

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: P170886

Luminaire Tested: **LDA4A13830D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170886
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: LDA4A13830D010TE 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: 1228.4 lumens
Efficiency: N/A
Efficacy: 55.2 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

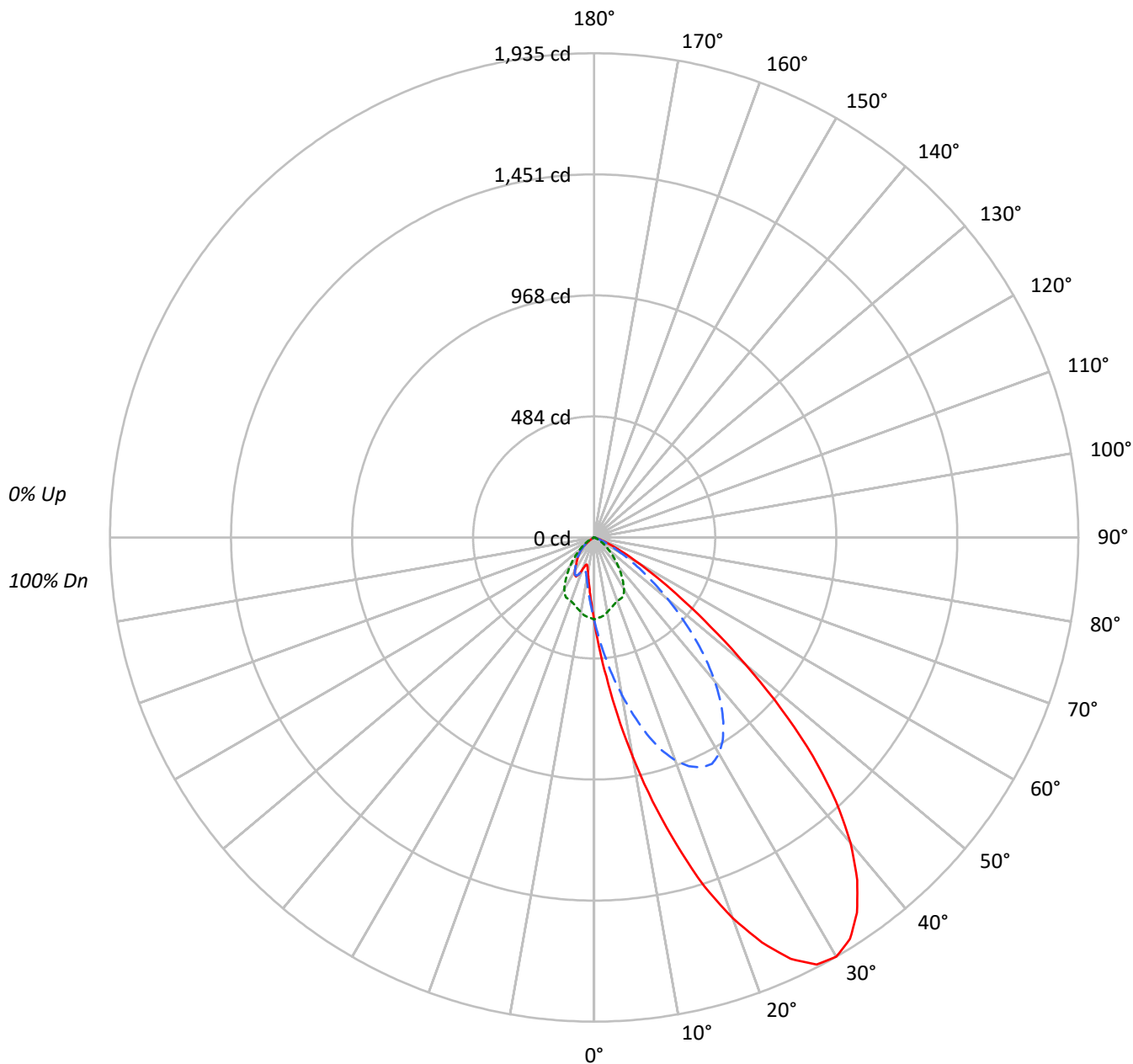
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
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°	40457	40457	40457
5°	69053	39473	25779
10°	111609	37913	17610
15°	162149	36394	14328
20°	212355	35598	17852
25°	252909	36066	23518
30°	275611	34026	21877
35°	275647	29031	18506
40°	256531	23991	16086
45°	215482	18752	13798
50°	151249	14008	10170
55°	91029	10086	5613
60°	50226	6439	2097
65°	24224	3152	233
70°	9701	1118	289
75°	2907	715	0
80°	1065	1065	0
85°	3255	2123	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.2	2.9
10°-20°	139.4	11.4
20°-30°	282.8	23.0
30°-40°	343.6	28.0
40°-50°	271.1	22.1
50°-60°	122.8	10.0
60°-70°	29.0	2.4
70°-80°	3.1	0.3
80°-90°	1.4	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°	457.4	37.2
0°-40°	801.0	65.2
0°-60°	1194.9	97.3
0°-90°	1228.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1228.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	328	328	328	328	328	
5°	558	469	319	234	208	64
15°	1270	814	285	135	112	369
25°	1858	1015	265	169	173	850
35°	1831	900	193	125	123	1130
45°	1235	568	108	78	79	935
55°	423	232	47	32	26	400
65°	83	49	11	2	1	93
75°	6	3	2	1	0	10
85°	2	2	2	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°	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0
2.5°	435.6	424.8	424.8	417.1	423.3	411.0	413.3	412.5	420.2	417.9	411.0
5°	557.7	548.5	547.7	537.7	545.4	529.3	530.1	527.7	536.2	527.7	517.8
7.5°	715.2	699.1	698.3	686.8	694.4	673.7	672.9	668.3	676.0	659.9	645.3
10°	891.1	868.1	866.5	852.7	861.1	834.3	832.0	824.3	829.6	804.3	783.6
12.5°	1079.3	1054.0	1050.9	1036.3	1044.0	1011.7	1005.6	995.6	997.9	961.0	933.4
15°	1269.8	1248.3	1245.2	1229.9	1237.6	1197.6	1187.6	1175.3	1173.0	1123.9	1088.5
17.5°	1459.6	1415.8	1429.6	1414.2	1421.2	1374.3	1361.2	1345.9	1337.4	1276.7	1232.2
20°	1617.8	1580.2	1590.2	1576.3	1582.5	1528.7	1512.6	1493.4	1478.8	1405.8	1354.3
22.5°	1751.5	1712.3	1706.9	1706.9	1710.8	1652.4	1630.9	1609.4	1588.6	1501.8	1449.6
25°	1858.3	1815.2	1809.1	1807.6	1808.3	1746.9	1721.5	1697.7	1670.8	1575.6	1518.7
27.5°	1924.3	1879.0	1872.1	1871.3	1867.5	1804.5	1776.1	1749.9	1717.7	1620.1	1556.4
30°	1935.1	1893.6	1885.9	1885.9	1875.9	1814.5	1783.0	1755.3	1719.2	1620.9	1552.5
32.5°	1902.8	1860.6	1852.1	1852.9	1836.7	1779.1	1745.3	1716.9	1679.3	1582.5	1511.8
35°	1830.6	1789.9	1782.2	1783.0	1763.0	1709.2	1673.9	1646.2	1606.3	1514.1	1441.9
37.5°	1726.9	1688.5	1680.8	1682.3	1657.8	1609.4	1573.3	1547.1	1506.4	1421.2	1350.5
40°	1593.2	1556.4	1549.4	1550.2	1523.3	1481.1	1445.7	1421.2	1380.4	1304.4	1236.8
42.5°	1431.1	1395.8	1390.4	1389.7	1363.5	1325.1	1290.6	1269.8	1228.3	1167.7	1103.1
45°	1235.3	1205.3	1181.5	1197.6	1170.7	1140.0	1107.7	1090.8	1051.7	1008.6	951.0
47.5°	1014.8	988.7	964.8	980.2	955.6	932.6	904.2	893.4	858.1	835.8	787.4
50°	788.2	765.9	744.4	757.4	738.2	722.9	700.6	695.2	666.0	662.9	625.3
52.5°	585.4	569.2	552.3	562.3	547.7	537.7	520.8	519.3	497.0	504.7	478.6
55°	423.3	411.8	398.7	406.4	395.6	389.5	377.2	378.0	361.1	372.6	354.1
57.5°	299.6	290.4	281.2	285.8	278.9	274.2	265.8	267.3	263.5	267.3	254.3
60°	203.6	198.2	191.3	195.1	189.0	186.7	181.3	182.1	172.8	185.1	175.9
62.5°	133.7	129.8	129.8	127.5	122.9	121.4	118.3	118.3	112.9	122.1	116.0
65°	83.0	81.4	80.7	79.1	76.1	75.3	73.0	73.0	69.1	76.1	71.4
67.5°	49.2	48.4	47.6	46.9	44.6	43.8	43.0	42.3	39.9	44.6	41.5
70°	26.9	26.9	26.1	25.4	23.8	23.8	23.0	23.0	21.5	23.8	21.5
72.5°	13.1	13.1	12.3	12.3	11.5	11.5	10.8	10.8	10.0	11.5	10.0
75°	6.1	6.1	5.4	5.4	5.4	5.4	4.6	4.6	4.6	5.4	4.6
77.5°	3.1	3.1	3.1	3.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	1.5	1.5	1.5	1.5	1.5	0.8	0.8	0.8	0.8	1.5	1.5
82.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
85°	2.3	2.3	2.3	2.3	3.1	2.3	3.1	3.1	3.1	3.1	3.1
87.5°	3.1	3.1	3.1	3.1	3.1	3.8	3.8	3.8	3.1	3.8	3.1
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°	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0	328.0
2.5°	413.3	407.1	409.4	402.5	397.2	394.9	394.9	394.1	358.0	321.9	296.5
5°	517.0	505.5	507.0	494.7	489.3	481.7	479.4	469.4	391.0	318.8	269.6
7.5°	639.9	623.0	613.0	601.5	594.6	580.8	573.8	553.9	421.7	312.7	243.5
10°	772.0	748.2	732.1	713.7	706.7	685.2	672.2	638.4	448.6	302.7	218.9
12.5°	914.9	882.7	853.5	833.5	825.0	783.6	775.1	726.7	473.2	293.4	199.0
15°	1061.6	1020.9	984.1	955.6	944.9	904.2	878.0	813.5	494.7	285.0	183.6
17.5°	1192.2	1148.4	1103.9	1067.0	1051.7	994.0	969.5	889.6	510.8	276.5	175.1
20°	1308.2	1255.2	1208.4	1157.7	1140.0	1074.7	1034.8	948.7	520.1	271.2	175.9
22.5°	1396.6	1335.9	1282.1	1225.3	1203.0	1131.5	1086.2	989.4	523.1	267.3	181.3
25°	1461.1	1393.5	1333.6	1271.4	1245.2	1169.2	1119.3	1014.8	522.4	265.0	183.6
27.5°	1494.1	1421.9	1357.4	1290.6	1262.1	1183.8	1130.0	1020.2	511.6	255.8	183.6
30°	1489.5	1413.5	1345.9	1276.7	1246.0	1168.4	1113.1	999.4	488.6	238.9	170.5
32.5°	1448.8	1371.2	1302.1	1232.9	1202.2	1126.2	1070.9	957.2	455.5	216.6	152.9
35°	1381.2	1304.4	1236.0	1168.4	1137.7	1063.9	1010.2	899.6	417.9	192.8	136.7
37.5°	1292.9	1218.4	1152.3	1090.8	1055.5	986.4	934.1	831.2	376.4	171.3	122.9
40°	1183.0	1112.3	1050.1	993.3	955.6	891.9	844.2	750.5	332.6	149.0	109.9
42.5°	1056.3	990.2	939.5	882.7	840.4	784.3	742.8	661.4	288.1	129.1	96.0
45°	912.6	854.2	810.4	760.5	716.7	669.1	633.8	567.7	242.7	107.5	83.0
47.5°	758.2	709.8	676.0	634.5	591.5	553.1	525.4	472.4	199.7	89.9	70.7
50°	606.1	567.7	543.1	511.6	472.4	443.2	421.7	386.4	158.2	73.0	59.2
52.5°	466.3	438.6	421.7	398.7	364.1	344.1	328.8	304.2	120.6	59.2	47.6
55°	348.0	328.0	317.3	301.1	271.2	257.3	247.4	232.0	89.9	46.9	36.9
57.5°	251.2	238.1	231.2	220.5	195.9	187.4	180.5	171.3	65.3	36.1	26.9
60°	175.1	165.9	162.1	155.2	135.2	129.8	120.6	120.6	46.1	26.1	18.4
62.5°	116.0	109.9	108.3	102.9	87.6	84.5	82.2	80.7	31.5	17.7	10.8
65°	72.2	67.6	66.8	63.8	53.0	51.5	49.2	49.2	20.0	10.8	5.4
67.5°	41.5	39.2	38.4	36.9	29.2	28.4	26.9	28.4	11.5	5.4	2.3
70°	22.3	20.0	20.0	19.2	14.6	13.8	13.1	13.8	6.1	3.1	1.5
72.5°	10.8	9.2	9.2	8.5	6.1	6.1	5.4	6.9	3.1	1.5	1.5
75°	4.6	4.6	3.8	3.8	2.3	2.3	2.3	3.1	1.5	1.5	1.5
77.5°	2.3	2.3	2.3	2.3	0.8	0.8	0.8	1.5	1.5	1.5	1.5
80°	1.5	1.5	1.5	1.5	0.0	0.0	0.0	1.5	1.5	1.5	1.5
82.5°	1.5	0.8	0.8	0.8	0.0	0.0	0.0	0.8	1.5	1.5	1.5
85°	2.3	2.3	2.3	2.3	1.5	1.5	1.5	2.3	1.5	1.5	1.5
87.5°	3.1	3.1	3.1	3.1	2.3	2.3	2.3	3.8	2.3	1.5	1.5
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°	328.0	328.0	328.0
2.5°	275.0	258.9	260.4
5°	233.5	210.5	208.2
7.5°	197.4	172.8	169.8
10°	169.0	144.4	140.6
12.5°	148.3	126.0	122.1
15°	135.2	115.2	112.2
17.5°	132.9	117.5	116.0
20°	142.1	134.4	136.0
22.5°	158.2	155.9	159.8
25°	169.0	168.2	172.8
27.5°	166.7	165.2	168.2
30°	154.4	152.1	153.6
32.5°	139.8	136.0	137.5
35°	125.2	122.1	122.9
37.5°	112.9	110.6	110.6
40°	102.2	99.9	99.9
42.5°	90.6	89.1	89.9
45°	78.4	77.6	79.1
47.5°	66.1	65.3	66.8
50°	54.5	53.0	53.0
52.5°	43.0	40.7	39.2
55°	31.5	27.7	26.1
57.5°	21.5	17.7	16.1
60°	12.3	10.0	8.5
62.5°	6.1	3.8	3.1
65°	2.3	1.5	0.8
67.5°	1.5	0.8	0.8
70°	1.5	0.8	0.8
72.5°	0.8	0.8	0.8
75°	0.8	0.8	0.0
77.5°	0.8	0.8	0.8
80°	0.8	0.8	0.0
82.5°	0.8	0.8	0.0
85°	0.8	0.8	0.0
87.5°	0.8	0.8	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - 90°-270°











(END OF REPORT)