

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: P170873

Luminaire Tested: **LDA4A18927D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170873
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: LDA4A18927D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1129.0 lumens
Efficiency: N/A
Efficacy: 38.8 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

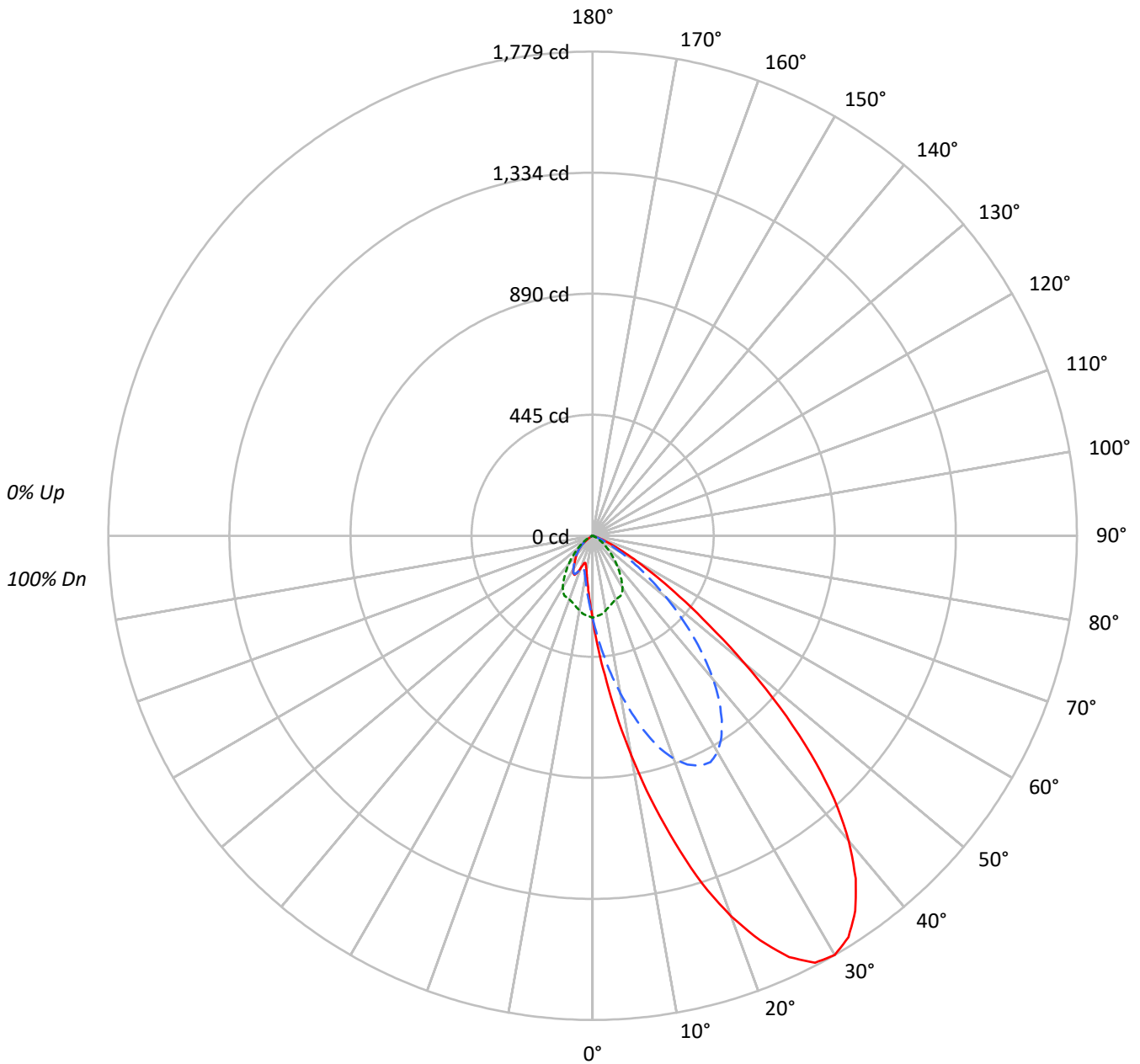
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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°	37189	37189	37189
5°	63468	36278	23686
10°	102578	34844	16182
15°	149035	33444	13166
20°	195186	32710	16408
25°	232440	33153	21626
30°	253321	31277	20111
35°	253346	26682	17015
40°	235792	22059	14781
45°	198038	17234	12682
50°	139006	12876	9345
55°	83653	9269	5161
60°	46156	5921	1924
65°	22269	2889	204
70°	8908	1010	252
75°	2669	667	0
80°	994	994	0
85°	2972	1981	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.4	2.9
10°-20°	128.2	11.4
20°-30°	259.9	23.0
30°-40°	315.8	28.0
40°-50°	249.2	22.1
50°-60°	112.9	10.0
60°-70°	26.6	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°	420.4	37.2
0°-40°	736.2	65.2
0°-60°	1098.3	97.3
0°-90°	1129.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1129.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	302	302	302	302	302	
5°	513	431	293	215	191	59
15°	1167	748	262	124	103	340
25°	1708	933	244	155	159	782
35°	1682	827	177	115	113	1039
45°	1135	522	99	72	73	859
55°	389	213	43	29	24	367
65°	76	45	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°	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5
2.5°	400.3	390.4	390.4	383.4	389.0	377.7	379.9	379.2	386.2	384.1	377.7
5°	512.6	504.1	503.4	494.2	501.3	486.5	487.2	485.1	492.8	485.1	475.9
7.5°	657.3	642.5	641.8	631.2	638.3	619.2	618.5	614.3	621.3	606.5	593.1
10°	819.0	797.8	796.4	783.7	791.5	766.8	764.7	757.6	762.5	739.2	720.2
12.5°	992.0	968.7	965.9	952.5	959.5	929.9	924.2	915.0	917.2	883.3	857.9
15°	1167.1	1147.3	1144.5	1130.4	1137.5	1100.7	1091.6	1080.3	1078.1	1033.0	1000.5
17.5°	1341.5	1301.3	1314.0	1299.8	1306.2	1263.1	1251.1	1237.0	1229.2	1173.5	1132.5
20°	1487.0	1452.4	1461.5	1448.8	1454.5	1405.0	1390.2	1372.6	1359.2	1292.1	1244.8
22.5°	1609.8	1573.8	1568.9	1568.9	1572.4	1518.7	1499.0	1479.2	1460.1	1380.3	1332.3
25°	1707.9	1668.4	1662.8	1661.3	1662.1	1605.6	1582.3	1560.4	1535.7	1448.1	1395.9
27.5°	1768.7	1727.0	1720.7	1719.9	1716.4	1658.5	1632.4	1608.4	1578.7	1489.1	1430.5
30°	1778.6	1740.4	1733.4	1733.4	1724.2	1667.7	1638.8	1613.3	1580.1	1489.8	1426.9
32.5°	1748.9	1710.1	1702.3	1703.0	1688.2	1635.2	1604.2	1578.0	1543.4	1454.5	1389.5
35°	1682.5	1645.1	1638.0	1638.8	1620.4	1571.0	1538.5	1513.1	1476.4	1391.6	1325.3
37.5°	1587.2	1551.9	1544.8	1546.3	1523.7	1479.2	1446.0	1422.0	1384.6	1306.2	1241.2
40°	1464.4	1430.5	1424.1	1424.8	1400.1	1361.3	1328.8	1306.2	1268.8	1198.9	1136.7
42.5°	1315.4	1282.9	1278.0	1277.3	1253.2	1217.9	1186.2	1167.1	1129.0	1073.2	1013.9
45°	1135.3	1107.8	1085.9	1100.7	1076.0	1047.8	1018.1	1002.6	966.6	927.0	874.1
47.5°	932.7	908.7	886.8	900.9	878.3	857.1	831.0	821.1	788.7	768.2	723.7
50°	724.4	703.9	684.2	696.2	678.5	664.4	643.9	639.0	612.1	609.3	574.7
52.5°	538.0	523.2	507.7	516.8	503.4	494.2	478.7	477.3	456.8	463.9	439.9
55°	389.0	378.4	366.4	373.5	363.6	358.0	346.7	347.4	331.8	342.4	325.5
57.5°	275.4	266.9	258.4	262.7	256.3	252.1	244.3	245.7	242.2	245.7	233.7
60°	187.1	182.2	175.8	179.3	173.7	171.6	166.6	167.3	158.9	170.2	161.7
62.5°	122.9	119.3	119.3	117.2	113.0	111.6	108.7	108.7	103.8	112.3	106.6
65°	76.3	74.8	74.1	72.7	69.9	69.2	67.1	67.1	63.5	69.9	65.7
67.5°	45.2	44.5	43.8	43.1	41.0	40.2	39.5	38.8	36.7	41.0	38.1
70°	24.7	24.7	24.0	23.3	21.9	21.9	21.2	21.2	19.8	21.9	19.8
72.5°	12.0	12.0	11.3	11.3	10.6	10.6	9.9	9.9	9.2	10.6	9.2
75°	5.6	5.6	4.9	4.9	4.9	4.9	4.2	4.2	4.2	4.9	4.2
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	3.5	3.5	3.5	2.8	3.5	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°	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5	301.5
2.5°	379.9	374.2	376.3	370.0	365.0	362.9	362.9	362.2	329.0	295.8	272.5
5°	475.2	464.6	466.0	454.7	449.8	442.7	440.6	431.4	359.4	293.0	247.8
7.5°	588.1	572.6	563.4	552.8	546.5	533.8	527.4	509.1	387.6	287.4	223.8
10°	709.6	687.7	672.9	655.9	649.6	629.8	617.8	586.7	412.3	278.2	201.2
12.5°	840.9	811.3	784.4	766.1	758.3	720.2	712.4	667.9	434.9	269.7	182.9
15°	975.8	938.3	904.5	878.3	868.4	831.0	807.0	747.7	454.7	261.9	168.7
17.5°	1095.8	1055.6	1014.6	980.7	966.6	913.6	891.0	817.6	469.5	254.2	161.0
20°	1202.4	1153.7	1110.6	1064.0	1047.8	987.8	951.1	872.0	478.0	249.2	161.7
22.5°	1283.6	1227.8	1178.4	1126.2	1105.7	1040.0	998.4	909.4	480.8	245.7	166.6
25°	1342.9	1280.8	1225.7	1168.5	1144.5	1074.6	1028.7	932.7	480.1	243.6	168.7
27.5°	1373.3	1306.9	1247.6	1186.2	1160.0	1088.0	1038.6	937.6	470.2	235.1	168.7
30°	1369.0	1299.1	1237.0	1173.5	1145.2	1073.9	1023.1	918.6	449.1	219.6	156.7
32.5°	1331.6	1260.3	1196.8	1133.2	1105.0	1035.1	984.2	879.7	418.7	199.1	140.5
35°	1269.5	1198.9	1136.0	1073.9	1045.7	977.9	928.5	826.8	384.1	177.2	125.7
37.5°	1188.3	1119.8	1059.1	1002.6	970.1	906.6	858.6	764.0	346.0	157.5	113.0
40°	1087.3	1022.4	965.2	912.9	878.3	819.7	776.0	689.8	305.7	137.0	101.0
42.5°	970.8	910.1	863.5	811.3	772.4	720.9	682.8	607.9	264.8	118.6	88.3
45°	838.8	785.1	744.9	699.0	658.7	615.0	582.5	521.8	223.1	98.8	76.3
47.5°	696.9	652.4	621.3	583.2	543.7	508.4	482.9	434.2	183.6	82.6	65.0
50°	557.1	521.8	499.2	470.2	434.2	407.4	387.6	355.1	145.4	67.1	54.4
52.5°	428.6	403.2	387.6	366.4	334.7	316.3	302.2	279.6	110.9	54.4	43.8
55°	319.8	301.5	291.6	276.8	249.2	236.5	227.3	213.2	82.6	43.1	33.9
57.5°	230.9	218.9	212.5	202.6	180.0	172.3	165.9	157.5	60.0	33.2	24.7
60°	161.0	152.5	149.0	142.6	124.3	119.3	110.9	110.9	42.4	24.0	16.9
62.5°	106.6	101.0	99.6	94.6	80.5	77.7	75.5	74.1	28.9	16.2	9.9
65°	66.4	62.1	61.4	58.6	48.7	47.3	45.2	45.2	18.4	9.9	4.9
67.5°	38.1	36.0	35.3	33.9	26.8	26.1	24.7	26.1	10.6	4.9	2.1
70°	20.5	18.4	18.4	17.7	13.4	12.7	12.0	12.7	5.6	2.8	1.4
72.5°	9.9	8.5	8.5	7.8	5.6	5.6	4.9	6.4	2.8	1.4	1.4
75°	4.2	4.2	3.5	3.5	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	3.5	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°	301.5	301.5	301.5
2.5°	252.8	237.9	239.4
5°	214.6	193.5	191.3
7.5°	181.5	158.9	156.0
10°	155.3	132.7	129.2
12.5°	136.3	115.8	112.3
15°	124.3	105.9	103.1
17.5°	122.1	108.0	106.6
20°	130.6	123.6	125.0
22.5°	145.4	143.3	146.9
25°	155.3	154.6	158.9
27.5°	153.2	151.8	154.6
30°	141.9	139.8	141.2
32.5°	128.5	125.0	126.4
35°	115.1	112.3	113.0
37.5°	103.8	101.7	101.7
40°	93.9	91.8	91.8
42.5°	83.3	81.9	82.6
45°	72.0	71.3	72.7
47.5°	60.7	60.0	61.4
50°	50.1	48.7	48.7
52.5°	39.5	37.4	36.0
55°	28.9	25.4	24.0
57.5°	19.8	16.2	14.8
60°	11.3	9.2	7.8
62.5°	5.6	3.5	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)