

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: P208760

Luminaire Tested: **LDSQA6A15927D010TE LARL20NF 6LSQA1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P208760  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29055)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQA6A15927D010TE LARL20NF 6LSQA1H  
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,  
SELF-FLANGED, 20° NARROW FLOOD  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1291.0 lumens  
Efficiency: N/A  
Efficacy: 59.2 lumens/watt  
Spacing Criteria (0/90/45): 0.37 / 0.38 / 0.39  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
CIE Type: Direct

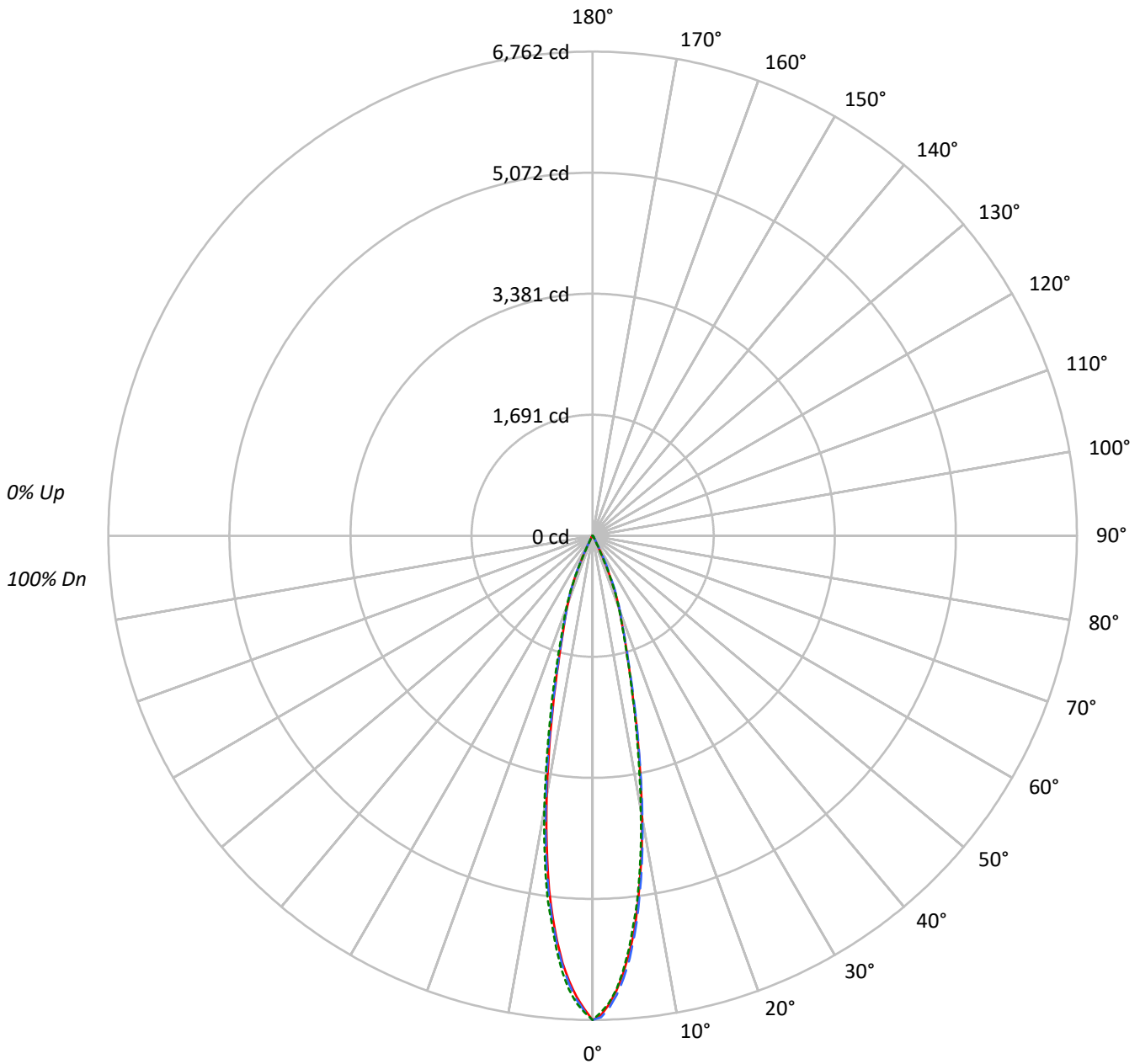
Input Watts (W): 21.79  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P208760

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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				100															
1	115	113	111	110	113	111	109	108	107	106	105	103	102	102	100	99	99	97				97															
2	112	108	105	103	110	107	104	102	103	101	100	101	99	97	98	97	95	94				94															
3	108	104	100	98	107	103	99	97	100	98	95	98	96	94	96	94	93	91				91															
4	105	100	96	93	104	99	96	93	97	94	92	95	93	91	94	92	90	89				89															
5	102	97	93	90	101	96	92	89	94	91	89	93	90	88	91	89	87	86				86															
6	99	94	90	87	98	93	89	86	92	88	86	90	88	85	89	87	85	84				84															
7	97	91	87	84	96	90	86	84	89	86	83	88	85	83	87	85	83	82				82															
8	94	88	84	82	93	88	84	81	87	83	81	86	83	81	85	82	80	80				80															
9	92	86	82	79	91	85	82	79	85	81	79	84	81	79	83	80	78	78				78															
10	90	84	80	77	89	83	80	77	83	79	77	82	79	77	81	79	77	76				76															

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	291155	291155	291155
5°	253028	250439	245923
10°	173830	169602	161103
15°	90522	89724	82641
20°	50337	49260	46598
25°	16651	15425	18095
30°	3689	3411	3048
35°	1382	1356	1209
40°	545	517	495
45°	170	170	170
50°	33	33	60
55°	38	0	38
60°	0	0	0
65°	0	0	0
70°	0	0	0
75°	0	0	0
80°	0	0	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	493.9	38.3
10°-20°	572.5	44.3
20°-30°	198.9	15.4
30°-40°	21.2	1.6
40°-50°	4.1	0.3
50°-60°	0.4	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	0.0	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°	1265.3	98.0
0°-40°	1286.5	99.7
0°-60°	1291.0	100.0
0°-90°	1291.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1291.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	6762	6762	6762	6762	6762	
5°	5854	5925	5794	5723	5690	498
15°	2031	2075	2013	1896	1854	584
25°	350	456	325	398	381	190
35°	26	37	26	33	23	20
45°	3	7	3	7	3	3
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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CATALOG NUMBER: LDSQA6A15927D010TE LARL20NF 6LSQA1H

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	6762.3	6762.3	6762.3	6762.3	6762.3	6762.3	6762.3	6762.3	6762.3
1°	6700.1	6699.2	6723.1	6729.6	6656.8	6756.3	6637.9	6759.0	6613.0
2°	6549.5	6557.7	6598.7	6593.2	6529.6	6617.2	6478.1	6573.4	6442.1
3°	6358.3	6373.0	6420.5	6416.8	6342.6	6417.7	6270.3	6355.5	6232.1
4°	6124.3	6158.9	6198.5	6209.1	6096.2	6163.9	6020.7	6100.4	5982.9
5°	5854.4	5900.0	5925.3	5911.0	5794.5	5856.7	5723.1	5836.4	5690.0
6°	5549.5	5584.9	5603.8	5578.5	5449.5	5520.0	5395.2	5491.4	5348.2
7°	5186.5	5226.6	5241.8	5216.9	5127.5	5156.1	5031.3	5111.9	4977.8
8°	4783.5	4843.8	4846.1	4823.5	4731.0	4699.6	4628.2	4687.2	4560.1
9°	4387.8	4432.9	4432.0	4415.4	4313.2	4267.6	4198.0	4239.9	4127.1
10°	3976.0	4016.5	4002.7	3987.5	3879.3	3828.6	3761.8	3783.9	3684.9
11°	3539.8	3591.4	3569.3	3554.6	3446.8	3397.0	3330.2	3336.2	3249.2
12°	3099.0	3172.2	3146.0	3136.3	3036.8	2988.5	2928.1	2921.7	2839.2
13°	2729.1	2774.3	2748.5	2743.4	2655.9	2614.0	2516.8	2542.6	2467.5
14°	2334.4	2413.2	2390.1	2387.8	2316.0	2276.8	2187.0	2207.3	2141.9
15°	2030.8	2093.5	2075.1	2074.1	2012.9	1975.6	1895.9	1912.5	1854.0
16°	1754.5	1813.4	1800.1	1802.4	1748.0	1715.3	1646.2	1660.0	1613.1
17°	1561.9	1583.1	1570.7	1570.7	1525.6	1505.3	1445.9	1459.2	1422.4
18°	1370.3	1378.2	1386.0	1387.4	1347.8	1333.9	1284.2	1296.2	1265.8
19°	1213.3	1232.1	1236.7	1237.7	1202.7	1194.8	1152.0	1161.2	1136.3
20°	1098.6	1109.6	1111.0	1108.7	1075.1	1068.6	1030.4	1038.7	1017.0
21°	965.9	985.3	981.1	977.4	942.4	937.3	905.1	906.5	885.3
22°	818.0	852.6	848.0	841.5	794.1	787.2	778.9	775.7	755.4
23°	637.0	717.6	713.5	704.3	635.2	655.9	650.8	644.9	626.0
24°	488.7	583.6	581.3	567.0	475.4	526.9	521.4	516.3	501.6
25°	350.5	455.1	455.5	433.4	324.7	417.3	398.0	394.3	380.9
26°	250.6	338.6	340.9	309.1	199.4	301.2	287.4	282.4	271.8
27°	152.5	235.8	240.4	202.7	124.4	202.2	193.5	187.9	157.5
28°	105.0	153.8	159.4	125.3	97.2	135.0	124.4	117.9	91.7
29°	89.8	100.4	104.6	88.4	82.0	89.8	84.8	82.0	74.2
30°	74.2	76.5	78.3	73.2	68.6	70.9	68.6	66.3	61.3
32.5°	47.0	51.1	52.5	48.8	44.7	46.1	46.1	42.8	38.7
35°	26.3	32.7	36.8	32.2	25.8	30.9	33.2	28.6	23.0
37.5°	16.1	20.3	25.8	20.3	15.7	19.8	24.0	18.0	14.7
40°	9.7	12.4	18.4	12.4	9.2	12.0	16.6	11.1	8.8
42.5°	5.5	7.4	12.0	7.4	5.1	6.9	11.1	6.4	5.1
45°	2.8	4.1	7.4	4.1	2.8	4.1	6.9	3.7	2.8
47.5°	1.4	2.3	4.1	2.3	1.4	2.3	3.7	2.3	1.4
50°	0.5	0.9	2.3	0.9	0.5	0.9	2.3	0.9	0.9
52.5°	0.5	0.5	1.4	0.5	0.5	0.5	0.9	0.5	0.5
55°	0.5	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.5
57.5°	0.5	0.0	0.5	0.0	0.0	0.0	0.5	0.5	0.5
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	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
87.5°	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



Report Generated By E9808895 / USPTCWHP6082093







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







62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



(END OF REPORT)