

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: P209255

Luminaire Tested: **LDSQ4B40D010 EU4B30508040 4LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209255  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35089)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQ4B40D010 EU4B30508040 4LBCSSQ1MMS  
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE SHALLOW CAST METALLIC SILVER TRIM  
MEDIUM DISTRIBUTION WITH MATTE METALLIC SILVER TRIM  
WATTAGE D010TR-43.02 W DE010-42.54 W D5LT-42.539 W DMX-41.87 W DL2-41.57 W DL3-44.71 W DLE-39.33 W  
Light Source: HIGH LUMEN LED 4000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4154.2 lumens  
Efficiency: N/A  
Efficacy: 96.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Direct

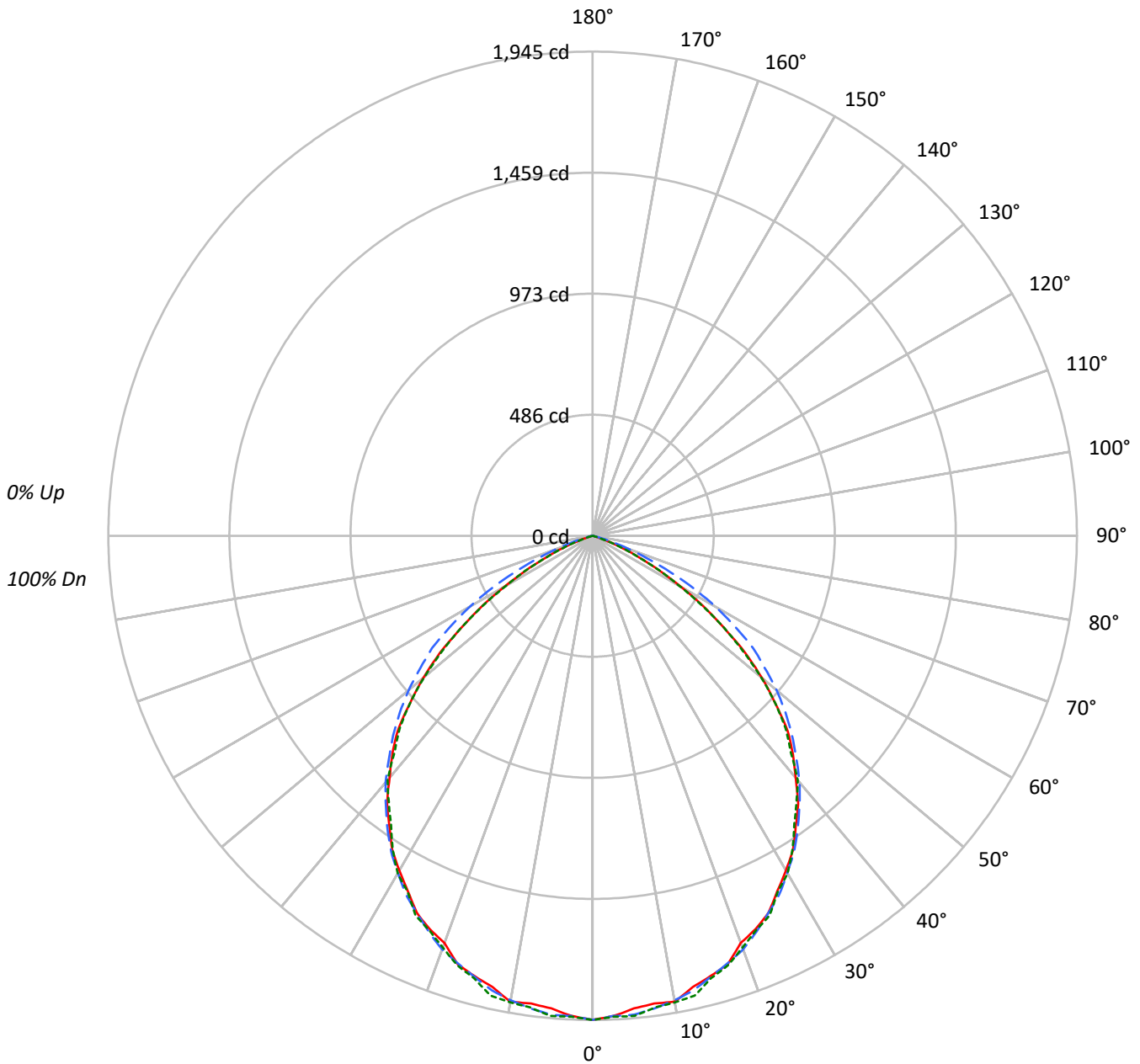
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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																			
1	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89																			
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77																			
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67																			
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41																			
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37																			
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33																			
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31																			

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

	0°	45°	90°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.6	4.4
10°-20°	519.4	12.5
20°-30°	770.7	18.6
30°-40°	893.0	21.5
40°-50°	856.2	20.6
50°-60°	629.5	15.2
60°-70°	271.9	6.5
70°-80°	29.3	0.7
80°-90°	0.4	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°	1473.7	35.5
0°-40°	2366.8	57.0
0°-60°	3852.5	92.7
0°-90°	4154.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4154.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1945	1945	1945	1945	1945	
5°	1906	1925	1931	1934	1936	182
15°	1831	1842	1834	1837	1840	516
25°	1671	1668	1671	1674	1682	765
35°	1423	1431	1436	1434	1412	890
45°	1108	1110	1132	1116	1097	842
55°	641	707	787	704	644	577
65°	210	262	342	260	204	216
75°	6	8	30	6	6	17
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7
2.5°	1930.8	1952.9	1955.7	1941.9	1936.4	1928.1	1947.4	1933.6	1939.1	1933.6	1930.8
5°	1906.0	1930.8	1933.6	1933.6	1928.1	1925.3	1933.6	1930.8	1928.1	1922.6	1930.8
7.5°	1894.9	1908.7	1922.6	1906.0	1914.3	1911.5	1930.8	1922.6	1919.8	1919.8	1914.3
10°	1900.5	1897.7	1908.7	1892.2	1897.7	1892.2	1908.7	1908.7	1903.2	1897.7	1894.9
12.5°	1856.3	1878.4	1878.4	1875.6	1870.1	1861.8	1878.4	1889.4	1872.8	1872.8	1870.1
15°	1831.4	1836.9	1839.7	1839.7	1836.9	1842.5	1850.7	1839.7	1842.5	1828.6	1834.2
17.5°	1803.8	1792.7	1801.0	1795.5	1798.3	1803.8	1814.8	1814.8	1798.3	1795.5	1801.0
20°	1740.2	1773.4	1776.2	1759.6	1762.3	1762.3	1781.7	1765.1	1776.2	1762.3	1767.9
22.5°	1709.9	1732.0	1734.7	1712.6	1726.4	1709.9	1729.2	1704.3	1732.0	1712.6	1720.9
25°	1671.2	1668.4	1676.7	1665.7	1668.4	1668.4	1682.2	1671.2	1679.5	1668.4	1671.2
27.5°	1607.7	1629.8	1627.0	1615.9	1621.5	1618.7	1646.3	1615.9	1632.5	1618.7	1624.2
30°	1552.4	1571.7	1566.2	1555.2	1555.2	1546.9	1577.3	1569.0	1566.2	1566.2	1563.5
32.5°	1497.2	1499.9	1494.4	1497.2	1499.9	1488.9	1513.7	1502.7	1499.9	1502.7	1505.5
35°	1422.6	1422.6	1428.1	1419.8	1430.9	1430.9	1453.0	1439.2	1436.4	1428.1	1436.4
37.5°	1356.3	1348.0	1350.8	1350.8	1356.3	1361.8	1372.9	1367.3	1367.3	1359.1	1364.6
40°	1267.9	1262.4	1270.7	1270.7	1278.9	1278.9	1290.0	1284.5	1292.8	1292.8	1292.8
42.5°	1190.6	1190.6	1185.0	1193.3	1196.1	1193.3	1212.6	1209.9	1212.6	1207.1	1209.9
45°	1107.7	1107.7	1102.2	1099.4	1113.2	1110.4	1132.5	1124.3	1135.3	1129.8	1132.5
47.5°	994.4	1008.2	1000.0	1008.2	1024.8	1027.6	1041.4	1035.9	1046.9	1038.6	1049.7
50°	886.7	886.7	895.0	906.0	922.6	925.4	941.9	953.0	958.5	961.3	964.0
52.5°	773.4	770.7	779.0	792.8	806.6	817.6	834.2	850.8	861.8	878.4	870.1
55°	640.9	646.4	654.7	671.2	693.3	707.1	721.0	743.1	762.4	770.7	787.3
57.5°	527.6	522.1	527.6	549.7	574.6	585.6	604.9	627.0	654.7	671.2	676.8
60°	408.8	411.6	417.1	436.4	455.8	472.4	480.6	516.6	541.4	558.0	569.0
62.5°	301.1	306.6	312.1	328.7	348.0	361.9	375.7	406.1	428.2	444.7	455.8
65°	209.9	212.7	221.0	229.3	248.6	262.4	273.5	298.3	320.4	334.2	342.5
67.5°	129.8	132.6	138.1	149.2	163.0	174.0	185.1	201.6	221.0	234.8	237.6
70°	66.3	69.1	71.8	80.1	91.2	96.7	105.0	118.8	132.6	143.6	149.2
72.5°	22.1	22.1	24.9	30.4	35.9	41.4	44.2	58.0	69.1	74.6	77.3
75°	5.5	5.5	5.5	5.5	5.5	8.3	8.3	16.6	22.1	27.6	30.4
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	5.5	5.5
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	0.0	0.0	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	0.0	0.0
87.5°	0.0	0.0	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	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7	1944.7
2.5°	1944.7	1939.1	1936.4	1939.1	1939.1	1936.4	1944.7	1955.7	1969.5	1933.6
5°	1941.9	1936.4	1941.9	1925.3	1933.6	1928.1	1939.1	1936.4	1947.4	1936.4
7.5°	1933.6	1922.6	1925.3	1917.0	1928.1	1914.3	1922.6	1939.1	1928.1	1911.5
10°	1906.0	1900.5	1919.8	1892.2	1886.7	1897.7	1919.8	1903.2	1897.7	1903.2
12.5°	1878.4	1878.4	1886.7	1864.6	1867.3	1872.8	1883.9	1872.8	1878.4	1892.2
15°	1848.0	1842.5	1856.3	1839.7	1836.9	1831.4	1842.5	1842.5	1848.0	1839.7
17.5°	1812.1	1803.8	1803.8	1798.3	1795.5	1809.3	1814.8	1817.6	1820.4	1809.3
20°	1767.9	1765.1	1773.4	1765.1	1767.9	1770.6	1770.6	1765.1	1790.0	1759.6
22.5°	1720.9	1729.2	1718.2	1712.6	1718.2	1723.7	1723.7	1726.4	1720.9	1715.4
25°	1674.0	1679.5	1682.2	1665.7	1674.0	1665.7	1685.0	1687.8	1676.7	1682.2
27.5°	1632.5	1624.2	1621.5	1610.4	1615.9	1613.2	1615.9	1615.9	1632.5	1610.4
30°	1569.0	1560.7	1563.5	1555.2	1557.9	1555.2	1557.9	1557.9	1569.0	1566.2
32.5°	1508.2	1499.9	1502.7	1494.4	1494.4	1497.2	1491.6	1491.6	1499.9	1494.4
35°	1450.2	1430.9	1433.6	1430.9	1433.6	1422.6	1422.6	1419.8	1425.3	1411.5
37.5°	1367.3	1359.1	1356.3	1353.5	1356.3	1350.8	1356.3	1348.0	1356.3	1345.2
40°	1292.8	1287.2	1290.0	1273.4	1273.4	1276.2	1270.7	1267.9	1270.7	1281.7
42.5°	1218.2	1207.1	1201.6	1196.1	1198.8	1190.6	1187.8	1182.3	1187.8	1176.7
45°	1129.8	1129.8	1127.0	1113.2	1116.0	1116.0	1104.9	1093.9	1096.6	1096.6
47.5°	1049.7	1044.1	1041.4	1027.6	1024.8	1022.1	1011.0	1002.7	1002.7	994.4
50°	961.3	955.8	947.5	933.7	928.1	911.6	903.3	892.2	881.2	881.2
52.5°	878.4	859.1	848.0	825.9	817.6	809.4	787.3	779.0	770.7	762.4
55°	779.0	762.4	740.3	715.4	704.4	690.6	668.5	651.9	640.9	643.6
57.5°	682.3	654.7	632.6	599.4	585.6	577.3	555.2	533.1	522.1	522.1
60°	563.5	541.4	513.8	483.4	472.4	458.5	430.9	417.1	408.8	400.5
62.5°	450.3	433.7	408.8	370.1	361.9	348.0	328.7	312.1	303.9	303.9
65°	337.0	320.4	298.3	270.7	259.7	248.6	232.0	215.5	207.2	204.4
67.5°	237.6	218.2	198.9	176.8	168.5	163.0	146.4	135.4	129.8	127.1
70°	143.6	132.6	118.8	102.2	93.9	88.4	77.3	69.1	66.3	63.5
72.5°	74.6	66.3	55.2	44.2	38.7	33.1	27.6	22.1	19.3	19.3
75°	27.6	22.1	13.8	8.3	5.5	5.5	5.5	5.5	5.5	5.5
77.5°	5.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	0.0	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	0.0
87.5°	0.0	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	0.0



Report Generated By E9808895 / USPTCWHP6082093







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









(END OF REPORT)