

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: P209253

Luminaire Tested: **LDSQ4B40D010 EU4B30508027 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209253
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 EU4B30508027 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 2700 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3836.3 lumens
Efficiency: N/A
Efficacy: 89.2 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

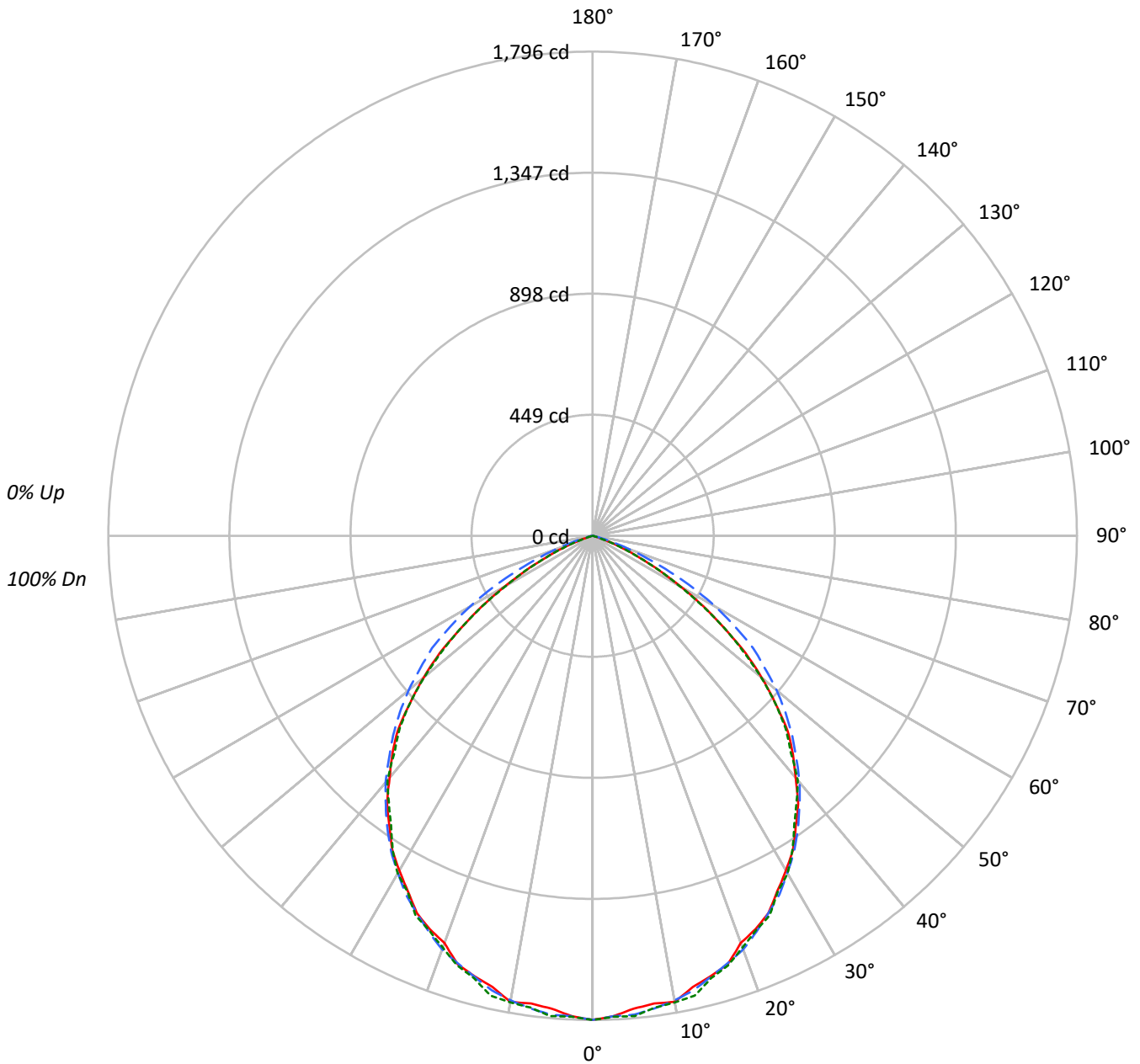
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	169.5	4.4
10°-20°	479.7	12.5
20°-30°	711.8	18.6
30°-40°	824.7	21.5
40°-50°	790.7	20.6
50°-60°	581.4	15.2
60°-70°	251.1	6.5
70°-80°	27.1	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°	1361.0	35.5
0°-40°	2185.7	57.0
0°-60°	3557.8	92.7
0°-90°	3836.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3836.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1796	1796	1796	1796	1796	
5°	1760	1778	1783	1786	1788	168
15°	1691	1702	1694	1696	1699	477
25°	1543	1541	1543	1546	1554	707
35°	1314	1321	1326	1324	1304	821
45°	1023	1026	1046	1031	1013	778
55°	592	653	727	650	594	533
65°	194	242	316	240	189	199
75°	5	8	28	5	5	16
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°	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9
2.5°	1783.1	1803.5	1806.1	1793.3	1788.2	1780.6	1798.4	1785.7	1790.8	1785.7	1783.1
5°	1760.2	1783.1	1785.7	1785.7	1780.6	1778.0	1785.7	1783.1	1780.6	1775.5	1783.1
7.5°	1750.0	1762.7	1775.5	1760.2	1767.8	1765.3	1783.1	1775.5	1772.9	1772.9	1767.8
10°	1755.1	1752.5	1762.7	1747.4	1752.5	1747.4	1762.7	1762.7	1757.6	1752.5	1750.0
12.5°	1714.2	1734.6	1734.6	1732.1	1727.0	1719.3	1734.6	1744.9	1729.5	1729.5	1727.0
15°	1691.3	1696.4	1698.9	1698.9	1696.4	1701.5	1709.1	1698.9	1701.5	1688.7	1693.8
17.5°	1665.8	1655.6	1663.2	1658.1	1660.7	1665.8	1676.0	1676.0	1660.7	1658.1	1663.2
20°	1607.1	1637.7	1640.3	1625.0	1627.5	1627.5	1645.4	1630.1	1640.3	1627.5	1632.6
22.5°	1579.0	1599.4	1602.0	1581.6	1594.3	1579.0	1596.9	1573.9	1599.4	1581.6	1589.2
25°	1543.3	1540.8	1548.4	1538.2	1540.8	1540.8	1553.5	1543.3	1551.0	1540.8	1543.3
27.5°	1484.7	1505.1	1502.5	1492.3	1497.4	1494.9	1520.4	1492.3	1507.6	1494.9	1500.0
30°	1433.6	1451.5	1446.4	1436.2	1436.2	1428.5	1456.6	1448.9	1446.4	1446.4	1443.8
32.5°	1382.6	1385.2	1380.1	1382.6	1385.2	1375.0	1397.9	1387.7	1385.2	1387.7	1390.3
35°	1313.7	1313.7	1318.8	1311.2	1321.4	1321.4	1341.8	1329.0	1326.5	1318.8	1326.5
37.5°	1252.5	1244.9	1247.4	1247.4	1252.5	1257.6	1267.8	1262.7	1262.7	1255.1	1260.2
40°	1170.9	1165.8	1173.4	1173.4	1181.1	1181.1	1191.3	1186.2	1193.8	1193.8	1193.8
42.5°	1099.5	1099.5	1094.4	1102.0	1104.6	1102.0	1119.9	1117.3	1119.9	1114.8	1117.3
45°	1022.9	1022.9	1017.8	1015.3	1028.0	1025.5	1045.9	1038.2	1048.4	1043.3	1045.9
47.5°	918.3	931.1	923.4	931.1	946.4	949.0	961.7	956.6	966.8	959.2	969.4
50°	818.9	818.9	826.5	836.7	852.0	854.6	869.9	880.1	885.2	887.7	890.3
52.5°	714.3	711.7	719.4	732.1	744.9	755.1	770.4	785.7	795.9	811.2	803.5
55°	591.8	596.9	604.6	619.9	640.3	653.0	665.8	686.2	704.1	711.7	727.0
57.5°	487.2	482.1	487.2	507.6	530.6	540.8	558.7	579.1	604.6	619.9	625.0
60°	377.5	380.1	385.2	403.1	420.9	436.2	443.9	477.0	500.0	515.3	525.5
62.5°	278.1	283.2	288.3	303.6	321.4	334.2	346.9	375.0	395.4	410.7	420.9
65°	193.9	196.4	204.1	211.7	229.6	242.3	252.5	275.5	295.9	308.7	316.3
67.5°	119.9	122.4	127.5	137.8	150.5	160.7	170.9	186.2	204.1	216.8	219.4
70°	61.2	63.8	66.3	74.0	84.2	89.3	96.9	109.7	122.4	132.6	137.8
72.5°	20.4	20.4	23.0	28.1	33.2	38.3	40.8	53.6	63.8	68.9	71.4
75°	5.1	5.1	5.1	5.1	5.1	7.7	7.7	15.3	20.4	25.5	28.1
77.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	5.1	5.1
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	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°	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9
2.5°	1795.9	1790.8	1788.2	1790.8	1790.8	1788.2	1795.9	1806.1	1818.8	1785.7
5°	1793.3	1788.2	1793.3	1778.0	1785.7	1780.6	1790.8	1788.2	1798.4	1788.2
7.5°	1785.7	1775.5	1778.0	1770.4	1780.6	1767.8	1775.5	1790.8	1780.6	1765.3
10°	1760.2	1755.1	1772.9	1747.4	1742.3	1752.5	1772.9	1757.6	1752.5	1757.6
12.5°	1734.6	1734.6	1742.3	1721.9	1724.4	1729.5	1739.7	1729.5	1734.6	1747.4
15°	1706.6	1701.5	1714.2	1698.9	1696.4	1691.3	1701.5	1701.5	1706.6	1698.9
17.5°	1673.4	1665.8	1665.8	1660.7	1658.1	1670.9	1676.0	1678.5	1681.1	1670.9
20°	1632.6	1630.1	1637.7	1630.1	1632.6	1635.2	1635.2	1630.1	1653.0	1625.0
22.5°	1589.2	1596.9	1586.7	1581.6	1586.7	1591.8	1591.8	1594.3	1589.2	1584.1
25°	1545.9	1551.0	1553.5	1538.2	1545.9	1538.2	1556.1	1558.6	1548.4	1553.5
27.5°	1507.6	1500.0	1497.4	1487.2	1492.3	1489.8	1492.3	1492.3	1507.6	1487.2
30°	1448.9	1441.3	1443.8	1436.2	1438.7	1436.2	1438.7	1438.7	1448.9	1446.4
32.5°	1392.8	1385.2	1387.7	1380.1	1380.1	1382.6	1377.5	1377.5	1385.2	1380.1
35°	1339.2	1321.4	1323.9	1321.4	1323.9	1313.7	1313.7	1311.2	1316.3	1303.5
37.5°	1262.7	1255.1	1252.5	1250.0	1252.5	1247.4	1252.5	1244.9	1252.5	1242.3
40°	1193.8	1188.7	1191.3	1176.0	1176.0	1178.5	1173.4	1170.9	1173.4	1183.6
42.5°	1125.0	1114.8	1109.7	1104.6	1107.1	1099.5	1096.9	1091.8	1096.9	1086.7
45°	1043.3	1043.3	1040.8	1028.0	1030.6	1030.6	1020.4	1010.2	1012.7	1012.7
47.5°	969.4	964.3	961.7	949.0	946.4	943.9	933.6	926.0	926.0	918.3
50°	887.7	882.6	875.0	862.2	857.1	841.8	834.2	824.0	813.8	813.8
52.5°	811.2	793.3	783.1	762.7	755.1	747.4	727.0	719.4	711.7	704.1
55°	719.4	704.1	683.7	660.7	650.5	637.7	617.3	602.0	591.8	594.4
57.5°	630.1	604.6	584.2	553.6	540.8	533.1	512.7	492.3	482.1	482.1
60°	520.4	500.0	474.5	446.4	436.2	423.5	397.9	385.2	377.5	369.9
62.5°	415.8	400.5	377.5	341.8	334.2	321.4	303.6	288.3	280.6	280.6
65°	311.2	295.9	275.5	250.0	239.8	229.6	214.3	199.0	191.3	188.8
67.5°	219.4	201.5	183.7	163.3	155.6	150.5	135.2	125.0	119.9	117.3
70°	132.6	122.4	109.7	94.4	86.7	81.6	71.4	63.8	61.2	58.7
72.5°	68.9	61.2	51.0	40.8	35.7	30.6	25.5	20.4	17.9	17.9
75°	25.5	20.4	12.8	7.7	5.1	5.1	5.1	5.1	5.1	5.1
77.5°	5.1	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
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)