

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: P170876

Luminaire Tested: **LDA4A18940D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170876
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: LDA4A18940D010TE 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: 1408.3 lumens
Efficiency: N/A
Efficacy: 48.4 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

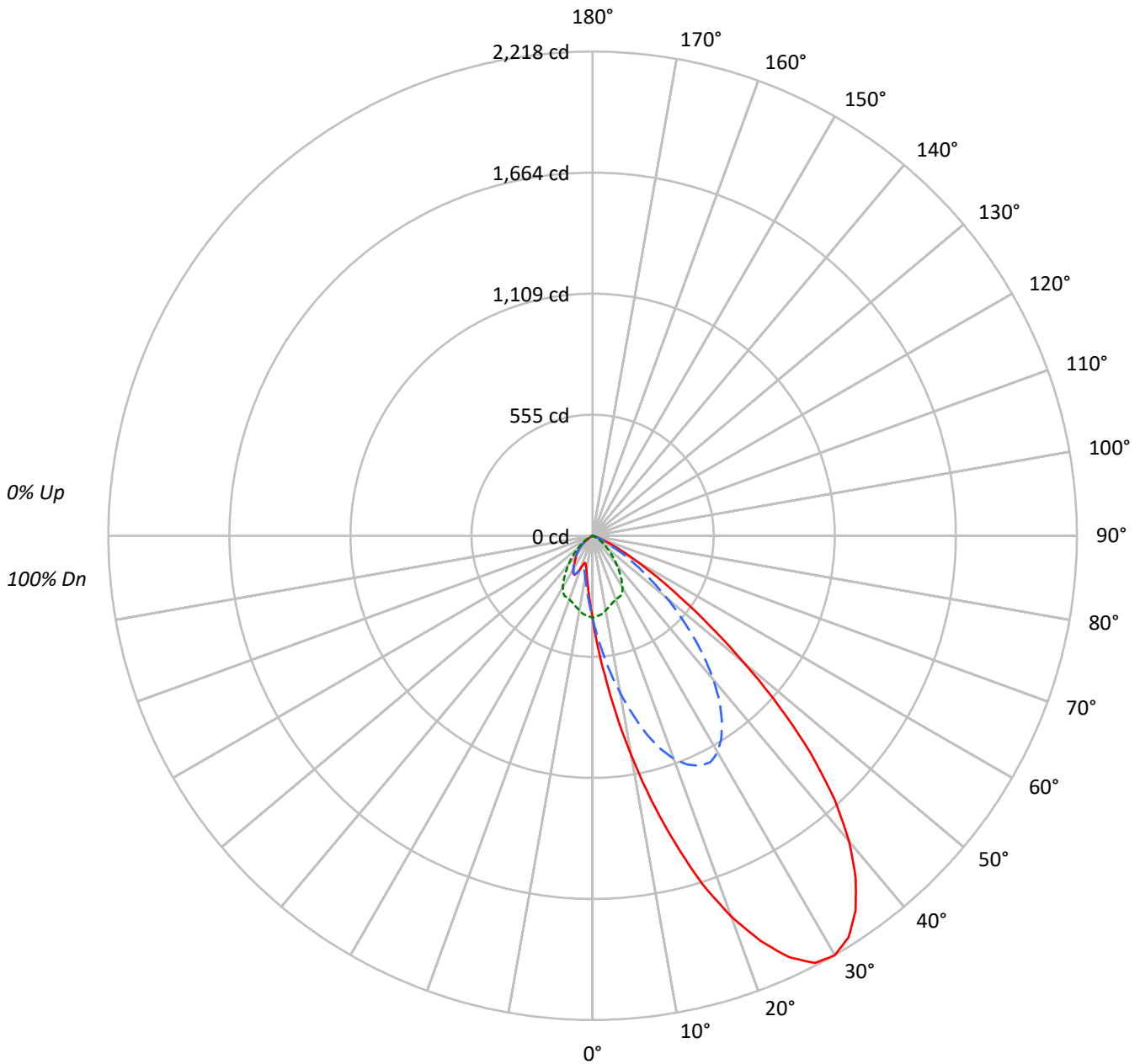
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	74	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	65	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°	46378	46378	46378
5°	79156	45255	29555
10°	127941	43461	20190
15°	185888	41719	16422
20°	243438	40809	20464
25°	289927	41346	26961
30°	315946	39011	25081
35°	315986	33278	21216
40°	294080	27502	18436
45°	247020	21508	15821
50°	173374	16061	11667
55°	104341	11548	6430
60°	57578	7376	2393
65°	27756	3590	263
70°	11108	1262	325
75°	3336	858	0
80°	1279	1279	0
85°	3680	2547	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.4	2.9
10°-20°	159.8	11.4
20°-30°	324.2	23.0
30°-40°	393.9	28.0
40°-50°	310.8	22.1
50°-60°	140.8	10.0
60°-70°	33.2	2.4
70°-80°	3.6	0.3
80°-90°	1.6	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°	524.4	37.2
0°-40°	918.2	65.2
0°-60°	1369.8	97.3
0°-90°	1408.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1408.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	376	376	376	376	376	
5°	639	538	366	268	239	73
15°	1456	933	327	155	129	424
25°	2130	1163	304	194	198	975
35°	2098	1031	221	144	141	1296
45°	1416	651	123	90	91	1071
55°	485	266	54	36	30	458
65°	95	56	12	3	1	107
75°	7	4	2	1	0	11
85°	3	3	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°	376.0	376.0	376.0	376.0	376.0	376.0	376.0	376.0	376.0	376.0	376.0
2.5°	499.3	487.0	487.0	478.2	485.2	471.1	473.8	472.9	481.7	479.1	471.1
5°	639.3	628.8	627.9	616.4	625.2	606.8	607.6	605.0	614.7	605.0	593.5
7.5°	819.9	801.4	800.5	787.3	796.1	772.3	771.4	766.2	775.0	756.5	739.7
10°	1021.5	995.1	993.4	977.5	987.2	956.4	953.7	944.9	951.1	922.0	898.2
12.5°	1237.3	1208.2	1204.7	1188.0	1196.8	1159.8	1152.7	1141.3	1143.9	1101.7	1070.0
15°	1455.7	1431.0	1427.5	1409.9	1418.7	1372.9	1361.5	1347.4	1344.7	1288.4	1247.9
17.5°	1673.2	1623.0	1638.9	1621.2	1629.2	1575.5	1560.5	1542.9	1533.2	1463.6	1412.5
20°	1854.6	1811.5	1822.9	1807.1	1814.1	1752.5	1734.0	1712.0	1695.2	1611.6	1552.6
22.5°	2007.8	1962.9	1956.8	1956.8	1961.2	1894.2	1869.6	1844.9	1821.1	1721.6	1661.8
25°	2130.3	2080.9	2073.9	2072.1	2073.0	2002.6	1973.5	1946.2	1915.4	1806.2	1741.0
27.5°	2206.0	2154.0	2146.1	2145.2	2140.8	2068.6	2036.0	2006.1	1969.1	1857.3	1784.2
30°	2218.3	2170.8	2162.0	2162.0	2150.5	2080.1	2044.0	2012.2	1970.9	1858.1	1779.8
32.5°	2181.3	2132.9	2123.2	2124.1	2105.6	2039.5	2000.8	1968.2	1925.1	1814.1	1733.1
35°	2098.5	2051.9	2043.1	2044.0	2021.1	1959.4	1918.9	1887.2	1841.4	1735.7	1652.9
37.5°	1979.7	1935.6	1926.8	1928.6	1900.4	1844.9	1803.5	1773.6	1726.9	1629.2	1548.2
40°	1826.4	1784.2	1776.2	1777.1	1746.3	1697.9	1657.4	1629.2	1582.5	1495.3	1417.8
42.5°	1640.6	1600.1	1593.9	1593.1	1563.1	1519.1	1479.5	1455.7	1408.1	1338.6	1264.6
45°	1416.1	1381.7	1354.4	1372.9	1342.1	1306.9	1269.9	1250.5	1205.6	1156.3	1090.2
47.5°	1163.3	1133.4	1106.1	1123.7	1095.5	1069.1	1036.5	1024.2	983.7	958.1	902.6
50°	903.5	878.0	853.3	868.3	846.3	828.7	803.1	797.0	763.5	760.0	716.8
52.5°	671.0	652.5	633.2	644.6	627.9	616.4	597.1	595.3	569.8	578.6	548.6
55°	485.2	472.0	457.0	465.9	453.5	446.5	432.4	433.3	413.9	427.1	406.0
57.5°	343.4	332.9	322.3	327.6	319.7	314.4	304.7	306.5	302.1	306.5	291.5
60°	233.4	227.2	219.3	223.7	216.6	214.0	207.8	208.7	198.1	212.2	201.7
62.5°	153.2	148.8	148.8	146.2	140.9	139.1	135.6	135.6	129.5	140.0	133.0
65°	95.1	93.3	92.5	90.7	87.2	86.3	83.7	83.7	79.3	87.2	81.9
67.5°	56.4	55.5	54.6	53.7	51.1	50.2	49.3	48.4	45.8	51.1	47.6
70°	30.8	30.8	29.9	29.1	27.3	27.3	26.4	26.4	24.7	27.3	24.7
72.5°	15.0	15.0	14.1	14.1	13.2	13.2	12.3	12.3	11.4	13.2	11.4
75°	7.0	7.0	6.2	6.2	6.2	6.2	5.3	5.3	5.3	6.2	5.3
77.5°	3.5	3.5	3.5	3.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6
80°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.9	0.9	1.8	1.8
82.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
85°	2.6	2.6	2.6	2.6	3.5	2.6	3.5	3.5	3.5	3.5	3.5
87.5°	3.5	3.5	3.5	3.5	3.5	4.4	4.4	4.4	3.5	4.4	3.5
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°	376.0	376.0	376.0	376.0	376.0	376.0	376.0	376.0	376.0	376.0	376.0
2.5°	473.8	466.7	469.4	461.5	455.3	452.6	452.6	451.8	410.4	369.0	339.9
5°	592.7	579.5	581.2	567.1	561.0	552.2	549.5	538.1	448.2	365.5	309.1
7.5°	733.6	714.2	702.7	689.5	681.6	665.8	657.8	634.9	483.5	358.4	279.2
10°	885.0	857.7	839.2	818.1	810.2	785.5	770.6	731.8	514.3	347.0	251.0
12.5°	1048.8	1011.8	978.4	955.5	945.8	898.2	888.6	833.1	542.5	336.4	228.1
15°	1217.0	1170.4	1128.1	1095.5	1083.2	1036.5	1006.6	932.6	567.1	326.7	210.5
17.5°	1366.7	1316.5	1265.5	1223.2	1205.6	1139.5	1111.4	1019.8	585.6	317.0	200.8
20°	1499.7	1439.0	1385.2	1327.1	1306.9	1232.0	1186.2	1087.6	596.2	310.9	201.7
22.5°	1601.0	1531.4	1469.8	1404.6	1379.1	1297.2	1245.2	1134.3	599.7	306.5	207.8
25°	1675.0	1597.5	1528.8	1457.4	1427.5	1340.3	1283.1	1163.3	598.8	303.8	210.5
27.5°	1712.8	1630.1	1556.1	1479.5	1446.9	1357.1	1295.4	1169.5	586.5	293.3	210.5
30°	1707.5	1620.4	1542.9	1463.6	1428.4	1339.4	1276.0	1145.7	560.1	273.9	195.5
32.5°	1660.9	1571.9	1492.7	1413.4	1378.2	1291.0	1227.6	1097.3	522.2	248.3	175.2
35°	1583.4	1495.3	1416.9	1339.4	1304.2	1219.7	1158.0	1031.2	479.1	221.0	156.8
37.5°	1482.1	1396.7	1321.0	1250.5	1210.0	1130.7	1070.9	952.8	431.5	196.4	140.9
40°	1356.2	1275.2	1203.8	1138.7	1095.5	1022.4	967.8	860.4	381.3	170.8	125.9
42.5°	1210.9	1135.1	1077.0	1011.8	963.4	899.1	851.6	758.2	330.2	147.9	110.1
45°	1046.2	979.3	929.1	871.8	821.6	767.0	726.5	650.8	278.3	123.3	95.1
47.5°	869.2	813.7	775.0	727.4	678.1	634.1	602.4	541.6	229.0	103.0	81.0
50°	694.8	650.8	622.6	586.5	541.6	508.1	483.5	443.0	181.4	83.7	67.8
52.5°	534.5	502.8	483.5	457.0	417.4	394.5	376.9	348.7	138.3	67.8	54.6
55°	398.9	376.0	363.7	345.2	310.9	295.0	283.6	266.0	103.0	53.7	42.3
57.5°	288.0	273.0	265.1	252.7	224.6	214.9	206.9	196.4	74.9	41.4	30.8
60°	200.8	190.2	185.8	177.9	155.0	148.8	138.3	138.3	52.8	29.9	21.1
62.5°	133.0	125.9	124.2	118.0	100.4	96.9	94.2	92.5	36.1	20.3	12.3
65°	82.8	77.5	76.6	73.1	60.8	59.0	56.4	56.4	22.9	12.3	6.2
67.5°	47.6	44.9	44.0	42.3	33.5	32.6	30.8	32.6	13.2	6.2	2.6
70°	25.5	22.9	22.9	22.0	16.7	15.9	15.0	15.9	7.0	3.5	1.8
72.5°	12.3	10.6	10.6	9.7	7.0	7.0	6.2	7.9	3.5	1.8	1.8
75°	5.3	5.3	4.4	4.4	2.6	2.6	2.6	3.5	1.8	1.8	1.8
77.5°	2.6	2.6	2.6	2.6	0.9	0.9	0.9	1.8	1.8	1.8	1.8
80°	1.8	1.8	1.8	1.8	0.0	0.0	0.0	1.8	1.8	1.8	1.8
82.5°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.9	1.8	1.8	1.8
85°	2.6	2.6	2.6	2.6	1.8	1.8	1.8	2.6	1.8	1.8	1.8
87.5°	3.5	3.5	3.5	3.5	2.6	2.6	2.6	4.4	2.6	1.8	1.8
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):

	135°	157.5°	180°
0°	376.0	376.0	376.0
2.5°	315.3	296.8	298.5
5°	267.7	241.3	238.7
7.5°	226.3	198.1	194.6
10°	193.7	165.6	161.2
12.5°	170.0	144.4	140.0
15°	155.0	132.1	128.6
17.5°	152.3	134.7	133.0
20°	162.9	154.1	155.9
22.5°	181.4	178.8	183.2
25°	193.7	192.9	198.1
27.5°	191.1	189.3	192.9
30°	177.0	174.4	176.1
32.5°	160.3	155.9	157.6
35°	143.5	140.0	140.9
37.5°	129.5	126.8	126.8
40°	117.1	114.5	114.5
42.5°	103.9	102.2	103.0
45°	89.8	88.9	90.7
47.5°	75.7	74.9	76.6
50°	62.5	60.8	60.8
52.5°	49.3	46.7	44.9
55°	36.1	31.7	29.9
57.5°	24.7	20.3	18.5
60°	14.1	11.4	9.7
62.5°	7.0	4.4	3.5
65°	2.6	1.8	0.9
67.5°	1.8	0.9	0.9
70°	1.8	0.9	0.9
72.5°	0.9	0.9	0.9
75°	0.9	0.9	0.0
77.5°	0.9	0.9	0.9
80°	0.9	0.9	0.0
82.5°	0.9	0.9	0.0
85°	0.9	0.9	0.0
87.5°	0.9	0.9	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)