

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: P170880

Luminaire Tested: **LDA4A09840D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170880
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: LDA4A09840D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 892.5 lumens
Efficiency: N/A
Efficacy: 64.5 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

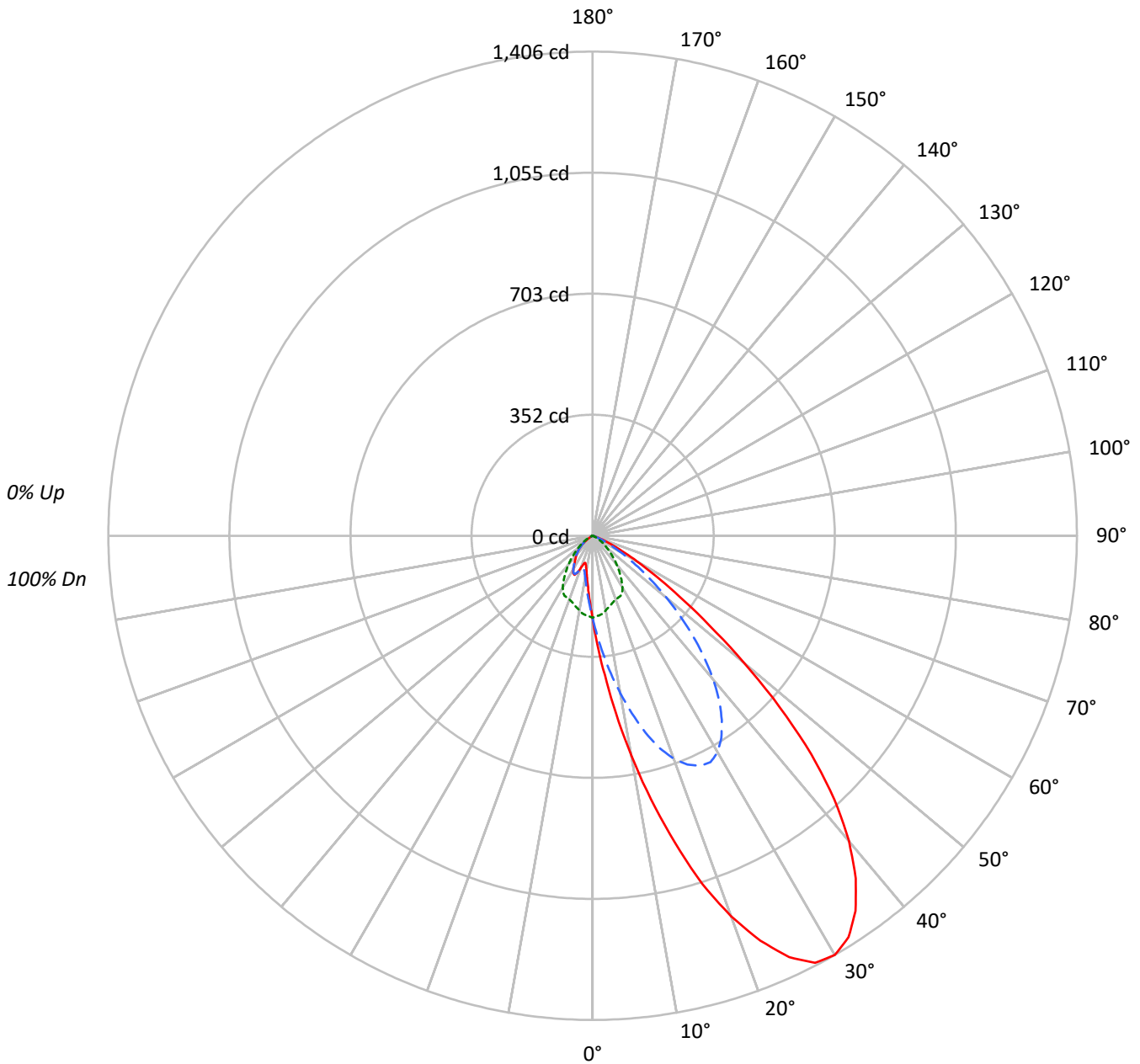
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				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°	29393	29393	29393
5°	50171	28676	18733
10°	81086	27542	12788
15°	117813	26446	10407
20°	154285	25859	12969
25°	183744	26212	17094
30°	200238	24725	15895
35°	200268	21096	13447
40°	186392	17438	11690
45°	156557	13624	10030
50°	109877	10170	7388
55°	66127	7312	4086
60°	36486	4687	1505
65°	17599	2277	175
70°	7032	793	216
75°	2145	524	0
80°	781	781	0
85°	2406	1557	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.6	2.9
10°-20°	101.3	11.4
20°-30°	205.4	23.0
30°-40°	249.6	28.0
40°-50°	197.0	22.1
50°-60°	89.2	10.0
60°-70°	21.1	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°	332.3	37.2
0°-40°	582.0	65.2
0°-60°	868.2	97.3
0°-90°	892.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	892.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	238	238	238	238	238	
5°	405	341	232	170	151	46
15°	923	591	207	98	82	268
25°	1350	737	193	123	126	618
35°	1330	654	140	91	89	821
45°	898	412	78	57	58	679
55°	308	169	34	23	19	290
65°	60	36	8	2	1	68
75°	4	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°	238.3	238.3	238.3	238.3	238.3	238.3	238.3	238.3	238.3	238.3	238.3
2.5°	316.5	308.6	308.6	303.1	307.5	298.6	300.3	299.7	305.3	303.6	298.6
5°	405.2	398.5	397.9	390.7	396.3	384.5	385.1	383.4	389.6	383.4	376.2
7.5°	519.6	507.9	507.3	499.0	504.5	489.5	488.9	485.6	491.2	479.4	468.8
10°	647.4	630.7	629.6	619.5	625.7	606.1	604.5	598.9	602.8	584.4	569.3
12.5°	784.2	765.8	763.5	752.9	758.5	735.1	730.6	723.3	725.0	698.2	678.1
15°	922.6	907.0	904.7	893.6	899.1	870.1	862.9	853.9	852.3	816.5	790.9
17.5°	1060.4	1028.6	1038.7	1027.5	1032.5	998.5	989.0	977.8	971.7	927.6	895.2
20°	1175.4	1148.1	1155.3	1145.3	1149.7	1110.7	1099.0	1085.0	1074.4	1021.4	984.0
22.5°	1272.5	1244.1	1240.2	1240.2	1243.0	1200.5	1184.9	1169.3	1154.2	1091.1	1053.2
25°	1350.1	1318.9	1314.4	1313.3	1313.8	1269.2	1250.8	1233.5	1213.9	1144.7	1103.4
27.5°	1398.1	1365.2	1360.2	1359.6	1356.8	1311.0	1290.4	1271.4	1248.0	1177.1	1130.8
30°	1405.9	1375.8	1370.2	1370.2	1362.9	1318.3	1295.4	1275.3	1249.1	1177.6	1128.0
32.5°	1382.5	1351.8	1345.6	1346.2	1334.5	1292.6	1268.1	1247.4	1220.1	1149.7	1098.4
35°	1330.0	1300.4	1294.9	1295.4	1280.9	1241.8	1216.2	1196.1	1167.0	1100.1	1047.6
37.5°	1254.7	1226.8	1221.2	1222.3	1204.4	1169.3	1143.0	1124.1	1094.5	1032.5	981.2
40°	1157.6	1130.8	1125.7	1126.3	1106.8	1076.1	1050.4	1032.5	1003.0	947.7	898.6
42.5°	1039.8	1014.1	1010.2	1009.7	990.7	962.8	937.7	922.6	892.4	848.4	801.5
45°	897.5	875.7	858.4	870.1	850.6	828.3	804.8	792.5	764.1	732.8	691.0
47.5°	737.3	718.3	701.0	712.2	694.3	677.6	656.9	649.1	623.4	607.2	572.1
50°	572.6	556.5	540.8	550.3	536.4	525.2	509.0	505.1	483.9	481.7	454.3
52.5°	425.3	413.6	401.3	408.5	397.9	390.7	378.4	377.3	361.1	366.7	347.7
55°	307.5	299.2	289.7	295.2	287.4	283.0	274.0	274.6	262.3	270.7	257.3
57.5°	217.7	211.0	204.3	207.6	202.6	199.3	193.1	194.2	191.4	194.2	184.7
60°	147.9	144.0	139.0	141.8	137.3	135.6	131.7	132.3	125.6	134.5	127.8
62.5°	97.1	94.3	94.3	92.6	89.3	88.2	86.0	86.0	82.0	88.7	84.3
65°	60.3	59.2	58.6	57.5	55.3	54.7	53.0	53.0	50.2	55.3	51.9
67.5°	35.7	35.2	34.6	34.0	32.4	31.8	31.3	30.7	29.0	32.4	30.1
70°	19.5	19.5	19.0	18.4	17.3	17.3	16.7	16.7	15.6	17.3	15.6
72.5°	9.5	9.5	8.9	8.9	8.4	8.4	7.8	7.8	7.3	8.4	7.3
75°	4.5	4.5	3.9	3.9	3.9	3.9	3.3	3.3	3.3	3.9	3.3
77.5°	2.2	2.2	2.2	2.2	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	2.2	1.7	2.2	2.2	2.2	2.2	2.2
87.5°	2.2	2.2	2.2	2.2	2.2	2.8	2.8	2.8	2.2	2.8	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°	238.3	238.3	238.3	238.3	238.3	238.3	238.3	238.3	238.3	238.3	238.3
2.5°	300.3	295.8	297.5	292.5	288.6	286.9	286.9	286.3	260.1	233.9	215.4
5°	375.6	367.2	368.4	359.4	355.5	349.9	348.3	341.0	284.1	231.6	195.9
7.5°	464.9	452.6	445.4	437.0	432.0	421.9	416.9	402.4	306.4	227.2	176.9
10°	560.9	543.6	531.9	518.5	513.5	497.8	488.4	463.8	325.9	219.9	159.1
12.5°	664.7	641.3	620.1	605.6	599.4	569.3	563.2	528.0	343.8	213.2	144.6
15°	771.3	741.8	715.0	694.3	686.5	656.9	637.9	591.1	359.4	207.1	133.4
17.5°	866.2	834.4	802.0	775.2	764.1	722.2	704.4	646.3	371.2	200.9	127.3
20°	950.5	912.0	877.9	841.1	828.3	780.8	751.8	689.3	377.9	197.0	127.8
22.5°	1014.7	970.6	931.5	890.2	874.0	822.1	789.2	718.9	380.1	194.2	131.7
25°	1061.6	1012.4	968.9	923.7	904.7	849.5	813.2	737.3	379.5	192.6	133.4
27.5°	1085.6	1033.1	986.2	937.7	917.0	860.1	821.0	741.2	371.7	185.9	133.4
30°	1082.2	1027.0	977.8	927.6	905.3	848.9	808.7	726.1	355.0	173.6	123.9
32.5°	1052.6	996.3	946.0	895.8	873.5	818.2	778.0	695.4	331.0	157.4	111.1
35°	1003.5	947.7	898.0	848.9	826.6	773.0	733.9	653.6	303.6	140.1	99.3
37.5°	939.3	885.2	837.2	792.5	766.9	716.6	678.7	603.9	273.5	124.5	89.3
40°	859.5	808.2	763.0	721.7	694.3	648.0	613.4	545.3	241.7	108.3	79.8
42.5°	767.4	719.4	682.6	641.3	610.6	569.8	539.7	480.5	209.3	93.8	69.8
45°	663.1	620.6	588.8	552.5	520.7	486.1	460.5	412.5	176.4	78.1	60.3
47.5°	550.9	515.7	491.2	461.0	429.8	401.9	381.8	343.2	145.1	65.3	51.3
50°	440.4	412.5	394.6	371.7	343.2	322.0	306.4	280.7	115.0	53.0	43.0
52.5°	338.8	318.7	306.4	289.7	264.6	250.0	238.9	221.0	87.6	43.0	34.6
55°	252.8	238.3	230.5	218.8	197.0	187.0	179.7	168.6	65.3	34.0	26.8
57.5°	182.5	173.0	168.0	160.2	142.3	136.2	131.2	124.5	47.4	26.2	19.5
60°	127.3	120.6	117.8	112.7	98.2	94.3	87.6	87.6	33.5	19.0	13.4
62.5°	84.3	79.8	78.7	74.8	63.6	61.4	59.7	58.6	22.9	12.8	7.8
65°	52.5	49.1	48.6	46.3	38.5	37.4	35.7	35.7	14.5	7.8	3.9
67.5°	30.1	28.5	27.9	26.8	21.2	20.7	19.5	20.7	8.4	3.9	1.7
70°	16.2	14.5	14.5	14.0	10.6	10.0	9.5	10.0	4.5	2.2	1.1
72.5°	7.8	6.7	6.7	6.1	4.5	4.5	3.9	5.0	2.2	1.1	1.1
75°	3.3	3.3	2.8	2.8	1.7	1.7	1.7	2.2	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°	2.2	2.2	2.2	2.2	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°	238.3	238.3	238.3
2.5°	199.8	188.1	189.2
5°	169.7	152.9	151.3
7.5°	143.4	125.6	123.3
10°	122.8	104.9	102.1
12.5°	107.7	91.5	88.7
15°	98.2	83.7	81.5
17.5°	96.6	85.4	84.3
20°	103.3	97.7	98.8
22.5°	115.0	113.3	116.1
25°	122.8	122.2	125.6
27.5°	121.1	120.0	122.2
30°	112.2	110.5	111.6
32.5°	101.6	98.8	99.9
35°	91.0	88.7	89.3
37.5°	82.0	80.4	80.4
40°	74.2	72.6	72.6
42.5°	65.9	64.7	65.3
45°	56.9	56.4	57.5
47.5°	48.0	47.4	48.6
50°	39.6	38.5	38.5
52.5°	31.3	29.6	28.5
55°	22.9	20.1	19.0
57.5°	15.6	12.8	11.7
60°	8.9	7.3	6.1
62.5°	4.5	2.8	2.2
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)