

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: P170878

Luminaire Tested: **LDA4A09830D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170878
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: LDA4A09830D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 827.7 lumens
Efficiency: N/A
Efficacy: 59.8 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

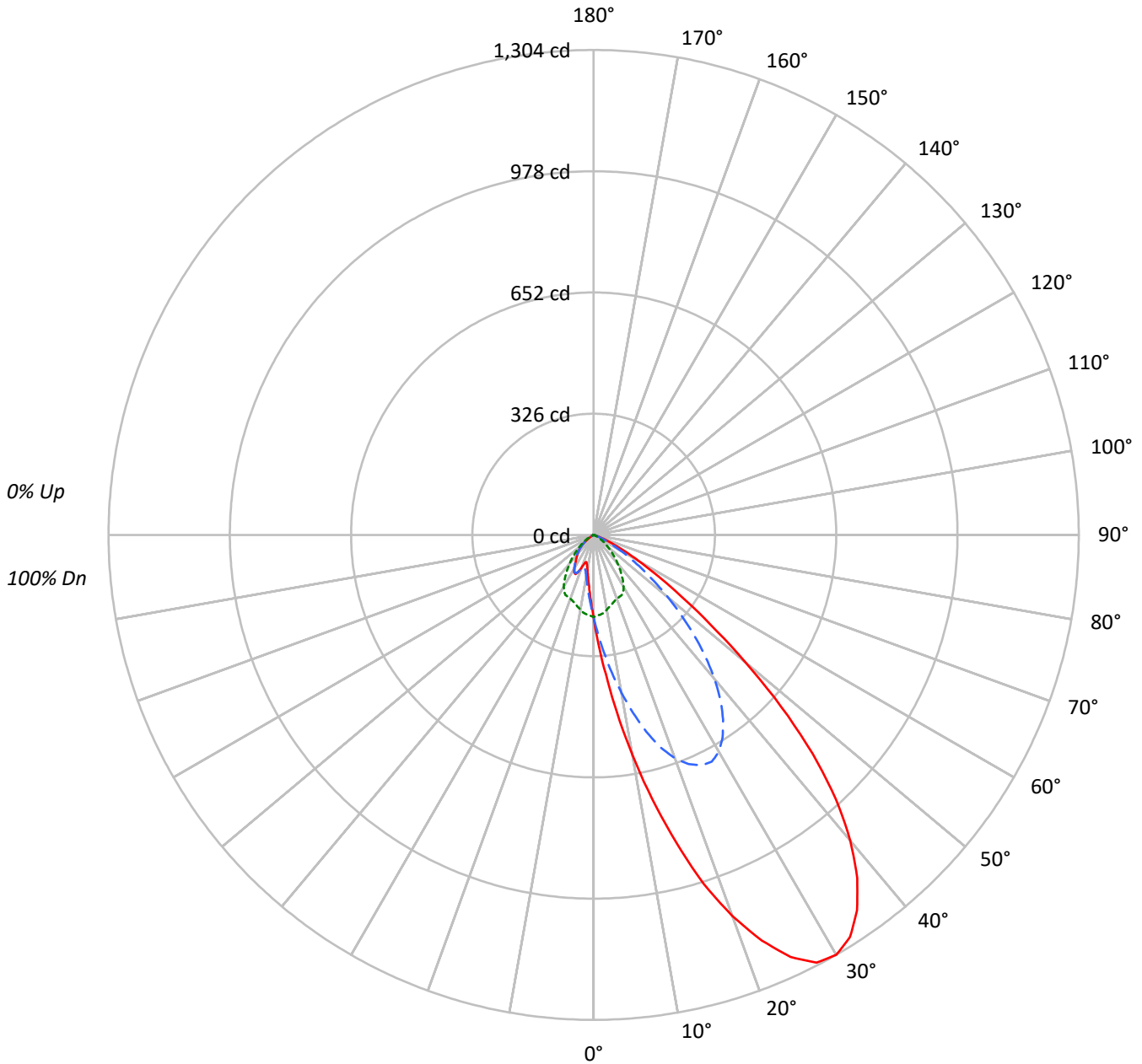
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	27259	27259	27259
5°	46530	26596	17371
10°	75199	25538	11861
15°	109257	24518	9654
20°	143088	23982	12024
25°	170407	24307	15855
30°	185711	22931	14741
35°	185737	19560	12468
40°	172851	16166	10836
45°	145184	12647	9297
50°	101914	9441	6851
55°	61331	6795	3785
60°	33846	4342	1406
65°	16315	2101	146
70°	6528	757	180
75°	1954	477	0
80°	710	710	0
85°	2264	1415	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	23.7	2.9
10°-20°	94.0	11.4
20°-30°	190.5	23.0
30°-40°	231.5	28.0
40°-50°	182.7	22.1
50°-60°	82.8	10.0
60°-70°	19.5	2.4
70°-80°	2.1	0.3
80°-90°	0.9	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°	308.2	37.2
0°-40°	539.7	65.2
0°-60°	805.1	97.3
0°-90°	827.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	827.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	221	221	221	221	221	
5°	376	316	215	157	140	43
15°	856	548	192	91	76	249
25°	1252	684	179	114	116	573
35°	1234	606	130	84	83	762
45°	832	382	72	53	53	630
55°	285	156	32	21	18	269
65°	56	33	7	2	0	63
75°	4	2	1	0	0	6
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°	221.0	221.0	221.0	221.0	221.0	221.0	221.0	221.0	221.0	221.0	221.0
2.5°	293.5	286.2	286.2	281.1	285.2	276.9	278.5	278.0	283.1	281.6	276.9
5°	375.8	369.6	369.1	362.3	367.5	356.6	357.2	355.6	361.3	355.6	348.9
7.5°	481.9	471.0	470.5	462.8	467.9	454.0	453.4	450.3	455.5	444.6	434.8
10°	600.4	584.9	583.9	574.6	580.3	562.1	560.6	555.4	559.0	542.0	528.0
12.5°	727.3	710.2	708.1	698.3	703.4	681.7	677.6	670.8	672.4	647.5	628.9
15°	855.6	841.1	839.1	828.7	833.9	807.0	800.2	792.0	790.4	757.3	733.5
17.5°	983.5	954.0	963.3	952.9	957.6	926.0	917.2	906.9	901.2	860.3	830.3
20°	1090.1	1064.7	1071.5	1062.2	1066.3	1030.1	1019.2	1006.3	996.4	947.2	912.6
22.5°	1180.2	1153.8	1150.2	1150.2	1152.7	1113.4	1098.9	1084.4	1070.4	1012.0	976.8
25°	1252.1	1223.1	1219.0	1218.0	1218.5	1177.1	1160.0	1143.9	1125.8	1061.6	1023.3
27.5°	1296.6	1266.1	1261.4	1260.9	1258.3	1215.9	1196.7	1179.1	1157.4	1091.7	1048.7
30°	1303.9	1275.9	1270.8	1270.8	1264.0	1222.6	1201.4	1182.8	1158.4	1092.2	1046.1
32.5°	1282.2	1253.7	1248.0	1248.5	1237.6	1198.8	1176.0	1156.9	1131.5	1066.3	1018.7
35°	1233.5	1206.1	1200.9	1201.4	1187.9	1151.7	1127.9	1109.3	1082.3	1020.2	971.6
37.5°	1163.6	1137.7	1132.6	1133.6	1117.0	1084.4	1060.1	1042.5	1015.1	957.6	910.0
40°	1073.5	1048.7	1044.0	1044.6	1026.4	998.0	974.2	957.6	930.2	878.9	833.4
42.5°	964.3	940.5	936.9	936.4	918.8	892.9	869.6	855.6	827.7	786.8	743.3
45°	832.3	812.1	796.1	807.0	788.9	768.2	746.4	735.0	708.6	679.6	640.8
47.5°	683.8	666.2	650.1	660.5	643.9	628.4	609.2	602.0	578.2	563.2	530.6
50°	531.1	516.1	501.6	510.4	497.4	487.1	472.1	468.4	448.8	446.7	421.3
52.5°	394.4	383.6	372.2	378.9	369.1	362.3	350.9	349.9	334.9	340.1	322.5
55°	285.2	277.4	268.6	273.8	266.6	262.4	254.2	254.7	243.3	251.0	238.6
57.5°	201.9	195.7	189.4	192.6	187.9	184.8	179.1	180.1	177.5	180.1	171.3
60°	137.2	133.5	128.9	131.5	127.3	125.8	122.2	122.7	116.5	124.7	118.5
62.5°	90.1	87.5	87.5	85.9	82.8	81.8	79.7	79.7	76.1	82.3	78.2
65°	55.9	54.9	54.4	53.3	51.2	50.7	49.2	49.2	46.6	51.2	48.1
67.5°	33.1	32.6	32.1	31.6	30.0	29.5	29.0	28.5	26.9	30.0	28.0
70°	18.1	18.1	17.6	17.1	16.0	16.0	15.5	15.5	14.5	16.0	14.5
72.5°	8.8	8.8	8.3	8.3	7.8	7.8	7.2	7.2	6.7	7.8	6.7
75°	4.1	4.1	3.6	3.6	3.6	3.6	3.1	3.1	3.1	3.6	3.1
77.5°	2.1	2.1	2.1	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.6	1.6	1.6	1.6	2.1	1.6	2.1	2.1	2.1	2.1	2.1
87.5°	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.1	2.6	2.1
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	221.0	221.0	221.0	221.0	221.0	221.0	221.0	221.0	221.0	221.0	221.0
2.5°	278.5	274.3	275.9	271.2	267.6	266.1	266.1	265.5	241.2	216.9	199.8
5°	348.4	340.6	341.6	333.3	329.7	324.5	323.0	316.3	263.5	214.8	181.7
7.5°	431.2	419.8	413.1	405.3	400.6	391.3	386.7	373.2	284.2	210.7	164.1
10°	520.2	504.2	493.3	480.9	476.2	461.7	452.9	430.1	302.3	203.9	147.5
12.5°	616.5	594.7	575.1	561.6	555.9	528.0	522.3	489.7	318.9	197.7	134.1
15°	715.4	687.9	663.1	643.9	636.7	609.2	591.6	548.2	333.3	192.0	123.7
17.5°	803.4	773.8	743.8	719.0	708.6	669.8	653.2	599.4	344.2	186.3	118.0
20°	881.5	845.8	814.2	780.1	768.2	724.2	697.2	639.3	350.4	182.7	118.5
22.5°	941.0	900.1	863.9	825.6	810.6	762.5	731.9	666.7	352.5	180.1	122.2
25°	984.5	939.0	898.6	856.7	839.1	787.8	754.2	683.8	352.0	178.6	123.7
27.5°	1006.8	958.1	914.6	869.6	850.5	797.7	761.4	687.4	344.7	172.4	123.7
30°	1003.7	952.4	906.9	860.3	839.6	787.3	750.0	673.4	329.2	161.0	114.9
32.5°	976.2	924.0	877.4	830.8	810.1	758.8	721.6	645.0	307.0	146.0	103.0
35°	930.7	878.9	832.9	787.3	766.6	716.9	680.7	606.1	281.6	129.9	92.1
37.5°	871.2	820.9	776.4	735.0	711.2	664.6	629.4	560.1	253.6	115.4	82.8
40°	797.1	749.5	707.6	669.3	643.9	601.0	568.9	505.7	224.1	100.4	74.0
42.5°	711.7	667.2	633.1	594.7	566.3	528.5	500.5	445.7	194.1	87.0	64.7
45°	614.9	575.6	546.1	512.4	482.9	450.8	427.0	382.5	163.6	72.5	55.9
47.5°	510.9	478.3	455.5	427.6	398.6	372.7	354.1	318.3	134.6	60.6	47.6
50°	408.4	382.5	366.0	344.7	318.3	298.7	284.2	260.4	106.6	49.2	39.9
52.5°	314.2	295.6	284.2	268.6	245.4	231.9	221.5	205.0	81.3	39.9	32.1
55°	234.5	221.0	213.8	202.9	182.7	173.4	166.7	156.3	60.6	31.6	24.8
57.5°	169.3	160.5	155.8	148.6	132.0	126.3	121.6	115.4	44.0	24.3	18.1
60°	118.0	111.8	109.2	104.6	91.1	87.5	81.3	81.3	31.1	17.6	12.4
62.5°	78.2	74.0	73.0	69.4	59.0	56.9	55.4	54.4	21.2	11.9	7.2
65°	48.7	45.6	45.0	43.0	35.7	34.7	33.1	33.1	13.5	7.2	3.6
67.5°	28.0	26.4	25.9	24.8	19.7	19.2	18.1	19.2	7.8	3.6	1.6
70°	15.0	13.5	13.5	12.9	9.8	9.3	8.8	9.3	4.1	2.1	1.0
72.5°	7.2	6.2	6.2	5.7	4.1	4.1	3.6	4.7	2.1	1.0	1.0
75°	3.1	3.1	2.6	2.6	1.6	1.6	1.6	2.1	1.0	1.0	1.0
77.5°	1.6	1.6	1.6	1.6	0.5	0.5	0.5	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0
82.5°	1.0	0.5	0.5	0.5	0.0	0.0	0.0	0.5	1.0	1.0	1.0
85°	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.6	1.0	1.0	1.0
87.5°	2.1	2.1	2.1	2.1	1.6	1.6	1.6	2.6	1.6	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):

	135°	157.5°	180°
0°	221.0	221.0	221.0
2.5°	185.3	174.4	175.5
5°	157.4	141.8	140.3
7.5°	133.0	116.5	114.4
10°	113.9	97.3	94.7
12.5°	99.9	84.9	82.3
15°	91.1	77.6	75.6
17.5°	89.5	79.2	78.2
20°	95.8	90.6	91.6
22.5°	106.6	105.1	107.7
25°	113.9	113.4	116.5
27.5°	112.3	111.3	113.4
30°	104.0	102.5	103.5
32.5°	94.2	91.6	92.7
35°	84.4	82.3	82.8
37.5°	76.1	74.5	74.5
40°	68.8	67.3	67.3
42.5°	61.1	60.0	60.6
45°	52.8	52.3	53.3
47.5°	44.5	44.0	45.0
50°	36.8	35.7	35.7
52.5°	29.0	27.4	26.4
55°	21.2	18.6	17.6
57.5°	14.5	11.9	10.9
60°	8.3	6.7	5.7
62.5°	4.1	2.6	2.1
65°	1.6	1.0	0.5
67.5°	1.0	0.5	0.5
70°	1.0	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)