

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: P209131

Luminaire Tested: **LDSQ4B20D010 EU4B10209027 4LBSQ1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209131
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 EU4B10209027 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: 1576.3 lumens
Efficiency: N/A
Efficacy: 75.8 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

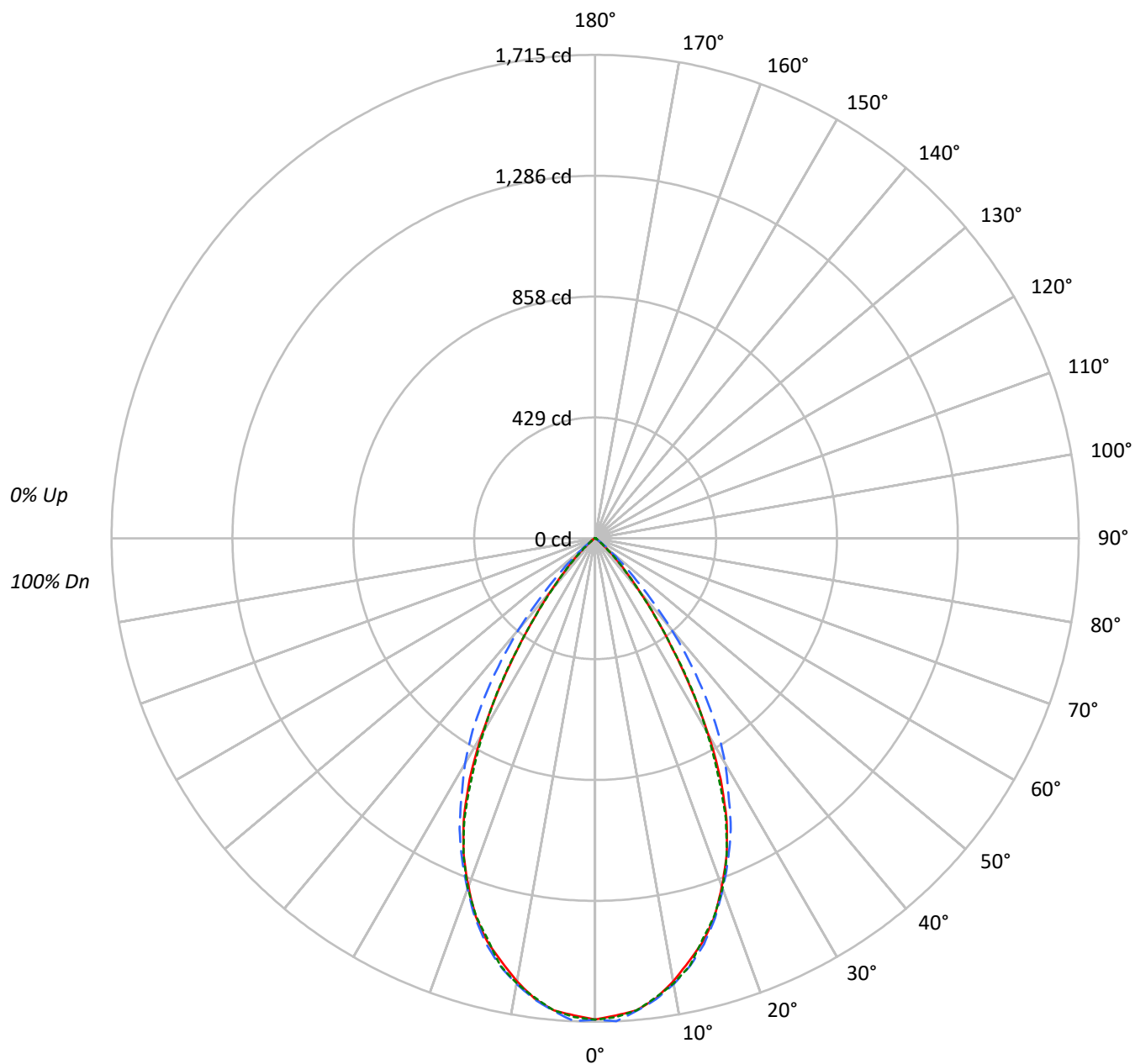
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	71	67	76	71	67	74	70	66	73	69	66	64			
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°	158.3	10.0
10°-20°	414.9	26.3
20°-30°	506.8	32.2
30°-40°	354.5	22.5
40°-50°	116.2	7.4
50°-60°	18.5	1.2
60°-70°	5.0	0.3
70°-80°	1.7	0.1
80°-90°	0.5	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°	1080.0	68.5
0°-40°	1434.5	91.0
0°-60°	1569.1	99.5
0°-90°	1576.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1576.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1707	1707	1707	1707	1707	
5°	1681	1682	1684	1673	1681	158
15°	1480	1486	1490	1481	1472	413
25°	1103	1120	1138	1117	1096	496
35°	477	564	678	555	482	305
45°	105	130	191	128	104	88
55°	15	16	18	16	14	15
65°	4	5	4	5	4	5
75°	1	1	1	1	1	2
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°	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4
2.5°	1694.4	1706.3	1703.0	1710.6	1710.6	1702.0	1704.1	1707.4	1711.7	1715.0	1688.9
5°	1681.3	1692.2	1682.4	1693.3	1686.8	1677.0	1693.3	1684.6	1690.0	1683.5	1687.9
7.5°	1646.6	1664.0	1644.5	1657.5	1653.1	1647.7	1654.2	1652.1	1655.3	1649.9	1638.0
10°	1595.7	1609.8	1596.7	1615.2	1606.5	1601.1	1606.5	1611.9	1610.8	1605.4	1611.9
12.5°	1537.1	1553.3	1546.8	1557.7	1547.9	1547.9	1560.9	1557.7	1558.8	1554.4	1562.0
15°	1479.6	1491.5	1481.8	1495.9	1491.5	1479.6	1485.0	1485.0	1493.7	1490.4	1481.8
17.5°	1408.0	1417.8	1406.9	1410.2	1405.8	1403.7	1426.4	1411.2	1419.9	1413.4	1414.5
20°	1313.6	1318.0	1314.7	1323.4	1318.0	1324.5	1322.3	1320.1	1320.1	1323.4	1315.8
22.5°	1218.2	1218.2	1221.4	1223.6	1227.9	1221.4	1234.4	1223.6	1224.7	1232.3	1230.1
25°	1103.2	1099.9	1107.5	1118.4	1122.7	1117.3	1134.6	1126.0	1132.5	1137.9	1126.0
27.5°	963.2	963.2	970.8	989.3	992.5	999.0	1022.9	1022.9	1031.6	1024.0	1032.7
30°	801.6	813.6	823.3	847.2	854.8	868.9	893.8	905.8	925.3	922.0	917.7
32.5°	635.7	651.9	653.0	678.0	698.6	722.4	756.1	784.3	798.4	808.1	797.3
35°	477.3	487.0	495.7	513.1	547.8	579.3	609.6	646.5	671.5	678.0	668.2
37.5°	349.3	351.5	360.1	376.4	402.4	432.8	469.7	509.8	535.9	545.6	534.8
40°	240.8	243.0	247.3	261.4	283.1	304.8	334.1	375.3	399.2	418.7	404.6
42.5°	161.6	163.8	168.1	179.0	190.9	211.5	234.3	260.3	283.1	291.8	284.2
45°	105.2	105.2	107.4	115.0	121.5	137.8	154.0	170.3	185.5	190.9	185.5
47.5°	61.8	62.9	65.1	70.5	78.1	84.6	96.5	107.4	111.7	116.1	113.9
50°	35.8	35.8	39.1	42.3	47.7	52.1	56.4	60.7	62.9	65.1	62.9
52.5°	19.5	20.6	21.7	22.8	24.9	29.3	32.5	32.5	33.6	34.7	33.6
55°	15.2	15.2	15.2	15.2	16.3	16.3	16.3	17.4	17.4	18.4	17.4
57.5°	10.8	10.8	10.8	11.9	11.9	11.9	10.8	10.8	10.8	10.8	10.8
60°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	7.6	7.6	7.6	7.6
62.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
65°	4.3	4.3	5.4	5.4	5.4	5.4	5.4	4.3	4.3	4.3	4.3
67.5°	3.3	3.3	3.3	3.3	4.3	4.3	3.3	3.3	3.3	3.3	3.3
70°	2.2	2.2	2.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
72.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	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°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4
2.5°	1707.4	1688.9	1691.1	1700.9	1695.4	1700.9	1699.8	1699.8
5°	1688.9	1683.5	1674.8	1671.6	1678.1	1692.2	1690.0	1681.3
7.5°	1654.2	1640.1	1649.9	1654.2	1648.8	1657.5	1661.8	1643.4
10°	1613.0	1607.6	1605.4	1607.6	1605.4	1614.1	1603.2	1603.2
12.5°	1554.4	1545.8	1545.8	1558.8	1551.2	1544.7	1553.3	1552.3
15°	1495.9	1478.5	1478.5	1482.8	1486.1	1481.8	1482.8	1472.0
17.5°	1409.1	1403.7	1396.1	1408.0	1411.2	1406.9	1410.2	1404.7
20°	1327.7	1327.7	1313.6	1319.0	1323.4	1326.6	1328.8	1320.1
22.5°	1223.6	1225.8	1216.0	1226.8	1230.1	1219.2	1221.4	1219.2
25°	1128.1	1127.0	1119.5	1115.1	1117.3	1112.9	1111.9	1095.6
27.5°	1022.9	1012.1	995.8	1000.1	981.7	966.5	966.5	941.6
30°	909.0	890.6	868.9	847.2	830.9	813.6	803.8	789.7
32.5°	775.6	750.6	723.5	694.2	675.8	649.8	635.7	643.3
35°	643.3	606.4	569.5	540.2	512.0	496.8	479.5	481.6
37.5°	515.3	463.2	430.6	399.2	375.3	355.8	348.2	346.0
40°	376.4	335.2	302.6	279.9	263.6	248.4	239.7	236.5
42.5°	260.3	231.0	205.0	186.6	175.7	166.0	161.6	160.5
45°	169.2	151.9	134.5	121.5	112.8	106.3	105.2	104.1
47.5°	106.3	97.6	86.8	77.0	69.4	65.1	61.8	61.8
50°	60.7	57.5	52.1	46.6	42.3	40.1	36.9	35.8
52.5°	32.5	32.5	30.4	26.0	22.8	20.6	20.6	19.5
55°	17.4	17.4	16.3	16.3	15.2	15.2	15.2	14.1
57.5°	10.8	10.8	11.9	11.9	10.8	10.8	10.8	10.8
60°	7.6	8.7	8.7	8.7	8.7	8.7	8.7	8.7
62.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
65°	4.3	5.4	5.4	5.4	5.4	4.3	4.3	4.3
67.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
70°	3.3	3.3	3.3	3.3	3.3	2.2	2.2	2.2
72.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)