

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: P209258

Luminaire Tested: **LDSQ4B40D010 EU4B30509027 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209258
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 EU4B30509027 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: 3294.1 lumens
Efficiency: N/A
Efficacy: 76.6 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

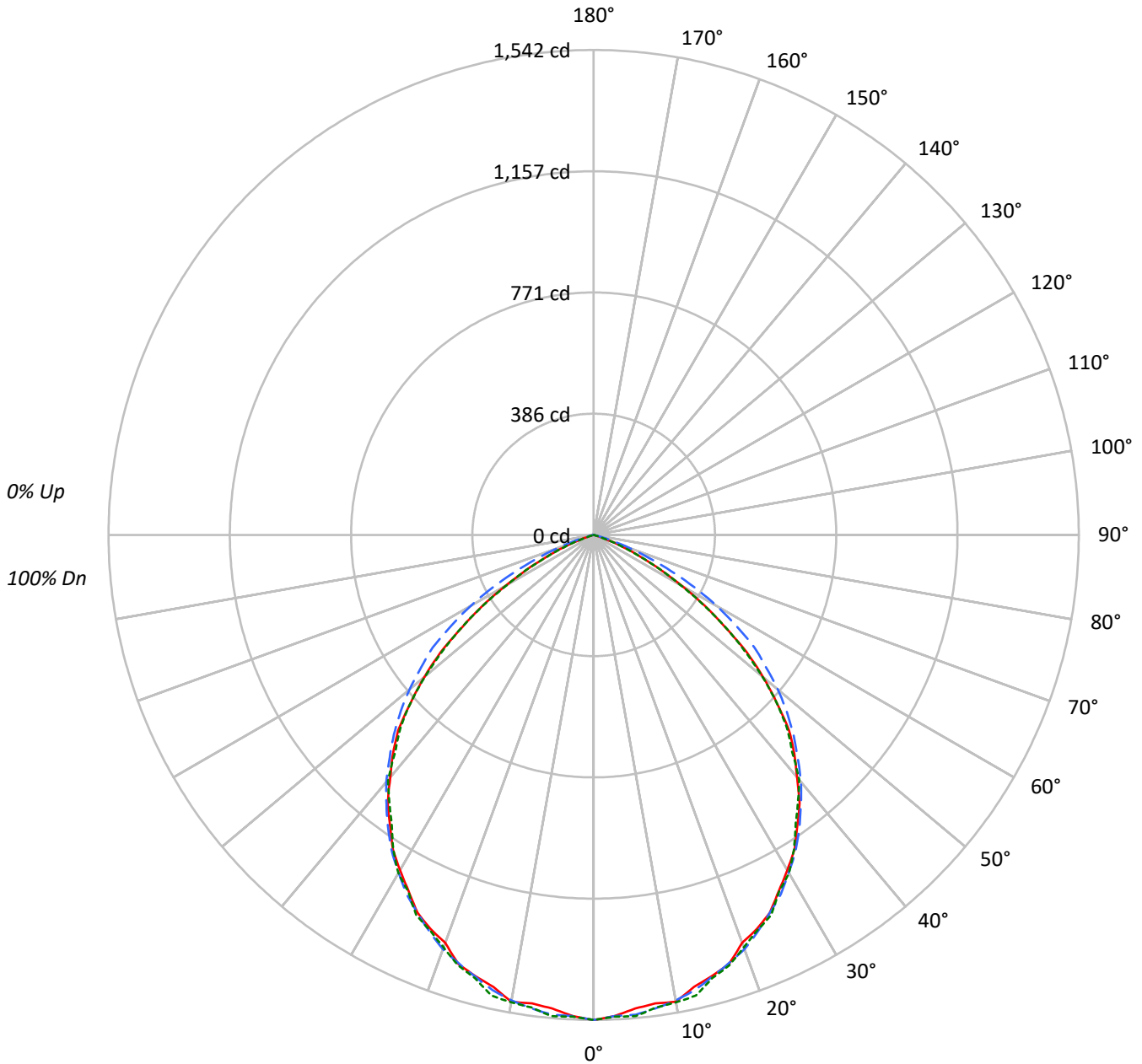
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	145.6	4.4
10°-20°	411.9	12.5
20°-30°	611.2	18.6
30°-40°	708.2	21.5
40°-50°	679.0	20.6
50°-60°	499.2	15.2
60°-70°	215.6	6.5
70°-80°	23.3	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°	1168.6	35.5
0°-40°	1876.8	57.0
0°-60°	3054.9	92.7
0°-90°	3294.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3294.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1542	1542	1542	1542	1542	
5°	1511	1527	1531	1533	1536	144
15°	1452	1461	1454	1457	1459	409
25°	1325	1323	1325	1327	1334	607
35°	1128	1135	1139	1137	1119	705
45°	878	880	898	885	870	668
55°	508	561	624	559	510	457
65°	166	208	272	206	162	171
75°	4	7	24	4	4	13
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°	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1
2.5°	1531.1	1548.6	1550.8	1539.9	1535.5	1528.9	1544.2	1533.3	1537.7	1533.3	1531.1
5°	1511.4	1531.1	1533.3	1533.3	1528.9	1526.7	1533.3	1531.1	1528.9	1524.5	1531.1
7.5°	1502.6	1513.6	1524.5	1511.4	1518.0	1515.8	1531.1	1524.5	1522.3	1522.3	1518.0
10°	1507.0	1504.8	1513.6	1500.4	1504.8	1500.4	1513.6	1513.6	1509.2	1504.8	1502.6
12.5°	1472.0	1489.5	1489.5	1487.3	1482.9	1476.3	1489.5	1498.2	1485.1	1485.1	1482.9
15°	1452.2	1456.6	1458.8	1458.8	1456.6	1461.0	1467.6	1458.8	1461.0	1450.1	1454.4
17.5°	1430.3	1421.6	1428.2	1423.8	1426.0	1430.3	1439.1	1439.1	1426.0	1423.8	1428.2
20°	1380.0	1406.2	1408.4	1395.3	1397.5	1397.5	1412.8	1399.7	1408.4	1397.5	1401.9
22.5°	1355.9	1373.4	1375.6	1358.1	1369.0	1355.9	1371.2	1351.5	1373.4	1358.1	1364.6
25°	1325.2	1323.0	1329.6	1320.8	1323.0	1323.0	1334.0	1325.2	1331.8	1323.0	1325.2
27.5°	1274.8	1292.3	1290.2	1281.4	1285.8	1283.6	1305.5	1281.4	1294.5	1283.6	1288.0
30°	1231.0	1246.3	1242.0	1233.2	1233.2	1226.6	1250.7	1244.2	1242.0	1242.0	1239.8
32.5°	1187.2	1189.4	1185.0	1187.2	1189.4	1180.6	1200.3	1191.6	1189.4	1191.6	1193.8
35°	1128.1	1128.1	1132.4	1125.9	1134.6	1134.6	1152.2	1141.2	1139.0	1132.4	1139.0
37.5°	1075.5	1068.9	1071.1	1071.1	1075.5	1079.9	1088.6	1084.3	1084.3	1077.7	1082.1
40°	1005.4	1001.0	1007.6	1007.6	1014.2	1014.2	1022.9	1018.5	1025.1	1025.1	1025.1
42.5°	944.1	944.1	939.7	946.3	948.4	946.3	961.6	959.4	961.6	957.2	959.4
45°	878.4	878.4	874.0	871.8	882.7	880.5	898.1	891.5	900.3	895.9	898.1
47.5°	788.5	799.5	792.9	799.5	812.6	814.8	825.8	821.4	830.2	823.6	832.4
50°	703.1	703.1	709.7	718.5	731.6	733.8	746.9	755.7	760.1	762.3	764.5
52.5°	613.3	611.1	617.7	628.6	639.6	648.4	661.5	674.6	683.4	696.6	690.0
55°	508.2	512.6	519.1	532.3	549.8	560.7	571.7	589.2	604.6	611.1	624.3
57.5°	418.4	414.0	418.4	435.9	455.6	464.4	479.7	497.2	519.1	532.3	536.7
60°	324.2	326.4	330.8	346.1	361.4	374.6	381.1	409.6	429.3	442.5	451.2
62.5°	238.8	243.1	247.5	260.7	276.0	286.9	297.9	322.0	339.5	352.7	361.4
65°	166.5	168.7	175.2	181.8	197.1	208.1	216.9	236.6	254.1	265.0	271.6
67.5°	102.9	105.1	109.5	118.3	129.2	138.0	146.8	159.9	175.2	186.2	188.4
70°	52.6	54.8	57.0	63.5	72.3	76.7	83.2	94.2	105.1	113.9	118.3
72.5°	17.5	17.5	19.7	24.1	28.5	32.9	35.0	46.0	54.8	59.1	61.3
75°	4.4	4.4	4.4	4.4	4.4	6.6	6.6	13.1	17.5	21.9	24.1
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	4.4	4.4
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1	1542.1
2.5°	1542.1	1537.7	1535.5	1537.7	1537.7	1535.5	1542.1	1550.8	1561.8	1533.3
5°	1539.9	1535.5	1539.9	1526.7	1533.3	1528.9	1537.7	1535.5	1544.2	1535.5
7.5°	1533.3	1524.5	1526.7	1520.1	1528.9	1518.0	1524.5	1537.7	1528.9	1515.8
10°	1511.4	1507.0	1522.3	1500.4	1496.1	1504.8	1522.3	1509.2	1504.8	1509.2
12.5°	1489.5	1489.5	1496.1	1478.5	1480.7	1485.1	1493.9	1485.1	1489.5	1500.4
15°	1465.4	1461.0	1472.0	1458.8	1456.6	1452.2	1461.0	1461.0	1465.4	1458.8
17.5°	1436.9	1430.3	1430.3	1426.0	1423.8	1434.7	1439.1	1441.3	1443.5	1434.7
20°	1401.9	1399.7	1406.2	1399.7	1401.9	1404.1	1404.1	1399.7	1419.4	1395.3
22.5°	1364.6	1371.2	1362.4	1358.1	1362.4	1366.8	1366.8	1369.0	1364.6	1360.2
25°	1327.4	1331.8	1334.0	1320.8	1327.4	1320.8	1336.2	1338.3	1329.6	1334.0
27.5°	1294.5	1288.0	1285.8	1277.0	1281.4	1279.2	1281.4	1281.4	1294.5	1277.0
30°	1244.2	1237.6	1239.8	1233.2	1235.4	1233.2	1235.4	1235.4	1244.2	1242.0
32.5°	1196.0	1189.4	1191.6	1185.0	1185.0	1187.2	1182.8	1182.8	1189.4	1185.0
35°	1150.0	1134.6	1136.8	1134.6	1136.8	1128.1	1128.1	1125.9	1130.3	1119.3
37.5°	1084.3	1077.7	1075.5	1073.3	1075.5	1071.1	1075.5	1068.9	1075.5	1066.7
40°	1025.1	1020.7	1022.9	1009.8	1009.8	1012.0	1007.6	1005.4	1007.6	1016.4
42.5°	966.0	957.2	952.8	948.4	950.6	944.1	941.9	937.5	941.9	933.1
45°	895.9	895.9	893.7	882.7	884.9	884.9	876.2	867.4	869.6	869.6
47.5°	832.4	828.0	825.8	814.8	812.6	810.5	801.7	795.1	795.1	788.5
50°	762.3	757.9	751.3	740.4	736.0	722.8	716.3	707.5	698.7	698.7
52.5°	696.6	681.2	672.5	654.9	648.4	641.8	624.3	617.7	611.1	604.6
55°	617.7	604.6	587.0	567.3	558.6	547.6	530.1	516.9	508.2	510.4
57.5°	541.0	519.1	501.6	475.3	464.4	457.8	440.3	422.8	414.0	414.0
60°	446.8	429.3	407.4	383.3	374.6	363.6	341.7	330.8	324.2	317.6
62.5°	357.0	343.9	324.2	293.5	286.9	276.0	260.7	247.5	240.9	240.9
65°	267.2	254.1	236.6	214.7	205.9	197.1	184.0	170.9	164.3	162.1
67.5°	188.4	173.0	157.7	140.2	133.6	129.2	116.1	107.3	102.9	100.8
70°	113.9	105.1	94.2	81.0	74.5	70.1	61.3	54.8	52.6	50.4
72.5°	59.1	52.6	43.8	35.0	30.7	26.3	21.9	17.5	15.3	15.3
75°	21.9	17.5	11.0	6.6	4.4	4.4	4.4	4.4	4.4	4.4
77.5°	4.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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)