

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: P170879

Luminaire Tested: **LDA4A09835D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170879
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: LDA4A09835D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 870.2 lumens
Efficiency: N/A
Efficacy: 62.9 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

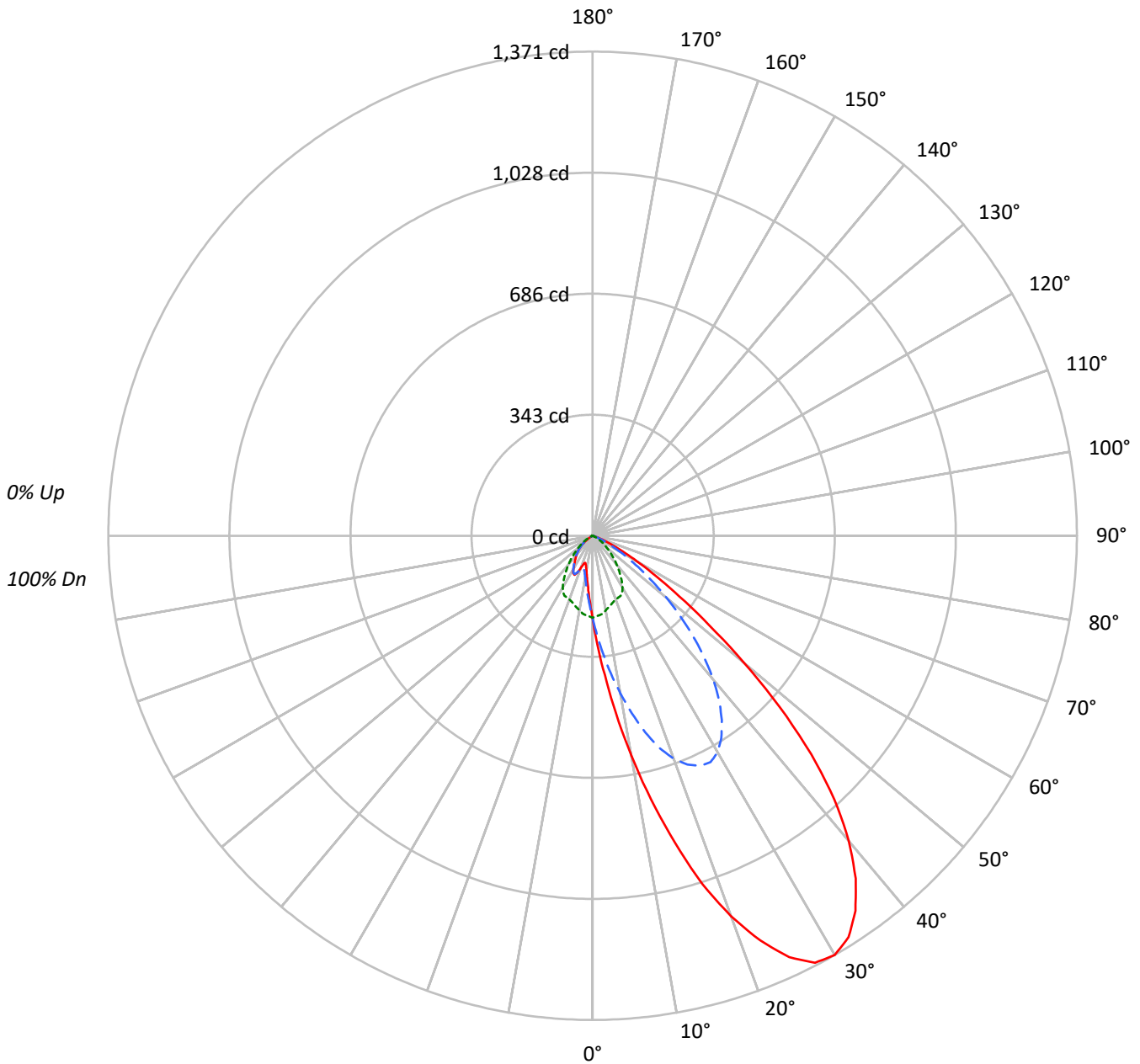
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	28666	28666	28666
5°	48920	27958	18263
10°	79069	26853	12475
15°	114863	25782	10152
20°	150439	25215	12640
25°	179158	25545	16658
30°	195239	24099	15496
35°	195269	20569	13115
40°	181723	17003	11384
45°	152650	13292	9786
50°	107133	9921	7196
55°	64471	7140	3978
60°	35573	4564	1480
65°	17161	2218	146
70°	6852	793	180
75°	2097	524	0
80°	781	781	0
85°	2264	1557	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.9	2.9
10°-20°	98.8	11.4
20°-30°	200.3	23.0
30°-40°	243.4	28.0
40°-50°	192.1	22.1
50°-60°	87.0	10.0
60°-70°	20.5	2.4
70°-80°	2.2	0.3
80°-90°	1.0	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°	324.0	37.2
0°-40°	567.4	65.2
0°-60°	846.5	97.3
0°-90°	870.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	870.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	232	232	232	232	232	
5°	395	332	226	165	148	45
15°	900	576	202	96	80	262
25°	1316	719	188	120	122	602
35°	1297	637	137	89	87	801
45°	875	402	76	56	56	662
55°	300	164	33	22	18	283
65°	59	35	8	2	0	66
75°	4	2	1	0	0	7
85°	2	2	1	0	0	1
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°	232.4	232.4	232.4	232.4	232.4	232.4	232.4	232.4	232.4	232.4	232.4
2.5°	308.6	300.9	300.9	295.5	299.8	291.1	292.8	292.2	297.7	296.0	291.1
5°	395.1	388.5	388.0	380.9	386.4	374.9	375.5	373.9	379.8	373.9	366.8
7.5°	506.6	495.2	494.7	486.5	491.9	477.3	476.7	473.4	478.9	467.5	457.1
10°	631.3	614.9	613.8	604.0	610.0	591.0	589.4	583.9	587.7	569.8	555.1
12.5°	764.6	746.6	744.4	734.1	739.6	716.7	712.3	705.3	706.9	680.8	661.2
15°	899.5	884.3	882.1	871.2	876.7	848.4	841.3	832.6	831.0	796.1	771.1
17.5°	1034.0	1002.9	1012.7	1001.8	1006.7	973.6	964.3	953.4	947.4	904.4	872.9
20°	1146.1	1119.4	1126.5	1116.7	1121.0	1082.9	1071.5	1057.9	1047.6	995.9	959.4
22.5°	1240.7	1213.0	1209.2	1209.2	1211.9	1170.5	1155.3	1140.1	1125.4	1063.9	1026.9
25°	1316.4	1285.9	1281.6	1280.5	1281.0	1237.5	1219.5	1202.7	1183.6	1116.1	1075.9
27.5°	1363.2	1331.1	1326.2	1325.6	1322.9	1278.3	1258.2	1239.7	1216.8	1147.7	1102.5
30°	1370.8	1341.4	1336.0	1336.0	1328.9	1285.4	1263.1	1243.5	1217.9	1148.2	1099.8
32.5°	1348.0	1318.0	1312.0	1312.6	1301.2	1260.3	1236.4	1216.3	1189.6	1121.0	1071.0
35°	1296.8	1268.0	1262.5	1263.1	1248.9	1210.8	1185.8	1166.2	1137.9	1072.6	1021.4
37.5°	1223.3	1196.1	1190.7	1191.8	1174.4	1140.1	1114.5	1096.0	1067.2	1006.7	956.7
40°	1128.6	1102.5	1097.6	1098.2	1079.1	1049.2	1024.2	1006.7	977.9	924.0	876.1
42.5°	1013.8	988.8	985.0	984.4	965.9	938.7	914.2	899.5	870.2	827.2	781.5
45°	875.1	853.8	837.0	848.4	829.3	807.6	784.7	772.7	745.0	714.5	673.7
47.5°	718.9	700.4	683.5	694.4	677.0	660.6	640.5	632.9	607.9	592.1	557.8
50°	558.3	542.6	527.3	536.6	523.0	512.1	496.3	492.5	471.8	469.6	443.0
52.5°	414.7	403.2	391.3	398.3	388.0	380.9	369.0	367.9	352.1	357.5	339.0
55°	299.8	291.7	282.4	287.9	280.3	275.9	267.2	267.7	255.8	263.9	250.9
57.5°	212.2	205.7	199.2	202.4	197.5	194.3	188.3	189.4	186.7	189.4	180.1
60°	144.2	140.4	135.5	138.2	133.9	132.2	128.4	129.0	122.4	131.1	124.6
62.5°	94.7	92.0	92.0	90.3	87.1	86.0	83.8	83.8	80.0	86.5	82.2
65°	58.8	57.7	57.1	56.1	53.9	53.3	51.7	51.7	49.0	53.9	50.6
67.5°	34.8	34.3	33.7	33.2	31.6	31.0	30.5	29.9	28.3	31.6	29.4
70°	19.0	19.0	18.5	18.0	16.9	16.9	16.3	16.3	15.2	16.9	15.2
72.5°	9.3	9.3	8.7	8.7	8.2	8.2	7.6	7.6	7.1	8.2	7.1
75°	4.4	4.4	3.8	3.8	3.8	3.8	3.3	3.3	3.3	3.8	3.3
77.5°	2.2	2.2	2.2	2.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.1	1.1	1.1	1.1	1.1	0.5	0.5	0.5	0.5	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.6	1.6	1.6	1.6	2.2	1.6	2.2	2.2	2.2	2.2	2.2
87.5°	2.2	2.2	2.2	2.2	2.2	2.7	2.7	2.7	2.2	2.7	2.2
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°	232.4	232.4	232.4	232.4	232.4	232.4	232.4	232.4	232.4	232.4	232.4
2.5°	292.8	288.4	290.1	285.2	281.3	279.7	279.7	279.2	253.6	228.0	210.1
5°	366.2	358.1	359.2	350.5	346.6	341.2	339.6	332.5	277.0	225.8	191.0
7.5°	453.3	441.3	434.3	426.1	421.2	411.4	406.5	392.4	298.8	221.5	172.5
10°	546.9	530.0	518.6	505.6	500.7	485.4	476.2	452.2	317.8	214.4	155.1
12.5°	648.1	625.3	604.6	590.4	584.5	555.1	549.1	514.8	335.2	207.9	140.9
15°	752.1	723.2	697.1	677.0	669.4	640.5	622.0	576.3	350.5	201.9	130.1
17.5°	844.6	813.6	782.0	755.9	745.0	704.2	686.8	630.2	361.9	195.9	124.1
20°	926.8	889.2	856.0	820.1	807.6	761.3	733.0	672.1	368.4	192.1	124.6
22.5°	989.3	946.3	908.2	868.0	852.2	801.6	769.5	700.9	370.6	189.4	128.4
25°	1035.0	987.2	944.7	900.6	882.1	828.3	792.9	718.9	370.0	187.7	130.1
27.5°	1058.4	1007.3	961.6	914.2	894.1	838.6	800.5	722.7	362.4	181.2	130.1
30°	1055.2	1001.3	953.4	904.4	882.7	827.7	788.5	708.0	346.1	169.2	120.8
32.5°	1026.3	971.4	922.4	873.4	851.7	797.8	758.6	678.1	322.7	153.5	108.3
35°	978.4	924.0	875.6	827.7	805.9	753.7	715.6	637.2	296.0	136.6	96.9
37.5°	915.9	863.1	816.3	772.7	747.7	698.7	661.7	588.8	266.7	121.4	87.1
40°	838.0	788.0	743.9	703.6	677.0	631.8	598.1	531.7	235.6	105.6	77.8
42.5°	748.3	701.5	665.5	625.3	595.3	555.6	526.2	468.5	204.1	91.4	68.0
45°	646.5	605.1	574.1	538.7	507.7	474.0	449.0	402.2	172.0	76.2	58.8
47.5°	537.1	502.8	478.9	449.5	419.0	391.8	372.2	334.7	141.5	63.7	50.1
50°	429.4	402.2	384.7	362.4	334.7	314.0	298.8	273.7	112.1	51.7	41.9
52.5°	330.3	310.7	298.8	282.4	257.9	243.8	232.9	215.5	85.4	41.9	33.7
55°	246.5	232.4	224.7	213.3	192.1	182.3	175.2	164.3	63.7	33.2	26.1
57.5°	177.9	168.7	163.8	156.2	138.8	132.8	127.9	121.4	46.3	25.6	19.0
60°	124.1	117.5	114.8	109.9	95.8	92.0	85.4	85.4	32.7	18.5	13.1
62.5°	82.2	77.8	76.7	72.9	62.0	59.9	58.2	57.1	22.3	12.5	7.6
65°	51.2	47.9	47.3	45.2	37.5	36.5	34.8	34.8	14.1	7.6	3.8
67.5°	29.4	27.8	27.2	26.1	20.7	20.1	19.0	20.1	8.2	3.8	1.6
70°	15.8	14.1	14.1	13.6	10.3	9.8	9.3	9.8	4.4	2.2	1.1
72.5°	7.6	6.5	6.5	6.0	4.4	4.4	3.8	4.9	2.2	1.1	1.1
75°	3.3	3.3	2.7	2.7	1.6	1.6	1.6	2.2	1.1	1.1	1.1
77.5°	1.6	1.6	1.6	1.6	0.5	0.5	0.5	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	1.1	1.1	1.1	1.1
82.5°	1.1	0.5	0.5	0.5	0.0	0.0	0.0	0.5	1.1	1.1	1.1
85°	1.6	1.6	1.6	1.6	1.1	1.1	1.1	1.6	1.1	1.1	1.1
87.5°	2.2	2.2	2.2	2.2	1.6	1.6	1.6	2.7	1.6	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):

	135°	157.5°	180°
0°	232.4	232.4	232.4
2.5°	194.8	183.4	184.5
5°	165.4	149.1	147.5
7.5°	139.9	122.4	120.3
10°	119.7	102.3	99.6
12.5°	105.0	89.2	86.5
15°	95.8	81.6	79.5
17.5°	94.1	83.3	82.2
20°	100.7	95.2	96.3
22.5°	112.1	110.5	113.2
25°	119.7	119.2	122.4
27.5°	118.1	117.0	119.2
30°	109.4	107.7	108.8
32.5°	99.0	96.3	97.4
35°	88.7	86.5	87.1
37.5°	80.0	78.4	78.4
40°	72.4	70.7	70.7
42.5°	64.2	63.1	63.7
45°	55.5	55.0	56.1
47.5°	46.8	46.3	47.3
50°	38.6	37.5	37.5
52.5°	30.5	28.8	27.8
55°	22.3	19.6	18.5
57.5°	15.2	12.5	11.4
60°	8.7	7.1	6.0
62.5°	4.4	2.7	2.2
65°	1.6	1.1	0.5
67.5°	1.1	0.5	0.5
70°	1.1	0.5	0.5
72.5°	0.5	0.5	0.5
75°	0.5	0.5	0.0
77.5°	0.5	0.5	0.5
80°	0.5	0.5	0.0
82.5°	0.5	0.5	0.0
85°	0.5	0.5	0.0
87.5°	0.5	0.5	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)