

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: P170874

Luminaire Tested: **LDA4A18930D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170874
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: LDA4A18930D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1301.5 lumens
Efficiency: N/A
Efficacy: 44.7 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

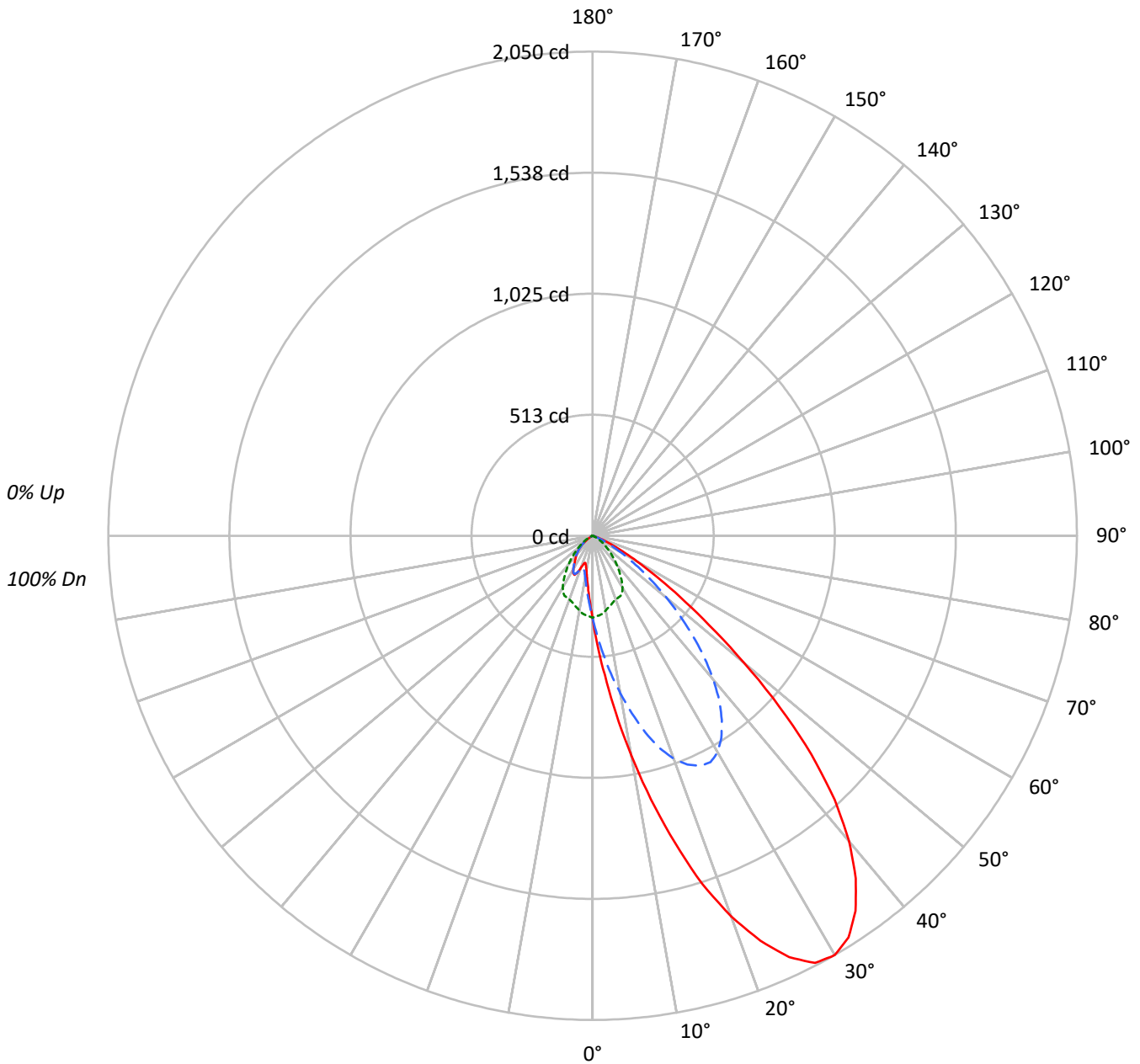
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	42863	42863	42863
5°	73163	41825	27314
10°	118247	40167	18649
15°	171803	38564	15170
20°	224996	37711	18915
25°	267947	38216	24919
30°	292004	36048	23187
35°	292044	30763	19605
40°	271795	25424	17036
45°	228286	19868	14618
50°	160249	14833	10784
55°	96448	10666	5957
60°	53211	6833	2220
65°	25655	3327	233
70°	10278	1190	289
75°	3098	763	0
80°	1137	1137	0
85°	3397	2264	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.3	2.9
10°-20°	147.7	11.4
20°-30°	299.6	23.0
30°-40°	364.0	28.0
40°-50°	287.2	22.1
50°-60°	130.1	10.0
60°-70°	30.7	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°	484.6	37.2
0°-40°	848.6	65.2
0°-60°	1266.0	97.3
0°-90°	1301.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1301.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	348	348	348	348	348	
5°	591	497	338	247	221	67
15°	1345	862	302	143	119	391
25°	1969	1075	281	179	183	901
35°	1940	953	204	133	130	1198
45°	1309	602	114	83	84	990
55°	448	246	50	33	28	423
65°	88	52	11	2	1	99
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°	347.5	347.5	347.5	347.5	347.5	347.5	347.5	347.5	347.5	347.5	347.5
2.5°	461.5	450.1	450.1	441.9	448.5	435.4	437.9	437.1	445.2	442.8	435.4
5°	590.9	581.1	580.3	569.7	577.9	560.8	561.6	559.1	568.1	559.1	548.6
7.5°	757.7	740.6	739.8	727.6	735.8	713.8	713.0	708.1	716.2	699.1	683.7
10°	944.1	919.7	918.1	903.4	912.4	883.9	881.5	873.3	879.0	852.1	830.2
12.5°	1143.5	1116.7	1113.4	1097.9	1106.1	1071.9	1065.4	1054.8	1057.3	1018.2	988.9
15°	1345.4	1322.6	1319.3	1303.0	1311.2	1268.9	1258.3	1245.3	1242.8	1190.7	1153.3
17.5°	1546.4	1500.0	1514.7	1498.4	1505.7	1456.1	1442.2	1425.9	1417.0	1352.7	1305.5
20°	1714.1	1674.2	1684.8	1670.1	1676.6	1619.7	1602.6	1582.2	1566.8	1489.4	1434.9
22.5°	1855.7	1814.2	1808.5	1808.5	1812.5	1750.7	1727.9	1705.1	1683.1	1591.2	1535.8
25°	1968.8	1923.2	1916.7	1915.1	1915.9	1850.8	1823.9	1798.7	1770.2	1669.3	1609.1
27.5°	2038.8	1990.8	1983.5	1982.7	1978.6	1911.8	1881.7	1854.1	1819.9	1716.5	1649.0
30°	2050.2	2006.3	1998.1	1998.1	1987.5	1922.4	1889.1	1859.8	1821.5	1717.3	1644.9
32.5°	2016.0	1971.3	1962.3	1963.1	1946.0	1885.0	1849.2	1819.1	1779.2	1676.6	1601.7
35°	1939.5	1896.4	1888.2	1889.1	1867.9	1810.9	1773.5	1744.2	1701.9	1604.2	1527.7
37.5°	1829.6	1788.9	1780.8	1782.4	1756.4	1705.1	1666.9	1639.2	1596.1	1505.7	1430.8
40°	1688.0	1649.0	1641.6	1642.4	1614.0	1569.2	1531.8	1505.7	1462.6	1382.0	1310.4
42.5°	1516.3	1478.9	1473.2	1472.3	1444.7	1404.0	1367.3	1345.4	1301.4	1237.1	1168.8
45°	1308.7	1277.0	1251.8	1268.9	1240.4	1207.8	1173.6	1155.7	1114.2	1068.6	1007.6
47.5°	1075.2	1047.5	1022.3	1038.5	1012.5	988.1	958.0	946.6	909.1	885.5	834.2
50°	835.1	811.5	788.7	802.5	782.2	765.9	742.3	736.6	705.6	702.4	662.5
52.5°	620.2	603.1	585.2	595.8	580.3	569.7	551.8	550.2	526.6	534.7	507.1
55°	448.5	436.2	422.4	430.6	419.2	412.6	399.6	400.4	382.5	394.7	375.2
57.5°	317.4	307.7	297.9	302.8	295.4	290.6	281.6	283.2	279.2	283.2	269.4
60°	215.7	210.0	202.7	206.7	200.2	197.8	192.1	192.9	183.1	196.1	186.4
62.5°	141.6	137.5	137.5	135.1	130.2	128.6	125.3	125.3	119.6	129.4	122.9
65°	87.9	86.3	85.5	83.8	80.6	79.8	77.3	77.3	73.3	80.6	75.7
67.5°	52.1	51.3	50.5	49.6	47.2	46.4	45.6	44.8	42.3	47.2	44.0
70°	28.5	28.5	27.7	26.9	25.2	25.2	24.4	24.4	22.8	25.2	22.8
72.5°	13.8	13.8	13.0	13.0	12.2	12.2	11.4	11.4	10.6	12.2	10.6
75°	6.5	6.5	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	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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°	2.4	2.4	2.4	2.4	3.3	2.4	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°	347.5	347.5	347.5	347.5	347.5	347.5	347.5	347.5	347.5	347.5	347.5
2.5°	437.9	431.4	433.8	426.5	420.8	418.3	418.3	417.5	379.3	341.0	314.2
5°	547.8	535.5	537.2	524.1	518.5	510.3	507.9	497.3	414.3	337.8	285.7
7.5°	678.0	660.1	649.5	637.3	630.0	615.3	608.0	586.8	446.8	331.3	258.0
10°	818.0	792.7	775.6	756.1	748.8	726.0	712.2	676.3	475.3	320.7	232.0
12.5°	969.4	935.2	904.2	883.1	874.1	830.2	821.2	769.9	501.4	310.9	210.8
15°	1124.8	1081.7	1042.6	1012.5	1001.1	958.0	930.3	861.9	524.1	302.0	194.5
17.5°	1263.2	1216.8	1169.6	1130.5	1114.2	1053.2	1027.1	942.5	541.2	293.0	185.6
20°	1386.1	1329.9	1280.3	1226.5	1207.8	1138.6	1096.3	1005.2	551.0	287.3	186.4
22.5°	1479.7	1415.4	1358.4	1298.2	1274.6	1198.9	1150.8	1048.3	554.3	283.2	192.1
25°	1548.0	1476.4	1412.9	1347.0	1319.3	1238.8	1185.8	1075.2	553.4	280.8	194.5
27.5°	1583.0	1506.5	1438.2	1367.3	1337.2	1254.2	1197.2	1080.9	542.1	271.0	194.5
30°	1578.1	1497.6	1425.9	1352.7	1320.1	1237.9	1179.3	1058.9	517.6	253.1	180.7
32.5°	1535.0	1452.8	1379.6	1306.3	1273.7	1193.2	1134.6	1014.1	482.6	229.5	162.0
35°	1463.4	1382.0	1309.6	1237.9	1205.4	1127.2	1070.3	953.1	442.8	204.3	144.9
37.5°	1369.8	1290.8	1220.8	1155.7	1118.3	1045.0	989.7	880.6	398.8	181.5	130.2
40°	1253.4	1178.5	1112.6	1052.4	1012.5	944.9	894.5	795.2	352.4	157.9	116.4
42.5°	1119.1	1049.1	995.4	935.2	890.4	831.0	787.0	700.8	305.2	136.7	101.7
45°	966.9	905.1	858.7	805.8	759.4	708.9	671.5	601.5	257.2	113.9	87.9
47.5°	803.3	752.0	716.2	672.3	626.7	586.0	556.7	500.5	211.6	95.2	74.9
50°	642.2	601.5	575.4	542.1	500.5	469.6	446.8	409.4	167.7	77.3	62.7
52.5°	494.0	464.7	446.8	422.4	385.8	364.6	348.3	322.3	127.8	62.7	50.5
55°	368.7	347.5	336.1	319.0	287.3	272.7	262.1	245.8	95.2	49.6	39.1
57.5°	266.1	252.3	245.0	233.6	207.5	198.6	191.3	181.5	69.2	38.3	28.5
60°	185.6	175.8	171.7	164.4	143.2	137.5	127.8	127.8	48.8	27.7	19.5
62.5°	122.9	116.4	114.8	109.1	92.8	89.5	87.1	85.5	33.4	18.7	11.4
65°	76.5	71.6	70.8	67.6	56.2	54.5	52.1	52.1	21.2	11.4	5.7
67.5°	44.0	41.5	40.7	39.1	30.9	30.1	28.5	30.1	12.2	5.7	2.4
70°	23.6	21.2	21.2	20.3	15.5	14.7	13.8	14.7	6.5	3.3	1.6
72.5°	11.4	9.8	9.8	9.0	6.5	6.5	5.7	7.3	3.3	1.6	1.6
75°	4.9	4.9	4.1	4.1	2.4	2.4	2.4	3.3	1.6	1.6	1.6
77.5°	2.4	2.4	2.4	2.4	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°	2.4	2.4	2.4	2.4	1.6	1.6	1.6	2.4	1.6	1.6	1.6
87.5°	3.3	3.3	3.3	3.3	2.4	2.4	2.4	4.1	2.4	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°	347.5	347.5	347.5
2.5°	291.4	274.3	275.9
5°	247.4	223.0	220.6
7.5°	209.2	183.1	179.9
10°	179.1	153.0	148.9
12.5°	157.1	133.5	129.4
15°	143.2	122.1	118.8
17.5°	140.8	124.5	122.9
20°	150.6	142.4	144.1
22.5°	167.7	165.2	169.3
25°	179.1	178.2	183.1
27.5°	176.6	175.0	178.2
30°	163.6	161.2	162.8
32.5°	148.1	144.1	145.7
35°	132.7	129.4	130.2
37.5°	119.6	117.2	117.2
40°	108.2	105.8	105.8
42.5°	96.0	94.4	95.2
45°	83.0	82.2	83.8
47.5°	70.0	69.2	70.8
50°	57.8	56.2	56.2
52.5°	45.6	43.1	41.5
55°	33.4	29.3	27.7
57.5°	22.8	18.7	17.1
60°	13.0	10.6	9.0
62.5°	6.5	4.1	3.3
65°	2.4	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)