

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: P208756

Luminaire Tested: **LDSQA6A15827D010TE LARL20NF 6LSQA1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P208756  
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: LDSQA6A15827D010TE LARL20NF 6LSQA1H  
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,  
SELF-FLANGED, 20° NARROW FLOOD  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1605.0 lumens  
Efficiency: N/A  
Efficacy: 73.7 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

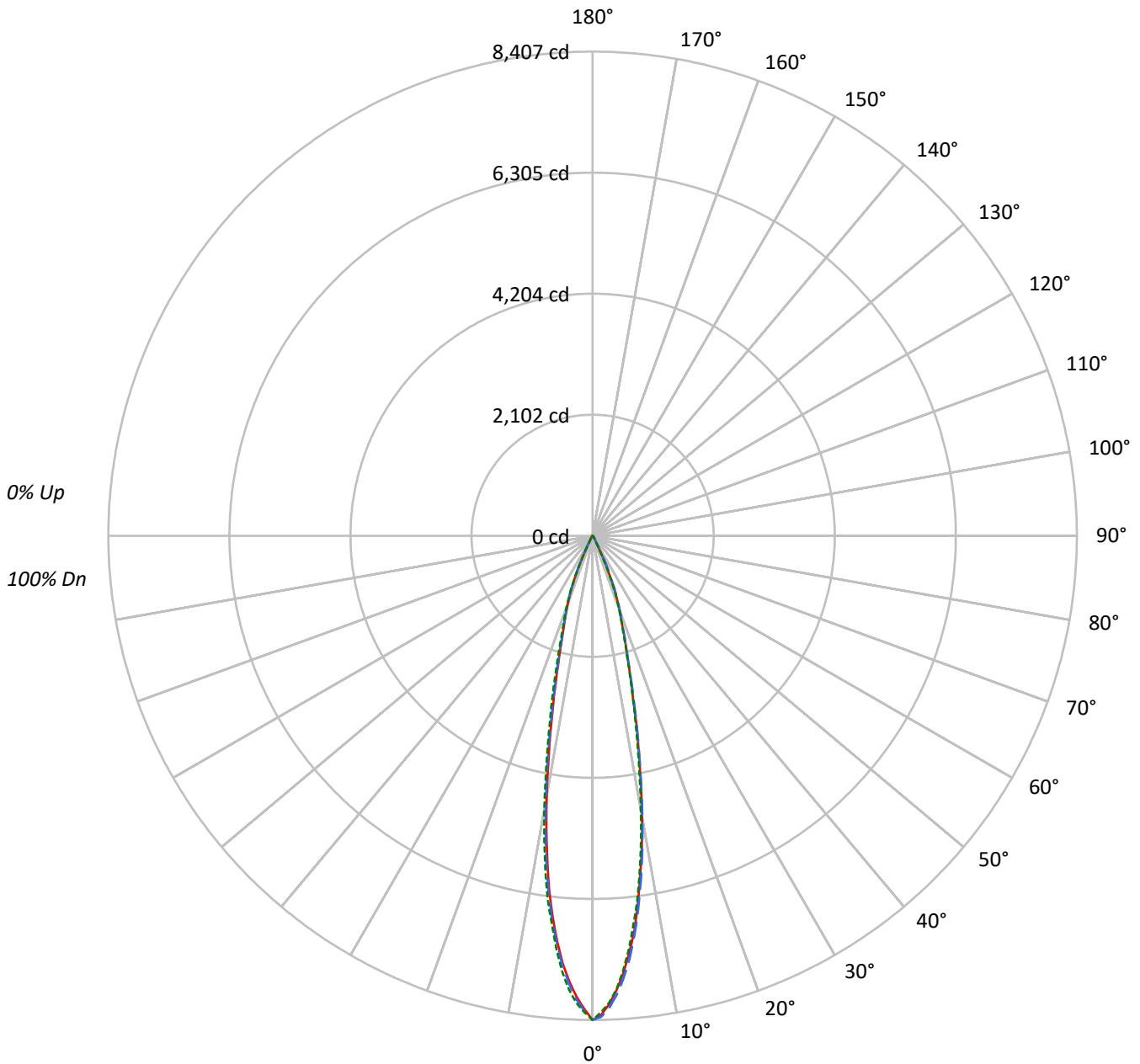
Input Watts (W): 21.79  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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				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°	361969	361969	361969
5°	314569	311353	305735
10°	216112	210852	200289
15°	112542	111548	102740
20°	62579	61242	57933
25°	20703	19178	22499
30°	4584	4241	3788
35°	1713	1687	1503
40°	674	646	613
45°	207	207	207
50°	40	40	74
55°	45	0	45
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°	614.0	38.3
10°-20°	711.7	44.3
20°-30°	247.3	15.4
30°-40°	26.3	1.6
40°-50°	5.1	0.3
50°-60°	0.5	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°	1573.1	98.0
0°-40°	1599.4	99.7
0°-60°	1605.0	100.0
0°-90°	1605.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1605.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	8407	8407	8407	8407	8407	
5°	7278	7366	7204	7115	7074	619
15°	2525	2580	2502	2357	2305	726
25°	436	566	404	495	474	236
35°	33	46	32	41	29	25
45°	3	9	3	9	3	3
55°	1	1	0	1	1	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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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	8407.0	8407.0	8407.0	8407.0	8407.0	8407.0	8407.0	8407.0	8407.0
1°	8329.7	8328.5	8358.3	8366.3	8275.9	8399.5	8252.4	8403.0	8221.5
2°	8142.4	8152.7	8203.7	8196.8	8117.8	8226.6	8053.7	8172.2	8009.0
3°	7904.8	7923.1	7982.1	7977.5	7885.3	7978.7	7795.4	7901.3	7747.9
4°	7613.9	7656.8	7706.1	7719.2	7578.9	7663.1	7485.0	7584.1	7438.1
5°	7278.3	7335.0	7366.5	7348.7	7203.9	7281.2	7115.1	7256.0	7073.9
6°	6899.2	6943.3	6966.8	6935.3	6775.0	6862.6	6707.4	6827.1	6649.0
7°	6448.0	6497.8	6516.7	6485.8	6374.7	6410.2	6255.0	6355.2	6188.6
8°	5946.9	6021.9	6024.8	5996.7	5881.6	5842.7	5753.9	5827.2	5669.2
9°	5455.0	5511.1	5510.0	5489.4	5362.2	5305.5	5219.1	5271.2	5130.9
10°	4943.1	4993.5	4976.3	4957.4	4822.8	4759.8	4676.8	4704.3	4581.2
11°	4400.8	4464.9	4437.4	4419.1	4285.1	4223.3	4140.2	4147.7	4039.4
12°	3852.8	3943.8	3911.2	3899.1	3775.4	3715.3	3640.3	3632.3	3529.8
13°	3392.9	3449.0	3417.0	3410.7	3301.9	3249.8	3128.9	3161.0	3067.7
14°	2902.2	3000.1	2971.5	2968.6	2879.3	2830.6	2718.9	2744.1	2662.8
15°	2524.8	2602.7	2579.8	2578.6	2502.5	2456.1	2357.0	2377.6	2304.9
16°	2181.2	2254.5	2237.9	2240.8	2173.2	2132.5	2046.6	2063.8	2005.4
17°	1941.8	1968.2	1952.7	1952.7	1896.6	1871.4	1797.5	1814.1	1768.3
18°	1703.6	1713.4	1723.1	1724.8	1675.6	1658.4	1596.5	1611.4	1573.6
19°	1508.3	1531.8	1537.5	1538.7	1495.2	1485.4	1432.2	1443.6	1412.7
20°	1365.8	1379.5	1381.2	1378.4	1336.6	1328.5	1281.0	1291.3	1264.4
21°	1200.8	1224.9	1219.7	1215.2	1171.6	1165.3	1125.2	1127.0	1100.6
22°	1017.0	1060.0	1054.2	1046.2	987.2	978.6	968.3	964.3	939.1
23°	792.0	892.2	887.0	875.6	789.7	815.4	809.1	801.7	778.2
24°	607.6	725.5	722.7	704.9	591.0	655.1	648.2	641.9	623.6
25°	435.8	565.8	566.3	538.9	403.7	518.8	494.8	490.2	473.6
26°	311.5	420.9	423.8	384.2	248.0	374.5	357.3	351.0	337.9
27°	189.5	293.2	298.9	252.0	154.6	251.4	240.5	233.6	195.8
28°	130.6	191.3	198.1	155.8	120.8	167.8	154.6	146.6	114.0
29°	111.7	124.8	130.0	109.9	101.9	111.7	105.4	101.9	92.2
30°	92.2	95.1	97.3	91.1	85.3	88.2	85.3	82.5	76.2
32.5°	58.4	63.6	65.3	60.7	55.5	57.3	57.3	53.3	48.1
35°	32.6	40.7	45.8	40.1	32.1	38.4	41.2	35.5	28.6
37.5°	20.0	25.2	32.1	25.2	19.5	24.6	29.8	22.3	18.3
40°	12.0	15.5	22.9	15.5	11.5	14.9	20.6	13.7	10.9
42.5°	6.9	9.2	14.9	9.2	6.3	8.6	13.7	8.0	6.3
45°	3.4	5.2	9.2	5.2	3.4	5.2	8.6	4.6	3.4
47.5°	1.7	2.9	5.2	2.9	1.7	2.9	4.6	2.9	1.7
50°	0.6	1.1	2.9	1.1	0.6	1.1	2.9	1.1	1.1
52.5°	0.6	0.6	1.7	0.6	0.6	0.6	1.1	0.6	0.6
55°	0.6	0.6	0.6	0.6	0.0	0.6	0.6	0.6	0.6
57.5°	0.6	0.0	0.6	0.0	0.0	0.0	0.6	0.6	0.6
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	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)