

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: P170891

Luminaire Tested: **LDA4A13935D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170891
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: LDA4A13935D010TE 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: 1058.6 lumens
Efficiency: N/A
Efficacy: 47.5 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

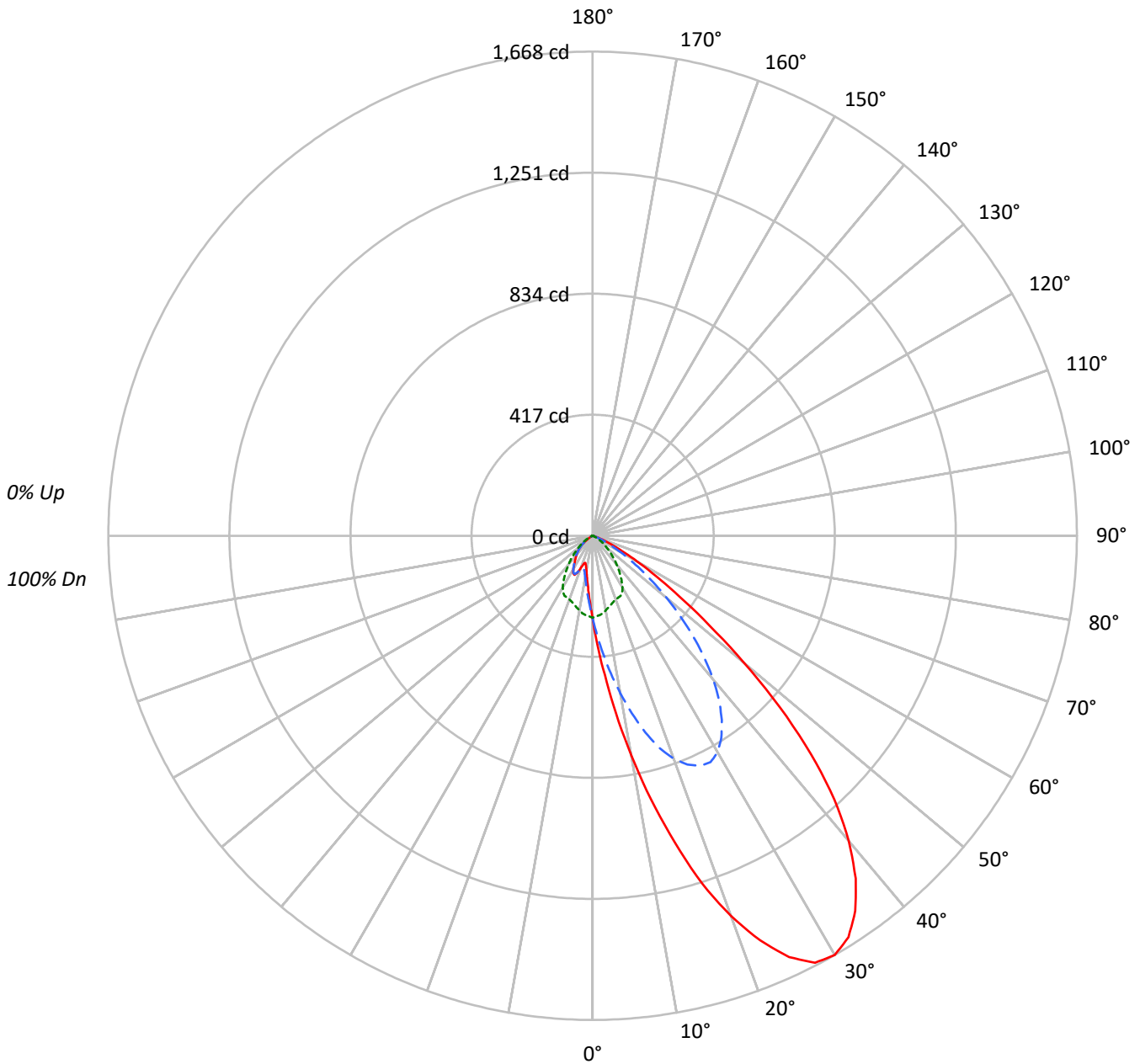
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170891

CATALOG NUMBER: LDA4A13935D010TE LAR35FL 4LLWW1

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°	34870	34870	34870
5°	59506	34012	22213
10°	96178	32665	15168
15°	139739	31362	12348
20°	183005	30676	15384
25°	217945	31085	20278
30°	237512	29326	18857
35°	237551	25026	15946
40°	221075	20674	13864
45°	185688	16170	11897
50°	130333	12070	8769
55°	78449	8688	4839
60°	43270	5551	1801
65°	20868	2714	204
70°	8367	938	252
75°	2526	620	0
80°	923	923	0
85°	2830	1840	0



TEST NUMBER: P170891

CATALOG NUMBER: LDA4A13935D010TE LAR35FL 4LLWW1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.3	2.9
10°-20°	120.2	11.4
20°-30°	243.7	23.0
30°-40°	296.1	28.0
40°-50°	233.6	22.1
50°-60°	105.8	10.0
60°-70°	25.0	2.4
70°-80°	2.7	0.3
80°-90°	1.2	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°	394.2	37.2
0°-40°	690.3	65.2
0°-60°	1029.8	97.3
0°-90°	1058.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1058.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	283	283	283	283	283	
5°	481	404	275	201	179	55
15°	1094	701	246	116	97	318
25°	1601	874	228	146	149	733
35°	1578	775	166	108	106	974
45°	1064	489	93	68	68	805
55°	365	200	40	27	22	344
65°	72	42	9	2	1	81
75°	5	3	1	1	0	8
85°	2	2	1	1	0	2
90°	0	0	0	0	0	



TEST NUMBER: P170891

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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	282.7	282.7	282.7	282.7	282.7	282.7	282.7	282.7	282.7	282.7	282.7
2.5°	375.4	366.1	366.1	359.5	364.8	354.2	356.2	355.5	362.1	360.1	354.2
5°	480.6	472.7	472.0	463.4	470.0	456.1	456.8	454.8	462.1	454.8	446.2
7.5°	616.3	602.4	601.8	591.8	598.5	580.6	579.9	576.0	582.6	568.7	556.1
10°	767.9	748.1	746.8	734.8	742.1	719.0	717.0	710.3	715.0	693.1	675.3
12.5°	930.1	908.3	905.6	893.1	899.7	871.9	866.6	858.0	860.0	828.2	804.4
15°	1094.3	1075.8	1073.1	1059.9	1066.5	1032.1	1023.5	1012.9	1010.9	968.5	938.1
17.5°	1257.8	1220.1	1232.0	1218.8	1224.7	1184.4	1173.1	1159.9	1152.6	1100.3	1061.9
20°	1394.2	1361.8	1370.4	1358.5	1363.8	1317.4	1303.5	1287.0	1274.4	1211.5	1167.1
22.5°	1509.4	1475.6	1471.0	1471.0	1474.3	1424.0	1405.5	1386.9	1369.1	1294.2	1249.2
25°	1601.4	1564.4	1559.1	1557.7	1558.4	1505.4	1483.6	1463.1	1439.9	1357.8	1308.8
27.5°	1658.4	1619.3	1613.3	1612.7	1609.4	1555.1	1530.6	1508.1	1480.3	1396.2	1341.3
30°	1667.6	1631.9	1625.3	1625.3	1616.6	1563.7	1536.5	1512.7	1481.6	1396.9	1337.9
32.5°	1639.8	1603.4	1596.1	1596.8	1582.9	1533.2	1504.1	1479.6	1447.2	1363.8	1302.9
35°	1577.6	1542.5	1535.9	1536.5	1519.3	1473.0	1442.5	1418.7	1384.3	1304.8	1242.6
37.5°	1488.2	1455.1	1448.5	1449.8	1428.6	1386.9	1355.8	1333.3	1298.2	1224.7	1163.8
40°	1373.0	1341.3	1335.3	1336.0	1312.8	1276.4	1245.9	1224.7	1189.6	1124.1	1065.9
42.5°	1233.3	1202.9	1198.3	1197.6	1175.1	1142.0	1112.2	1094.3	1058.6	1006.3	950.7
45°	1064.5	1038.7	1018.2	1032.1	1008.9	982.4	954.6	940.1	906.3	869.2	819.6
47.5°	874.5	852.0	831.5	844.7	823.6	803.7	779.2	769.9	739.5	720.3	678.6
50°	679.2	660.0	641.5	652.8	636.2	623.0	603.8	599.1	574.0	571.3	538.9
52.5°	504.5	490.6	476.0	484.6	472.0	463.4	448.8	447.5	428.3	434.9	412.4
55°	364.8	354.8	343.6	350.2	340.9	335.6	325.1	325.7	311.1	321.1	305.2
57.5°	258.2	250.2	242.3	246.3	240.3	236.3	229.1	230.4	227.1	230.4	219.1
60°	175.4	170.8	164.8	168.2	162.9	160.9	156.2	156.9	149.0	159.5	151.6
62.5°	115.2	111.9	111.9	109.9	105.9	104.6	102.0	102.0	97.3	105.3	100.0
65°	71.5	70.2	69.5	68.2	65.5	64.9	62.9	62.9	59.6	65.5	61.6
67.5°	42.4	41.7	41.0	40.4	38.4	37.7	37.1	36.4	34.4	38.4	35.7
70°	23.2	23.2	22.5	21.8	20.5	20.5	19.9	19.9	18.5	20.5	18.5
72.5°	11.3	11.3	10.6	10.6	9.9	9.9	9.3	9.3	8.6	9.9	8.6
75°	5.3	5.3	4.6	4.6	4.6	4.6	4.0	4.0	4.0	4.6	4.0
77.5°	2.6	2.6	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	1.3	1.3	1.3	1.3	1.3	0.7	0.7	0.7	0.7	1.3	1.3
82.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	2.0	2.0	2.0	2.0	2.6	2.0	2.6	2.6	2.6	2.6	2.6
87.5°	2.6	2.6	2.6	2.6	2.6	3.3	3.3	3.3	2.6	3.3	2.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P170891

CATALOG NUMBER: LDA4A13935D010TE LAR35FL 4LLWW1

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	282.7	282.7	282.7	282.7	282.7	282.7	282.7	282.7	282.7	282.7	282.7
2.5°	356.2	350.9	352.9	346.9	342.3	340.3	340.3	339.6	308.5	277.4	255.5
5°	445.5	435.6	436.9	426.3	421.7	415.1	413.1	404.5	337.0	274.7	232.4
7.5°	551.5	536.9	528.3	518.4	512.4	500.5	494.5	477.3	363.4	269.4	209.9
10°	665.3	644.8	630.9	615.0	609.1	590.5	579.3	550.1	386.6	260.8	188.7
12.5°	788.5	760.7	735.5	718.3	711.0	675.3	668.0	626.3	407.8	252.9	171.5
15°	914.9	879.8	848.0	823.6	814.3	779.2	756.7	701.1	426.3	245.6	158.2
17.5°	1027.5	989.7	951.3	919.5	906.3	856.7	835.5	766.6	440.2	238.3	150.9
20°	1127.4	1081.7	1041.4	997.7	982.4	926.2	891.7	817.6	448.2	233.7	151.6
22.5°	1203.6	1151.3	1104.9	1055.9	1036.7	975.2	936.1	852.7	450.8	230.4	156.2
25°	1259.2	1200.9	1149.3	1095.6	1073.1	1007.6	964.6	874.5	450.2	228.4	158.2
27.5°	1287.6	1225.4	1169.8	1112.2	1087.7	1020.2	973.8	879.2	440.9	220.5	158.2
30°	1283.7	1218.1	1159.9	1100.3	1073.8	1006.9	959.3	861.3	421.0	205.9	147.0
32.5°	1248.6	1181.7	1122.1	1062.5	1036.1	970.5	922.9	824.9	392.6	186.7	131.7
35°	1190.3	1124.1	1065.2	1006.9	980.4	916.9	870.6	775.2	360.1	166.2	117.8
37.5°	1114.2	1050.0	993.0	940.1	909.6	850.0	805.0	716.3	324.4	147.6	105.9
40°	1019.5	958.6	905.0	856.0	823.6	768.6	727.6	646.8	286.7	128.4	94.7
42.5°	910.3	853.3	809.6	760.7	724.2	675.9	640.2	570.0	248.3	111.2	82.8
45°	786.5	736.2	698.4	655.4	617.7	576.6	546.2	489.2	209.2	92.7	71.5
47.5°	653.4	611.7	582.6	546.8	509.8	476.7	452.8	407.1	172.1	77.5	60.9
50°	522.3	489.2	468.0	440.9	407.1	382.0	363.4	333.0	136.4	62.9	51.0
52.5°	401.8	378.0	363.4	343.6	313.8	296.6	283.3	262.2	103.9	51.0	41.0
55°	299.9	282.7	273.4	259.5	233.7	221.8	213.2	199.9	77.5	40.4	31.8
57.5°	216.5	205.2	199.3	190.0	168.8	161.5	155.6	147.6	56.3	31.1	23.2
60°	150.9	143.0	139.7	133.7	116.5	111.9	103.9	103.9	39.7	22.5	15.9
62.5°	100.0	94.7	93.3	88.7	75.5	72.8	70.8	69.5	27.1	15.2	9.3
65°	62.2	58.3	57.6	54.9	45.7	44.4	42.4	42.4	17.2	9.3	4.6
67.5°	35.7	33.8	33.1	31.8	25.2	24.5	23.2	24.5	9.9	4.6	2.0
70°	19.2	17.2	17.2	16.6	12.6	11.9	11.3	11.9	5.3	2.6	1.3
72.5°	9.3	7.9	7.9	7.3	5.3	5.3	4.6	6.0	2.6	1.3	1.3
75°	4.0	4.0	3.3	3.3	2.0	2.0	2.0	2.6	1.3	1.3	1.3
77.5°	2.0	2.0	2.0	2.0	0.7	0.7	0.7	1.3	1.3	1.3	1.3
80°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	1.3	1.3	1.3	1.3
82.5°	1.3	0.7	0.7	0.7	0.0	0.0	0.0	0.7	1.3	1.3	1.3
85°	2.0	2.0	2.0	2.0	1.3	1.3	1.3	2.0	1.3	1.3	1.3
87.5°	2.6	2.6	2.6	2.6	2.0	2.0	2.0	3.3	2.0	1.3	1.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P170891

CATALOG NUMBER: LDA4A13935D010TE LAR35FL 4LLWW1

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	282.7	282.7	282.7
2.5°	237.0	223.1	224.4
5°	201.3	181.4	179.4
7.5°	170.1	149.0	146.3
10°	145.6	124.5	121.1
12.5°	127.8	108.6	105.3
15°	116.5	99.3	96.7
17.5°	114.5	101.3	100.0
20°	122.5	115.9	117.2
22.5°	136.4	134.4	137.7
25°	145.6	145.0	149.0
27.5°	143.7	142.3	145.0
30°	133.1	131.1	132.4
32.5°	120.5	117.2	118.5
35°	107.9	105.3	105.9
37.5°	97.3	95.3	95.3
40°	88.0	86.1	86.1
42.5°	78.1	76.8	77.5
45°	67.5	66.9	68.2
47.5°	56.9	56.3	57.6
50°	47.0	45.7	45.7
52.5°	37.1	35.1	33.8
55°	27.1	23.8	22.5
57.5°	18.5	15.2	13.9
60°	10.6	8.6	7.3
62.5°	5.3	3.3	2.6
65°	2.0	1.3	0.7
67.5°	1.3	0.7	0.7
70°	1.3	0.7	0.7
72.5°	0.7	0.7	0.7
75°	0.7	0.7	0.0
77.5°	0.7	0.7	0.7
80°	0.7	0.7	0.0
82.5°	0.7	0.7	0.0
85°	0.7	0.7	0.0
87.5°	0.7	0.7	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)