

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: P170877

Luminaire Tested: **LDA4A09827D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170877
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: LDA4A09827D010TE LAR35FL 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 764.7 lumens
Efficiency: N/A
Efficacy: 55.3 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

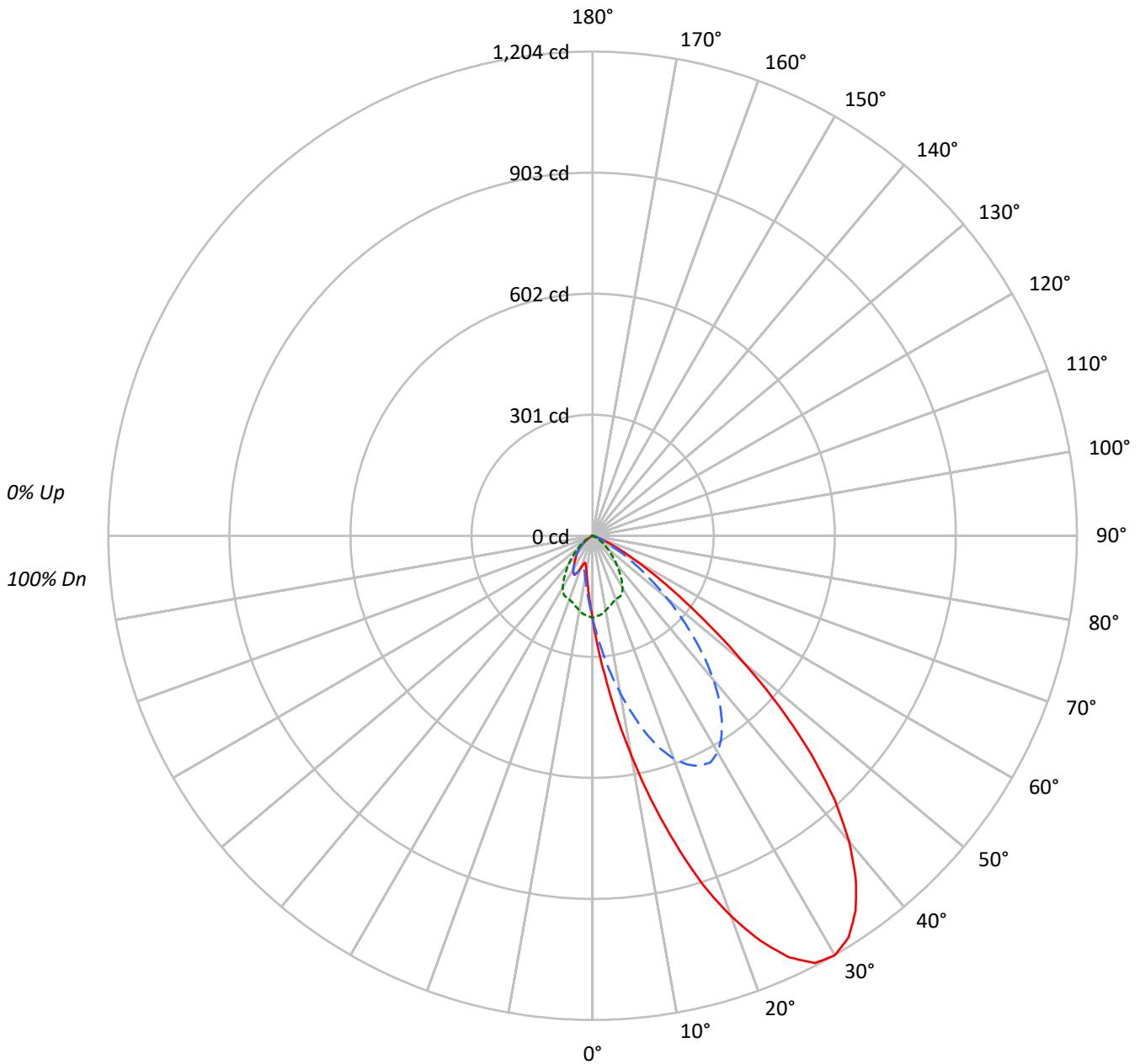
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	25187	25187	25187
5°	42989	24565	16047
10°	69475	23597	10959
15°	100932	22653	8913
20°	132181	22157	11105
25°	157423	22456	14644
30°	171554	21179	13616
35°	171583	18069	11519
40°	159680	14942	10015
45°	134125	11670	8600
50°	94142	8712	6332
55°	56665	6279	3505
60°	31256	4021	1307
65°	15060	1955	146
70°	6023	685	180
75°	1811	477	0
80°	710	710	0
85°	1981	1415	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.9	2.9
10°-20°	86.8	11.4
20°-30°	176.0	23.0
30°-40°	213.9	28.0
40°-50°	168.8	22.1
50°-60°	76.4	10.0
60°-70°	18.0	2.4
70°-80°	2.0	0.3
80°-90°	0.9	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°	284.7	37.2
0°-40°	498.6	65.2
0°-60°	743.8	97.3
0°-90°	764.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	764.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	204	204	204	204	204	
5°	347	292	198	145	130	40
15°	790	506	177	84	70	230
25°	1157	632	165	105	108	529
35°	1140	560	120	78	76	704
45°	769	353	67	49	49	582
55°	264	144	29	20	16	249
65°	52	31	7	1	0	58
75°	4	2	1	0	0	6
85°	1	1	1	0	0	1
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°	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2
2.5°	271.1	264.4	264.4	259.6	263.5	255.8	257.3	256.8	261.6	260.1	255.8
5°	347.2	341.4	340.9	334.7	339.5	329.5	329.9	328.5	333.8	328.5	322.3
7.5°	445.2	435.1	434.7	427.5	432.3	419.4	418.9	416.0	420.8	410.7	401.7
10°	554.7	540.3	539.4	530.8	536.0	519.3	517.9	513.1	516.4	500.6	487.7
12.5°	671.8	656.0	654.1	645.1	649.8	629.7	625.9	619.7	621.1	598.2	581.0
15°	790.4	777.0	775.1	765.5	770.3	745.5	739.3	731.6	730.2	699.6	677.6
17.5°	908.5	881.3	889.9	880.3	884.6	855.4	847.3	837.8	832.5	794.7	767.0
20°	1007.0	983.6	989.8	981.2	985.0	951.6	941.5	929.6	920.5	875.1	843.0
22.5°	1090.2	1065.8	1062.5	1062.5	1064.9	1028.5	1015.2	1001.8	988.9	934.8	902.3
25°	1156.7	1129.9	1126.1	1125.1	1125.6	1087.4	1071.6	1056.8	1040.0	980.7	945.3
27.5°	1197.8	1169.6	1165.3	1164.8	1162.4	1123.2	1105.5	1089.3	1069.2	1008.5	968.8
30°	1204.5	1178.7	1173.9	1173.9	1167.7	1129.4	1109.8	1092.6	1070.1	1008.9	966.4
32.5°	1184.4	1158.1	1152.9	1153.3	1143.3	1107.4	1086.4	1068.7	1045.3	985.0	941.0
35°	1139.5	1114.1	1109.4	1109.8	1097.4	1063.9	1041.9	1024.7	999.9	942.5	897.5
37.5°	1074.9	1051.0	1046.2	1047.2	1031.9	1001.8	979.3	963.0	937.7	884.6	840.6
40°	991.7	968.8	964.5	964.9	948.2	921.9	899.9	884.6	859.3	811.9	769.9
42.5°	890.8	868.8	865.5	865.0	848.8	824.8	803.3	790.4	764.6	726.8	686.7
45°	768.9	750.2	735.4	745.5	728.7	709.6	689.5	679.0	654.6	627.8	592.0
47.5°	631.7	615.4	600.6	610.1	594.8	580.5	562.8	556.1	534.1	520.2	490.1
50°	490.6	476.7	463.3	471.5	459.5	450.0	436.1	432.7	414.6	412.7	389.2
52.5°	364.4	354.3	343.8	350.0	340.9	334.7	324.2	323.2	309.4	314.2	297.9
55°	263.5	256.3	248.2	253.0	246.3	242.4	234.8	235.3	224.7	231.9	220.4
57.5°	186.5	180.7	175.0	177.9	173.6	170.7	165.4	166.4	164.0	166.4	158.3
60°	126.7	123.4	119.1	121.5	117.6	116.2	112.8	113.3	107.6	115.2	109.5
62.5°	83.2	80.8	80.8	79.4	76.5	75.6	73.6	73.6	70.3	76.0	72.2
65°	51.6	50.7	50.2	49.3	47.3	46.9	45.4	45.4	43.0	47.3	44.5
67.5°	30.6	30.1	29.6	29.2	27.7	27.3	26.8	26.3	24.9	27.7	25.8
70°	16.7	16.7	16.3	15.8	14.8	14.8	14.3	14.3	13.4	14.8	13.4
72.5°	8.1	8.1	7.7	7.7	7.2	7.2	6.7	6.7	6.2	7.2	6.2
75°	3.8	3.8	3.3	3.3	3.3	3.3	2.9	2.9	2.9	3.3	2.9
77.5°	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.4	1.4	1.4	1.4	1.9	1.4	1.9	1.9	1.9	1.9	1.9
87.5°	1.9	1.9	1.9	1.9	1.9	2.4	2.4	2.4	1.9	2.4	1.9
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°	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2
2.5°	257.3	253.4	254.9	250.6	247.2	245.8	245.8	245.3	222.8	200.4	184.6
5°	321.8	314.6	315.6	307.9	304.6	299.8	298.4	292.2	243.4	198.4	167.8
7.5°	398.3	387.8	381.6	374.4	370.1	361.5	357.2	344.8	262.5	194.6	151.6
10°	480.6	465.7	455.7	444.2	439.9	426.5	418.4	397.4	279.3	188.4	136.3
12.5°	569.5	549.4	531.2	518.8	513.6	487.7	482.5	452.3	294.6	182.7	123.8
15°	660.8	635.5	612.5	594.8	588.1	562.8	546.5	506.4	307.9	177.4	114.3
17.5°	742.1	714.9	687.1	664.2	654.6	618.8	603.5	553.7	318.0	172.1	109.0
20°	814.3	781.3	752.2	720.6	709.6	669.0	644.1	590.5	323.7	168.8	109.5
22.5°	869.3	831.5	798.1	762.7	748.8	704.3	676.1	615.9	325.6	166.4	112.8
25°	909.5	867.4	830.1	791.4	775.1	727.8	696.7	631.7	325.2	165.0	114.3
27.5°	930.0	885.1	844.9	803.3	785.6	736.9	703.4	635.0	318.5	159.2	114.3
30°	927.2	879.8	837.8	794.7	775.6	727.3	692.9	622.1	304.1	148.7	106.2
32.5°	901.8	853.5	810.5	767.5	748.3	701.0	666.6	595.8	283.6	134.8	95.2
35°	859.7	811.9	769.4	727.3	708.2	662.3	628.8	559.9	260.1	120.0	85.1
37.5°	804.8	758.4	717.3	679.0	657.0	614.0	581.5	517.4	234.3	106.6	76.5
40°	736.4	692.4	653.7	618.3	594.8	555.2	525.5	467.2	207.0	92.8	68.4
42.5°	657.5	616.4	584.8	549.4	523.1	488.2	462.4	411.7	179.3	80.3	59.8
45°	568.1	531.7	504.5	473.4	446.1	416.5	394.5	353.4	151.1	66.9	51.6
47.5°	472.0	441.8	420.8	395.0	368.2	344.3	327.1	294.1	124.3	55.9	44.0
50°	377.3	353.4	338.1	318.5	294.1	275.9	262.5	240.5	98.5	45.4	36.8
52.5°	290.2	273.0	262.5	248.2	226.7	214.2	204.7	189.4	75.1	36.8	29.6
55°	216.6	204.2	197.5	187.4	168.8	160.2	154.0	144.4	55.9	29.2	23.0
57.5°	156.4	148.2	143.9	137.2	121.9	116.7	112.4	106.6	40.6	22.5	16.7
60°	109.0	103.3	100.9	96.6	84.2	80.8	75.1	75.1	28.7	16.3	11.5
62.5°	72.2	68.4	67.4	64.1	54.5	52.6	51.2	50.2	19.6	11.0	6.7
65°	44.9	42.1	41.6	39.7	33.0	32.0	30.6	30.6	12.4	6.7	3.3
67.5°	25.8	24.4	23.9	23.0	18.2	17.7	16.7	17.7	7.2	3.3	1.4
70°	13.9	12.4	12.4	12.0	9.1	8.6	8.1	8.6	3.8	1.9	1.0
72.5°	6.7	5.7	5.7	5.3	3.8	3.8	3.3	4.3	1.9	1.0	1.0
75°	2.9	2.9	2.4	2.4	1.4	1.4	1.4	1.9	1.0	1.0	1.0
77.5°	1.4	1.4	1.4	1.4	0.5	0.5	0.5	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0
82.5°	1.0	0.5	0.5	0.5	0.0	0.0	0.0	0.5	1.0	1.0	1.0
85°	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.4	1.0	1.0	1.0
87.5°	1.9	1.9	1.9	1.9	1.4	1.4	1.4	2.4	1.4	1.0	1.0
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°	204.2	204.2	204.2
2.5°	171.2	161.1	162.1
5°	145.4	131.0	129.6
7.5°	122.9	107.6	105.7
10°	105.2	89.9	87.5
12.5°	92.3	78.4	76.0
15°	84.2	71.7	69.8
17.5°	82.7	73.2	72.2
20°	88.5	83.7	84.6
22.5°	98.5	97.1	99.5
25°	105.2	104.7	107.6
27.5°	103.8	102.8	104.7
30°	96.1	94.7	95.6
32.5°	87.0	84.6	85.6
35°	77.9	76.0	76.5
37.5°	70.3	68.9	68.9
40°	63.6	62.2	62.2
42.5°	56.4	55.5	55.9
45°	48.8	48.3	49.3
47.5°	41.1	40.6	41.6
50°	34.0	33.0	33.0
52.5°	26.8	25.3	24.4
55°	19.6	17.2	16.3
57.5°	13.4	11.0	10.0
60°	7.7	6.2	5.3
62.5°	3.8	2.4	1.9
65°	1.4	1.0	0.5
67.5°	1.0	0.5	0.5
70°	1.0	0.5	0.5
72.5°	0.5	0.5	0.5
75°	0.5	0.5	0.0
77.5°	0.5	0.5	0.5
80°	0.5	0.5	0.0
82.5°	0.5	0.5	0.0
85°	0.5	0.5	0.0
87.5°	0.5	0.5	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)