	276.5
60°	167.0	168.2	170.4	178.3	186.2	193.0	196.4	211.0	221.2	228.0	232.5
62.5°	123.0	125.3	127.5	134.3	142.2	147.8	153.5	165.9	174.9	181.7	186.2
65°	85.8	86.9	90.3	93.7	101.6	107.2	111.7	121.9	130.9	136.6	139.9
67.5°	53.0	54.2	56.4	60.9	66.6	71.1	75.6	82.4	90.3	95.9	97.1
70°	27.1	28.2	29.3	32.7	37.2	39.5	42.9	48.5	54.2	58.7	60.9
72.5°	9.0	9.0	10.2	12.4	14.7	16.9	18.1	23.7	28.2	30.5	31.6
75°	2.3	2.3	2.3	2.3	2.3	3.4	3.4	6.8	9.0	11.3	12.4
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°	794.5	794.5	794.5	794.5	794.5	794.5	794.5	794.5	794.5	794.5
2.5°	794.5	792.2	791.1	792.2	792.2	791.1	794.5	799.0	804.7	790.0
5°	793.4	791.1	793.4	786.6	790.0	787.7	792.2	791.1	795.6	791.1
7.5°	790.0	785.5	786.6	783.2	787.7	782.1	785.5	792.2	787.7	781.0
10°	778.7	776.4	784.3	773.1	770.8	775.3	784.3	777.6	775.3	777.6
12.5°	767.4	767.4	770.8	761.8	762.9	765.2	769.7	765.2	767.4	773.1
15°	755.0	752.7	758.4	751.6	750.5	748.2	752.7	752.7	755.0	751.6
17.5°	740.3	736.9	736.9	734.7	733.6	739.2	741.5	742.6	743.7	739.2
20°	722.3	721.1	724.5	721.1	722.3	723.4	723.4	721.1	731.3	718.9
22.5°	703.1	706.5	702.0	699.7	702.0	704.2	704.2	705.3	703.1	700.8
25°	683.9	686.2	687.3	680.5	683.9	680.5	688.4	689.5	685.0	687.3
27.5°	667.0	663.6	662.5	657.9	660.2	659.1	660.2	660.2	667.0	657.9
30°	641.0	637.6	638.8	635.4	636.5	635.4	636.5	636.5	641.0	639.9
32.5°	616.2	612.8	613.9	610.5	610.5	611.7	609.4	609.4	612.8	610.5
35°	592.5	584.6	585.7	584.6	585.7	581.2	581.2	580.1	582.3	576.7
37.5°	558.6	555.2	554.1	553.0	554.1	551.9	554.1	550.7	554.1	549.6
40°	528.2	525.9	527.0	520.3	520.3	521.4	519.1	518.0	519.1	523.6
42.5°	497.7	493.2	490.9	488.7	489.8	486.4	485.3	483.0	485.3	480.8
45°	461.6	461.6	460.4	454.8	455.9	455.9	451.4	446.9	448.0	448.0
47.5°	428.8	426.6	425.5	419.8	418.7	417.6	413.1	409.7	409.7	406.3
50°	392.7	390.5	387.1	381.5	379.2	372.4	369.0	364.5	360.0	360.0
52.5°	358.9	351.0	346.5	337.4	334.1	330.7	321.6	318.3	314.9	311.5
55°	318.3	311.5	302.5	292.3	287.8	282.1	273.1	266.3	261.8	263.0
57.5°	278.8	267.5	258.4	244.9	239.3	235.9	226.8	217.8	213.3	213.3
60°	230.2	221.2	209.9	197.5	193.0	187.3	176.1	170.4	167.0	163.6
62.5°	184.0	177.2	167.0	151.2	147.8	142.2	134.3	127.5	124.1	124.1
65°	137.7	130.9	121.9	110.6	106.1	101.6	94.8	88.0	84.6	83.5
67.5°	97.1	89.2	81.3	72.2	68.8	66.6	59.8	55.3	53.0	51.9
70°	58.7	54.2	48.5	41.8	38.4	36.1	31.6	28.2	27.1	26.0
72.5°	30.5	27.1	22.6	18.1	15.8	13.5	11.3	9.0	7.9	7.9
75°	11.3	9.0	5.6	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)