

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: P208764

Luminaire Tested: **LDSQA6A20827D010TE LARL20NF 6LSQA1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P208764  
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: LDSQA6A20827D010TE 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: 1950.0 lumens  
Efficiency: N/A  
Efficacy: 67.7 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

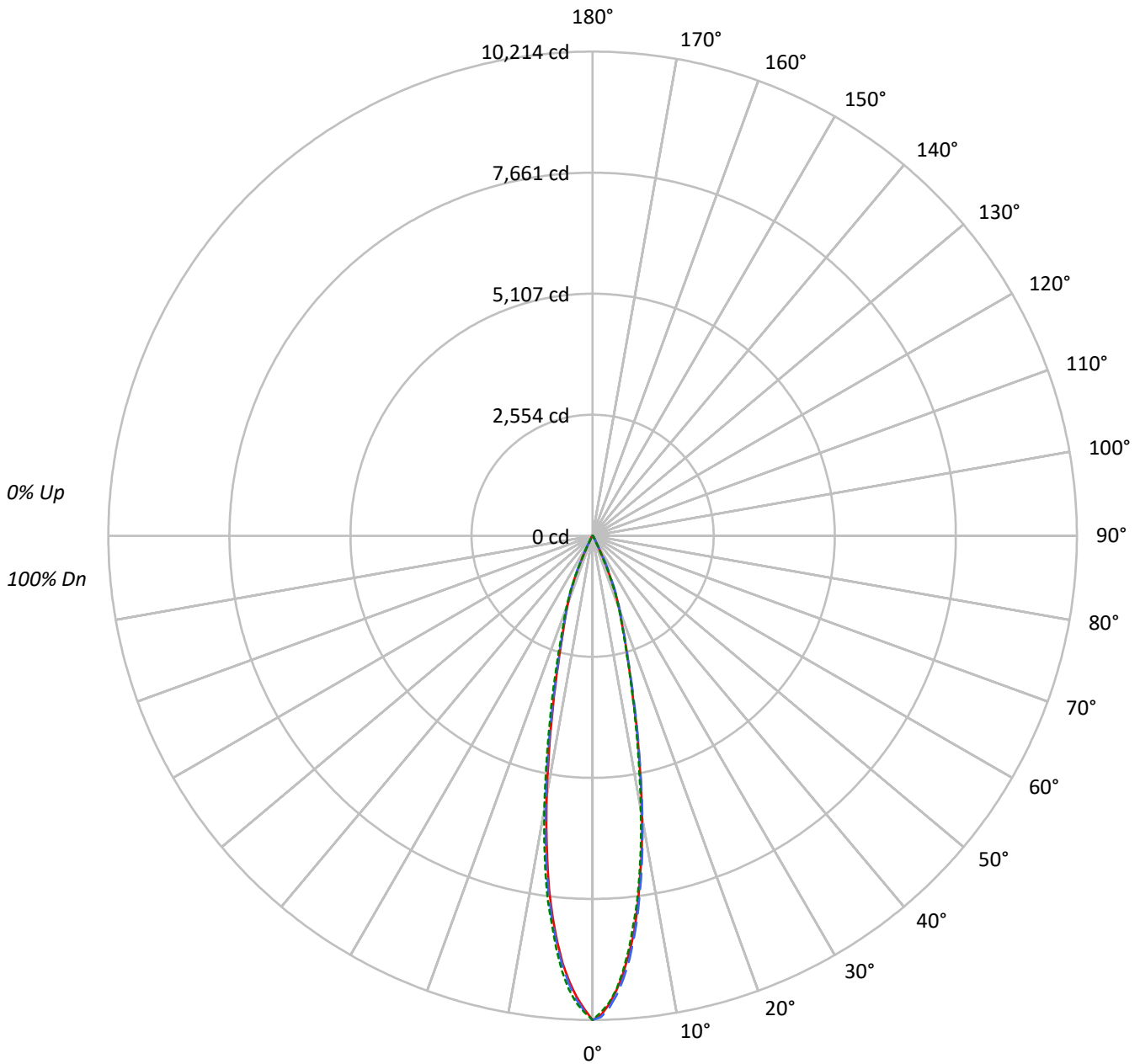
Input Watts (W): 28.81  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P208764

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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	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°	439775	439775	439775
5°	382187	378280	371451
10°	262564	256177	243340
15°	136732	135524	124822
20°	76027	74401	70387
25°	25155	23302	27335
30°	5568	5156	4599
35°	2087	2050	1829
40°	821	781	742
45°	256	256	256
50°	47	47	94
55°	53	0	53
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°	746.0	38.3
10°-20°	864.7	44.3
20°-30°	300.5	15.4
30°-40°	32.0	1.6
40°-50°	6.1	0.3
50°-60°	0.6	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°	1911.2	98.0
0°-40°	1943.2	99.7
0°-60°	1950.0	100.0
0°-90°	1950.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1950.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	10214	10214	10214	10214	10214	
5°	8843	8950	8752	8644	8594	752
15°	3068	3134	3040	2864	2800	883
25°	530	688	490	601	575	287
35°	40	56	39	50	35	30
45°	4	11	4	10	4	4
55°	1	1	0	1	1	1
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



TEST NUMBER: P208764

CATALOG NUMBER: LDSQA6A20827D010TE LARL20NF 6LSQA1H

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	10214.1	10214.1	10214.1	10214.1	10214.1	10214.1	10214.1	10214.1	10214.1
1°	10120.2	10118.8	10155.0	10164.7	10054.8	10205.1	10026.3	10209.2	9988.7
2°	9892.7	9905.2	9967.1	9958.8	9862.8	9994.9	9784.8	9928.8	9730.6
3°	9603.9	9626.2	9697.9	9692.3	9580.3	9693.7	9471.1	9599.8	9413.3
4°	9250.5	9302.7	9362.5	9378.5	9208.1	9310.3	9094.0	9214.3	9036.9
5°	8842.8	8911.7	8949.9	8928.4	8752.4	8846.3	8644.5	8815.7	8594.4
6°	8382.2	8435.8	8464.3	8426.1	8231.3	8337.7	8149.2	8294.6	8078.2
7°	7834.0	7894.5	7917.5	7879.9	7744.9	7788.1	7599.5	7721.3	7518.8
8°	7225.2	7316.4	7319.8	7285.7	7145.9	7098.6	6990.8	7079.8	6887.8
9°	6627.6	6695.8	6694.4	6669.3	6514.9	6446.0	6340.9	6404.3	6233.8
10°	6005.6	6066.8	6045.9	6023.0	5859.5	5783.0	5682.1	5715.5	5565.9
11°	5346.7	5424.7	5391.3	5369.0	5206.2	5131.1	5030.2	5039.2	4907.7
12°	4680.9	4791.5	4751.9	4737.3	4587.0	4513.9	4422.8	4413.1	4288.5
13°	4122.2	4190.4	4151.5	4143.8	4011.6	3948.3	3801.5	3840.5	3727.1
14°	3526.0	3645.0	3610.2	3606.7	3498.2	3439.0	3303.4	3334.0	3235.2
15°	3067.5	3162.1	3134.3	3132.9	3040.4	2984.0	2863.6	2888.7	2800.3
16°	2650.1	2739.1	2718.9	2722.4	2640.3	2590.9	2486.6	2507.4	2436.5
17°	2359.2	2391.2	2372.5	2372.5	2304.3	2273.7	2183.9	2204.1	2148.4
18°	2069.8	2081.6	2093.5	2095.6	2035.7	2014.9	1939.7	1957.8	1911.9
19°	1832.6	1861.1	1868.1	1869.4	1816.6	1804.7	1740.0	1754.0	1716.4
20°	1659.3	1676.0	1678.1	1674.6	1623.8	1614.1	1556.4	1568.9	1536.2
21°	1459.0	1488.2	1481.9	1476.4	1423.5	1415.8	1367.1	1369.2	1337.2
22°	1235.6	1287.8	1280.9	1271.1	1199.4	1189.0	1176.5	1171.6	1141.0
23°	962.2	1084.0	1077.7	1063.8	959.4	990.7	983.1	974.0	945.5
24°	738.2	881.5	878.0	856.5	718.0	795.9	787.6	779.9	757.7
25°	529.5	687.4	688.1	654.7	490.5	630.3	601.1	595.6	575.4
26°	378.5	511.4	514.8	466.8	301.3	455.0	434.1	426.5	410.5
27°	230.3	356.2	363.2	306.1	187.8	305.4	292.2	283.9	237.9
28°	158.6	232.4	240.7	189.2	146.8	203.9	187.8	178.1	138.5
29°	135.7	151.7	157.9	133.6	123.8	135.7	128.0	123.8	112.0
30°	112.0	115.5	118.3	110.6	103.7	107.1	103.7	100.2	92.5
32.5°	71.0	77.2	79.3	73.7	67.5	69.6	69.6	64.7	58.4
35°	39.7	49.4	55.7	48.7	39.0	46.6	50.1	43.1	34.8
37.5°	24.4	30.6	39.0	30.6	23.7	29.9	36.2	27.1	22.3
40°	14.6	18.8	27.8	18.8	13.9	18.1	25.0	16.7	13.2
42.5°	8.3	11.1	18.1	11.1	7.7	10.4	16.7	9.7	7.7
45°	4.2	6.3	11.1	6.3	4.2	6.3	10.4	5.6	4.2
47.5°	2.1	3.5	6.3	3.5	2.1	3.5	5.6	3.5	2.1
50°	0.7	1.4	3.5	1.4	0.7	1.4	3.5	1.4	1.4
52.5°	0.7	0.7	2.1	0.7	0.7	0.7	1.4	0.7	0.7
55°	0.7	0.7	0.7	0.7	0.0	0.7	0.7	0.7	0.7
57.5°	0.7	0.0	0.7	0.0	0.0	0.0	0.7	0.7	0.7
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	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)