

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: P170885

Luminaire Tested: **LDA4A13827D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170885  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26103)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A13827D010TE LAR35FL 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1134.7 lumens  
Efficiency: N/A  
Efficacy: 51.0 lumens/watt  
Spacing Criteria (0/90/45): 2.19 / 1.11 / 1.55  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

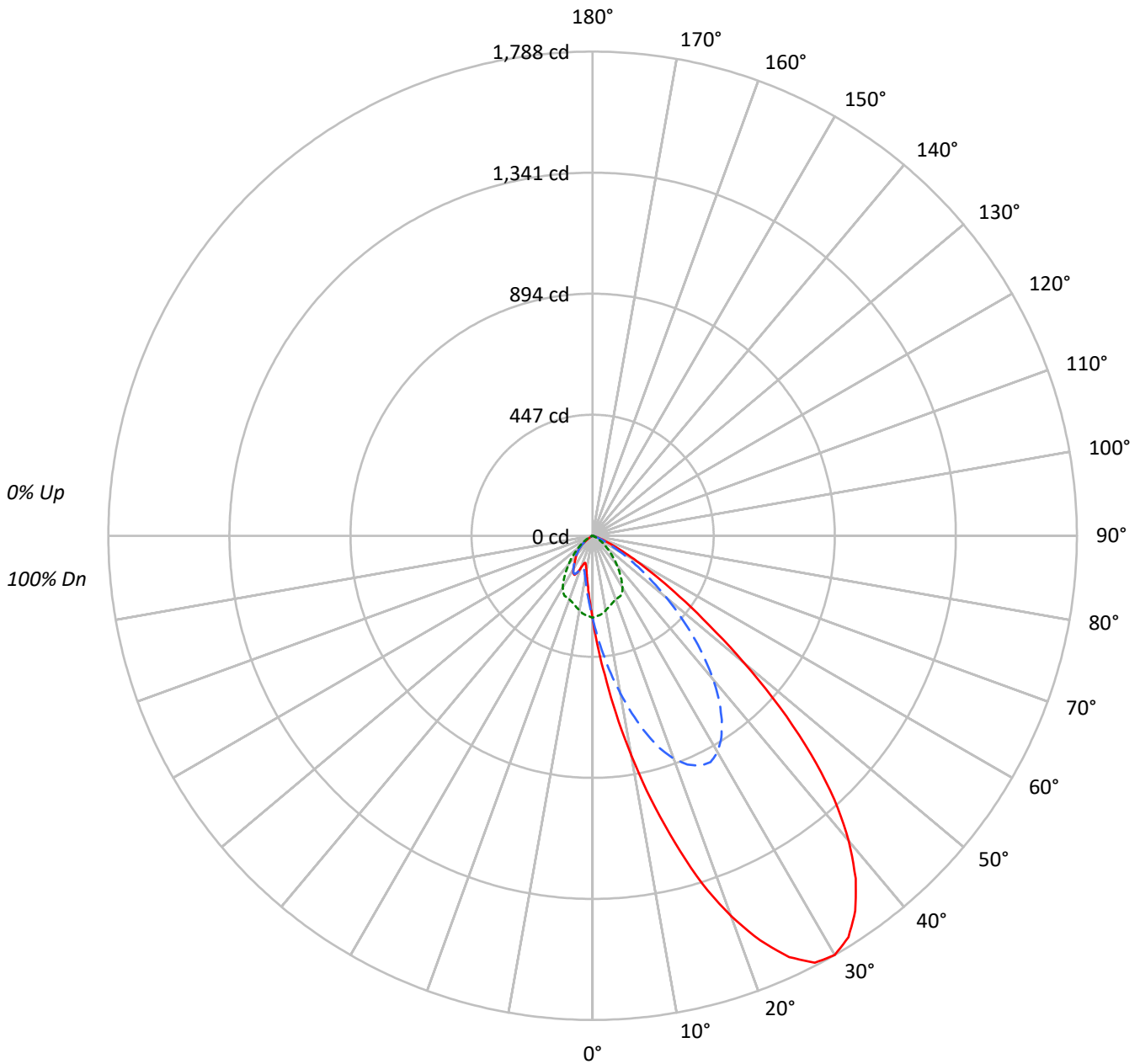
Input Watts (W): 22.27  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	92	88	102	96	91	87	93	89	85	89	86	83	87	84	81	80																			
3	97	88	82	76	94	87	81	76	84	79	75	81	77	73	79	75	72	70																			
4	90	80	72	67	87	78	72	66	76	70	66	74	69	65	72	67	64	62																			
5	83	72	64	59	81	71	64	59	69	63	58	67	62	57	65	61	57	55																			
6	77	66	58	52	75	65	57	52	63	56	52	61	56	51	60	55	51	49																			
7	72	60	52	46	70	59	52	46	57	51	46	56	50	46	55	50	45	44																			
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	50	45	41	39																			
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37	35																			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32																			

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

	0°	90°	180°
0°	37374	37374	37374
5°	63790	36464	23810
10°	103105	35019	16270
15°	149788	33623	13229
20°	196171	32881	16486
25°	233624	33317	21735
30°	254603	31434	20210
35°	254641	26818	17091
40°	236984	22172	14862
45°	199050	17322	12751
50°	139716	12934	9403
55°	84083	9312	5183
60°	46403	5945	1924
65°	22357	2889	204
70°	8944	1010	252
75°	2716	667	0
80°	994	994	0
85°	2972	1981	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.5	2.9
10°-20°	128.8	11.4
20°-30°	261.2	23.0
30°-40°	317.4	28.0
40°-50°	250.4	22.1
50°-60°	113.4	10.0
60°-70°	26.8	2.4
70°-80°	2.9	0.3
80°-90°	1.3	0.1
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°	422.5	37.2
0°-40°	739.9	65.2
0°-60°	1103.8	97.3
0°-90°	1134.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1134.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	303	303	303	303	303	
5°	515	434	294	216	192	59
15°	1173	752	263	125	104	341
25°	1717	937	245	156	160	786
35°	1691	831	178	116	114	1044
45°	1141	524	99	72	73	863
55°	391	214	43	29	24	369
65°	77	45	10	2	1	86
75°	6	3	1	1	0	9
85°	2	2	1	1	0	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	303.0	303.0	303.0	303.0	303.0	303.0	303.0	303.0	303.0	303.0	303.0
2.5°	402.4	392.4	392.4	385.3	391.0	379.7	381.8	381.1	388.2	386.0	379.7
5°	515.2	506.7	506.0	496.7	503.8	488.9	489.7	487.5	495.3	487.5	478.3
7.5°	660.7	645.8	645.1	634.4	641.5	622.4	621.6	617.4	624.5	609.6	596.1
10°	823.2	801.9	800.5	787.7	795.5	770.7	768.5	761.4	766.4	743.0	723.8
12.5°	997.0	973.6	970.8	957.3	964.4	934.6	928.9	919.7	921.8	887.8	862.2
15°	1173.0	1153.2	1150.3	1136.1	1143.2	1106.3	1097.1	1085.7	1083.6	1038.2	1005.6
17.5°	1348.3	1307.9	1320.6	1306.4	1312.8	1269.5	1257.5	1243.3	1235.5	1179.4	1138.3
20°	1494.5	1459.7	1469.0	1456.2	1461.9	1412.2	1397.3	1379.5	1366.1	1298.6	1251.1
22.5°	1618.0	1581.8	1576.8	1576.8	1580.4	1526.4	1506.6	1486.7	1467.5	1387.3	1339.1
25°	1716.6	1676.9	1671.2	1669.8	1670.5	1613.7	1590.3	1568.3	1543.5	1455.5	1403.0
27.5°	1777.6	1735.8	1729.4	1728.7	1725.1	1666.9	1640.7	1616.6	1586.8	1496.6	1437.7
30°	1787.6	1749.3	1742.2	1742.2	1732.9	1676.2	1647.1	1621.5	1588.2	1497.3	1434.2
32.5°	1757.8	1718.7	1710.9	1711.7	1696.8	1643.5	1612.3	1586.0	1551.3	1461.9	1396.6
35°	1691.1	1653.5	1646.4	1647.1	1628.6	1578.9	1546.3	1520.8	1483.9	1398.7	1332.0
37.5°	1595.3	1559.8	1552.7	1554.1	1531.4	1486.7	1453.3	1429.2	1391.6	1312.8	1247.5
40°	1471.8	1437.7	1431.3	1432.1	1407.2	1368.2	1335.5	1312.8	1275.2	1205.0	1142.5
42.5°	1322.1	1289.4	1284.4	1283.7	1259.6	1224.1	1192.2	1173.0	1134.7	1078.7	1019.0
45°	1141.1	1113.4	1091.4	1106.3	1081.5	1053.1	1023.3	1007.7	971.5	931.8	878.5
47.5°	937.4	913.3	891.3	905.5	882.8	861.5	835.2	825.3	792.7	772.1	727.4
50°	728.1	707.5	687.6	699.7	682.0	667.8	647.2	642.2	615.3	612.4	577.6
52.5°	540.7	525.8	510.2	519.5	506.0	496.7	481.1	479.7	459.1	466.2	442.1
55°	391.0	380.4	368.3	375.4	365.5	359.8	348.4	349.1	333.5	344.2	327.1
57.5°	276.8	268.2	259.7	264.0	257.6	253.3	245.5	247.0	243.4	247.0	234.9
60°	188.1	183.1	176.7	180.2	174.6	172.4	167.5	168.2	159.7	171.0	162.5
62.5°	123.5	119.9	119.9	117.8	113.5	112.1	109.3	109.3	104.3	112.8	107.2
65°	76.6	75.2	74.5	73.1	70.3	69.5	67.4	67.4	63.9	70.3	66.0
67.5°	45.4	44.7	44.0	43.3	41.2	40.4	39.7	39.0	36.9	41.2	38.3
70°	24.8	24.8	24.1	23.4	22.0	22.0	21.3	21.3	19.9	22.0	19.9
72.5°	12.1	12.1	11.4	11.4	10.6	10.6	9.9	9.9	9.2	10.6	9.2
75°	5.7	5.7	5.0	5.0	5.0	5.0	4.3	4.3	4.3	5.0	4.3
77.5°	2.8	2.8	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	1.4	1.4	1.4	1.4	1.4	0.7	0.7	0.7	0.7	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	2.1	2.1	2.1	2.1	2.8	2.1	2.8	2.8	2.8	2.8	2.8
87.5°	2.8	2.8	2.8	2.8	2.8	3.5	3.5	3.5	2.8	3.5	2.8
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):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	303.0	303.0	303.0	303.0	303.0	303.0	303.0	303.0	303.0	303.0	303.0
2.5°	381.8	376.1	378.2	371.9	366.9	364.8	364.8	364.0	330.7	297.3	273.9
5°	477.6	466.9	468.4	457.0	452.0	444.9	442.8	433.6	361.2	294.5	249.1
7.5°	591.1	575.5	566.3	555.6	549.3	536.5	530.1	511.7	389.6	288.8	225.0
10°	713.2	691.2	676.3	659.3	652.9	633.0	620.9	589.7	414.4	279.6	202.2
12.5°	845.2	815.4	788.4	770.0	762.2	723.8	716.0	671.3	437.1	271.1	183.8
15°	980.7	943.1	909.0	882.8	872.9	835.2	811.1	751.5	457.0	263.3	169.6
17.5°	1101.4	1060.9	1019.8	985.7	971.5	918.3	895.6	821.8	471.9	255.5	161.8
20°	1208.5	1159.6	1116.3	1069.4	1053.1	992.8	955.9	876.4	480.4	250.5	162.5
22.5°	1290.1	1234.1	1184.4	1131.9	1111.3	1045.3	1003.4	914.0	483.3	247.0	167.5
25°	1349.7	1287.3	1231.9	1174.5	1150.3	1080.1	1033.9	937.4	482.6	244.8	169.6
27.5°	1380.3	1313.5	1253.9	1192.2	1165.9	1093.6	1043.9	942.4	472.6	236.3	169.6
30°	1376.0	1305.7	1243.3	1179.4	1151.0	1079.4	1028.3	923.2	451.3	220.7	157.5
32.5°	1338.4	1266.7	1202.8	1139.0	1110.6	1040.3	989.2	884.2	420.8	200.1	141.2
35°	1275.9	1205.0	1141.8	1079.4	1051.0	982.9	933.2	831.0	386.0	178.1	126.3
37.5°	1194.3	1125.5	1064.5	1007.7	975.0	911.2	862.9	767.8	347.7	158.2	113.5
40°	1092.8	1027.6	970.1	917.6	882.8	823.9	779.9	693.3	307.3	137.7	101.5
42.5°	975.8	914.7	867.9	815.4	776.3	724.5	686.2	611.0	266.1	119.2	88.7
45°	843.1	789.1	748.7	702.5	662.1	618.1	585.5	524.4	224.2	99.3	76.6
47.5°	700.4	655.7	624.5	586.2	546.4	510.9	485.4	436.4	184.5	83.0	65.3
50°	559.9	524.4	501.7	472.6	436.4	409.5	389.6	356.9	146.2	67.4	54.6
52.5°	430.8	405.2	389.6	368.3	336.4	317.9	303.7	281.0	111.4	54.6	44.0
55°	321.5	303.0	293.1	278.2	250.5	237.7	228.5	214.3	83.0	43.3	34.1
57.5°	232.1	220.0	213.6	203.7	181.0	173.2	166.8	158.2	60.3	33.4	24.8
60°	161.8	153.3	149.7	143.3	124.9	119.9	111.4	111.4	42.6	24.1	17.0
62.5°	107.2	101.5	100.1	95.1	80.9	78.1	75.9	74.5	29.1	16.3	9.9
65°	66.7	62.4	61.7	58.9	49.0	47.5	45.4	45.4	18.5	9.9	5.0
67.5°	38.3	36.2	35.5	34.1	27.0	26.3	24.8	26.3	10.6	5.0	2.1
70°	20.6	18.5	18.5	17.7	13.5	12.8	12.1	12.8	5.7	2.8	1.4
72.5°	9.9	8.5	8.5	7.8	5.7	5.7	5.0	6.4	2.8	1.4	1.4
75°	4.3	4.3	3.5	3.5	2.1	2.1	2.1	2.8	1.4	1.4	1.4
77.5°	2.1	2.1	2.1	2.1	0.7	0.7	0.7	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	0.0	0.0	0.0	1.4	1.4	1.4	1.4
82.5°	1.4	0.7	0.7	0.7	0.0	0.0	0.0	0.7	1.4	1.4	1.4
85°	2.1	2.1	2.1	2.1	1.4	1.4	1.4	2.1	1.4	1.4	1.4
87.5°	2.8	2.8	2.8	2.8	2.1	2.1	2.1	3.5	2.1	1.4	1.4
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):**

	135°	157.5°	180°
0°	303.0	303.0	303.0
2.5°	254.1	239.1	240.6
5°	215.7	194.4	192.3
7.5°	182.4	159.7	156.8
10°	156.1	133.4	129.9
12.5°	137.0	116.4	112.8
15°	124.9	106.4	103.6
17.5°	122.8	108.6	107.2
20°	131.3	124.2	125.6
22.5°	146.2	144.1	147.6
25°	156.1	155.4	159.7
27.5°	154.0	152.6	155.4
30°	142.6	140.5	141.9
32.5°	129.2	125.6	127.0
35°	115.7	112.8	113.5
37.5°	104.3	102.2	102.2
40°	94.4	92.3	92.3
42.5°	83.7	82.3	83.0
45°	72.4	71.7	73.1
47.5°	61.0	60.3	61.7
50°	50.4	49.0	49.0
52.5°	39.7	37.6	36.2
55°	29.1	25.5	24.1
57.5°	19.9	16.3	14.9
60°	11.4	9.2	7.8
62.5°	5.7	3.5	2.8
65°	2.1	1.4	0.7
67.5°	1.4	0.7	0.7
70°	1.4	0.7	0.7
72.5°	0.7	0.7	0.7
75°	0.7	0.7	0.0
77.5°	0.7	0.7	0.7
80°	0.7	0.7	0.0
82.5°	0.7	0.7	0.0
85°	0.7	0.7	0.0
87.5°	0.7	0.7	0.0
90°	0.0	0.0	0.0





Report Generated By E9808895 / USPTCWHP6082093





— 0°-180°    - - 45°-225°    - - - - 90°-270°











(END OF REPORT)