

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: P209259

Luminaire Tested: **LDSQ4B40D010 EU4B30509030 4LBCSSQ1MMS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209259  
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 EU4B30509030 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 3000 K  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3425.0 lumens  
Efficiency: N/A  
Efficacy: 79.6 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

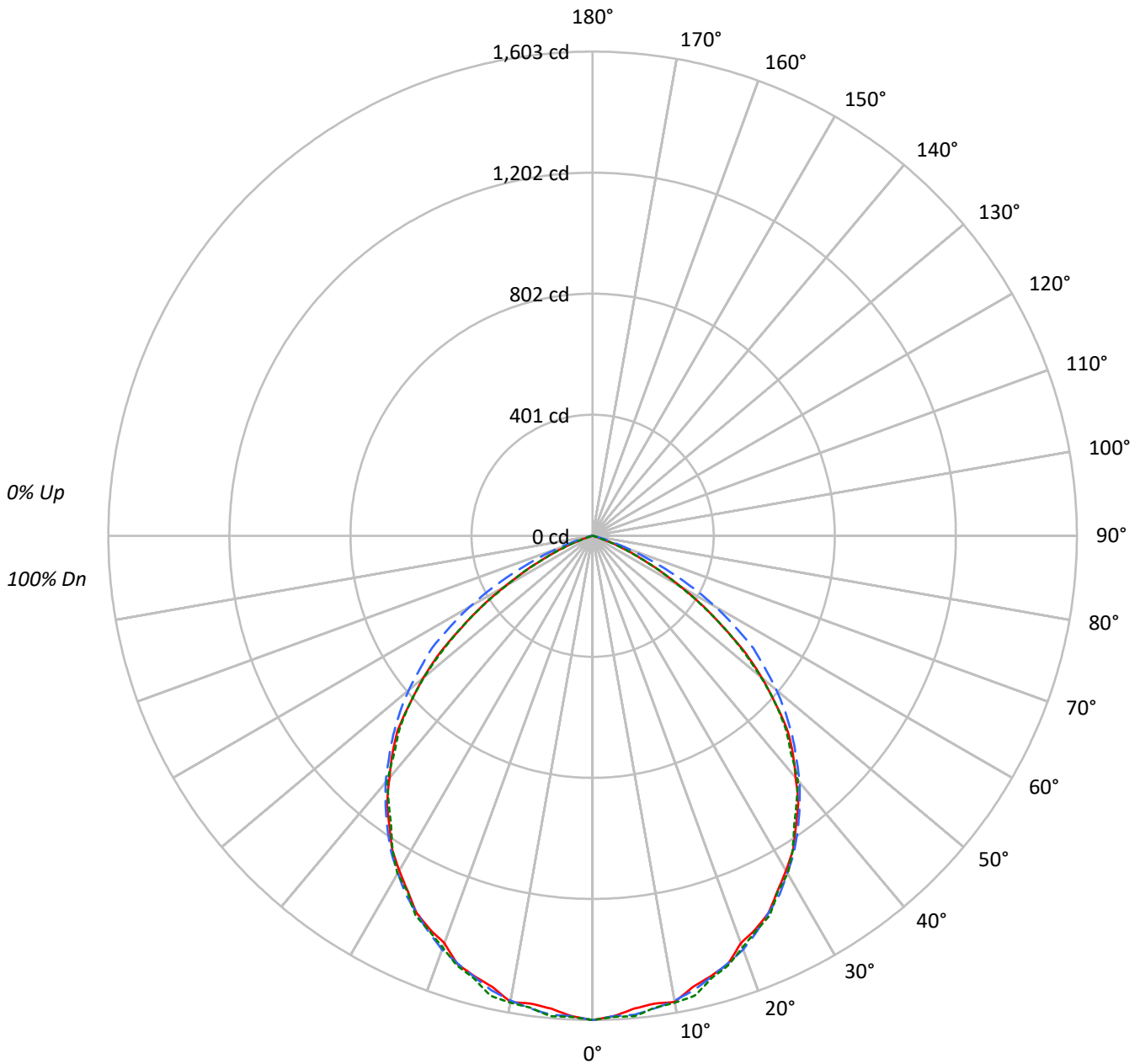
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	151.3	4.4
10°-20°	428.3	12.5
20°-30°	635.4	18.6
30°-40°	736.3	21.5
40°-50°	705.9	20.6
50°-60°	519.0	15.2
60°-70°	224.2	6.5
70°-80°	24.2	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°	1215.0	35.5
0°-40°	1951.3	57.0
0°-60°	3176.3	92.7
0°-90°	3425.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3425.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1603	1603	1603	1603	1603	
5°	1571	1587	1592	1594	1596	150
15°	1510	1519	1512	1514	1517	426
25°	1378	1376	1378	1380	1387	631
35°	1173	1180	1184	1182	1164	733
45°	913	916	934	920	904	694
55°	528	583	649	581	531	475
65°	173	216	282	214	168	178
75°	5	7	25	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°	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3
2.5°	1591.9	1610.2	1612.4	1601.0	1596.5	1589.7	1605.6	1594.2	1598.8	1594.2	1591.9
5°	1571.4	1591.9	1594.2	1594.2	1589.7	1587.4	1594.2	1591.9	1589.7	1585.1	1591.9
7.5°	1562.3	1573.7	1585.1	1571.4	1578.3	1576.0	1591.9	1585.1	1582.8	1582.8	1578.3
10°	1566.9	1564.6	1573.7	1560.0	1564.6	1560.0	1573.7	1573.7	1569.2	1564.6	1562.3
12.5°	1530.4	1548.7	1548.7	1546.4	1541.8	1535.0	1548.7	1557.8	1544.1	1544.1	1541.8
15°	1509.9	1514.5	1516.8	1516.8	1514.5	1519.1	1525.9	1516.8	1519.1	1507.7	1512.2
17.5°	1487.2	1478.1	1484.9	1480.3	1482.6	1487.2	1496.3	1496.3	1482.6	1480.3	1484.9
20°	1434.8	1462.1	1464.4	1450.7	1453.0	1453.0	1468.9	1455.3	1464.4	1453.0	1457.6
22.5°	1409.7	1428.0	1430.2	1412.0	1423.4	1409.7	1425.7	1405.2	1428.0	1412.0	1418.8
25°	1377.9	1375.6	1382.4	1373.3	1375.6	1375.6	1387.0	1377.9	1384.7	1375.6	1377.9
27.5°	1325.5	1343.7	1341.4	1332.3	1336.9	1334.6	1357.4	1332.3	1346.0	1334.6	1339.1
30°	1279.9	1295.9	1291.3	1282.2	1282.2	1275.4	1300.4	1293.6	1291.3	1291.3	1289.0
32.5°	1234.4	1236.7	1232.1	1234.4	1236.7	1227.5	1248.0	1238.9	1236.7	1238.9	1241.2
35°	1172.9	1172.9	1177.4	1170.6	1179.7	1179.7	1197.9	1186.5	1184.3	1177.4	1184.3
37.5°	1118.2	1111.4	1113.7	1113.7	1118.2	1122.8	1131.9	1127.3	1127.3	1120.5	1125.1
40°	1045.3	1040.8	1047.6	1047.6	1054.5	1054.5	1063.6	1059.0	1065.8	1065.8	1065.8
42.5°	981.6	981.6	977.0	983.9	986.1	983.9	999.8	997.5	999.8	995.2	997.5
45°	913.3	913.3	908.7	906.4	917.8	915.5	933.8	926.9	936.0	931.5	933.8
47.5°	819.9	831.3	824.4	831.3	844.9	847.2	858.6	854.0	863.2	856.3	865.4
50°	731.1	731.1	737.9	747.0	760.7	762.9	776.6	785.7	790.3	792.5	794.8
52.5°	637.7	635.4	642.2	653.6	665.0	674.1	687.8	701.5	710.6	724.2	717.4
55°	528.4	532.9	539.8	553.4	571.6	583.0	594.4	612.6	628.6	635.4	649.1
57.5°	435.0	430.4	435.0	453.2	473.7	482.8	498.8	517.0	539.8	553.4	558.0
60°	337.1	339.3	343.9	359.8	375.8	389.4	396.3	425.9	446.4	460.0	469.2
62.5°	248.2	252.8	257.4	271.0	287.0	298.3	309.7	334.8	353.0	366.7	375.8
65°	173.1	175.4	182.2	189.0	205.0	216.4	225.5	246.0	264.2	275.6	282.4
67.5°	107.0	109.3	113.9	123.0	134.4	143.5	152.6	166.3	182.2	193.6	195.9
70°	54.7	56.9	59.2	66.0	75.2	79.7	86.5	97.9	109.3	118.4	123.0
72.5°	18.2	18.2	20.5	25.1	29.6	34.2	36.4	47.8	56.9	61.5	63.8
75°	4.6	4.6	4.6	4.6	4.6	6.8	6.8	13.7	18.2	22.8	25.1
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°	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3	1603.3
2.5°	1603.3	1598.8	1596.5	1598.8	1598.8	1596.5	1603.3	1612.4	1623.8	1594.2
5°	1601.0	1596.5	1601.0	1587.4	1594.2	1589.7	1598.8	1596.5	1605.6	1596.5
7.5°	1594.2	1585.1	1587.4	1580.5	1589.7	1578.3	1585.1	1598.8	1589.7	1576.0
10°	1571.4	1566.9	1582.8	1560.0	1555.5	1564.6	1582.8	1569.2	1564.6	1569.2
12.5°	1548.7	1548.7	1555.5	1537.3	1539.6	1544.1	1553.2	1544.1	1548.7	1560.0
15°	1523.6	1519.1	1530.4	1516.8	1514.5	1509.9	1519.1	1519.1	1523.6	1516.8
17.5°	1494.0	1487.2	1487.2	1482.6	1480.3	1491.7	1496.3	1498.6	1500.8	1491.7
20°	1457.6	1455.3	1462.1	1455.3	1457.6	1459.8	1459.8	1455.3	1475.8	1450.7
22.5°	1418.8	1425.7	1416.6	1412.0	1416.6	1421.1	1421.1	1423.4	1418.8	1414.3
25°	1380.1	1384.7	1387.0	1373.3	1380.1	1373.3	1389.2	1391.5	1382.4	1387.0
27.5°	1346.0	1339.1	1336.9	1327.7	1332.3	1330.0	1332.3	1332.3	1346.0	1327.7
30°	1293.6	1286.8	1289.0	1282.2	1284.5	1282.2	1284.5	1284.5	1293.6	1291.3
32.5°	1243.5	1236.7	1238.9	1232.1	1232.1	1234.4	1229.8	1229.8	1236.7	1232.1
35°	1195.7	1179.7	1182.0	1179.7	1182.0	1172.9	1172.9	1170.6	1175.2	1163.8
37.5°	1127.3	1120.5	1118.2	1115.9	1118.2	1113.7	1118.2	1111.4	1118.2	1109.1
40°	1065.8	1061.3	1063.6	1049.9	1049.9	1052.2	1047.6	1045.3	1047.6	1056.7
42.5°	1004.4	995.2	990.7	986.1	988.4	981.6	979.3	974.7	979.3	970.2
45°	931.5	931.5	929.2	917.8	920.1	920.1	911.0	901.9	904.1	904.1
47.5°	865.4	860.9	858.6	847.2	844.9	842.7	833.5	826.7	826.7	819.9
50°	792.5	788.0	781.2	769.8	765.2	751.6	744.7	735.6	726.5	726.5
52.5°	724.2	708.3	699.2	681.0	674.1	667.3	649.1	642.2	635.4	628.6
55°	642.2	628.6	610.4	589.9	580.7	569.4	551.1	537.5	528.4	530.6
57.5°	562.5	539.8	521.5	494.2	482.8	476.0	457.8	439.5	430.4	430.4
60°	464.6	446.4	423.6	398.6	389.4	378.1	355.3	343.9	337.1	330.2
62.5°	371.2	357.6	337.1	305.2	298.3	287.0	271.0	257.4	250.5	250.5
65°	277.8	264.2	246.0	223.2	214.1	205.0	191.3	177.6	170.8	168.5
67.5°	195.9	179.9	164.0	145.8	138.9	134.4	120.7	111.6	107.0	104.8
70°	118.4	109.3	97.9	84.3	77.4	72.9	63.8	56.9	54.7	52.4
72.5°	61.5	54.7	45.5	36.4	31.9	27.3	22.8	18.2	15.9	15.9
75°	22.8	18.2	11.4	6.8	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)