

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: P209239

Luminaire Tested: **LDSQ4B20D010 EU4B10209730 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209239
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 EU4B10209730 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: 1483.2 lumens
Efficiency: N/A
Efficacy: 71.3 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

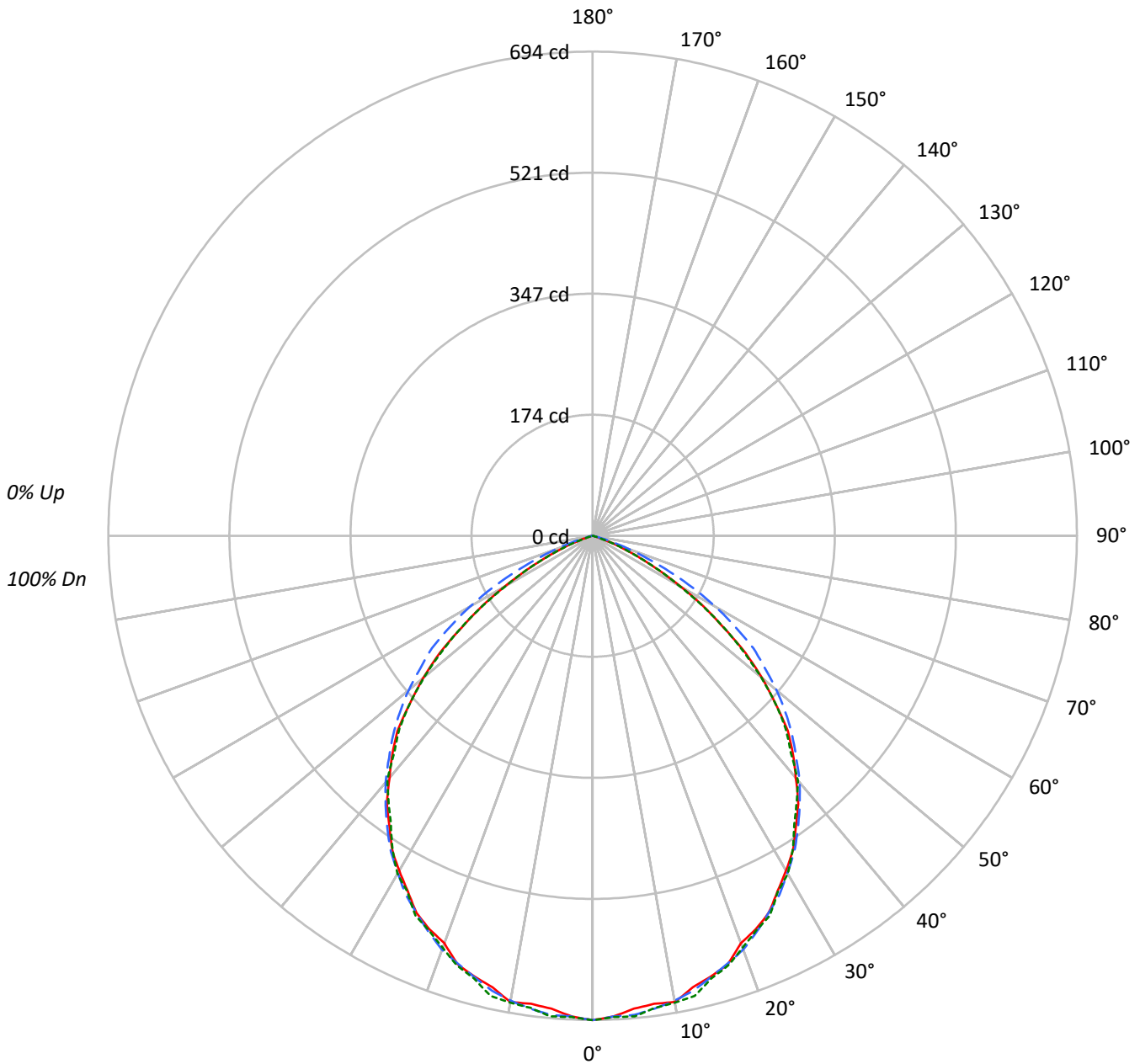
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20	
RC	80				70				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				100
1	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89				89
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77				77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67				67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59				59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52				52
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41				41
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37				37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33				33
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31				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°	65.5	4.4
10°-20°	185.5	12.5
20°-30°	275.2	18.6
30°-40°	318.8	21.5
40°-50°	305.7	20.6
50°-60°	224.8	15.2
60°-70°	97.1	6.5
70°-80°	10.5	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°	526.2	35.5
0°-40°	845.0	57.0
0°-60°	1375.5	92.7
0°-90°	1483.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1483.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	694	694	694	694	694	
5°	680	687	689	690	691	65
15°	654	658	655	656	657	184
25°	597	596	597	598	601	273
35°	508	511	513	512	504	318
45°	396	396	404	398	392	301
55°	229	252	281	252	230	206
65°	75	94	122	93	73	77
75°	2	3	11	2	2	6
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°	694.3	694.3	694.3	694.3	694.3	694.3	694.3	694.3	694.3	694.3	694.3
2.5°	689.4	697.3	698.3	693.3	691.4	688.4	695.3	690.4	692.3	690.4	689.4
5°	680.5	689.4	690.4	690.4	688.4	687.4	690.4	689.4	688.4	686.4	689.4
7.5°	676.6	681.5	686.4	680.5	683.5	682.5	689.4	686.4	685.4	685.4	683.5
10°	678.5	677.6	681.5	675.6	677.6	675.6	681.5	681.5	679.5	677.6	676.6
12.5°	662.8	670.6	670.6	669.7	667.7	664.7	670.6	674.6	668.7	668.7	667.7
15°	653.9	655.9	656.8	656.8	655.9	657.8	660.8	656.8	657.8	652.9	654.9
17.5°	644.0	640.1	643.0	641.1	642.0	644.0	648.0	648.0	642.0	641.1	643.0
20°	621.3	633.2	634.2	628.2	629.2	629.2	636.1	630.2	634.2	629.2	631.2
22.5°	610.5	618.4	619.4	611.5	616.4	610.5	617.4	608.5	618.4	611.5	614.4
25°	596.7	595.7	598.7	594.7	595.7	595.7	600.6	596.7	599.6	595.7	596.7
27.5°	574.0	581.9	580.9	577.0	578.9	577.9	587.8	577.0	582.9	577.9	579.9
30°	554.3	561.2	559.2	555.3	555.3	552.3	563.1	560.2	559.2	559.2	558.2
32.5°	534.5	535.5	533.6	534.5	535.5	531.6	540.5	536.5	535.5	536.5	537.5
35°	507.9	507.9	509.9	506.9	510.9	510.9	518.8	513.8	512.8	509.9	512.8
37.5°	484.2	481.3	482.3	482.3	484.2	486.2	490.2	488.2	488.2	485.2	487.2
40°	452.7	450.7	453.7	453.7	456.6	456.6	460.6	458.6	461.6	461.6	461.6
42.5°	425.1	425.1	423.1	426.1	427.0	426.1	433.0	432.0	433.0	431.0	432.0
45°	395.5	395.5	393.5	392.5	397.5	396.5	404.4	401.4	405.3	403.4	404.4
47.5°	355.0	360.0	357.0	360.0	365.9	366.9	371.8	369.8	373.8	370.8	374.8
50°	316.6	316.6	319.5	323.5	329.4	330.4	336.3	340.3	342.2	343.2	344.2
52.5°	276.1	275.2	278.1	283.1	288.0	291.9	297.8	303.8	307.7	313.6	310.7
55°	228.8	230.8	233.7	239.7	247.5	252.5	257.4	265.3	272.2	275.2	281.1
57.5°	188.4	186.4	188.4	196.3	205.1	209.1	216.0	223.9	233.7	239.7	241.6
60°	146.0	147.0	148.9	155.8	162.7	168.6	171.6	184.4	193.3	199.2	203.2
62.5°	107.5	109.5	111.4	117.4	124.3	129.2	134.1	145.0	152.9	158.8	162.7
65°	75.0	75.9	78.9	81.9	88.8	93.7	97.6	106.5	114.4	119.3	122.3
67.5°	46.4	47.3	49.3	53.3	58.2	62.1	66.1	72.0	78.9	83.8	84.8
70°	23.7	24.7	25.6	28.6	32.5	34.5	37.5	42.4	47.3	51.3	53.3
72.5°	7.9	7.9	8.9	10.8	12.8	14.8	15.8	20.7	24.7	26.6	27.6
75°	2.0	2.0	2.0	2.0	2.0	3.0	3.0	5.9	7.9	9.9	10.8
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	694.3	694.3	694.3	694.3	694.3	694.3	694.3	694.3	694.3	694.3
2.5°	694.3	692.3	691.4	692.3	692.3	691.4	694.3	698.3	703.2	690.4
5°	693.3	691.4	693.3	687.4	690.4	688.4	692.3	691.4	695.3	691.4
7.5°	690.4	686.4	687.4	684.5	688.4	683.5	686.4	692.3	688.4	682.5
10°	680.5	678.5	685.4	675.6	673.6	677.6	685.4	679.5	677.6	679.5
12.5°	670.6	670.6	673.6	665.7	666.7	668.7	672.6	668.7	670.6	675.6
15°	659.8	657.8	662.8	656.8	655.9	653.9	657.8	657.8	659.8	656.8
17.5°	647.0	644.0	644.0	642.0	641.1	646.0	648.0	649.0	649.9	646.0
20°	631.2	630.2	633.2	630.2	631.2	632.2	632.2	630.2	639.1	628.2
22.5°	614.4	617.4	613.4	611.5	613.4	615.4	615.4	616.4	614.4	612.5
25°	597.7	599.6	600.6	594.7	597.7	594.7	601.6	602.6	598.7	600.6
27.5°	582.9	579.9	578.9	575.0	577.0	576.0	577.0	577.0	582.9	575.0
30°	560.2	557.2	558.2	555.3	556.2	555.3	556.2	556.2	560.2	559.2
32.5°	538.5	535.5	536.5	533.6	533.6	534.5	532.6	532.6	535.5	533.6
35°	517.8	510.9	511.9	510.9	511.9	507.9	507.9	506.9	508.9	504.0
37.5°	488.2	485.2	484.2	483.3	484.2	482.3	484.2	481.3	484.2	480.3
40°	461.6	459.6	460.6	454.7	454.7	455.6	453.7	452.7	453.7	457.6
42.5°	434.9	431.0	429.0	427.0	428.0	425.1	424.1	422.1	424.1	420.1
45°	403.4	403.4	402.4	397.5	398.4	398.4	394.5	390.6	391.5	391.5
47.5°	374.8	372.8	371.8	366.9	365.9	364.9	361.0	358.0	358.0	355.0
50°	343.2	341.2	338.3	333.4	331.4	325.5	322.5	318.6	314.6	314.6
52.5°	313.6	306.7	302.8	294.9	291.9	289.0	281.1	278.1	275.2	272.2
55°	278.1	272.2	264.3	255.4	251.5	246.6	238.7	232.8	228.8	229.8
57.5°	243.6	233.7	225.9	214.0	209.1	206.1	198.2	190.3	186.4	186.4
60°	201.2	193.3	183.4	172.6	168.6	163.7	153.9	148.9	146.0	143.0
62.5°	160.8	154.8	146.0	132.2	129.2	124.3	117.4	111.4	108.5	108.5
65°	120.3	114.4	106.5	96.7	92.7	88.8	82.8	76.9	74.0	73.0
67.5°	84.8	77.9	71.0	63.1	60.2	58.2	52.3	48.3	46.4	45.4
70°	51.3	47.3	42.4	36.5	33.5	31.6	27.6	24.7	23.7	22.7
72.5°	26.6	23.7	19.7	15.8	13.8	11.8	9.9	7.9	6.9	6.9
75°	9.9	7.9	4.9	3.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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



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— 0°-180° - - 45°-225° - - - - 90°-270°









(END OF REPORT)