

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: P170875

Luminaire Tested: **LDA4A18935D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170875
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: LDA4A18935D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1311.5 lumens
Efficiency: N/A
Efficacy: 45.0 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

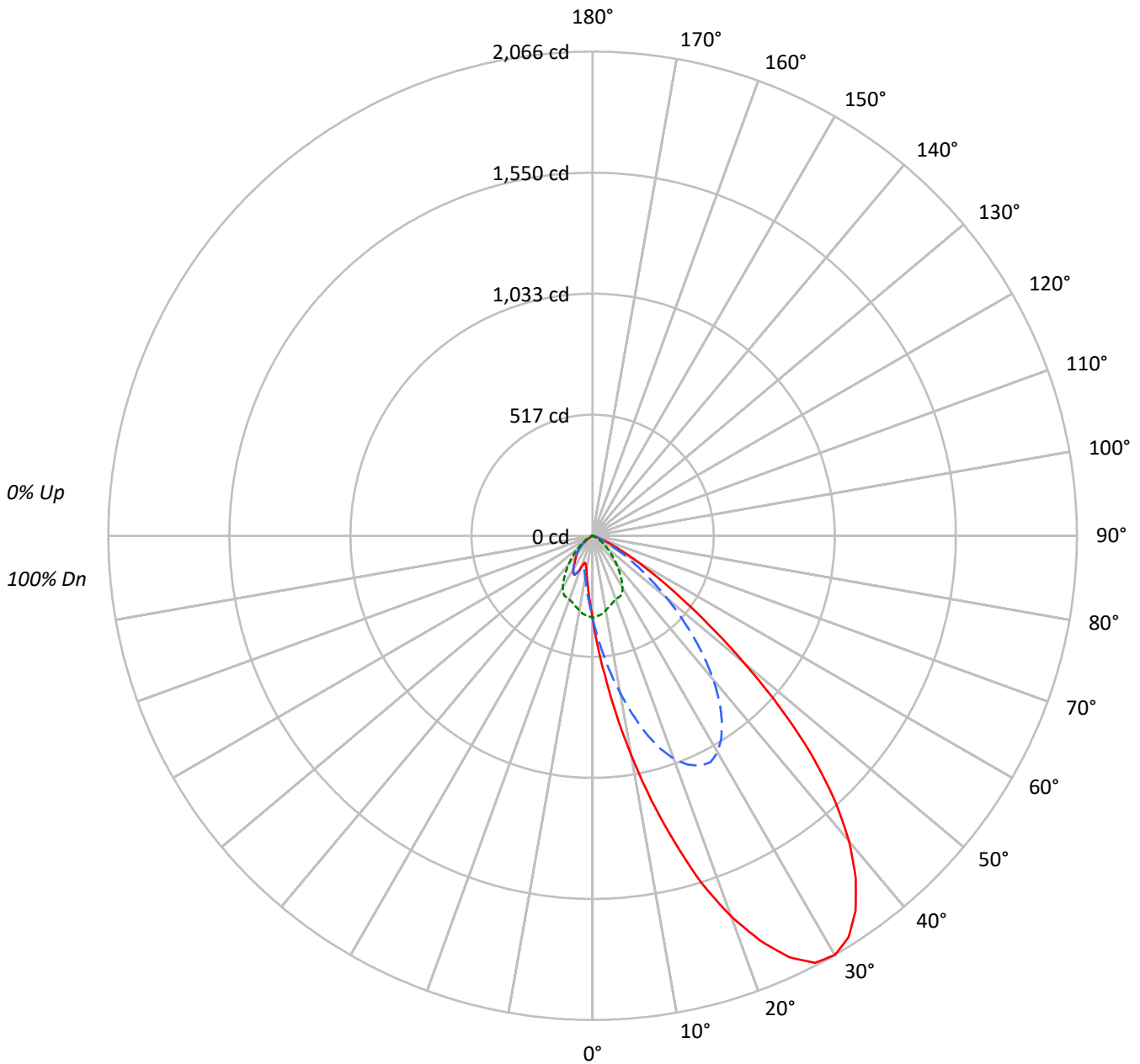
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90					90			
2	104	98	92	88	102	96	91	87	93	89	85	89	86	83	87	84	81	80					80			
3	97	88	82	76	94	87	81	76	84	79	75	81	77	73	79	75	72	70					70			
4	90	80	72	67	87	78	72	66	76	70	66	74	69	65	72	67	64	62					62			
5	83	72	64	59	81	71	64	59	69	63	58	67	62	57	65	61	57	55					55			
6	77	66	58	52	75	65	57	52	63	56	52	61	56	51	60	55	51	49					49			
7	72	60	52	46	70	59	52	46	57	51	46	56	50	46	55	50	45	44					44			
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	50	45	41	39					39			
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37	35					35			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32					32			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	43196	43196	43196
5°	73733	42147	27524
10°	119161	40480	18800
15°	173131	38858	15285
20°	226728	38000	19059
25°	270016	38515	25110
30°	294255	36333	23358
35°	294303	31004	19756
40°	273905	25618	17164
45°	230065	20025	14740
50°	161477	14948	10861
55°	97180	10752	6000
60°	53606	6883	2220
65°	25859	3356	233
70°	10350	1190	289
75°	3145	763	0
80°	1137	1137	0
85°	3538	2264	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.6	2.9
10°-20°	148.9	11.4
20°-30°	301.9	23.0
30°-40°	366.8	28.0
40°-50°	289.5	22.1
50°-60°	131.1	10.0
60°-70°	30.9	2.4
70°-80°	3.3	0.3
80°-90°	1.5	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°	488.4	37.2
0°-40°	855.2	65.2
0°-60°	1275.8	97.3
0°-90°	1311.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1311.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	350	350	350	350	350	
5°	596	501	340	249	222	68
15°	1356	869	304	144	120	395
25°	1984	1084	283	180	184	908
35°	1954	960	206	134	131	1207
45°	1319	606	115	84	84	998
55°	452	248	50	34	28	427
65°	89	52	12	2	1	100
75°	7	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°	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2
2.5°	465.0	453.6	453.6	445.4	451.9	438.8	441.3	440.4	448.6	446.2	438.8
5°	595.5	585.6	584.8	574.1	582.3	565.1	565.9	563.5	572.5	563.5	552.8
7.5°	763.6	746.4	745.5	733.2	741.4	719.3	718.5	713.6	721.8	704.5	689.0
10°	951.4	926.8	925.2	910.4	919.4	890.7	888.3	880.1	885.8	858.7	836.6
12.5°	1152.4	1125.3	1122.0	1106.4	1114.6	1080.2	1073.6	1063.0	1065.4	1026.0	996.5
15°	1355.8	1332.8	1329.5	1313.1	1321.3	1278.7	1268.0	1254.9	1252.4	1199.9	1162.2
17.5°	1558.3	1511.6	1526.4	1510.0	1517.3	1467.3	1453.4	1437.0	1427.9	1363.1	1315.6
20°	1727.3	1687.1	1697.8	1683.0	1689.6	1632.2	1614.9	1594.4	1578.9	1500.9	1446.0
22.5°	1870.0	1828.2	1822.4	1822.4	1826.5	1764.2	1741.2	1718.3	1696.1	1603.5	1547.7
25°	1984.0	1938.1	1931.5	1929.9	1930.7	1865.1	1838.0	1812.6	1783.9	1682.2	1621.5
27.5°	2054.6	2006.2	1998.8	1998.0	1993.9	1926.6	1896.3	1868.4	1833.9	1729.8	1661.7
30°	2066.0	2021.8	2013.6	2013.6	2002.9	1937.3	1903.6	1874.1	1835.6	1730.6	1657.6
32.5°	2031.6	1986.5	1977.5	1978.3	1961.1	1899.5	1863.5	1833.1	1792.9	1689.6	1614.1
35°	1954.5	1911.0	1902.8	1903.6	1882.3	1824.9	1787.2	1757.7	1715.0	1616.6	1539.5
37.5°	1843.8	1802.8	1794.6	1796.2	1770.0	1718.3	1679.7	1651.8	1608.4	1517.3	1441.9
40°	1701.1	1661.7	1654.3	1655.1	1626.4	1581.3	1543.6	1517.3	1473.9	1392.7	1320.5
42.5°	1528.0	1490.3	1484.5	1483.7	1455.8	1414.8	1377.9	1355.8	1311.5	1246.7	1177.8
45°	1318.9	1286.9	1261.4	1278.7	1250.0	1217.2	1182.7	1164.7	1122.8	1076.9	1015.4
47.5°	1083.5	1055.6	1030.2	1046.6	1020.3	995.7	965.4	953.9	916.1	892.4	840.7
50°	841.5	817.7	794.8	808.7	788.2	771.8	748.0	742.3	711.1	707.8	667.6
52.5°	625.0	607.8	589.7	600.4	584.8	574.1	556.1	554.4	530.7	538.9	511.0
55°	451.9	439.6	425.7	433.9	422.4	415.8	402.7	403.5	385.5	397.8	378.1
57.5°	319.9	310.0	300.2	305.1	297.7	292.8	283.8	285.4	281.3	285.4	271.5
60°	217.3	211.6	204.2	208.3	201.8	199.3	193.6	194.4	184.5	197.7	187.8
62.5°	142.7	138.6	138.6	136.2	131.2	129.6	126.3	126.3	120.6	130.4	123.8
65°	88.6	86.9	86.1	84.5	81.2	80.4	77.9	77.9	73.8	81.2	76.3
67.5°	52.5	51.7	50.9	50.0	47.6	46.8	45.9	45.1	42.6	47.6	44.3
70°	28.7	28.7	27.9	27.1	25.4	25.4	24.6	24.6	23.0	25.4	23.0
72.5°	13.9	13.9	13.1	13.1	12.3	12.3	11.5	11.5	10.7	12.3	10.7
75°	6.6	6.6	5.7	5.7	5.7	5.7	4.9	4.9	4.9	5.7	4.9
77.5°	3.3	3.3	3.3	3.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	1.6	1.6
82.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	2.5	2.5	2.5	2.5	3.3	2.5	3.3	3.3	3.3	3.3	3.3
87.5°	3.3	3.3	3.3	3.3	3.3	4.1	4.1	4.1	3.3	4.1	3.3
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°	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2
2.5°	441.3	434.7	437.2	429.8	424.0	421.6	421.6	420.8	382.2	343.7	316.6
5°	552.0	539.7	541.3	528.2	522.5	514.3	511.8	501.1	417.5	340.4	287.9
7.5°	683.2	665.2	654.5	642.2	634.8	620.1	612.7	591.4	450.3	333.8	260.0
10°	824.3	798.9	781.6	762.0	754.6	731.6	717.7	681.6	479.0	323.2	233.8
12.5°	976.8	942.4	911.2	889.9	880.9	836.6	827.6	775.9	505.2	313.3	212.4
15°	1133.5	1090.0	1050.7	1020.3	1008.8	965.4	937.5	868.6	528.2	304.3	196.0
17.5°	1272.9	1226.2	1178.6	1139.2	1122.8	1061.3	1035.1	949.8	545.4	295.3	187.0
20°	1396.8	1340.2	1290.1	1236.0	1217.2	1147.4	1104.8	1012.9	555.3	289.5	187.8
22.5°	1491.1	1426.3	1368.9	1308.2	1284.4	1208.1	1159.7	1056.4	558.5	285.4	193.6
25°	1560.0	1487.8	1423.8	1357.4	1329.5	1248.3	1195.0	1083.5	557.7	283.0	196.0
27.5°	1595.3	1518.2	1449.3	1377.9	1347.6	1263.9	1206.5	1089.2	546.2	273.1	196.0
30°	1590.3	1509.1	1437.0	1363.1	1330.3	1247.5	1188.4	1067.1	521.6	255.1	182.1
32.5°	1546.9	1464.0	1390.2	1316.4	1283.6	1202.4	1143.3	1021.9	486.4	231.3	163.2
35°	1474.7	1392.7	1319.7	1247.5	1214.7	1136.0	1078.5	960.4	446.2	205.9	146.0
37.5°	1380.4	1300.8	1230.3	1164.7	1126.9	1053.1	997.3	887.4	401.9	182.9	131.2
40°	1263.1	1187.6	1121.2	1060.5	1020.3	952.2	901.4	801.3	355.1	159.1	117.3
42.5°	1127.8	1057.2	1003.1	942.4	897.3	837.4	793.1	706.2	307.6	137.8	102.5
45°	974.4	912.0	865.3	812.0	765.2	714.4	676.7	606.1	259.2	114.8	88.6
47.5°	809.5	757.8	721.8	677.5	631.5	590.5	561.0	504.4	213.2	96.0	75.5
50°	647.1	606.1	579.9	546.2	504.4	473.2	450.3	412.6	169.0	77.9	63.2
52.5°	497.9	468.3	450.3	425.7	388.8	367.4	351.0	324.8	128.8	63.2	50.9
55°	371.5	350.2	338.7	321.5	289.5	274.8	264.1	247.7	96.0	50.0	39.4
57.5°	268.2	254.3	246.9	235.4	209.1	200.1	192.7	182.9	69.7	38.5	28.7
60°	187.0	177.2	173.1	165.7	144.4	138.6	128.8	128.8	49.2	27.9	19.7
62.5°	123.8	117.3	115.6	109.9	93.5	90.2	87.8	86.1	33.6	18.9	11.5
65°	77.1	72.2	71.4	68.1	56.6	55.0	52.5	52.5	21.3	11.5	5.7
67.5°	44.3	41.8	41.0	39.4	31.2	30.3	28.7	30.3	12.3	5.7	2.5
70°	23.8	21.3	21.3	20.5	15.6	14.8	13.9	14.8	6.6	3.3	1.6
72.5°	11.5	9.8	9.8	9.0	6.6	6.6	5.7	7.4	3.3	1.6	1.6
75°	4.9	4.9	4.1	4.1	2.5	2.5	2.5	3.3	1.6	1.6	1.6
77.5°	2.5	2.5	2.5	2.5	0.8	0.8	0.8	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	0.0	0.0	0.0	1.6	1.6	1.6	1.6
82.5°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.8	1.6	1.6	1.6
85°	2.5	2.5	2.5	2.5	1.6	1.6	1.6	2.5	1.6	1.6	1.6
87.5°	3.3	3.3	3.3	3.3	2.5	2.5	2.5	4.1	2.5	1.6	1.6
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°	350.2	350.2	350.2
2.5°	293.6	276.4	278.0
5°	249.3	224.7	222.3
7.5°	210.8	184.5	181.3
10°	180.4	154.2	150.1
12.5°	158.3	134.5	130.4
15°	144.4	123.0	119.7
17.5°	141.9	125.5	123.8
20°	151.7	143.5	145.2
22.5°	169.0	166.5	170.6
25°	180.4	179.6	184.5
27.5°	178.0	176.3	179.6
30°	164.9	162.4	164.0
32.5°	149.3	145.2	146.8
35°	133.7	130.4	131.2
37.5°	120.6	118.1	118.1
40°	109.1	106.6	106.6
42.5°	96.8	95.1	96.0
45°	83.7	82.8	84.5
47.5°	70.5	69.7	71.4
50°	58.2	56.6	56.6
52.5°	45.9	43.5	41.8
55°	33.6	29.5	27.9
57.5°	23.0	18.9	17.2
60°	13.1	10.7	9.0
62.5°	6.6	4.1	3.3
65°	2.5	1.6	0.8
67.5°	1.6	0.8	0.8
70°	1.6	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)