

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: P209257

Luminaire Tested: **LDSQ4B40D010 EU4B30509024 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209257
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 EU4B30509024 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 2400 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2898.0 lumens
Efficiency: N/A
Efficacy: 67.4 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

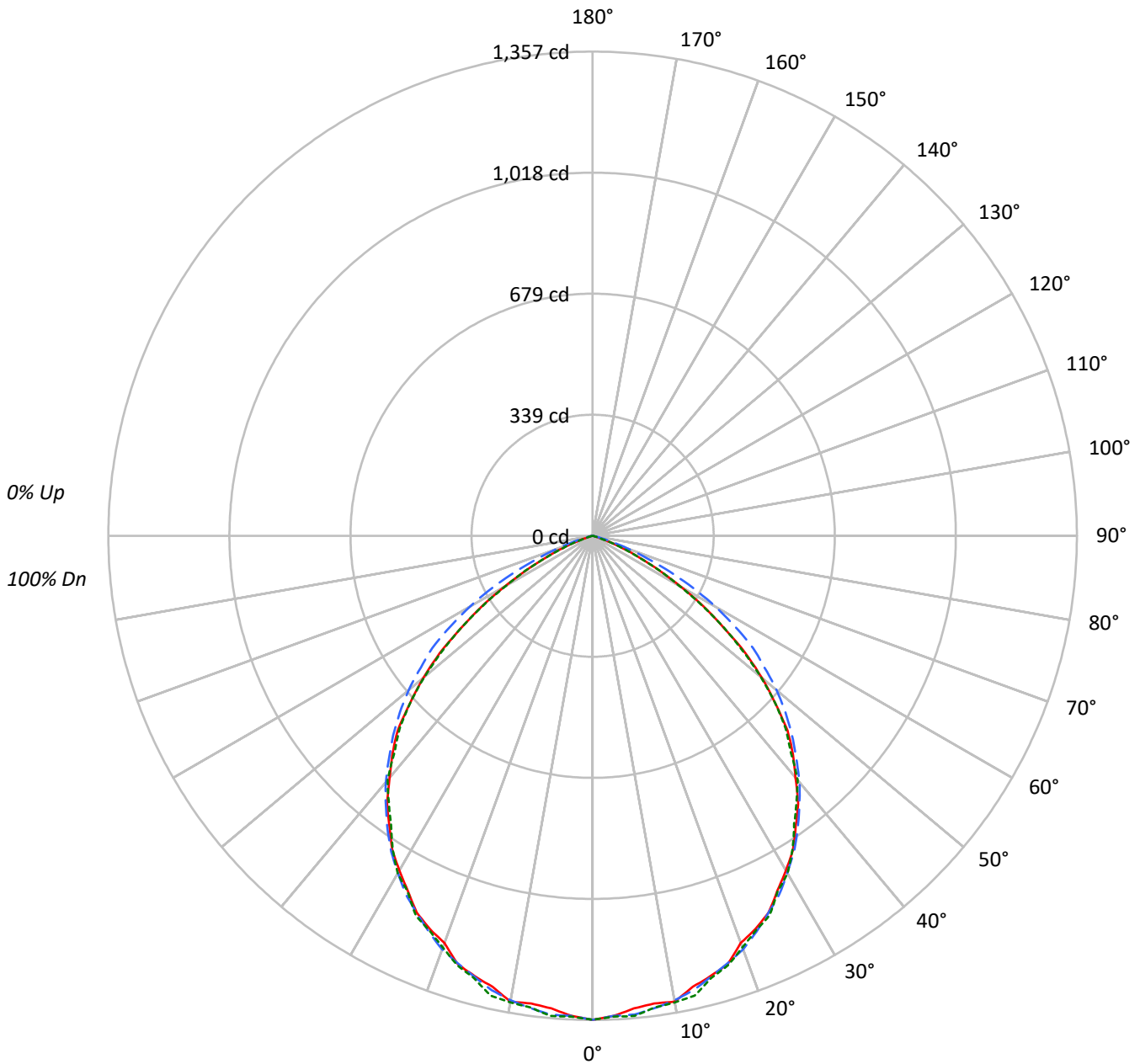
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	128.1	4.4
10°-20°	362.4	12.5
20°-30°	537.7	18.6
30°-40°	623.0	21.5
40°-50°	597.3	20.6
50°-60°	439.2	15.2
60°-70°	189.7	6.5
70°-80°	20.5	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°	1028.1	35.5
0°-40°	1651.1	57.0
0°-60°	2687.6	92.7
0°-90°	2898.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2898.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1357	1357	1357	1357	1357	
5°	1330	1343	1347	1349	1351	127
15°	1278	1285	1280	1282	1283	360
25°	1166	1164	1166	1168	1174	534
35°	992	998	1002	1000	985	621
45°	773	775	790	778	765	587
55°	447	493	549	491	449	402
65°	146	183	239	181	143	151
75°	4	6	21	4	4	12
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°	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6
2.5°	1347.0	1362.4	1364.3	1354.7	1350.8	1345.0	1358.5	1348.9	1352.8	1348.9	1347.0
5°	1329.6	1347.0	1348.9	1348.9	1345.0	1343.1	1348.9	1347.0	1345.0	1341.2	1347.0
7.5°	1321.9	1331.6	1341.2	1329.6	1335.4	1333.5	1347.0	1341.2	1339.3	1339.3	1335.4
10°	1325.8	1323.9	1331.6	1320.0	1323.9	1320.0	1331.6	1331.6	1327.7	1323.9	1321.9
12.5°	1294.9	1310.4	1310.4	1308.4	1304.6	1298.8	1310.4	1318.1	1306.5	1306.5	1304.6
15°	1277.6	1281.5	1283.4	1283.4	1281.5	1285.3	1291.1	1283.4	1285.3	1275.7	1279.5
17.5°	1258.3	1250.6	1256.4	1252.6	1254.5	1258.3	1266.0	1266.0	1254.5	1252.6	1256.4
20°	1214.0	1237.1	1239.1	1227.5	1229.4	1229.4	1242.9	1231.4	1239.1	1229.4	1233.3
22.5°	1192.8	1208.2	1210.2	1194.7	1204.4	1192.8	1206.3	1189.0	1208.2	1194.7	1200.5
25°	1165.8	1163.9	1169.7	1162.0	1163.9	1163.9	1173.5	1165.8	1171.6	1163.9	1165.8
27.5°	1121.5	1136.9	1135.0	1127.3	1131.2	1129.2	1148.5	1127.3	1138.9	1129.2	1133.1
30°	1083.0	1096.5	1092.6	1084.9	1084.9	1079.1	1100.3	1094.5	1092.6	1092.6	1090.7
32.5°	1044.4	1046.4	1042.5	1044.4	1046.4	1038.7	1056.0	1048.3	1046.4	1048.3	1050.2
35°	992.4	992.4	996.3	990.5	998.2	998.2	1013.6	1004.0	1002.0	996.3	1002.0
37.5°	946.2	940.4	942.3	942.3	946.2	950.0	957.7	953.9	953.9	948.1	951.9
40°	884.5	880.6	886.4	886.4	892.2	892.2	899.9	896.1	901.8	901.8	901.8
42.5°	830.5	830.5	826.7	832.5	834.4	832.5	846.0	844.0	846.0	842.1	844.0
45°	772.7	772.7	768.9	766.9	776.6	774.7	790.1	784.3	792.0	788.1	790.1
47.5°	693.7	703.4	697.6	703.4	714.9	716.8	726.5	722.6	730.3	724.6	732.3
50°	618.6	618.6	624.3	632.1	643.6	645.5	657.1	664.8	668.7	670.6	672.5
52.5°	539.6	537.6	543.4	553.1	562.7	570.4	582.0	593.5	601.2	612.8	607.0
55°	447.1	450.9	456.7	468.3	483.7	493.3	502.9	518.4	531.9	537.6	549.2
57.5°	368.1	364.2	368.1	383.5	400.8	408.5	422.0	437.4	456.7	468.3	472.1
60°	285.2	287.1	291.0	304.5	318.0	329.5	335.3	360.4	377.7	389.3	397.0
62.5°	210.0	213.9	217.8	229.3	242.8	252.4	262.1	283.3	298.7	310.2	318.0
65°	146.5	148.4	154.2	159.9	173.4	183.1	190.8	208.1	223.5	233.2	238.9
67.5°	90.6	92.5	96.4	104.1	113.7	121.4	129.1	140.7	154.2	163.8	165.7
70°	46.2	48.2	50.1	55.9	63.6	67.4	73.2	82.9	92.5	100.2	104.1
72.5°	15.4	15.4	17.3	21.2	25.1	28.9	30.8	40.5	48.2	52.0	54.0
75°	3.9	3.9	3.9	3.9	3.9	5.8	5.8	11.6	15.4	19.3	21.2
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.9	3.9
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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°	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6	1356.6
2.5°	1356.6	1352.8	1350.8	1352.8	1352.8	1350.8	1356.6	1364.3	1374.0	1348.9
5°	1354.7	1350.8	1354.7	1343.1	1348.9	1345.0	1352.8	1350.8	1358.5	1350.8
7.5°	1348.9	1341.2	1343.1	1337.3	1345.0	1335.4	1341.2	1352.8	1345.0	1333.5
10°	1329.6	1325.8	1339.3	1320.0	1316.1	1323.9	1339.3	1327.7	1323.9	1327.7
12.5°	1310.4	1310.4	1316.1	1300.7	1302.7	1306.5	1314.2	1306.5	1310.4	1320.0
15°	1289.2	1285.3	1294.9	1283.4	1281.5	1277.6	1285.3	1285.3	1289.2	1283.4
17.5°	1264.1	1258.3	1258.3	1254.5	1252.6	1262.2	1266.0	1268.0	1269.9	1262.2
20°	1233.3	1231.4	1237.1	1231.4	1233.3	1235.2	1235.2	1231.4	1248.7	1227.5
22.5°	1200.5	1206.3	1198.6	1194.7	1198.6	1202.5	1202.5	1204.4	1200.5	1196.7
25°	1167.8	1171.6	1173.5	1162.0	1167.8	1162.0	1175.5	1177.4	1169.7	1173.5
27.5°	1138.9	1133.1	1131.2	1123.4	1127.3	1125.4	1127.3	1127.3	1138.9	1123.4
30°	1094.5	1088.8	1090.7	1084.9	1086.8	1084.9	1086.8	1086.8	1094.5	1092.6
32.5°	1052.1	1046.4	1048.3	1042.5	1042.5	1044.4	1040.6	1040.6	1046.4	1042.5
35°	1011.7	998.2	1000.1	998.2	1000.1	992.4	992.4	990.5	994.3	984.7
37.5°	953.9	948.1	946.2	944.2	946.2	942.3	946.2	940.4	946.2	938.5
40°	901.8	898.0	899.9	888.3	888.3	890.3	886.4	884.5	886.4	894.1
42.5°	849.8	842.1	838.2	834.4	836.3	830.5	828.6	824.8	828.6	820.9
45°	788.1	788.1	786.2	776.6	778.5	778.5	770.8	763.1	765.0	765.0
47.5°	732.3	728.4	726.5	716.8	714.9	713.0	705.3	699.5	699.5	693.7
50°	670.6	666.7	661.0	651.3	647.5	635.9	630.1	622.4	614.7	614.7
52.5°	612.8	599.3	591.6	576.2	570.4	564.6	549.2	543.4	537.6	531.9
55°	543.4	531.9	516.4	499.1	491.4	481.8	466.3	454.8	447.1	449.0
57.5°	476.0	456.7	441.3	418.2	408.5	402.7	387.3	371.9	364.2	364.2
60°	393.1	377.7	358.4	337.2	329.5	319.9	300.6	291.0	285.2	279.4
62.5°	314.1	302.5	285.2	258.2	252.4	242.8	229.3	217.8	212.0	212.0
65°	235.1	223.5	208.1	188.8	181.1	173.4	161.9	150.3	144.5	142.6
67.5°	165.7	152.2	138.7	123.3	117.5	113.7	102.1	94.4	90.6	88.6
70°	100.2	92.5	82.9	71.3	65.5	61.7	54.0	48.2	46.2	44.3
72.5°	52.0	46.2	38.5	30.8	27.0	23.1	19.3	15.4	13.5	13.5
75°	19.3	15.4	9.6	5.8	3.9	3.9	3.9	3.9	3.9	3.9
77.5°	3.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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)