

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: P136914

Luminaire Tested: **LDSQ6A20DL3 ESQ6A20935 6LSQ1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P136914  
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: LDSQ6A20DL3 ESQ6A20935 6LSQ1H  
Description: PORTFOLIO LED SQUARE 6 INCH 60 DEGREE CUTOFF RECESSED DOWNLIGHT  
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 3500K  
Ballast/Driver: LUTRON ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2186.1 lumens  
Efficiency: N/A  
Efficacy: 67.9 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

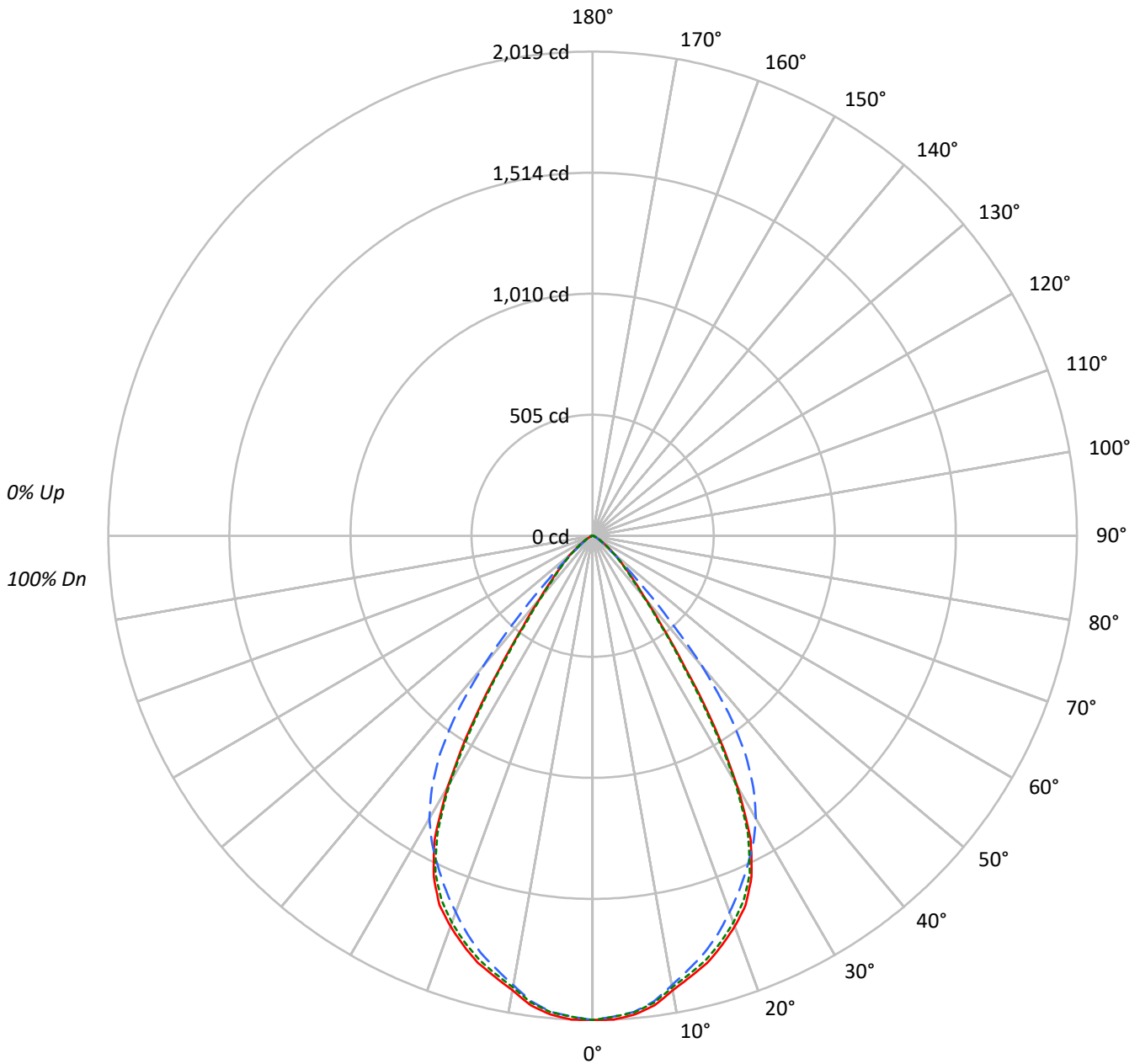
Input Watts (W): 32.2  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	86934	86934	86934
5°	86635	86112	86216
10°	84139	83181	83605
15°	82213	80265	81562
20°	79390	76499	78611
25°	74481	72405	73669
30°	59968	67684	59118
35°	35589	58296	33928
40°	19233	39698	18278
45°	11971	16696	11526
50°	7964	6504	7482
55°	4737	3461	4556
60°	2919	2299	2713
65°	1732	1487	1732
70°	1221	1221	919
75°	815	815	815
80°	595	595	595
85°	0	1186	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	187.6	8.6
10°-20°	510.0	23.3
20°-30°	697.6	31.9
30°-40°	528.3	24.2
40°-50°	183.4	8.4
50°-60°	54.9	2.5
60°-70°	17.4	0.8
70°-80°	5.4	0.2
80°-90°	1.3	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°	1395.3	63.8
0°-40°	1923.6	88.0
0°-60°	2161.9	98.9
0°-90°	2186.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2186.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2019	2019	2019	2019	2019	
5°	2004	1997	1992	1995	1995	189
15°	1844	1821	1801	1816	1830	518
25°	1568	1545	1524	1536	1551	703
35°	677	826	1109	815	646	440
45°	197	210	274	206	189	160
55°	63	61	46	60	61	60
65°	17	17	15	17	17	19
75°	5	5	5	5	5	5
85°	0	0	2	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°	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1
2.5°	2019.1	2009.4	1999.7	2007.0	2016.7	2004.5	2007.0	2007.0	1999.7	2007.0	2002.1
5°	2004.5	1997.2	1987.6	1994.8	2002.1	1992.4	1992.4	1992.4	1987.6	1992.4	1990.0
7.5°	1975.5	1965.7	1956.0	1963.3	1970.6	1960.9	1958.4	1960.9	1953.6	1958.4	1956.0
10°	1924.5	1917.2	1907.5	1914.8	1919.6	1907.5	1905.0	1907.5	1897.8	1902.6	1902.6
12.5°	1883.2	1878.4	1866.2	1871.1	1873.5	1861.3	1856.5	1856.5	1846.9	1851.7	1849.3
15°	1844.4	1837.1	1825.0	1827.4	1829.8	1812.8	1807.9	1805.6	1795.9	1800.7	1798.3
17.5°	1791.0	1786.2	1771.6	1774.0	1771.6	1757.1	1747.3	1744.9	1735.2	1740.0	1735.2
20°	1732.7	1725.4	1711.0	1708.5	1703.7	1686.6	1679.3	1676.9	1664.8	1669.6	1667.3
22.5°	1667.3	1657.5	1643.0	1640.5	1635.7	1616.3	1609.0	1604.1	1594.4	1599.3	1594.4
25°	1567.8	1560.5	1548.3	1548.3	1550.7	1538.6	1536.1	1533.7	1521.7	1524.1	1521.7
27.5°	1427.0	1422.1	1417.3	1419.7	1431.9	1431.9	1443.9	1448.8	1443.9	1448.8	1443.9
30°	1206.2	1208.6	1223.1	1237.7	1266.8	1288.7	1317.8	1339.6	1349.3	1361.4	1351.7
32.5°	948.9	941.6	970.8	1004.7	1050.8	1099.4	1157.6	1203.7	1235.3	1247.4	1232.8
35°	677.1	674.6	701.4	737.8	791.2	861.5	948.9	1029.0	1084.8	1109.1	1084.8
37.5°	473.3	475.7	490.2	514.5	555.8	616.4	708.6	808.1	893.0	929.5	888.3
40°	342.2	339.8	349.4	364.0	388.3	427.2	490.2	572.7	657.7	706.3	652.8
42.5°	257.2	254.8	259.6	266.9	279.1	298.5	332.5	376.2	429.6	463.5	422.3
45°	196.6	196.6	196.6	201.5	206.3	213.5	225.7	240.3	259.6	274.2	254.8
47.5°	152.9	152.9	152.9	155.4	157.8	157.8	157.8	155.4	157.8	160.2	155.4
50°	118.9	118.9	118.9	118.9	118.9	116.4	111.7	101.9	99.5	97.1	97.1
52.5°	84.9	84.9	84.9	87.4	89.8	84.9	77.6	70.3	65.6	65.6	65.6
55°	63.1	63.1	63.1	63.1	63.1	58.3	53.4	48.5	46.1	46.1	46.1
57.5°	46.1	46.1	46.1	46.1	43.7	41.2	38.8	36.4	33.9	33.9	33.9
60°	33.9	33.9	33.9	33.9	31.5	29.1	29.1	26.7	26.7	26.7	26.7
62.5°	24.2	24.2	24.2	24.2	24.2	21.9	21.9	19.5	19.5	19.5	19.5
65°	17.0	17.0	17.0	17.0	17.0	17.0	14.6	14.6	14.6	14.6	14.6
67.5°	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
70°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
72.5°	4.9	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
75°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
80°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
82.5°	0.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	2.4	2.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.4	2.4
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°	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1	2019.1
2.5°	2002.1	2014.3	2014.3	2004.5	1997.2	2009.4	2011.8	2007.0
5°	1990.0	1999.7	1999.7	1990.0	1982.8	1997.2	1997.2	1994.8
7.5°	1956.0	1968.2	1965.7	1958.4	1951.1	1963.3	1968.2	1963.3
10°	1902.6	1914.8	1914.8	1907.5	1900.2	1914.8	1917.2	1912.3
12.5°	1851.7	1863.8	1868.6	1861.3	1858.9	1871.1	1875.9	1871.1
15°	1800.7	1815.2	1817.7	1815.2	1815.2	1829.8	1834.7	1829.8
17.5°	1740.0	1754.6	1759.5	1757.1	1759.5	1774.0	1781.3	1776.4
20°	1669.6	1681.8	1686.6	1686.6	1689.1	1708.5	1718.2	1715.7
22.5°	1594.4	1609.0	1616.3	1618.7	1621.2	1640.5	1650.3	1645.4
25°	1524.1	1536.1	1536.1	1536.1	1533.7	1548.3	1555.6	1550.7
27.5°	1439.1	1441.5	1434.3	1417.3	1405.1	1410.0	1414.8	1402.7
30°	1332.3	1317.8	1291.1	1254.7	1223.1	1211.0	1208.6	1189.1
32.5°	1196.4	1155.2	1099.4	1036.2	980.5	951.3	939.1	917.3
35°	1021.7	944.0	856.6	774.2	711.0	679.5	667.3	645.5
37.5°	798.5	701.4	609.2	538.7	497.5	470.8	463.5	451.4
40°	555.8	478.1	417.4	373.7	347.0	334.9	332.5	325.2
42.5°	366.5	322.8	291.3	269.4	257.2	250.0	250.0	245.1
45°	235.4	220.8	211.1	201.5	194.2	191.7	191.7	189.3
47.5°	152.9	155.4	155.4	152.9	148.1	145.6	148.1	145.6
50°	101.9	109.2	114.1	116.4	114.1	111.7	114.1	111.7
52.5°	70.3	77.6	84.9	87.4	84.9	82.5	82.5	82.5
55°	48.5	53.4	58.3	60.7	60.7	60.7	60.7	60.7
57.5°	36.4	38.8	41.2	43.7	46.1	43.7	46.1	43.7
60°	26.7	29.1	31.5	31.5	33.9	33.9	33.9	31.5
62.5°	19.5	21.9	21.9	24.2	24.2	24.2	24.2	24.2
65°	14.6	14.6	17.0	17.0	17.0	17.0	17.0	17.0
67.5°	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
70°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	7.3
72.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	4.9
75°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
80°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
82.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
85°	2.4	2.4	0.0	2.4	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)