

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: P170892

Luminaire Tested: **LDA4A13940D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170892
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: LDA4A13940D010TE 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: 1136.6 lumens
Efficiency: N/A
Efficacy: 51.0 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

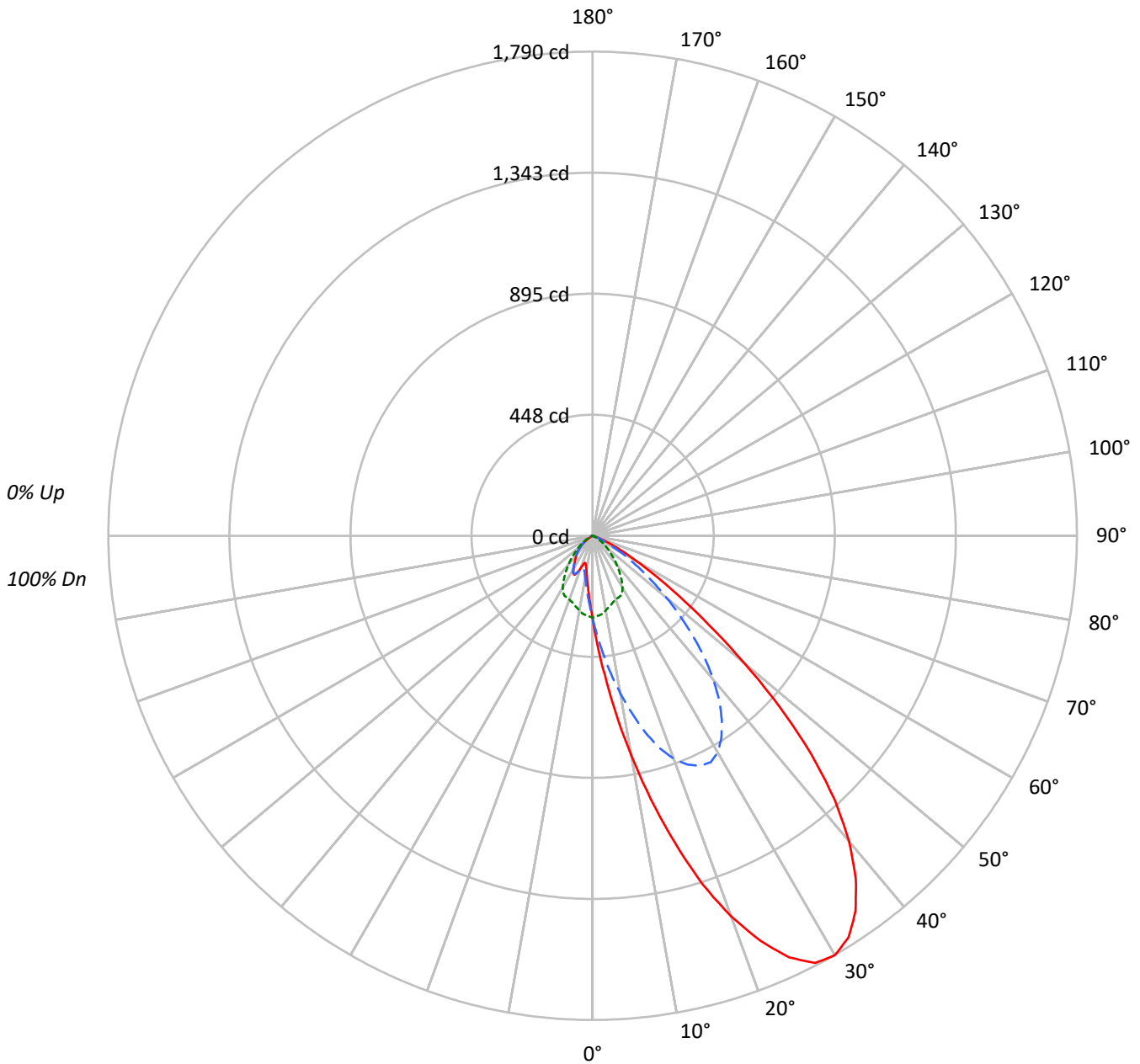
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	37435	37435	37435
5°	63889	36526	23847
10°	103267	35082	16295
15°	150044	33674	13255
20°	196499	32934	16513
25°	234019	33371	21762
30°	255016	31491	20253
35°	255063	26863	17121
40°	237370	22204	14878
45°	199382	17356	12769
50°	139947	12953	9403
55°	84234	9333	5204
60°	46477	5970	1924
65°	22415	2919	204
70°	8980	1010	252
75°	2716	667	0
80°	994	994	0
85°	2972	1981	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.6	2.9
10°-20°	129.0	11.4
20°-30°	261.6	23.0
30°-40°	317.9	28.0
40°-50°	250.9	22.1
50°-60°	113.6	10.0
60°-70°	26.8	2.4
70°-80°	2.9	0.3
80°-90°	1.3	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°	423.2	37.2
0°-40°	741.2	65.2
0°-60°	1105.7	97.3
0°-90°	1136.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1136.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	304	304	304	304	304	
5°	516	434	295	216	193	59
15°	1175	753	264	125	104	342
25°	1720	939	245	156	160	787
35°	1694	832	178	116	114	1046
45°	1143	525	100	72	73	865
55°	392	215	43	29	24	370
65°	77	46	10	2	1	86
75°	6	3	1	1	0	9
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°	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5
2.5°	403.0	393.1	393.1	386.0	391.7	380.3	382.4	381.7	388.8	386.7	380.3
5°	516.0	507.5	506.8	497.6	504.7	489.7	490.5	488.3	496.1	488.3	479.1
7.5°	661.8	646.8	646.1	635.5	642.6	623.4	622.7	618.4	625.5	610.6	597.1
10°	824.5	803.2	801.8	789.0	796.8	771.9	769.8	762.7	767.7	744.2	725.0
12.5°	998.7	975.2	972.4	958.9	966.0	936.1	930.5	921.2	923.3	889.2	863.6
15°	1175.0	1155.1	1152.2	1138.0	1145.1	1108.2	1098.9	1087.5	1085.4	1039.9	1007.2
17.5°	1350.5	1310.0	1322.8	1308.6	1315.0	1271.6	1259.6	1245.3	1237.5	1181.4	1140.1
20°	1497.0	1462.1	1471.4	1458.6	1464.3	1414.5	1399.6	1381.8	1368.3	1300.8	1253.2
22.5°	1620.7	1584.4	1579.4	1579.4	1583.0	1529.0	1509.1	1489.2	1470.0	1389.6	1341.3
25°	1719.5	1679.6	1674.0	1672.5	1673.3	1616.4	1592.9	1570.9	1546.0	1457.9	1405.3
27.5°	1780.6	1738.6	1732.2	1731.5	1728.0	1669.7	1643.4	1619.2	1589.4	1499.1	1440.1
30°	1790.5	1752.2	1745.0	1745.0	1735.8	1678.9	1649.8	1624.2	1590.8	1499.8	1436.5
32.5°	1760.7	1721.6	1713.8	1714.5	1699.6	1646.2	1615.0	1588.7	1553.8	1464.3	1398.9
35°	1693.9	1656.2	1649.1	1649.8	1631.3	1581.6	1548.9	1523.3	1486.3	1401.0	1334.2
37.5°	1597.9	1562.4	1555.3	1556.7	1533.9	1489.2	1455.7	1431.6	1393.9	1315.0	1249.6
40°	1474.2	1440.1	1433.7	1434.4	1409.5	1370.4	1337.7	1315.0	1277.3	1207.0	1144.4
42.5°	1324.2	1291.5	1286.6	1285.9	1261.7	1226.1	1194.2	1175.0	1136.6	1080.4	1020.7
45°	1143.0	1115.3	1093.2	1108.2	1083.3	1054.8	1025.0	1009.4	973.1	933.3	880.0
47.5°	939.0	914.8	892.8	907.0	884.2	862.9	836.6	826.7	794.0	773.4	728.6
50°	729.3	708.7	688.8	700.9	683.1	668.9	648.3	643.3	616.3	613.4	578.6
52.5°	541.6	526.7	511.1	520.3	506.8	497.6	481.9	480.5	459.9	467.0	442.8
55°	391.7	381.0	368.9	376.0	366.1	360.4	349.0	349.7	334.1	344.7	327.7
57.5°	277.2	268.7	260.2	264.4	258.0	253.8	245.9	247.4	243.8	247.4	235.3
60°	188.4	183.4	177.0	180.5	174.9	172.7	167.8	168.5	159.9	171.3	162.8
62.5°	123.7	120.1	120.1	118.0	113.7	112.3	109.5	109.5	104.5	113.0	107.3
65°	76.8	75.3	74.6	73.2	70.4	69.7	67.5	67.5	64.0	70.4	66.1
67.5°	45.5	44.8	44.1	43.4	41.2	40.5	39.8	39.1	37.0	41.2	38.4
70°	24.9	24.9	24.2	23.5	22.0	22.0	21.3	21.3	19.9	22.0	19.9
72.5°	12.1	12.1	11.4	11.4	10.7	10.7	10.0	10.0	9.2	10.7	9.2
75°	5.7	5.7	5.0	5.0	5.0	5.0	4.3	4.3	4.3	5.0	4.3
77.5°	2.8	2.8	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	1.4	1.4	1.4	1.4	1.4	0.7	0.7	0.7	0.7	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	2.1	2.1	2.1	2.1	2.8	2.1	2.8	2.8	2.8	2.8	2.8
87.5°	2.8	2.8	2.8	2.8	2.8	3.6	3.6	3.6	2.8	3.6	2.8
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°	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5
2.5°	382.4	376.7	378.9	372.5	367.5	365.4	365.4	364.6	331.2	297.8	274.4
5°	478.4	467.7	469.1	457.8	452.8	445.7	443.5	434.3	361.8	295.0	249.5
7.5°	592.1	576.5	567.2	556.6	550.2	537.4	531.0	512.5	390.2	289.3	225.3
10°	714.4	692.3	677.4	660.3	653.9	634.0	622.0	590.7	415.1	280.1	202.6
12.5°	846.6	816.7	789.7	771.2	763.4	725.0	717.2	672.4	437.9	271.5	184.1
15°	982.3	944.7	910.5	884.2	874.3	836.6	812.5	752.7	457.8	263.7	169.9
17.5°	1103.2	1062.7	1021.4	987.3	973.1	919.8	897.0	823.1	472.7	255.9	162.1
20°	1210.5	1161.5	1118.1	1071.2	1054.8	994.4	957.5	877.9	481.2	250.9	162.8
22.5°	1292.3	1236.1	1186.3	1133.7	1113.1	1047.0	1005.1	915.5	484.1	247.4	167.8
25°	1352.0	1289.4	1234.0	1176.4	1152.2	1081.9	1035.7	939.0	483.4	245.2	169.9
27.5°	1382.5	1315.7	1256.0	1194.2	1167.9	1095.4	1045.6	944.0	473.4	236.7	169.9
30°	1378.3	1307.9	1245.3	1181.4	1152.9	1081.1	1030.0	924.8	452.1	221.1	157.8
32.5°	1340.6	1268.8	1204.8	1140.9	1112.4	1042.0	990.9	885.7	421.5	200.4	141.5
35°	1278.0	1207.0	1143.7	1081.1	1052.7	984.5	934.7	832.4	386.7	178.4	126.5
37.5°	1196.3	1127.3	1066.2	1009.4	976.7	912.7	864.3	769.1	348.3	158.5	113.7
40°	1094.6	1029.3	971.7	919.1	884.2	825.3	781.2	694.5	307.8	137.9	101.6
42.5°	977.4	916.2	869.3	816.7	777.6	725.7	687.4	612.0	266.6	119.4	88.9
45°	844.4	790.4	749.9	703.7	663.2	619.1	586.4	525.3	224.6	99.5	76.8
47.5°	701.6	656.8	625.5	587.1	547.3	511.8	486.2	437.1	184.8	83.2	65.4
50°	560.8	525.3	502.5	473.4	437.1	410.1	390.2	357.5	146.4	67.5	54.7
52.5°	431.5	405.9	390.2	368.9	336.9	318.4	304.2	281.5	111.6	54.7	44.1
55°	322.0	303.5	293.6	278.6	250.9	238.1	228.9	214.7	83.2	43.4	34.1
57.5°	232.4	220.4	214.0	204.0	181.3	173.4	167.0	158.5	60.4	33.4	24.9
60°	162.1	153.5	150.0	143.6	125.1	120.1	111.6	111.6	42.6	24.2	17.1
62.5°	107.3	101.6	100.2	95.2	81.0	78.2	76.1	74.6	29.1	16.3	10.0
65°	66.8	62.6	61.8	59.0	49.0	47.6	45.5	45.5	18.5	10.0	5.0
67.5°	38.4	36.3	35.5	34.1	27.0	26.3	24.9	26.3	10.7	5.0	2.1
70°	20.6	18.5	18.5	17.8	13.5	12.8	12.1	12.8	5.7	2.8	1.4
72.5°	10.0	8.5	8.5	7.8	5.7	5.7	5.0	6.4	2.8	1.4	1.4
75°	4.3	4.3	3.6	3.6	2.1	2.1	2.1	2.8	1.4	1.4	1.4
77.5°	2.1	2.1	2.1	2.1	0.7	0.7	0.7	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	0.0	0.0	0.0	1.4	1.4	1.4	1.4
82.5°	1.4	0.7	0.7	0.7	0.0	0.0	0.0	0.7	1.4	1.4	1.4
85°	2.1	2.1	2.1	2.1	1.4	1.4	1.4	2.1	1.4	1.4	1.4
87.5°	2.8	2.8	2.8	2.8	2.1	2.1	2.1	3.6	2.1	1.4	1.4
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°	303.5	303.5	303.5
2.5°	254.5	239.5	241.0
5°	216.1	194.8	192.6
7.5°	182.7	159.9	157.1
10°	156.4	133.6	130.1
12.5°	137.2	116.6	113.0
15°	125.1	106.6	103.8
17.5°	123.0	108.8	107.3
20°	131.5	124.4	125.8
22.5°	146.4	144.3	147.8
25°	156.4	155.7	159.9
27.5°	154.2	152.8	155.7
30°	142.9	140.7	142.2
32.5°	129.4	125.8	127.2
35°	115.9	113.0	113.7
37.5°	104.5	102.4	102.4
40°	94.5	92.4	92.4
42.5°	83.9	82.5	83.2
45°	72.5	71.8	73.2
47.5°	61.1	60.4	61.8
50°	50.5	49.0	49.0
52.5°	39.8	37.7	36.3
55°	29.1	25.6	24.2
57.5°	19.9	16.3	14.9
60°	11.4	9.2	7.8
62.5°	5.7	3.6	2.8
65°	2.1	1.4	0.7
67.5°	1.4	0.7	0.7
70°	1.4	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)