

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: P136901

Luminaire Tested: **LDSQ6A20D010TE ESQ6A20830 6LSQ1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P136901  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P23674)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQ6A20D010TE ESQ6A20830 6LSQ1H  
Description: PORTFOLIO LED SQUARE 6 INCH 60 DEGREE CUTOFF RECESSED DOWNLIGHT  
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 3000K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2312.0 lumens  
Efficiency: N/A  
Efficacy: 70.5 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.02 / 1.05  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
CIE Type: Direct

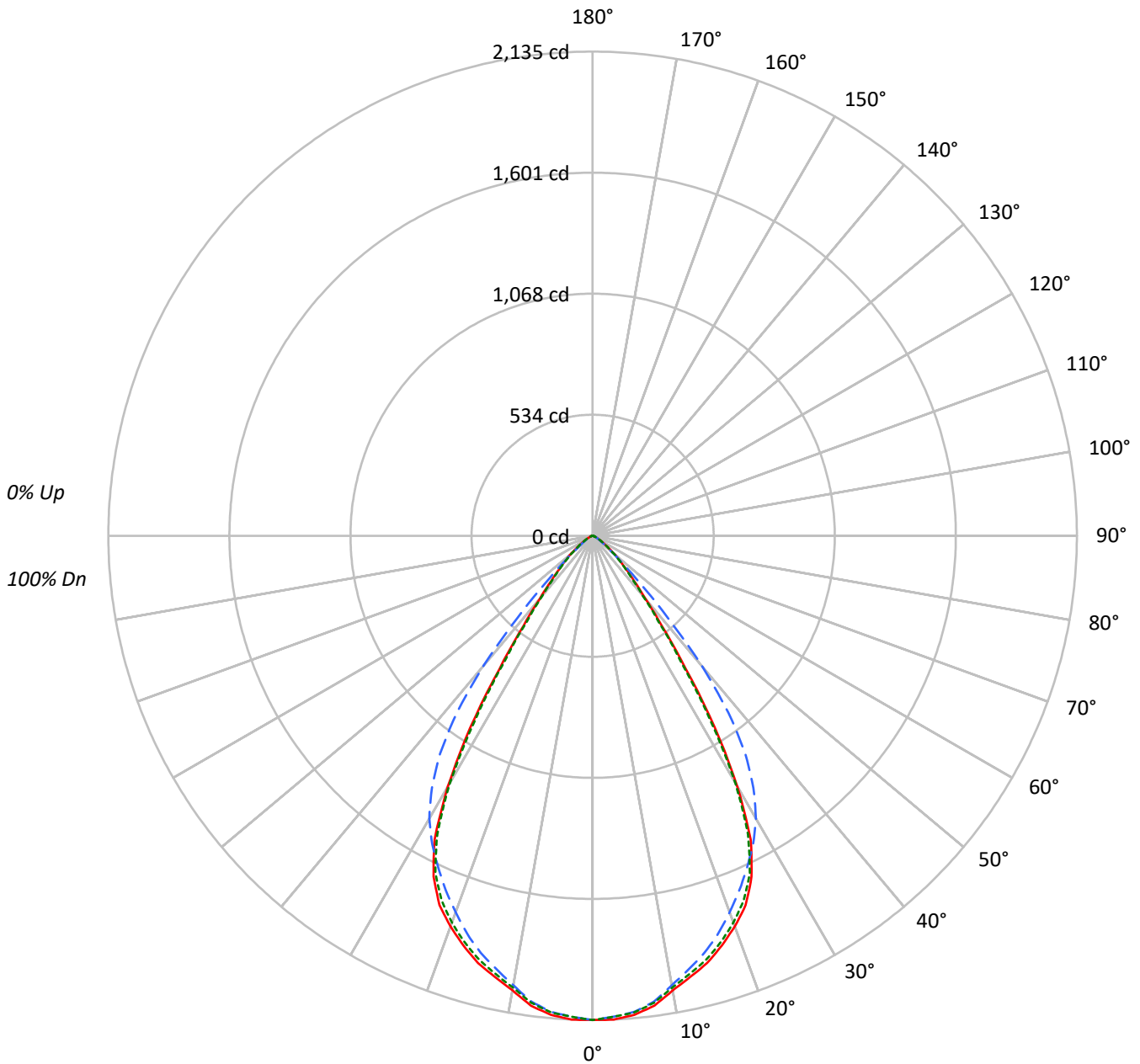
Input Watts (W): 32.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20				20				20				20				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	113	110	108	105	111	108	106	104	104	102	100	100	99	97	97	96	95	93				93
2	107	102	98	94	105	100	96	93	97	94	91	94	91	89	91	89	87	85				85
3	101	94	89	85	99	93	88	84	90	86	83	88	84	81	86	83	80	79				79
4	96	88	82	77	94	86	81	77	84	80	76	82	78	75	80	77	74	72				72
5	90	81	75	71	89	80	75	70	79	74	70	77	73	69	75	72	68	67				67
6	85	76	70	65	84	75	69	65	74	68	64	72	67	64	71	67	63	62				62
7	81	71	65	60	79	70	64	60	69	64	60	68	63	59	67	62	59	57				57
8	77	66	60	56	75	66	60	56	65	59	55	64	59	55	63	58	55	53				53
9	73	62	56	52	71	62	56	52	61	55	52	60	55	51	59	55	51	50				50
10	69	59	53	49	68	58	52	48	57	52	48	57	52	48	56	51	48	47				47

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

	0°	45°	90°
0°	91941	91941	91941
5°	91627	91073	91186
10°	88983	87973	88423
15°	86947	84888	86261
20°	83968	80907	83143
25°	78766	76571	77916
30°	63418	71587	62528
35°	37639	61654	35884
40°	20341	41980	19329
45°	12659	17658	12190
50°	8426	6879	7911
55°	5007	3663	4819
60°	3091	2428	2876
65°	1834	1569	1834
70°	1297	1297	969
75°	848	848	848
80°	645	645	645
85°	0	1284	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	198.4	8.6
10°-20°	539.4	23.3
20°-30°	737.8	31.9
30°-40°	558.8	24.2
40°-50°	194.0	8.4
50°-60°	58.1	2.5
60°-70°	18.4	0.8
70°-80°	5.7	0.2
80°-90°	1.4	0.1
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°	1475.7	63.8
0°-40°	2034.4	88.0
0°-60°	2286.5	98.9
0°-90°	2312.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2312.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2135	2135	2135	2135	2135	
5°	2120	2112	2107	2110	2110	200
15°	1951	1926	1904	1921	1935	548
25°	1658	1634	1612	1625	1640	743
35°	716	874	1173	862	683	466
45°	208	222	290	218	200	169
55°	67	64	49	63	64	63
65°	18	18	15	18	18	20
75°	5	5	5	5	5	5
85°	0	0	3	1	0	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4
2.5°	2135.4	2125.2	2114.9	2122.6	2132.9	2120.0	2122.6	2122.6	2114.9	2122.6	2117.5
5°	2120.0	2112.3	2102.1	2109.8	2117.5	2107.2	2107.2	2107.2	2102.1	2107.2	2104.6
7.5°	2089.2	2079.0	2068.7	2076.4	2084.1	2073.8	2071.3	2073.8	2066.1	2071.3	2068.7
10°	2035.3	2027.6	2017.4	2025.1	2030.2	2017.4	2014.8	2017.4	2007.1	2012.2	2012.2
12.5°	1991.7	1986.6	1973.7	1978.9	1981.4	1968.6	1963.5	1963.5	1953.2	1958.3	1955.8
15°	1950.6	1942.9	1930.1	1932.7	1935.2	1917.3	1912.1	1909.6	1899.3	1904.4	1901.9
17.5°	1894.2	1889.0	1873.6	1876.2	1873.6	1858.2	1848.0	1845.4	1835.1	1840.3	1835.1
20°	1832.6	1824.9	1809.5	1806.9	1801.8	1783.8	1776.1	1773.5	1760.7	1765.8	1763.3
22.5°	1763.3	1753.0	1737.6	1735.0	1729.9	1709.4	1701.7	1696.5	1686.3	1691.4	1686.3
25°	1658.0	1650.3	1637.5	1637.5	1640.1	1627.2	1624.7	1622.1	1609.3	1611.8	1609.3
27.5°	1509.2	1504.1	1498.9	1501.5	1514.3	1514.3	1527.2	1532.3	1527.2	1532.3	1527.2
30°	1275.6	1278.2	1293.6	1309.0	1339.8	1362.9	1393.7	1416.8	1427.1	1439.9	1429.6
32.5°	1003.6	995.9	1026.7	1062.6	1111.4	1162.7	1224.3	1273.1	1306.4	1319.3	1303.9
35°	716.1	713.5	741.8	780.3	836.7	911.2	1003.6	1088.3	1147.3	1173.0	1147.3
37.5°	500.5	503.1	518.5	544.1	587.8	651.9	749.5	854.7	944.5	983.0	939.4
40°	361.9	359.3	369.6	385.0	410.7	451.7	518.5	605.7	695.6	746.9	690.4
42.5°	272.1	269.5	274.6	282.3	295.2	315.7	351.6	397.8	454.3	490.2	446.6
45°	207.9	207.9	207.9	213.0	218.2	225.9	238.7	254.1	274.6	290.0	269.5
47.5°	161.7	161.7	161.7	164.3	166.8	166.8	166.8	164.3	166.8	169.4	164.3
50°	125.8	125.8	125.8	125.8	125.8	123.2	118.1	107.8	105.2	102.7	102.7
52.5°	89.8	89.8	89.8	92.4	95.0	89.8	82.1	74.4	69.3	69.3	69.3
55°	66.7	66.7	66.7	66.7	66.7	61.6	56.5	51.3	48.8	48.8	48.8
57.5°	48.8	48.8	48.8	48.8	46.2	43.6	41.1	38.5	35.9	35.9	35.9
60°	35.9	35.9	35.9	35.9	33.4	30.8	30.8	28.2	28.2	28.2	28.2
62.5°	25.7	25.7	25.7	25.7	25.7	23.1	23.1	20.5	20.5	20.5	20.5
65°	18.0	18.0	18.0	18.0	18.0	18.0	15.4	15.4	15.4	15.4	15.4
67.5°	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
70°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
72.5°	5.1	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
75°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
77.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
80°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	0.0	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.6	2.6	2.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.6	2.6
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):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4	2135.4
2.5°	2117.5	2130.3	2130.3	2120.0	2112.3	2125.2	2127.7	2122.6
5°	2104.6	2114.9	2114.9	2104.6	2096.9	2112.3	2112.3	2109.8
7.5°	2068.7	2081.5	2079.0	2071.3	2063.6	2076.4	2081.5	2076.4
10°	2012.2	2025.1	2025.1	2017.4	2009.7	2025.1	2027.6	2022.5
12.5°	1958.3	1971.2	1976.3	1968.6	1966.0	1978.9	1984.0	1978.9
15°	1904.4	1919.8	1922.4	1919.8	1919.8	1935.2	1940.4	1935.2
17.5°	1840.3	1855.7	1860.8	1858.2	1860.8	1876.2	1883.9	1878.8
20°	1765.8	1778.7	1783.8	1783.8	1786.4	1806.9	1817.2	1814.6
22.5°	1686.3	1701.7	1709.4	1711.9	1714.5	1735.0	1745.3	1740.2
25°	1611.8	1624.7	1624.7	1624.7	1622.1	1637.5	1645.2	1640.1
27.5°	1522.0	1524.6	1516.9	1498.9	1486.1	1491.2	1496.4	1483.5
30°	1409.1	1393.7	1365.5	1327.0	1293.6	1280.8	1278.2	1257.7
32.5°	1265.4	1221.7	1162.7	1096.0	1036.9	1006.1	993.3	970.2
35°	1080.6	998.4	906.0	818.8	752.0	718.7	705.8	682.7
37.5°	844.4	741.8	644.2	569.8	526.2	497.9	490.2	477.4
40°	587.8	505.6	441.5	395.3	367.0	354.2	351.6	343.9
42.5°	387.6	341.4	308.0	284.9	272.1	264.4	264.4	259.2
45°	249.0	233.6	223.3	213.0	205.3	202.8	202.8	200.2
47.5°	161.7	164.3	164.3	161.7	156.6	154.0	156.6	154.0
50°	107.8	115.5	120.6	123.2	120.6	118.1	120.6	118.1
52.5°	74.4	82.1	89.8	92.4	89.8	87.3	87.3	87.3
55°	51.3	56.5	61.6	64.2	64.2	64.2	64.2	64.2
57.5°	38.5	41.1	43.6	46.2	48.8	46.2	48.8	46.2
60°	28.2	30.8	33.4	33.4	35.9	35.9	35.9	33.4
62.5°	20.5	23.1	23.1	25.7	25.7	25.7	25.7	25.7
65°	15.4	15.4	18.0	18.0	18.0	18.0	18.0	18.0
67.5°	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
70°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	7.7
72.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	5.1
75°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
77.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
80°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
85°	2.6	2.6	0.0	2.6	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
90°	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)