

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: P170881

Luminaire Tested: **LDA4A09927D010TE LAR35FL 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170881
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: LDA4A09927D010TE 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: 614.1 lumens
Efficiency: N/A
Efficacy: 44.4 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

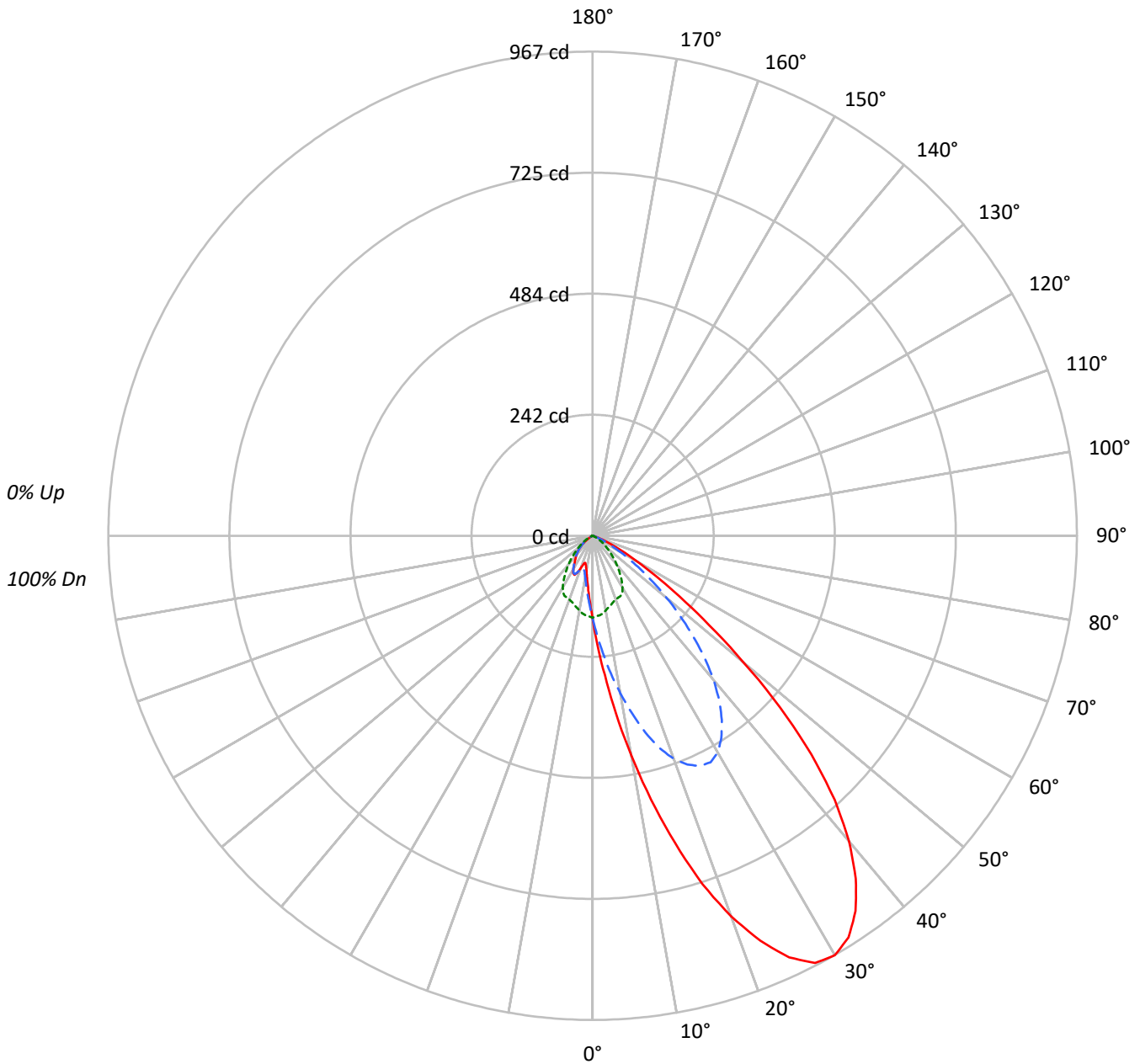
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	20229	20229	20229
5°	34520	19736	12889
10°	55798	18950	8805
15°	81062	18197	7164
20°	106151	17799	8926
25°	126420	18033	11759
30°	137770	17006	10938
35°	137793	14516	9245
40°	128233	11996	8035
45°	107715	9385	6908
50°	75605	7004	5085
55°	45504	5032	2817
60°	25113	3232	1036
65°	12112	1576	117
70°	4833	541	144
75°	1477	381	0
80°	568	568	0
85°	1698	1132	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	17.6	2.9
10°-20°	69.7	11.4
20°-30°	141.3	23.0
30°-40°	171.8	28.0
40°-50°	135.5	22.1
50°-60°	61.4	10.0
60°-70°	14.5	2.4
70°-80°	1.6	0.3
80°-90°	0.7	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°	228.6	37.2
0°-40°	400.4	65.2
0°-60°	597.3	97.3
0°-90°	614.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	614.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	164	164	164	164	164	
5°	279	235	159	117	104	32
15°	635	407	142	68	56	185
25°	929	507	132	84	86	425
35°	915	450	96	63	61	565
45°	618	284	54	39	40	467
55°	212	116	23	16	13	200
65°	42	25	5	1	0	47
75°	3	2	1	0	0	5
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°	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0
2.5°	217.7	212.4	212.4	208.5	211.6	205.4	206.6	206.2	210.1	208.9	205.4
5°	278.8	274.2	273.8	268.8	272.6	264.6	265.0	263.8	268.0	263.8	258.8
7.5°	357.5	349.4	349.1	343.3	347.1	336.8	336.4	334.1	337.9	329.9	322.6
10°	445.5	433.9	433.2	426.2	430.5	417.0	415.9	412.0	414.7	402.1	391.7
12.5°	539.5	526.9	525.3	518.0	521.9	505.7	502.7	497.7	498.8	480.4	466.6
15°	634.8	624.0	622.5	614.8	618.6	598.7	593.7	587.5	586.4	561.8	544.1
17.5°	729.6	707.7	714.6	707.0	710.4	687.0	680.5	672.8	668.6	638.2	615.9
20°	808.7	789.9	794.9	788.0	791.1	764.2	756.1	746.5	739.2	702.7	677.0
22.5°	875.5	856.0	853.3	853.3	855.2	826.0	815.3	804.5	794.1	750.7	724.6
25°	928.9	907.4	904.3	903.6	904.0	873.2	860.6	848.7	835.2	787.6	759.2
27.5°	961.9	939.3	935.8	935.4	933.5	902.0	887.8	874.8	858.6	809.9	778.0
30°	967.3	946.6	942.7	942.7	937.7	907.0	891.3	877.5	859.4	810.3	776.1
32.5°	951.2	930.1	925.8	926.2	918.2	889.4	872.5	858.3	839.4	791.1	755.7
35°	915.1	894.7	890.9	891.3	881.3	854.4	836.8	822.9	803.0	756.9	720.8
37.5°	863.3	844.1	840.2	841.0	828.7	804.5	786.4	773.4	753.0	710.4	675.1
40°	796.4	778.0	774.5	774.9	761.5	740.4	722.7	710.4	690.1	652.0	618.3
42.5°	715.4	697.7	695.1	694.7	681.6	662.4	645.1	634.8	614.0	583.7	551.4
45°	617.5	602.5	590.6	598.7	585.2	569.9	553.7	545.3	525.7	504.2	475.4
47.5°	507.3	494.2	482.3	490.0	477.7	466.2	452.0	446.6	428.9	417.8	393.6
50°	394.0	382.9	372.1	378.6	369.0	361.4	350.2	347.5	332.9	331.4	312.6
52.5°	292.6	284.6	276.1	281.1	273.8	268.8	260.4	259.6	248.5	252.3	239.2
55°	211.6	205.8	199.3	203.1	197.8	194.7	188.5	188.9	180.5	186.2	177.0
57.5°	149.8	145.2	140.5	142.9	139.4	137.1	132.9	133.6	131.7	133.6	127.1
60°	101.8	99.1	95.6	97.5	94.5	93.3	90.6	91.0	86.4	92.5	87.9
62.5°	66.8	64.9	64.9	63.7	61.4	60.7	59.1	59.1	56.4	61.1	58.0
65°	41.5	40.7	40.3	39.6	38.0	37.6	36.5	36.5	34.6	38.0	35.7
67.5°	24.6	24.2	23.8	23.4	22.3	21.9	21.5	21.1	20.0	22.3	20.7
70°	13.4	13.4	13.1	12.7	11.9	11.9	11.5	11.5	10.8	11.9	10.8
72.5°	6.5	6.5	6.1	6.1	5.8	5.8	5.4	5.4	5.0	5.8	5.0
75°	3.1	3.1	2.7	2.7	2.7	2.7	2.3	2.3	2.3	2.7	2.3
77.5°	1.5	1.5	1.5	1.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	1.2	1.2	1.2	1.2	1.5	1.2	1.5	1.5	1.5	1.5	1.5
87.5°	1.5	1.5	1.5	1.5	1.5	1.9	1.9	1.9	1.5	1.9	1.5
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°	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0
2.5°	206.6	203.5	204.7	201.2	198.5	197.4	197.4	197.0	178.9	160.9	148.2
5°	258.4	252.7	253.4	247.3	244.6	240.8	239.6	234.6	195.5	159.4	134.8
7.5°	319.9	311.4	306.4	300.7	297.2	290.3	286.9	276.9	210.8	156.3	121.7
10°	385.9	374.0	366.0	356.7	353.3	342.5	336.0	319.1	224.3	151.3	109.4
12.5°	457.4	441.2	426.6	416.6	412.4	391.7	387.5	363.3	236.5	146.7	99.5
15°	530.7	510.3	491.9	477.7	472.3	452.0	438.9	406.7	247.3	142.5	91.8
17.5°	596.0	574.1	551.8	533.4	525.7	496.9	484.6	444.7	255.4	138.2	87.6
20°	654.0	627.5	604.0	578.7	569.9	537.2	517.3	474.3	260.0	135.6	87.9
22.5°	698.1	667.8	640.9	612.5	601.4	565.6	543.0	494.6	261.5	133.6	90.6
25°	730.4	696.6	666.6	635.5	622.5	584.5	559.5	507.3	261.1	132.5	91.8
27.5°	746.9	710.8	678.5	645.1	630.9	591.8	564.9	510.0	255.7	127.9	91.8
30°	744.6	706.6	672.8	638.2	622.9	584.1	556.4	499.6	244.2	119.4	85.2
32.5°	724.2	685.5	650.9	616.3	601.0	563.0	535.3	478.5	227.7	108.3	76.4
35°	690.4	652.0	617.9	584.1	568.7	531.9	505.0	449.7	208.9	96.4	68.4
37.5°	646.3	609.0	576.0	545.3	527.6	493.1	467.0	415.5	188.2	85.6	61.4
40°	591.4	556.0	524.9	496.5	477.7	445.8	422.0	375.2	166.3	74.5	54.9
42.5°	528.0	495.0	469.6	441.2	420.1	392.1	371.3	330.6	144.0	64.5	48.0
45°	456.2	427.0	405.1	380.2	358.3	334.5	316.8	283.8	121.3	53.8	41.5
47.5°	379.0	354.8	337.9	317.2	295.7	276.5	262.7	236.2	99.8	44.9	35.3
50°	303.0	283.8	271.5	255.7	236.2	221.6	210.8	193.2	79.1	36.5	29.6
52.5°	233.1	219.3	210.8	199.3	182.0	172.0	164.4	152.1	60.3	29.6	23.8
55°	174.0	164.0	158.6	150.5	135.6	128.6	123.7	116.0	44.9	23.4	18.4
57.5°	125.6	119.0	115.6	110.2	97.9	93.7	90.2	85.6	32.6	18.0	13.4
60°	87.6	82.9	81.0	77.6	67.6	64.9	60.3	60.3	23.0	13.1	9.2
62.5°	58.0	54.9	54.1	51.5	43.8	42.2	41.1	40.3	15.7	8.8	5.4
65°	36.1	33.8	33.4	31.9	26.5	25.7	24.6	24.6	10.0	5.4	2.7
67.5°	20.7	19.6	19.2	18.4	14.6	14.2	13.4	14.2	5.8	2.7	1.2
70°	11.1	10.0	10.0	9.6	7.3	6.9	6.5	6.9	3.1	1.5	0.8
72.5°	5.4	4.6	4.6	4.2	3.1	3.1	2.7	3.5	1.5	0.8	0.8
75°	2.3	2.3	1.9	1.9	1.2	1.2	1.2	1.5	0.8	0.8	0.8
77.5°	1.2	1.2	1.2	1.2	0.4	0.4	0.4	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.8	0.8	0.8	0.8
82.5°	0.8	0.4	0.4	0.4	0.0	0.0	0.0	0.4	0.8	0.8	0.8
85°	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2	0.8	0.8	0.8
87.5°	1.5	1.5	1.5	1.5	1.2	1.2	1.2	1.9	1.2	0.8	0.8
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°	164.0	164.0	164.0
2.5°	137.5	129.4	130.2
5°	116.7	105.2	104.1
7.5°	98.7	86.4	84.9
10°	84.5	72.2	70.3
12.5°	74.1	63.0	61.1
15°	67.6	57.6	56.1
17.5°	66.4	58.8	58.0
20°	71.0	67.2	68.0
22.5°	79.1	78.0	79.9
25°	84.5	84.1	86.4
27.5°	83.3	82.6	84.1
30°	77.2	76.0	76.8
32.5°	69.9	68.0	68.7
35°	62.6	61.1	61.4
37.5°	56.4	55.3	55.3
40°	51.1	49.9	49.9
42.5°	45.3	44.5	44.9
45°	39.2	38.8	39.6
47.5°	33.0	32.6	33.4
50°	27.3	26.5	26.5
52.5°	21.5	20.4	19.6
55°	15.7	13.8	13.1
57.5°	10.8	8.8	8.1
60°	6.1	5.0	4.2
62.5°	3.1	1.9	1.5
65°	1.2	0.8	0.4
67.5°	0.8	0.4	0.4
70°	0.8	0.4	0.4
72.5°	0.4	0.4	0.4
75°	0.4	0.4	0.0
77.5°	0.4	0.4	0.4
80°	0.4	0.4	0.0
82.5°	0.4	0.4	0.0
85°	0.4	0.4	0.0
87.5°	0.4	0.4	0.0
90°	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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











(END OF REPORT)