

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: P209261

Luminaire Tested: **LDSQ4B40D010 EU4B30509040 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209261
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 EU4B30509040 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: 3479.9 lumens
Efficiency: N/A
Efficacy: 80.9 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

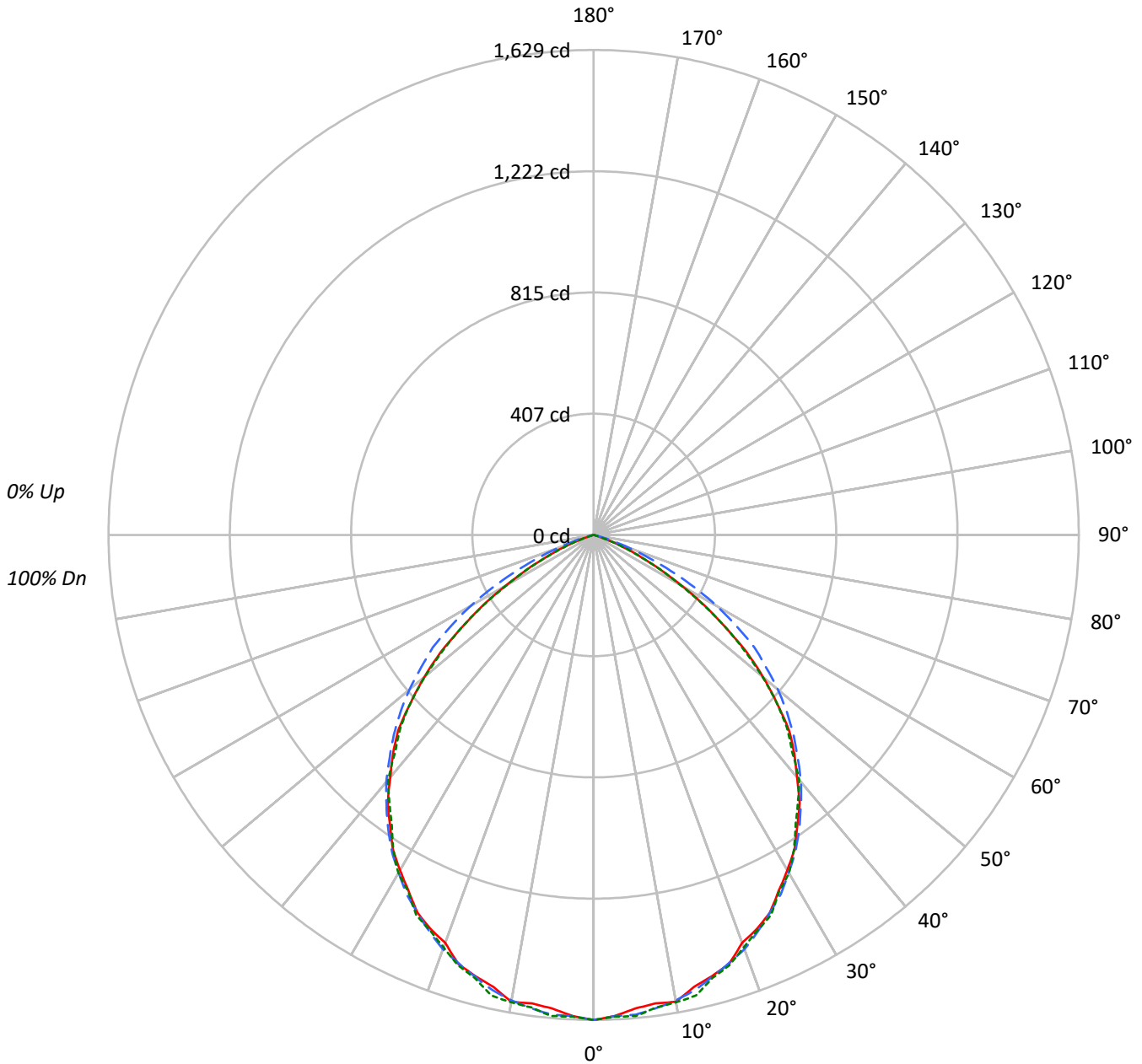
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	153.8	4.4
10°-20°	435.1	12.5
20°-30°	645.6	18.6
30°-40°	748.1	21.5
40°-50°	717.3	20.6
50°-60°	527.4	15.2
60°-70°	227.8	6.5
70°-80°	24.6	0.7
80°-90°	0.3	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°	1234.5	35.5
0°-40°	1982.6	57.0
0°-60°	3227.2	92.7
0°-90°	3479.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3479.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1629	1629	1629	1629	1629	
5°	1597	1613	1618	1620	1622	152
15°	1534	1543	1536	1539	1541	432
25°	1400	1398	1400	1402	1409	641
35°	1192	1199	1203	1201	1182	745
45°	928	930	949	935	919	705
55°	537	592	660	590	539	483
65°	176	220	287	218	171	181
75°	5	7	26	5	5	14
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°	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0
2.5°	1617.5	1636.0	1638.3	1626.7	1622.1	1615.1	1631.3	1619.8	1624.4	1619.8	1617.5
5°	1596.6	1617.5	1619.8	1619.8	1615.1	1612.8	1619.8	1617.5	1615.1	1610.5	1617.5
7.5°	1587.4	1598.9	1610.5	1596.6	1603.6	1601.3	1617.5	1610.5	1608.2	1608.2	1603.6
10°	1592.0	1589.7	1598.9	1585.1	1589.7	1585.1	1598.9	1598.9	1594.3	1589.7	1587.4
12.5°	1555.0	1573.5	1573.5	1571.2	1566.6	1559.6	1573.5	1582.7	1568.9	1568.9	1566.6
15°	1534.2	1538.8	1541.1	1541.1	1538.8	1543.4	1550.4	1541.1	1543.4	1531.8	1536.5
17.5°	1511.0	1501.8	1508.7	1504.1	1506.4	1511.0	1520.3	1520.3	1506.4	1504.1	1508.7
20°	1457.8	1485.6	1487.9	1474.0	1476.3	1476.3	1492.5	1478.6	1487.9	1476.3	1480.9
22.5°	1432.3	1450.9	1453.2	1434.7	1446.2	1432.3	1448.5	1427.7	1450.9	1434.7	1441.6
25°	1399.9	1397.6	1404.6	1395.3	1397.6	1397.6	1409.2	1399.9	1406.9	1397.6	1399.9
27.5°	1346.7	1365.2	1362.9	1353.7	1358.3	1356.0	1379.1	1353.7	1367.6	1356.0	1360.6
30°	1300.4	1316.6	1312.0	1302.8	1302.8	1295.8	1321.3	1314.3	1312.0	1312.0	1309.7
32.5°	1254.2	1256.5	1251.9	1254.2	1256.5	1247.2	1268.1	1258.8	1256.5	1258.8	1261.1
35°	1191.7	1191.7	1196.3	1189.4	1198.6	1198.6	1217.1	1205.6	1203.3	1196.3	1203.3
37.5°	1136.2	1129.2	1131.5	1131.5	1136.2	1140.8	1150.0	1145.4	1145.4	1138.5	1143.1
40°	1062.1	1057.5	1064.4	1064.4	1071.4	1071.4	1080.6	1076.0	1082.9	1082.9	1082.9
42.5°	997.3	997.3	992.7	999.6	1001.9	999.6	1015.8	1013.5	1015.8	1011.2	1013.5
45°	927.9	927.9	923.3	921.0	932.5	930.2	948.7	941.8	951.0	946.4	948.7
47.5°	833.0	844.6	837.7	844.6	858.5	860.8	872.4	867.7	877.0	870.0	879.3
50°	742.8	742.8	749.7	759.0	772.9	775.2	789.1	798.3	802.9	805.3	807.6
52.5°	647.9	645.6	652.5	664.1	675.7	684.9	698.8	712.7	722.0	735.8	728.9
55°	536.8	541.5	548.4	562.3	580.8	592.4	603.9	622.5	638.7	645.6	659.5
57.5°	442.0	437.3	442.0	460.5	481.3	490.6	506.8	525.3	548.4	562.3	566.9
60°	342.5	344.8	349.4	365.6	381.8	395.7	402.6	432.7	453.5	467.4	476.7
62.5°	252.2	256.8	261.5	275.4	291.6	303.1	314.7	340.2	358.7	372.5	381.8
65°	175.9	178.2	185.1	192.1	208.3	219.8	229.1	249.9	268.4	280.0	286.9
67.5°	108.8	111.1	115.7	125.0	136.5	145.8	155.0	168.9	185.1	196.7	199.0
70°	55.5	57.8	60.2	67.1	76.4	81.0	87.9	99.5	111.1	120.3	125.0
72.5°	18.5	18.5	20.8	25.5	30.1	34.7	37.0	48.6	57.8	62.5	64.8
75°	4.6	4.6	4.6	4.6	4.6	6.9	6.9	13.9	18.5	23.1	25.5
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	4.6	4.6
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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°	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0	1629.0
2.5°	1629.0	1624.4	1622.1	1624.4	1624.4	1622.1	1629.0	1638.3	1649.9	1619.8
5°	1626.7	1622.1	1626.7	1612.8	1619.8	1615.1	1624.4	1622.1	1631.3	1622.1
7.5°	1619.8	1610.5	1612.8	1605.9	1615.1	1603.6	1610.5	1624.4	1615.1	1601.3
10°	1596.6	1592.0	1608.2	1585.1	1580.4	1589.7	1608.2	1594.3	1589.7	1594.3
12.5°	1573.5	1573.5	1580.4	1561.9	1564.2	1568.9	1578.1	1568.9	1573.5	1585.1
15°	1548.0	1543.4	1555.0	1541.1	1538.8	1534.2	1543.4	1543.4	1548.0	1541.1
17.5°	1518.0	1511.0	1511.0	1506.4	1504.1	1515.6	1520.3	1522.6	1524.9	1515.6
20°	1480.9	1478.6	1485.6	1478.6	1480.9	1483.2	1483.2	1478.6	1499.4	1474.0
22.5°	1441.6	1448.5	1439.3	1434.7	1439.3	1443.9	1443.9	1446.2	1441.6	1437.0
25°	1402.3	1406.9	1409.2	1395.3	1402.3	1395.3	1411.5	1413.8	1404.6	1409.2
27.5°	1367.6	1360.6	1358.3	1349.0	1353.7	1351.4	1353.7	1353.7	1367.6	1349.0
30°	1314.3	1307.4	1309.7	1302.8	1305.1	1302.8	1305.1	1305.1	1314.3	1312.0
32.5°	1263.4	1256.5	1258.8	1251.9	1251.9	1254.2	1249.5	1249.5	1256.5	1251.9
35°	1214.8	1198.6	1200.9	1198.6	1200.9	1191.7	1191.7	1189.4	1194.0	1182.4
37.5°	1145.4	1138.5	1136.2	1133.8	1136.2	1131.5	1136.2	1129.2	1136.2	1126.9
40°	1082.9	1078.3	1080.6	1066.7	1066.7	1069.0	1064.4	1062.1	1064.4	1073.7
42.5°	1020.5	1011.2	1006.6	1001.9	1004.3	997.3	995.0	990.4	995.0	985.7
45°	946.4	946.4	944.1	932.5	934.8	934.8	925.6	916.3	918.6	918.6
47.5°	879.3	874.7	872.4	860.8	858.5	856.2	846.9	840.0	840.0	833.0
50°	805.3	800.6	793.7	782.1	777.5	763.6	756.7	747.4	738.2	738.2
52.5°	735.8	719.6	710.4	691.9	684.9	678.0	659.5	652.5	645.6	638.7
55°	652.5	638.7	620.1	599.3	590.1	578.5	560.0	546.1	536.8	539.2
57.5°	571.5	548.4	529.9	502.1	490.6	483.6	465.1	446.6	437.3	437.3
60°	472.0	453.5	430.4	404.9	395.7	384.1	361.0	349.4	342.5	335.5
62.5°	377.2	363.3	342.5	310.1	303.1	291.6	275.4	261.5	254.5	254.5
65°	282.3	268.4	249.9	226.8	217.5	208.3	194.4	180.5	173.5	171.2
67.5°	199.0	182.8	166.6	148.1	141.2	136.5	122.6	113.4	108.8	106.4
70°	120.3	111.1	99.5	85.6	78.7	74.0	64.8	57.8	55.5	53.2
72.5°	62.5	55.5	46.3	37.0	32.4	27.8	23.1	18.5	16.2	16.2
75°	23.1	18.5	11.6	6.9	4.6	4.6	4.6	4.6	4.6	4.6
77.5°	4.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)