

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: P170884

Luminaire Tested: **LDA4A09940D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170884
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: LDA4A09940D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 766.0 lumens
Efficiency: N/A
Efficacy: 55.3 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

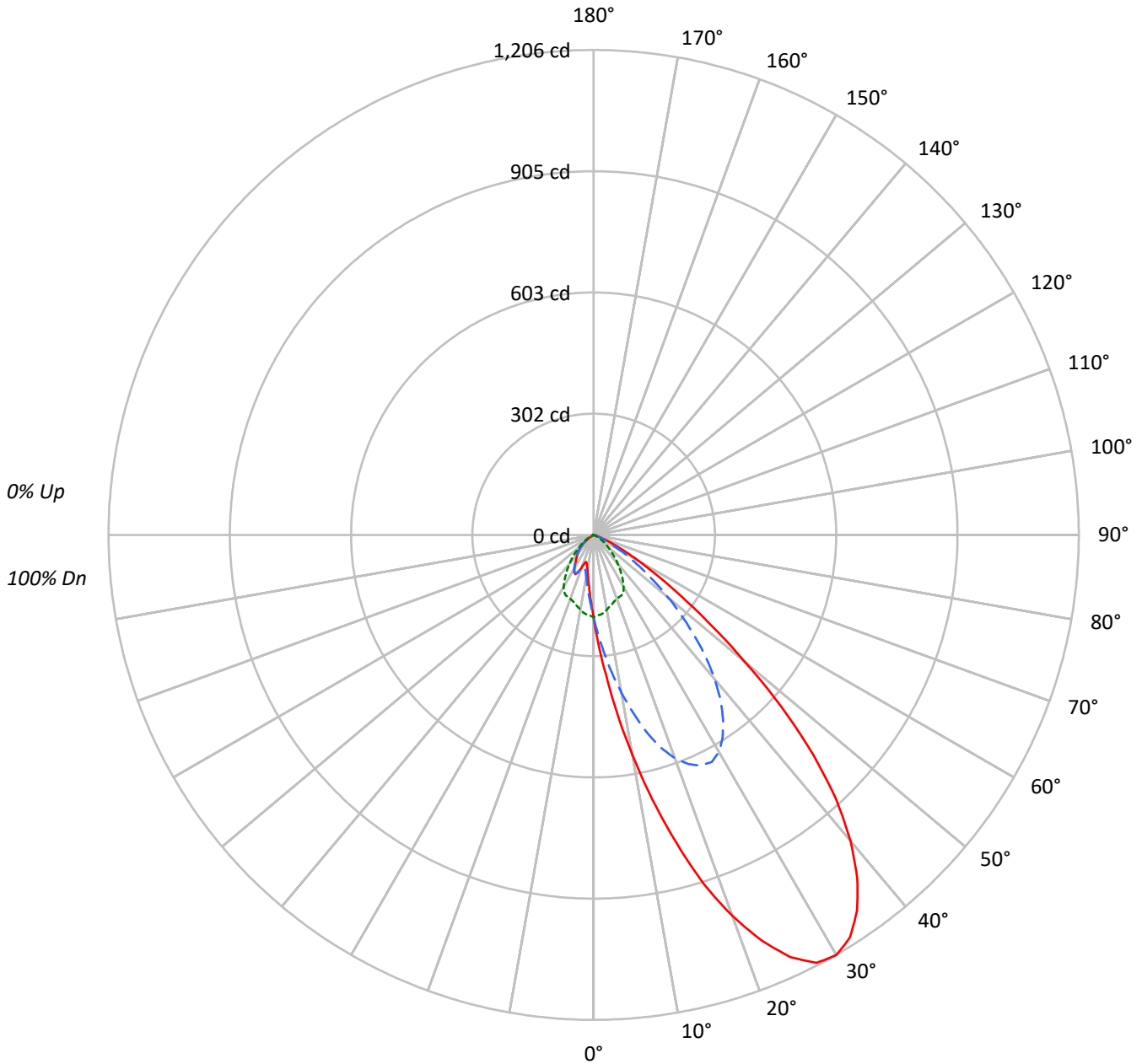
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	74	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	65	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°	25224	25224	25224
5°	43051	24615	16071
10°	69588	23634	10972
15°	101098	22692	8926
20°	132404	22196	11131
25°	157682	22483	14671
30°	171838	21222	13645
35°	171869	18099	11534
40°	159954	14958	10031
45°	134351	11705	8600
50°	94296	8731	6332
55°	56751	6279	3505
60°	31305	4021	1307
65°	15089	1955	146
70°	6059	685	180
75°	1811	477	0
80°	710	710	0
85°	1981	1415	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.9	2.9
10°-20°	86.9	11.3
20°-30°	176.3	23.0
30°-40°	214.2	28.0
40°-50°	169.0	22.1
50°-60°	76.6	10.0
60°-70°	18.1	2.4
70°-80°	2.0	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°	285.2	37.2
0°-40°	499.4	65.2
0°-60°	745.0	97.3
0°-90°	766.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	766.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	204	204	204	204	204	
5°	348	293	199	146	130	40
15°	792	507	178	84	70	230
25°	1159	633	165	105	108	530
35°	1141	561	120	78	77	705
45°	770	354	67	49	49	583
55°	264	145	29	20	16	249
65°	52	31	7	1	0	58
75°	4	2	1	0	0	6
85°	1	1	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°	204.5	204.5	204.5	204.5	204.5	204.5	204.5	204.5	204.5	204.5	204.5
2.5°	271.6	264.9	264.9	260.1	263.9	256.2	257.7	257.2	262.0	260.6	256.2
5°	347.7	342.0	341.5	335.3	340.1	330.0	330.5	329.0	334.3	329.0	322.8
7.5°	445.9	435.9	435.4	428.2	433.0	420.0	419.6	416.7	421.5	411.4	402.3
10°	555.6	541.2	540.3	531.6	536.9	520.1	518.7	513.9	517.3	501.5	488.5
12.5°	672.9	657.1	655.2	646.1	650.9	630.8	627.0	620.7	622.2	599.2	581.9
15°	791.7	778.3	776.4	766.8	771.6	746.7	740.5	732.8	731.4	700.7	678.7
17.5°	910.0	882.7	891.3	881.8	886.1	856.9	848.7	839.1	833.9	796.0	768.2
20°	1008.7	985.2	991.4	982.8	986.7	953.1	943.1	931.1	922.0	876.5	844.4
22.5°	1092.0	1067.6	1064.2	1064.2	1066.6	1030.2	1016.8	1003.4	990.5	936.4	903.8
25°	1158.6	1131.8	1127.9	1127.0	1127.5	1089.2	1073.3	1058.5	1041.7	982.3	946.9
27.5°	1199.8	1171.5	1167.2	1166.7	1164.3	1125.1	1107.4	1091.1	1071.0	1010.1	970.4
30°	1206.5	1180.6	1175.8	1175.8	1169.6	1131.3	1111.7	1094.4	1071.9	1010.6	968.0
32.5°	1186.4	1160.0	1154.8	1155.2	1145.2	1109.3	1088.2	1070.5	1047.0	986.7	942.6
35°	1141.4	1116.0	1111.2	1111.7	1099.2	1065.7	1043.7	1026.4	1001.5	944.0	899.0
37.5°	1076.7	1052.8	1048.0	1048.9	1033.6	1003.4	980.9	964.6	939.2	886.1	842.0
40°	993.4	970.4	966.1	966.5	949.8	923.4	901.4	886.1	860.7	813.3	771.1
42.5°	892.3	870.3	866.9	866.4	850.2	826.2	804.7	791.7	765.9	728.0	687.8
45°	770.2	751.5	736.6	746.7	729.9	710.8	690.7	680.1	655.7	628.9	593.0
47.5°	632.7	616.4	601.6	611.2	595.8	581.5	563.7	557.0	535.0	521.1	490.9
50°	491.4	477.5	464.1	472.3	460.3	450.7	436.8	433.5	415.3	413.3	389.9
52.5°	365.0	354.9	344.4	350.6	341.5	335.3	324.7	323.8	309.9	314.7	298.4
55°	263.9	256.7	248.6	253.4	246.7	242.8	235.2	235.6	225.1	232.3	220.8
57.5°	186.8	181.0	175.3	178.2	173.9	171.0	165.7	166.7	164.3	166.7	158.5
60°	126.9	123.6	119.3	121.7	117.8	116.4	113.0	113.5	107.8	115.4	109.7
62.5°	83.3	80.9	80.9	79.5	76.6	75.7	73.8	73.8	70.4	76.2	72.3
65°	51.7	50.8	50.3	49.3	47.4	46.9	45.5	45.5	43.1	47.4	44.5
67.5°	30.7	30.2	29.7	29.2	27.8	27.3	26.8	26.3	24.9	27.8	25.9
70°	16.8	16.8	16.3	15.8	14.8	14.8	14.4	14.4	13.4	14.8	13.4
72.5°	8.1	8.1	7.7	7.7	7.2	7.2	6.7	6.7	6.2	7.2	6.2
75°	3.8	3.8	3.4	3.4	3.4	3.4	2.9	2.9	2.9	3.4	2.9
77.5°	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	1.4	1.4	1.4	1.4	1.9	1.4	1.9	1.9	1.9	1.9	1.9
87.5°	1.9	1.9	1.9	1.9	1.9	2.4	2.4	2.4	1.9	2.4	1.9
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°	204.5	204.5	204.5	204.5	204.5	204.5	204.5	204.5	204.5	204.5	204.5
2.5°	257.7	253.8	255.3	251.0	247.6	246.2	246.2	245.7	223.2	200.7	184.9
5°	322.3	315.2	316.1	308.4	305.1	300.3	298.9	292.6	243.8	198.8	168.1
7.5°	399.0	388.4	382.2	375.0	370.7	362.1	357.8	345.3	262.9	194.9	151.8
10°	481.4	466.5	456.4	445.0	440.6	427.2	419.1	398.0	279.7	188.7	136.5
12.5°	570.4	550.3	532.1	519.7	514.4	488.5	483.3	453.1	295.0	183.0	124.1
15°	661.9	636.5	613.5	595.8	589.1	563.7	547.4	507.2	308.4	177.7	114.5
17.5°	743.3	716.0	688.3	665.3	655.7	619.8	604.4	554.6	318.5	172.4	109.2
20°	815.7	782.6	753.4	721.8	710.8	670.1	645.2	591.5	324.3	169.1	109.7
22.5°	870.7	832.9	799.4	763.9	750.0	705.5	677.2	616.9	326.2	166.7	113.0
25°	911.0	868.8	831.5	792.7	776.4	729.0	697.8	632.7	325.7	165.2	114.5
27.5°	931.6	886.6	846.3	804.7	786.9	738.1	704.5	636.1	319.0	159.5	114.5
30°	928.7	881.3	839.1	796.0	776.9	728.5	694.0	623.1	304.6	149.0	106.3
32.5°	903.3	854.9	811.8	768.7	749.6	702.2	667.7	596.8	284.0	135.1	95.3
35°	861.2	813.3	770.6	728.5	709.3	663.4	629.8	560.9	260.6	120.2	85.3
37.5°	806.1	759.6	718.4	680.1	658.1	615.0	582.4	518.2	234.7	106.8	76.6
40°	737.6	693.5	654.7	619.3	595.8	556.1	526.4	467.9	207.4	92.9	68.5
42.5°	658.6	617.4	585.8	550.3	524.0	489.0	463.2	412.4	179.6	80.5	59.9
45°	569.0	532.6	505.3	474.2	446.9	417.2	395.1	354.0	151.4	67.1	51.7
47.5°	472.7	442.6	421.5	395.6	368.8	344.9	327.6	294.6	124.5	56.0	44.1
50°	377.9	354.0	338.6	319.0	294.6	276.4	262.9	240.9	98.7	45.5	36.9
52.5°	290.7	273.5	262.9	248.6	227.0	214.6	205.0	189.7	75.2	36.9	29.7
55°	217.0	204.5	197.8	187.8	169.1	160.5	154.2	144.6	56.0	29.2	23.0
57.5°	156.6	148.5	144.2	137.5	122.1	116.9	112.6	106.8	40.7	22.5	16.8
60°	109.2	103.5	101.1	96.7	84.3	80.9	75.2	75.2	28.7	16.3	11.5
62.5°	72.3	68.5	67.5	64.2	54.6	52.7	51.2	50.3	19.6	11.0	6.7
65°	45.0	42.1	41.7	39.8	33.0	32.1	30.7	30.7	12.5	6.7	3.4
67.5°	25.9	24.4	23.9	23.0	18.2	17.7	16.8	17.7	7.2	3.4	1.4
70°	13.9	12.5	12.5	12.0	9.1	8.6	8.1	8.6	3.8	1.9	1.0
72.5°	6.7	5.7	5.7	5.3	3.8	3.8	3.4	4.3	1.9	1.0	1.0
75°	2.9	2.9	2.4	2.4	1.4	1.4	1.4	1.9	1.0	1.0	1.0
77.5°	1.4	1.4	1.4	1.4	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°	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.4	1.0	1.0	1.0
87.5°	1.9	1.9	1.9	1.9	1.4	1.4	1.4	2.4	1.4	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°	204.5	204.5	204.5
2.5°	171.5	161.4	162.4
5°	145.6	131.2	129.8
7.5°	123.1	107.8	105.8
10°	105.4	90.0	87.6
12.5°	92.4	78.5	76.2
15°	84.3	71.8	69.9
17.5°	82.9	73.3	72.3
20°	88.6	83.8	84.8
22.5°	98.7	97.2	99.6
25°	105.4	104.9	107.8
27.5°	103.9	103.0	104.9
30°	96.3	94.8	95.8
32.5°	87.2	84.8	85.7
35°	78.1	76.2	76.6
37.5°	70.4	69.0	69.0
40°	63.7	62.3	62.3
42.5°	56.5	55.6	56.0
45°	48.9	48.4	49.3
47.5°	41.2	40.7	41.7
50°	34.0	33.0	33.0
52.5°	26.8	25.4	24.4
55°	19.6	17.2	16.3
57.5°	13.4	11.0	10.1
60°	7.7	6.2	5.3
62.5°	3.8	2.4	1.9
65°	1.4	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)