

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: P170889

Luminaire Tested: **LDA4A13927D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170889
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: LDA4A13927D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 911.3 lumens
Efficiency: N/A
Efficacy: 40.9 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

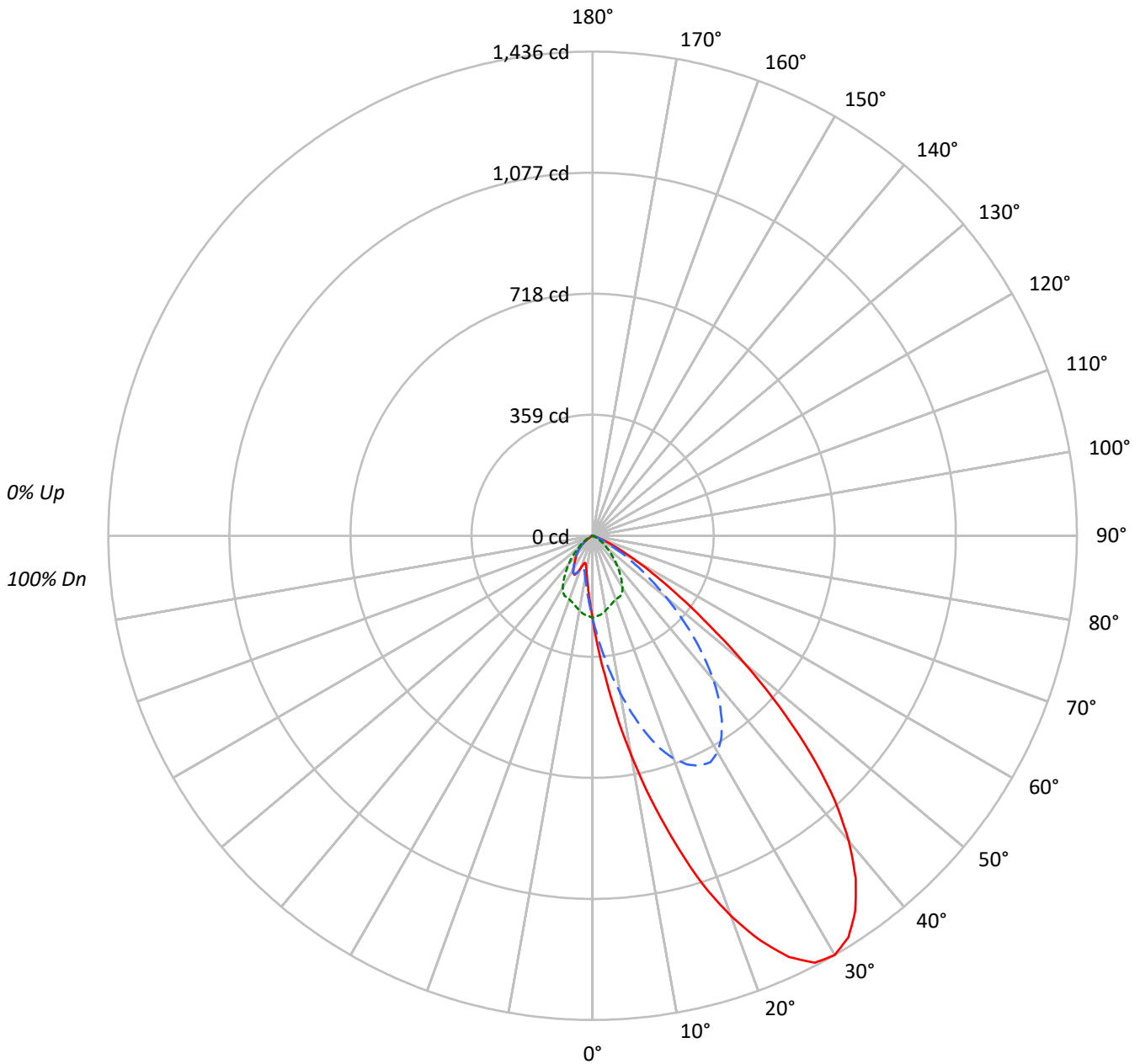
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	30010	30010	30010
5°	51223	29283	19117
10°	82802	28118	13063
15°	120290	26995	10624
20°	157540	26410	13244
25°	187623	26757	17448
30°	204469	25238	16237
35°	204499	21533	13733
40°	190321	17808	11931
45°	159854	13920	10239
50°	112199	10381	7541
55°	67525	7484	4172
60°	37250	4786	1554
65°	17949	2335	175
70°	7177	829	216
75°	2192	524	0
80°	781	781	0
85°	2406	1557	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.1	2.9
10°-20°	103.4	11.4
20°-30°	209.8	23.0
30°-40°	254.9	28.0
40°-50°	201.1	22.1
50°-60°	91.1	10.0
60°-70°	21.5	2.4
70°-80°	2.3	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°	339.3	37.2
0°-40°	594.2	65.2
0°-60°	886.5	97.3
0°-90°	911.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	911.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	243	243	243	243	243	
5°	414	348	236	173	154	47
15°	942	604	211	100	83	274
25°	1379	753	197	125	128	631
35°	1358	667	143	93	91	839
45°	916	421	80	58	59	693
55°	314	172	35	23	19	297
65°	62	36	8	2	1	69
75°	5	2	1	1	0	7
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°	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3
2.5°	323.1	315.2	315.2	309.5	314.0	304.9	306.6	306.0	311.7	310.0	304.9
5°	413.7	406.9	406.3	398.9	404.6	392.7	393.2	391.5	397.8	391.5	384.1
7.5°	530.6	518.6	518.0	509.5	515.2	499.8	499.2	495.8	501.5	489.5	478.7
10°	661.1	644.0	642.8	632.6	638.9	618.9	617.2	611.5	615.5	596.7	581.3
12.5°	800.7	781.9	779.6	768.8	774.5	750.6	746.0	738.6	740.3	712.9	692.4
15°	942.0	926.1	923.8	912.4	918.1	888.5	881.1	871.9	870.2	833.8	807.5
17.5°	1082.8	1050.3	1060.6	1049.2	1054.3	1019.5	1009.9	998.5	992.2	947.2	914.1
20°	1200.2	1172.3	1179.7	1169.4	1174.0	1134.1	1122.1	1107.9	1097.1	1042.9	1004.7
22.5°	1299.4	1270.3	1266.3	1266.3	1269.2	1225.9	1209.9	1193.9	1178.5	1114.2	1075.4
25°	1378.6	1346.7	1342.1	1341.0	1341.5	1295.9	1277.1	1259.5	1239.5	1168.9	1126.7
27.5°	1427.6	1394.0	1388.8	1388.3	1385.4	1338.7	1317.6	1298.2	1274.3	1201.9	1154.6
30°	1435.6	1404.8	1399.1	1399.1	1391.7	1346.1	1322.7	1302.2	1275.4	1202.5	1151.8
32.5°	1411.6	1380.3	1374.0	1374.6	1362.6	1319.9	1294.8	1273.7	1245.8	1174.0	1121.6
35°	1358.1	1327.9	1322.2	1322.7	1307.9	1268.0	1241.8	1221.3	1191.7	1123.3	1069.7
37.5°	1281.1	1252.6	1246.9	1248.1	1229.8	1193.9	1167.2	1147.8	1117.6	1054.3	1001.9
40°	1182.0	1154.6	1149.5	1150.1	1130.1	1098.8	1072.5	1054.3	1024.1	967.7	917.5
42.5°	1061.7	1035.5	1031.5	1030.9	1011.6	983.1	957.4	942.0	911.3	866.2	818.4
45°	916.4	894.2	876.5	888.5	868.5	845.7	821.8	809.3	780.2	748.3	705.5
47.5°	752.8	733.5	715.8	727.2	709.0	691.9	670.8	662.8	636.6	620.0	584.1
50°	584.7	568.2	552.2	561.9	547.7	536.3	519.7	515.8	494.1	491.8	463.9
52.5°	434.3	422.3	409.8	417.2	406.3	398.9	386.4	385.3	368.7	374.4	355.0
55°	314.0	305.5	295.8	301.5	293.5	288.9	279.8	280.4	267.9	276.4	262.7
57.5°	222.3	215.4	208.6	212.0	206.9	203.5	197.2	198.3	195.5	198.3	188.6
60°	151.0	147.0	141.9	144.8	140.2	138.5	134.5	135.1	128.2	137.3	130.5
62.5°	99.2	96.3	96.3	94.6	91.2	90.0	87.8	87.8	83.8	90.6	86.1
65°	61.5	60.4	59.8	58.7	56.4	55.9	54.1	54.1	51.3	56.4	53.0
67.5°	36.5	35.9	35.3	34.8	33.1	32.5	31.9	31.3	29.6	33.1	30.8
70°	19.9	19.9	19.4	18.8	17.7	17.7	17.1	17.1	16.0	17.7	16.0
72.5°	9.7	9.7	9.1	9.1	8.5	8.5	8.0	8.0	7.4	8.5	7.4
75°	4.6	4.6	4.0	4.0	4.0	4.0	3.4	3.4	3.4	4.0	3.4
77.5°	2.3	2.3	2.3	2.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6	0.6	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°	1.7	1.7	1.7	1.7	2.3	1.7	2.3	2.3	2.3	2.3	2.3
87.5°	2.3	2.3	2.3	2.3	2.3	2.8	2.8	2.8	2.3	2.8	2.3
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°	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3	243.3
2.5°	306.6	302.0	303.8	298.6	294.6	292.9	292.9	292.4	265.6	238.8	220.0
5°	383.5	375.0	376.1	367.0	363.0	357.3	355.6	348.2	290.1	236.5	200.0
7.5°	474.7	462.2	454.8	446.2	441.1	430.8	425.7	410.9	312.9	231.9	180.7
10°	572.7	555.1	543.1	529.4	524.3	508.3	498.7	473.6	332.8	224.5	162.4
12.5°	678.7	654.8	633.2	618.3	612.1	581.3	575.0	539.1	351.1	217.7	147.6
15°	787.6	757.4	730.0	709.0	701.0	670.8	651.4	603.5	367.0	211.4	136.2
17.5°	884.5	852.0	818.9	791.6	780.2	737.4	719.2	659.9	379.0	205.2	129.9
20°	970.5	931.2	896.4	858.8	845.7	797.3	767.7	703.8	385.8	201.2	130.5
22.5°	1036.1	991.1	951.2	909.0	892.5	839.5	805.8	734.0	388.1	198.3	134.5
25°	1083.9	1033.8	989.3	943.2	923.8	867.4	830.3	752.8	387.5	196.6	136.2
27.5°	1108.5	1054.9	1007.0	957.4	936.3	878.2	838.3	756.8	379.6	189.8	136.2
30°	1105.0	1048.6	998.5	947.2	924.4	866.8	825.8	741.4	362.5	177.2	126.5
32.5°	1074.8	1017.3	966.0	914.7	891.9	835.5	794.4	710.1	337.9	160.7	113.4
35°	1024.7	967.7	917.0	866.8	844.0	789.3	749.4	667.4	310.0	143.0	101.4
37.5°	959.1	903.9	854.8	809.3	783.0	731.7	693.0	616.6	279.3	127.1	91.2
40°	877.6	825.2	779.1	736.9	709.0	661.7	626.3	556.8	246.8	110.6	81.5
42.5°	783.6	734.6	697.0	654.8	623.5	581.9	551.1	490.7	213.7	95.7	71.2
45°	677.0	633.7	601.2	564.2	531.7	496.4	470.2	421.2	180.1	79.8	61.5
47.5°	562.5	526.6	501.5	470.7	438.8	410.3	389.8	350.5	148.2	66.7	52.4
50°	449.6	421.2	402.9	379.6	350.5	328.8	312.9	286.7	117.4	54.1	43.9
52.5°	345.9	325.4	312.9	295.8	270.1	255.3	243.9	225.7	89.5	43.9	35.3
55°	258.2	243.3	235.4	223.4	201.2	190.9	183.5	172.1	66.7	34.8	27.4
57.5°	186.4	176.7	171.5	163.6	145.3	139.1	133.9	127.1	48.4	26.8	19.9
60°	129.9	123.1	120.2	115.1	100.3	96.3	89.5	89.5	34.2	19.4	13.7
62.5°	86.1	81.5	80.4	76.4	65.0	62.7	61.0	59.8	23.4	13.1	8.0
65°	53.6	50.2	49.6	47.3	39.3	38.2	36.5	36.5	14.8	8.0	4.0
67.5°	30.8	29.1	28.5	27.4	21.7	21.1	19.9	21.1	8.5	4.0	1.7
70°	16.5	14.8	14.8	14.2	10.8	10.3	9.7	10.3	4.6	2.3	1.1
72.5°	8.0	6.8	6.8	6.3	4.6	4.6	4.0	5.1	2.3	1.1	1.1
75°	3.4	3.4	2.8	2.8	1.7	1.7	1.7	2.3	1.1	1.1	1.1
77.5°	1.7	1.7	1.7	1.7	0.6	0.6	0.6	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	0.6	0.6	0.6	0.0	0.0	0.0	0.6	1.1	1.1	1.1
85°	1.7	1.7	1.7	1.7	1.1	1.1	1.1	1.7	1.1	1.1	1.1
87.5°	2.3	2.3	2.3	2.3	1.7	1.7	1.7	2.8	1.7	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°	243.3	243.3	243.3
2.5°	204.0	192.1	193.2
5°	173.2	156.2	154.4
7.5°	146.5	128.2	125.9
10°	125.4	107.1	104.3
12.5°	110.0	93.5	90.6
15°	100.3	85.5	83.2
17.5°	98.6	87.2	86.1
20°	105.4	99.7	100.9
22.5°	117.4	115.7	118.5
25°	125.4	124.8	128.2
27.5°	123.7	122.5	124.8
30°	114.5	112.8	114.0
32.5°	103.7	100.9	102.0
35°	92.9	90.6	91.2
37.5°	83.8	82.1	82.1
40°	75.8	74.1	74.1
42.5°	67.2	66.1	66.7
45°	58.1	57.6	58.7
47.5°	49.0	48.4	49.6
50°	40.5	39.3	39.3
52.5°	31.9	30.2	29.1
55°	23.4	20.5	19.4
57.5°	16.0	13.1	12.0
60°	9.1	7.4	6.3
62.5°	4.6	2.8	2.3
65°	1.7	1.1	0.6
67.5°	1.1	0.6	0.6
70°	1.1	0.6	0.6
72.5°	0.6	0.6	0.6
75°	0.6	0.6	0.0
77.5°	0.6	0.6	0.6
80°	0.6	0.6	0.0
82.5°	0.6	0.6	0.0
85°	0.6	0.6	0.0
87.5°	0.6	0.6	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)