

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: P170887

Luminaire Tested: **LDA4A13835D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170887
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: LDA4A13835D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1291.4 lumens
Efficiency: N/A
Efficacy: 58.0 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

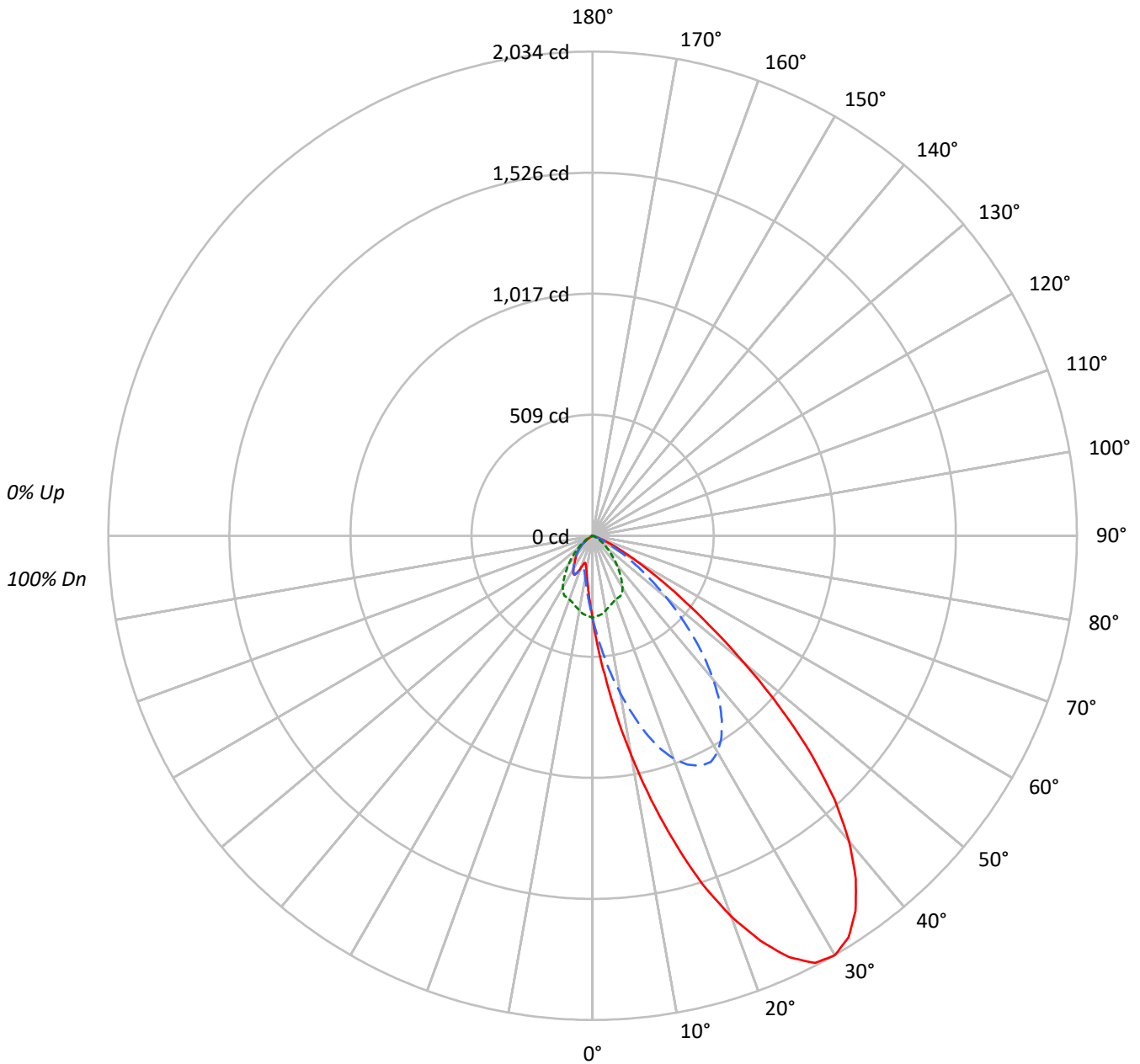
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	42542	42542	42542
5°	72594	41503	27103
10°	117333	39854	18512
15°	170475	38258	15055
20°	223250	37423	18757
25°	265879	37917	24729
30°	289754	35778	23002
35°	289786	30522	19455
40°	269702	25231	16907
45°	226524	19729	14513
50°	159001	14718	10688
55°	95696	10602	5914
60°	52792	6784	2196
65°	25450	3298	233
70°	10206	1154	289
75°	3098	763	0
80°	1137	1137	0
85°	3397	2264	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.0	2.9
10°-20°	146.6	11.4
20°-30°	297.3	23.0
30°-40°	361.2	28.0
40°-50°	285.0	22.1
50°-60°	129.1	10.0
60°-70°	30.5	2.4
70°-80°	3.3	0.3
80°-90°	1.4	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°	480.9	37.2
0°-40°	842.1	65.2
0°-60°	1256.2	97.3
0°-90°	1291.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1291.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	345	345	345	345	345	
5°	586	494	335	246	219	67
15°	1335	855	300	142	118	388
25°	1954	1067	279	178	182	894
35°	1924	946	203	132	129	1188
45°	1299	597	113	82	83	983
55°	445	244	49	33	28	420
65°	87	52	11	2	1	98
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°	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9
2.5°	457.9	446.6	446.6	438.5	445.0	432.1	434.5	433.7	441.8	439.3	432.1
5°	586.3	576.6	575.8	565.3	573.4	556.4	557.3	554.8	563.7	554.8	544.3
7.5°	751.9	734.9	734.1	722.0	730.1	708.3	707.5	702.6	710.7	693.7	678.4
10°	936.8	912.6	911.0	896.5	905.3	877.1	874.6	866.6	872.2	845.6	823.8
12.5°	1134.7	1108.0	1104.8	1089.5	1097.6	1063.6	1057.2	1046.7	1049.1	1010.3	981.3
15°	1335.0	1312.4	1309.1	1293.0	1301.1	1259.1	1248.6	1235.7	1233.2	1181.5	1144.4
17.5°	1534.5	1488.4	1503.0	1486.8	1494.1	1444.8	1431.1	1414.9	1406.1	1342.3	1295.4
20°	1700.8	1661.3	1671.8	1657.2	1663.7	1607.2	1590.2	1570.0	1554.7	1477.9	1423.8
22.5°	1841.4	1800.2	1794.5	1794.5	1798.6	1737.2	1714.6	1692.0	1670.2	1578.9	1524.0
25°	1953.6	1908.4	1901.9	1900.3	1901.1	1836.5	1809.9	1784.8	1756.6	1656.4	1596.7
27.5°	2023.1	1975.4	1968.2	1967.4	1963.3	1897.1	1867.2	1839.7	1805.8	1703.3	1636.2
30°	2034.4	1990.8	1982.7	1982.7	1972.2	1907.6	1874.5	1845.4	1807.4	1704.1	1632.2
32.5°	2000.5	1956.0	1947.2	1948.0	1931.0	1870.4	1834.9	1805.0	1765.4	1663.7	1589.4
35°	1924.5	1881.7	1873.7	1874.5	1853.5	1796.9	1759.8	1730.7	1688.7	1591.8	1515.9
37.5°	1815.5	1775.1	1767.1	1768.7	1742.8	1692.0	1654.0	1626.5	1583.7	1494.1	1419.8
40°	1675.0	1636.2	1629.0	1629.8	1601.5	1557.1	1519.9	1494.1	1451.3	1371.3	1300.3
42.5°	1504.6	1467.4	1461.8	1461.0	1433.5	1393.1	1356.8	1335.0	1291.4	1227.6	1159.7
45°	1298.6	1267.1	1242.1	1259.1	1230.8	1198.5	1164.6	1146.8	1105.6	1060.4	999.8
47.5°	1066.9	1039.4	1014.4	1030.5	1004.7	980.4	950.6	939.3	902.1	878.7	827.8
50°	828.6	805.2	782.6	796.3	776.1	760.0	736.5	730.9	700.2	697.0	657.4
52.5°	615.4	598.4	580.7	591.2	575.8	565.3	547.6	545.9	522.5	530.6	503.1
55°	445.0	432.9	419.2	427.2	415.9	409.5	396.5	397.3	379.6	391.7	372.3
57.5°	315.0	305.3	295.6	300.4	293.2	288.3	279.4	281.1	277.0	281.1	267.3
60°	214.0	208.4	201.1	205.1	198.7	196.3	190.6	191.4	181.7	194.6	184.9
62.5°	140.5	136.5	136.5	134.1	129.2	127.6	124.4	124.4	118.7	128.4	122.0
65°	87.2	85.6	84.8	83.2	80.0	79.1	76.7	76.7	72.7	80.0	75.1
67.5°	51.7	50.9	50.1	49.3	46.8	46.0	45.2	44.4	42.0	46.8	43.6
70°	28.3	28.3	27.5	26.7	25.0	25.0	24.2	24.2	22.6	25.0	22.6
72.5°	13.7	13.7	12.9	12.9	12.1	12.1	11.3	11.3	10.5	12.1	10.5
75°	6.5	6.5	5.7	5.7	5.7	5.7	4.8	4.8	4.8	5.7	4.8
77.5°	3.2	3.2	3.2	3.2	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	3.2	2.4	3.2	3.2	3.2	3.2	3.2
87.5°	3.2	3.2	3.2	3.2	3.2	4.0	4.0	4.0	3.2	4.0	3.2
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°	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9
2.5°	434.5	428.0	430.5	423.2	417.5	415.1	415.1	414.3	376.3	338.4	311.7
5°	543.5	531.4	533.0	520.1	514.5	506.4	504.0	493.5	411.1	335.2	283.5
7.5°	672.7	655.0	644.5	632.4	625.1	610.6	603.3	582.3	443.4	328.7	256.0
10°	811.7	786.6	769.7	750.3	743.0	720.4	706.7	671.1	471.6	318.2	230.2
12.5°	961.9	928.0	897.3	876.3	867.4	823.8	814.9	764.0	497.5	308.5	209.2
15°	1116.1	1073.3	1034.6	1004.7	993.4	950.6	923.1	855.3	520.1	299.6	193.0
17.5°	1253.4	1207.4	1160.5	1121.8	1105.6	1045.1	1019.2	935.2	537.1	290.7	184.1
20°	1375.4	1319.6	1270.4	1217.1	1198.5	1129.9	1087.9	997.4	546.8	285.1	184.9
22.5°	1468.2	1404.4	1347.9	1288.1	1264.7	1189.6	1142.0	1040.2	550.0	281.1	190.6
25°	1536.1	1465.0	1402.0	1336.6	1309.1	1229.2	1176.7	1066.9	549.2	278.6	193.0
27.5°	1570.8	1494.9	1427.1	1356.8	1326.9	1244.5	1188.0	1072.5	537.9	268.9	193.0
30°	1566.0	1486.0	1414.9	1342.3	1310.0	1228.4	1170.2	1050.7	513.6	251.2	179.3
32.5°	1523.2	1441.6	1368.9	1296.2	1263.9	1184.0	1125.8	1006.3	478.9	227.7	160.7
35°	1452.1	1371.3	1299.5	1228.4	1196.1	1118.5	1062.0	945.7	439.3	202.7	143.8
37.5°	1359.2	1280.9	1211.4	1146.8	1109.7	1037.0	982.1	873.8	395.7	180.1	129.2
40°	1243.7	1169.4	1104.0	1044.2	1004.7	937.6	887.6	789.0	349.7	156.7	115.5
42.5°	1110.5	1041.0	987.7	928.0	883.5	824.6	781.0	695.4	302.9	135.7	101.0
45°	959.4	898.1	852.0	799.5	753.5	703.4	666.3	596.8	255.2	113.1	87.2
47.5°	797.1	746.2	710.7	667.1	621.9	581.5	552.4	496.7	210.0	94.5	74.3
50°	637.2	596.8	571.0	537.9	496.7	466.0	443.4	406.2	166.4	76.7	62.2
52.5°	490.2	461.1	443.4	419.2	382.8	361.8	345.7	319.8	126.8	62.2	50.1
55°	365.9	344.9	333.5	316.6	285.1	270.6	260.1	243.9	94.5	49.3	38.8
57.5°	264.1	250.4	243.1	231.8	205.9	197.1	189.8	180.1	68.6	38.0	28.3
60°	184.1	174.4	170.4	163.1	142.1	136.5	126.8	126.8	48.5	27.5	19.4
62.5°	122.0	115.5	113.9	108.2	92.1	88.8	86.4	84.8	33.1	18.6	11.3
65°	75.9	71.1	70.3	67.0	55.7	54.1	51.7	51.7	21.0	11.3	5.7
67.5°	43.6	41.2	40.4	38.8	30.7	29.9	28.3	29.9	12.1	5.7	2.4
70°	23.4	21.0	21.0	20.2	15.3	14.5	13.7	14.5	6.5	3.2	1.6
72.5°	11.3	9.7	9.7	8.9	6.5	6.5	5.7	7.3	3.2	1.6	1.6
75°	4.8	4.8	4.0	4.0	2.4	2.4	2.4	3.2	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°	3.2	3.2	3.2	3.2	2.4	2.4	2.4	4.0	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°	344.9	344.9	344.9
2.5°	289.1	272.2	273.8
5°	245.5	221.3	218.9
7.5°	207.6	181.7	178.5
10°	177.7	151.8	147.8
12.5°	155.9	132.4	128.4
15°	142.1	121.1	117.9
17.5°	139.7	123.6	122.0
20°	149.4	141.3	142.9
22.5°	166.4	163.9	168.0
25°	177.7	176.9	181.7
27.5°	175.3	173.6	176.9
30°	162.3	159.9	161.5
32.5°	147.0	142.9	144.6
35°	131.6	128.4	129.2
37.5°	118.7	116.3	116.3
40°	107.4	105.0	105.0
42.5°	95.3	93.7	94.5
45°	82.4	81.6	83.2
47.5°	69.5	68.6	70.3
50°	57.3	55.7	55.7
52.5°	45.2	42.8	41.2
55°	33.1	29.1	27.5
57.5°	22.6	18.6	17.0
60°	12.9	10.5	8.9
62.5°	6.5	4.0	3.2
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)