

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: P209136

Luminaire Tested: **LDSQ4B20D010 EU4B10209727 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209136
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35088)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B20D010 EU4B10209727 4LBSQ1LI
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE LOW
IRIDESCENT TRIM.
MEDIUM DISTRIBUTION WITH SPECULAR CLEAR TRIM
WATTAGE D010TR-21.86 W DE010-20.46 W D5LT-21.24 W DMX-20.89 W DL2-22.5 W
DL3-21.8 6 W DLE-22.46 W
Light Source: HIGH LUMEN LED 2700 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1371.0 lumens
Efficiency: N/A
Efficacy: 65.9 lumens/watt
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: Direct

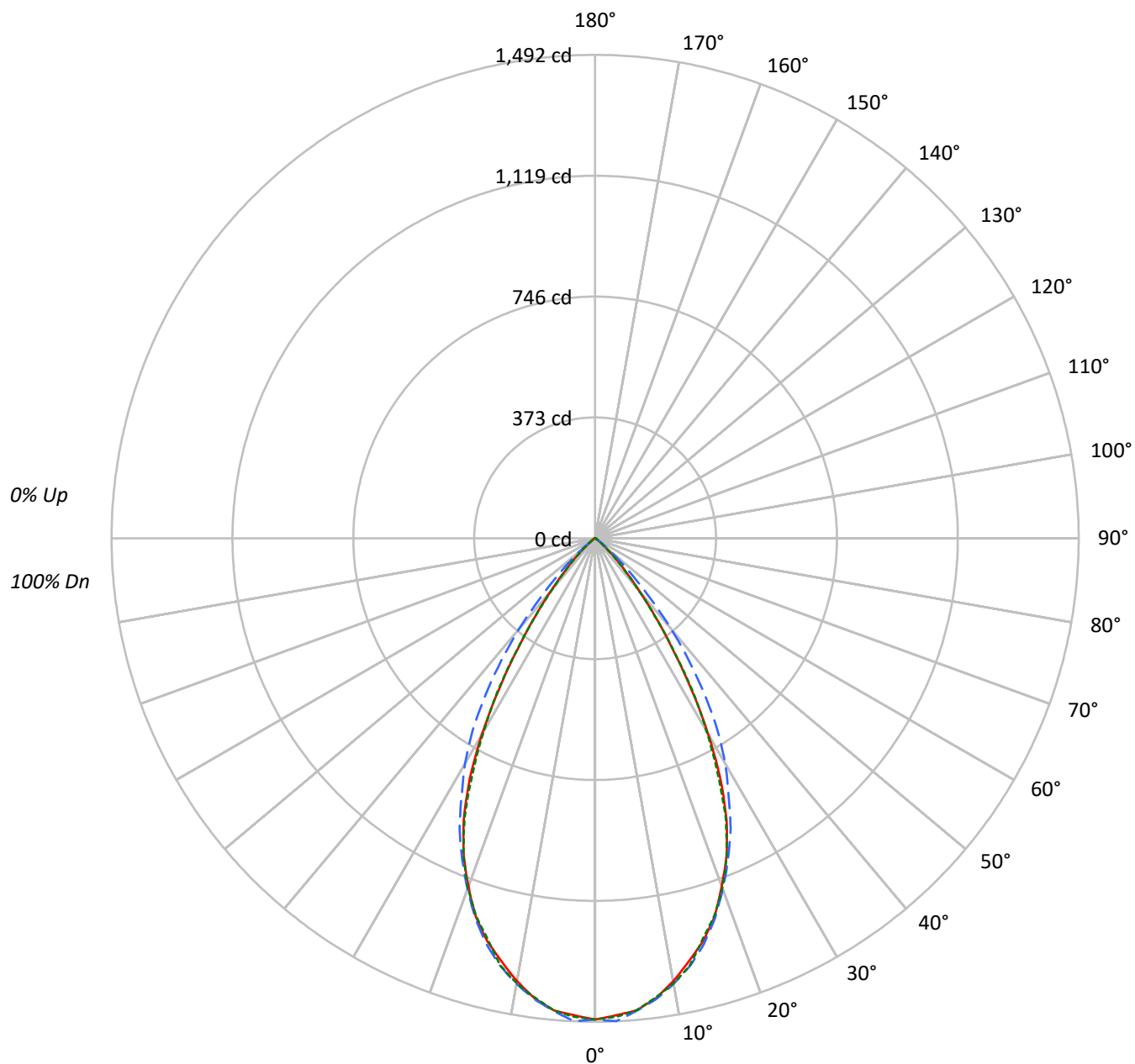
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20							
RC	80				70				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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93						
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87						
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80						
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75						
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69						
6	87	78	72	68	86	77	72	67	76	71	67	74	70	66	73	69	66	65						
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60						
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56						
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53						
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50						

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°	137.7	10.0
10°-20°	360.9	26.3
20°-30°	440.8	32.2
30°-40°	308.3	22.5
40°-50°	101.0	7.4
50°-60°	16.1	1.2
60°-70°	4.4	0.3
70°-80°	1.4	0.1
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°	939.4	68.5
0°-40°	1247.7	91.0
0°-60°	1364.8	99.5
0°-90°	1371.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1371.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1485	1485	1485	1485	1485	
5°	1462	1463	1464	1455	1462	137
15°	1287	1292	1296	1288	1280	359
25°	960	974	990	972	953	431
35°	415	490	590	483	419	265
45°	92	113	166	111	91	77
55°	13	14	16	14	12	13
65°	4	5	4	5	4	4
75°	1	1	1	1	1	1
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°	25°	30°	35°	40°	45°	50°
0°	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1
2.5°	1473.7	1484.1	1481.3	1487.9	1487.9	1480.4	1482.2	1485.1	1488.8	1491.7	1469.0
5°	1462.4	1471.9	1463.4	1472.8	1467.1	1458.7	1472.8	1465.3	1470.0	1464.3	1468.1
7.5°	1432.2	1447.3	1430.3	1441.7	1437.9	1433.2	1438.8	1436.9	1439.8	1435.1	1424.7
10°	1387.9	1400.2	1388.8	1404.9	1397.3	1392.6	1397.3	1402.0	1401.1	1396.4	1402.0
12.5°	1336.9	1351.1	1345.4	1354.9	1346.4	1346.4	1357.7	1354.9	1355.8	1352.0	1358.6
15°	1286.9	1297.3	1288.8	1301.1	1297.3	1286.9	1291.7	1291.7	1299.2	1296.4	1288.8
17.5°	1224.7	1233.2	1223.7	1226.5	1222.8	1220.9	1240.7	1227.5	1235.0	1229.4	1230.3
20°	1142.6	1146.4	1143.5	1151.1	1146.4	1152.0	1150.1	1148.2	1148.2	1151.1	1144.5
22.5°	1059.6	1059.6	1062.4	1064.3	1068.0	1062.4	1073.7	1064.3	1065.2	1071.8	1069.9
25°	959.5	956.7	963.3	972.7	976.5	971.8	986.9	979.4	985.0	989.7	979.4
27.5°	837.8	837.8	844.4	860.5	863.3	869.0	889.7	889.7	897.3	890.7	898.2
30°	697.2	707.6	716.1	736.9	743.5	755.7	777.4	787.8	804.8	802.0	798.2
32.5°	552.9	567.0	568.0	589.7	607.6	628.4	657.6	682.2	694.4	702.9	693.5
35°	415.1	423.6	431.2	446.3	476.5	503.8	530.2	562.3	584.0	589.7	581.2
37.5°	303.8	305.7	313.2	327.4	350.0	376.5	408.5	443.4	466.1	474.6	465.1
40°	209.5	211.3	215.1	227.4	246.3	265.1	290.6	326.5	347.2	364.2	351.9
42.5°	140.6	142.5	146.2	155.7	166.1	184.0	203.8	226.4	246.3	253.8	247.2
45°	91.5	91.5	93.4	100.0	105.7	119.8	134.0	148.1	161.3	166.1	161.3
47.5°	53.8	54.7	56.6	61.3	67.9	73.6	84.0	93.4	97.2	101.0	99.1
50°	31.1	31.1	34.0	36.8	41.5	45.3	49.1	52.8	54.7	56.6	54.7
52.5°	17.0	17.9	18.9	19.8	21.7	25.5	28.3	28.3	29.2	30.2	29.2
55°	13.2	13.2	13.2	13.2	14.2	14.2	14.2	15.1	15.1	16.0	15.1
57.5°	9.4	9.4	9.4	10.4	10.4	10.4	9.4	9.4	9.4	9.4	9.4
60°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	6.6	6.6	6.6	6.6
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
65°	3.8	3.8	4.7	4.7	4.7	4.7	4.7	3.8	3.8	3.8	3.8
67.5°	2.8	2.8	2.8	2.8	3.8	3.8	2.8	2.8	2.8	2.8	2.8
70°	1.9	1.9	1.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
75°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	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°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1	1485.1
2.5°	1485.1	1469.0	1470.9	1479.4	1474.7	1479.4	1478.5	1478.5
5°	1469.0	1464.3	1456.8	1453.9	1459.6	1471.9	1470.0	1462.4
7.5°	1438.8	1426.6	1435.1	1438.8	1434.1	1441.7	1445.4	1429.4
10°	1403.0	1398.3	1396.4	1398.3	1396.4	1403.9	1394.5	1394.5
12.5°	1352.0	1344.5	1344.5	1355.8	1349.2	1343.5	1351.1	1350.1
15°	1301.1	1286.0	1286.0	1289.8	1292.6	1288.8	1289.8	1280.3
17.5°	1225.6	1220.9	1214.3	1224.7	1227.5	1223.7	1226.5	1221.8
20°	1154.8	1154.8	1142.6	1147.3	1151.1	1153.9	1155.8	1148.2
22.5°	1064.3	1066.2	1057.7	1067.1	1069.9	1060.5	1062.4	1060.5
25°	981.2	980.3	973.7	969.9	971.8	968.0	967.1	952.9
27.5°	889.7	880.3	866.1	869.9	853.9	840.7	840.7	819.0
30°	790.7	774.6	755.7	736.9	722.7	707.6	699.1	686.9
32.5°	674.6	652.9	629.3	603.8	587.8	565.2	552.9	559.5
35°	559.5	527.4	495.3	469.9	445.3	432.1	417.0	418.9
37.5°	448.2	402.9	374.6	347.2	326.5	309.5	302.9	301.0
40°	327.4	291.5	263.2	243.4	229.3	216.1	208.5	205.7
42.5°	226.4	201.0	178.3	162.3	152.8	144.4	140.6	139.6
45°	147.2	132.1	117.0	105.7	98.1	92.5	91.5	90.6
47.5°	92.5	84.9	75.5	67.0	60.4	56.6	53.8	53.8
50°	52.8	50.0	45.3	40.6	36.8	34.9	32.1	31.1
52.5°	28.3	28.3	26.4	22.6	19.8	17.9	17.9	17.0
55°	15.1	15.1	14.2	14.2	13.2	13.2	13.2	12.3
57.5°	9.4	9.4	10.4	10.4	9.4	9.4	9.4	9.4
60°	6.6	7.5	7.5	7.5	7.5	7.5	7.5	7.5
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
65°	3.8	4.7	4.7	4.7	4.7	3.8	3.8	3.8
67.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
70°	2.8	2.8	2.8	2.8	2.8	1.9	1.9	1.9
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
75°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	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
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°









(END OF REPORT)