

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: P274357

Luminaire Tested: **LD4B20DE010W2N2765 EU4B1020W2N902765 4LBSQ0LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P274357  
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: LD4B20DE010W2N2765 EU4B1020W2N902765 4LBSQ0LI  
Description: PORTFOLIO 4" W2N SQ DOWNLIGHT WITH SPECULAR FINISH  
Light Source: W2N 2700K-6500K CCT TUNING RANGE  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1467.8 lumens  
Efficiency: N/A  
Efficacy: 52.4 lumens/watt  
Spacing Criteria (0/90/45): 0.91 / 0.9 / 0.94  
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')  
CIE Type: Direct

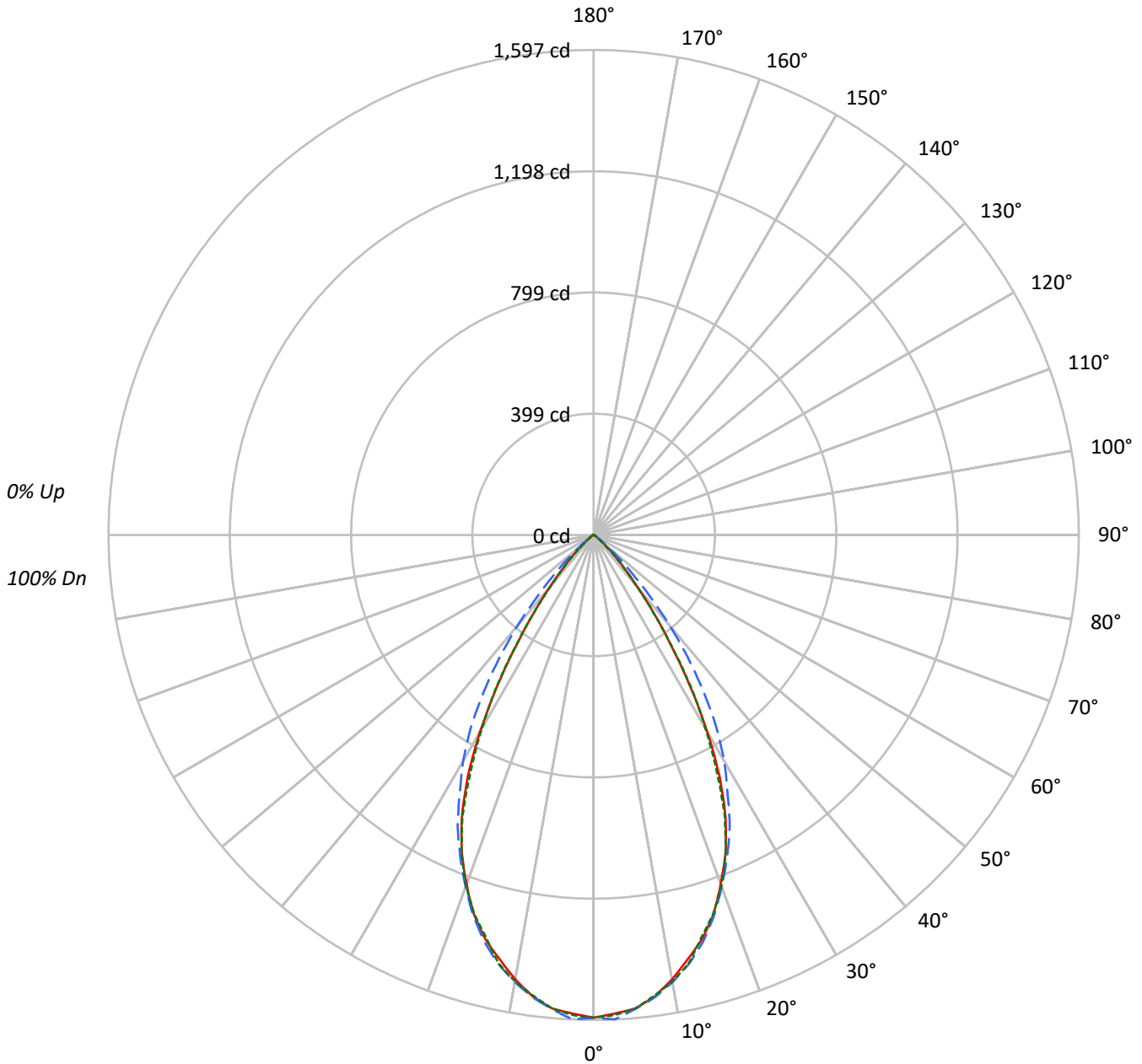
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93					93			
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87					87			
3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80					80			
4	97	89	84	79	95	88	83	79	86	81	78	84	80	77	82	79	76	75					75			
5	92	83	77	73	90	82	77	73	81	76	72	79	75	71	77	74	71	69					69			
6	87	78	72	68	86	77	71	67	76	71	67	74	70	66	73	69	66	64					64			
7	83	73	67	63	81	73	67	63	71	66	62	70	65	62	69	65	62	60					60			
8	79	69	63	59	77	68	62	58	67	62	58	66	61	58	65	61	58	56					56			
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53					53			
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50					50			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	121696	121696	121696
5°	120294	120455	120294
10°	115483	116190	116034
15°	109182	109982	108619
20°	99637	100378	100134
25°	86762	89490	86162
30°	65979	75887	64989
35°	41526	58990	41909
40°	22402	38959	22002
45°	10608	19247	10500
50°	3965	7216	3965
55°	1882	2295	1748
60°	1240	1087	1240
65°	724	724	724
70°	448	671	448
75°	296	296	296
80°	441	441	441
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.4	10.0
10°-20°	386.3	26.3
20°-30°	471.9	32.2
30°-40°	330.1	22.5
40°-50°	108.2	7.4
50°-60°	17.2	1.2
60°-70°	4.7	0.3
70°-80°	1.5	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°	1005.7	68.5
0°-40°	1335.7	91.0
0°-60°	1461.1	99.5
0°-90°	1467.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1467.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1590	1590	1590	1590	1590	
5°	1566	1566	1568	1558	1566	147
15°	1378	1383	1388	1379	1371	384
25°	1027	1043	1060	1040	1020	461
35°	444	525	631	517	448	284
45°	98	121	178	119	97	82
55°	14	15	17	15	13	14
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	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9
2.5°	1577.8	1588.9	1585.8	1592.9	1592.9	1584.8	1586.8	1589.9	1593.9	1596.9	1572.7
5°	1565.6	1575.7	1566.6	1576.7	1570.7	1561.6	1576.7	1568.7	1573.7	1567.7	1571.7
7.5°	1533.3	1549.5	1531.3	1543.4	1539.4	1534.3	1540.4	1538.4	1541.4	1536.3	1525.2
10°	1485.8	1499.0	1486.8	1504.0	1495.9	1490.9	1495.9	1501.0	1500.0	1494.9	1501.0
12.5°	1431.3	1446.4	1440.4	1450.5	1441.4	1441.4	1453.5	1450.5	1451.5	1447.5	1454.5
15°	1377.8	1388.9	1379.8	1392.9	1388.9	1377.8	1382.8	1382.8	1390.9	1387.9	1379.8
17.5°	1311.1	1320.2	1310.1	1313.1	1309.1	1307.0	1328.3	1314.1	1322.2	1316.1	1317.2
20°	1223.2	1227.3	1224.2	1232.3	1227.3	1233.3	1231.3	1229.3	1229.3	1232.3	1225.2
22.5°	1134.3	1134.3	1137.4	1139.4	1143.4	1137.4	1149.5	1139.4	1140.4	1147.5	1145.4
25°	1027.3	1024.2	1031.3	1041.4	1045.4	1040.4	1056.5	1048.5	1054.5	1059.6	1048.5
27.5°	897.0	897.0	904.0	921.2	924.2	930.3	952.5	952.5	960.6	953.5	961.6
30°	746.5	757.6	766.7	788.9	795.9	809.1	832.3	843.4	861.6	858.6	854.5
32.5°	591.9	607.1	608.1	631.3	650.5	672.7	704.0	730.3	743.4	752.5	742.4
35°	444.4	453.5	461.6	477.8	510.1	539.4	567.7	602.0	625.2	631.3	622.2
37.5°	325.2	327.3	335.3	350.5	374.7	403.0	437.4	474.7	499.0	508.1	498.0
40°	224.2	226.3	230.3	243.4	263.6	283.8	311.1	349.5	371.7	389.9	376.8
42.5°	150.5	152.5	156.6	166.7	177.8	197.0	218.2	242.4	263.6	271.7	264.6
45°	98.0	98.0	100.0	107.1	113.1	128.3	143.4	158.6	172.7	177.8	172.7
47.5°	57.6	58.6	60.6	65.7	72.7	78.8	89.9	100.0	104.0	108.1	106.1
50°	33.3	33.3	36.4	39.4	44.4	48.5	52.5	56.6	58.6	60.6	58.6
52.5°	18.2	19.2	20.2	21.2	23.2	27.3	30.3	30.3	31.3	32.3	31.3
55°	14.1	14.1	14.1	14.1	15.2	15.2	15.2	16.2	16.2	17.2	16.2
57.5°	10.1	10.1	10.1	11.1	11.1	11.1	10.1	10.1	10.1	10.1	10.1
60°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	7.1	7.1	7.1	7.1
62.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
65°	4.0	4.0	5.1	5.1	5.1	5.1	5.1	4.0	4.0	4.0	4.0
67.5°	3.0	3.0	3.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
70°	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	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°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9	1589.9
2.5°	1589.9	1572.7	1574.7	1583.8	1578.8	1583.8	1582.8	1582.8
5°	1572.7	1567.7	1559.6	1556.5	1562.6	1575.7	1573.7	1565.6
7.5°	1540.4	1527.2	1536.3	1540.4	1535.3	1543.4	1547.4	1530.3
10°	1502.0	1496.9	1494.9	1496.9	1494.9	1503.0	1492.9	1492.9
12.5°	1447.5	1439.4	1439.4	1451.5	1444.4	1438.4	1446.4	1445.4
15°	1392.9	1376.7	1376.7	1380.8	1383.8	1379.8	1380.8	1370.7
17.5°	1312.1	1307.0	1300.0	1311.1	1314.1	1310.1	1313.1	1308.1
20°	1236.3	1236.3	1223.2	1228.3	1232.3	1235.3	1237.4	1229.3
22.5°	1139.4	1141.4	1132.3	1142.4	1145.4	1135.3	1137.4	1135.3
25°	1050.5	1049.5	1042.4	1038.4	1040.4	1036.3	1035.3	1020.2
27.5°	952.5	942.4	927.3	931.3	914.1	900.0	900.0	876.8
30°	846.5	829.3	809.1	788.9	773.7	757.6	748.5	735.3
32.5°	722.2	699.0	673.7	646.5	629.3	605.0	591.9	599.0
35°	599.0	564.6	530.3	503.0	476.8	462.6	446.5	448.5
37.5°	479.8	431.3	401.0	371.7	349.5	331.3	324.2	322.2
40°	350.5	312.1	281.8	260.6	245.5	231.3	223.2	220.2
42.5°	242.4	215.1	190.9	173.7	163.6	154.5	150.5	149.5
45°	157.6	141.4	125.3	113.1	105.0	99.0	98.0	97.0
47.5°	99.0	90.9	80.8	71.7	64.6	60.6	57.6	57.6
50°	56.6	53.5	48.5	43.4	39.4	37.4	34.3	33.3
52.5°	30.3	30.3	28.3	24.2	21.2	19.2	19.2	18.2
55°	16.2	16.2	15.2	15.2	14.1	14.1	14.1	13.1
57.5°	10.1	10.1	11.1	11.1	10.1	10.1	10.1	10.1
60°	7.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
62.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
65°	4.0	5.1	5.1	5.1	5.1	4.0	4.0	4.0
67.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
70°	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
90°	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)