

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: P1191551

Luminaire Tested: **LDA4A15935D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-41-14
Report Number: P1191551
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25649)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A15935D010TE LAR25NF 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 25°
Narrow Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

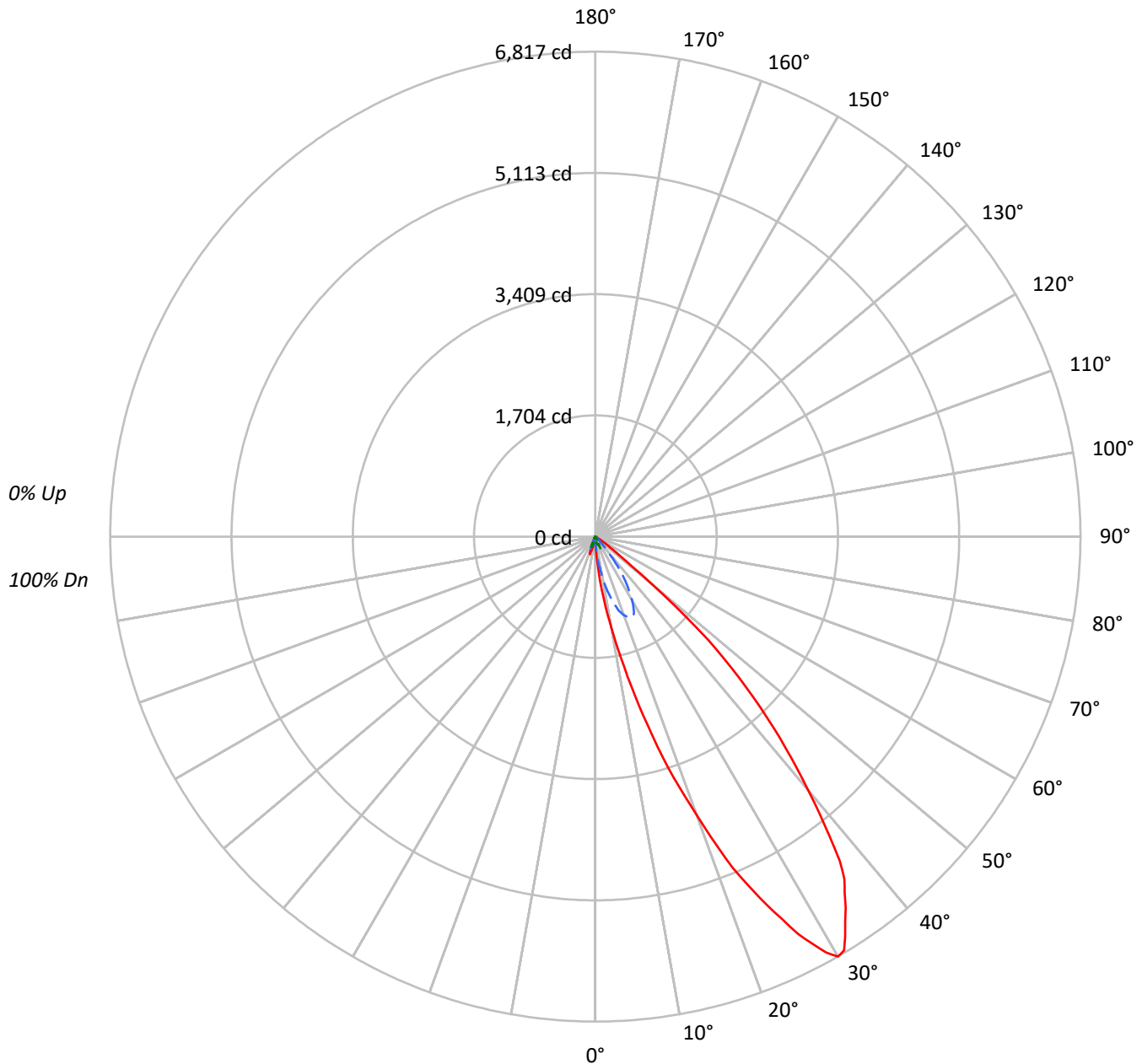
Lumens per Lamp: N/A
Luminaire Lumens: 1578.9 lumens
Efficiency: N/A
Efficacy: 77.4 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 20.4
Input Voltage (V): NR
Input Current (Ain): 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					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10		50	30	10			50	30	10			50
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111			106	106	106			102
1	112	109	106	104	110	107	104	102		103	101	99			99	97	96			96
2	105	100	95	91	103	98	93	90		95	91	88			91	88	86			89
3	99	91	85	80	96	89	84	79		87	82	78			84	80	77			82
4	92	83	76	71	90	82	75	71		79	74	70			77	73	69			75
5	86	76	69	63	84	75	68	63		73	67	62			71	66	62			69
6	80	69	62	57	78	68	61	56		67	61	56			65	60	56			64
7	75	63	56	51	73	63	56	51		61	55	50			60	54	50			59
8	70	58	51	46	68	58	51	46		56	50	46			55	49	45			54
9	65	53	46	41	64	53	46	41		52	46	41			51	45	41			50
10	61	49	42	38	60	49	42	38		48	42	37			47	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12902	12902	12902
5°	56077	12171	7379
10°	161708	10959	8028
15°	331335	12106	23164
20°	546652	22498	23443
25°	778719	14358	7853
30°	970941	6295	3091
35°	919997	2861	1355
40°	749305	1449	435
45°	524864	785	0
50°	196670	518	0
55°	41913	581	0
60°	8017	444	0
65°	2393	788	0
70°	649	974	0
75°	0	1287	0
80°	0	1918	0
85°	0	3821	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.9	1.4
10°-20°	189.1	12.0
20°-30°	483.0	30.6
30°-40°	559.4	35.4
40°-50°	288.6	18.3
50°-60°	29.8	1.9
60°-70°	3.2	0.2
70°-80°	2.0	0.1
80°-90°	1.8	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°	694.0	44.0
0°-40°	1253.4	79.4
0°-60°	1571.8	99.6
0°-90°	1578.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1578.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	105	105	105	105	105	
5°	453	236	98	65	60	71
15°	2595	950	95	126	181	794
25°	5722	1240	106	66	58	2658
35°	6110	678	19	11	9	3741
45°	3009	79	4	3	0	2253
55°	195	12	3	2	0	244
65°	8	3	3	2	0	11
75°	0	2	3	3	0	0
85°	0	2	3	3	0	0
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°	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6
2.5°	180.4	174.1	169.6	171.4	181.4	170.5	171.4	167.9	166.0	164.2	159.7
5°	452.9	434.9	423.1	424.1	397.9	417.7	415.9	400.6	390.7	371.7	360.8
7.5°	849.8	811.1	797.6	793.1	795.7	776.9	768.7	748.8	722.7	688.4	668.6
10°	1291.1	1267.6	1259.5	1245.0	1244.2	1210.8	1190.9	1165.6	1113.3	1065.5	1030.4
12.5°	1881.1	1808.9	1796.3	1769.2	1762.0	1705.2	1663.6	1626.7	1539.1	1476.0	1420.1
15°	2594.7	2536.1	2549.6	2466.7	2444.1	2351.2	2273.6	2194.2	2052.6	1956.0	1856.7
17.5°	3405.0	3330.0	3339.1	3235.4	3048.6	3065.7	2953.0	2843.7	2644.4	2515.4	2362.0
20°	4164.6	4111.4	4114.9	3976.9	3913.8	3742.4	3591.7	3461.7	3196.5	3032.3	2829.3
22.5°	5038.8	4900.8	4874.6	4687.0	4576.0	4345.9	4135.8	3963.4	3642.3	3457.2	3208.2
25°	5721.8	5627.1	5554.9	5332.9	5178.7	4879.1	4635.6	4380.3	3994.1	3789.3	3493.4
26°	5978.1	5888.7	5795.7	5556.7	5383.5	5066.9	4801.5	4527.3	4114.1	3894.8	3572.7
27°	6267.7	6121.5	6009.6	5741.6	5554.0	5221.1	4906.2	4647.3	4205.2	3962.5	3623.3
28°	6472.5	6326.3	6178.4	5887.0	5683.9	5335.7	5008.2	4725.8	4258.4	3995.1	3644.1
29°	6682.7	6527.5	6311.9	5994.3	5773.2	5407.0	5066.9	4764.6	4273.8	3993.1	3633.1
30°	6817.1	6661.0	6382.2	6054.7	5821.1	5435.9	5083.1	4757.3	4249.4	3957.1	3593.5
31°	6785.5	6642.0	6365.1	6061.1	5816.6	5418.7	5053.2	4705.9	4188.0	3893.1	3521.3
32°	6627.7	6505.8	6295.7	6018.7	5767.0	5360.1	4983.8	4624.8	4099.6	3818.2	3433.8
33°	6444.4	6343.4	6198.2	5932.9	5680.4	5271.6	4888.2	4524.6	3997.6	3716.2	3328.2
34°	6291.2	6199.9	6065.6	5817.4	5562.2	5153.5	4767.3	4398.3	3881.3	3596.2	3203.7
35°	6109.8	6026.7	5902.2	5661.4	5398.0	4994.6	4615.6	4252.1	3744.1	3453.7	3059.5
36°	5951.9	5821.1	5694.7	5460.2	5197.7	4802.5	4437.0	4080.7	3589.0	3290.3	2897.1
37°	5707.4	5576.6	5441.2	5219.3	4960.4	4582.4	4238.6	3897.6	3412.1	3167.6	2723.7
38°	5341.9	5281.5	5146.2	4935.1	4694.2	4339.6	4021.1	3689.2	3212.7	2930.3	2539.8
39°	5001.0	4951.4	4819.6	4626.6	4403.7	4078.9	3780.3	3454.5	2988.1	2721.0	2345.7
40°	4653.6	4603.9	4480.4	4306.2	4105.9	3807.3	3524.1	3204.7	2752.6	2505.4	2150.9
42.5°	3830.7	3779.3	3753.1	3575.5	3363.4	3107.2	2844.7	2556.0	2171.6	1968.7	1690.8
45°	3008.9	2962.0	2863.6	2790.6	2601.0	2388.1	2174.3	1938.8	1655.6	1455.3	1195.4
47.5°	2150.9	2128.4	2131.9	1996.6	1816.1	1648.4	1471.5	1258.6	1007.7	756.0	554.9
50°	1024.9	1031.2	1056.5	961.8	826.4	728.0	623.5	489.0	357.3	280.6	217.5
51°	664.1	671.2	692.9	625.2	526.9	460.1	393.4	317.6	253.5	215.6	172.4
52°	449.3	449.3	453.8	414.1	365.5	327.5	288.7	244.5	197.6	169.6	136.2
53°	337.4	336.5	338.3	312.1	278.7	250.8	223.8	191.3	156.1	132.7	105.5
54°	258.0	257.2	259.0	239.0	215.6	194.9	174.1	149.7	121.0	99.3	79.4
55°	194.9	194.9	197.6	182.2	164.2	148.0	132.7	111.8	89.3	72.1	57.7
57.5°	78.5	78.5	81.1	75.8	67.6	61.4	55.9	47.9	39.7	33.4	27.0
60°	32.5	33.4	34.2	31.6	29.7	28.0	26.2	23.5	20.7	17.2	14.5
61°	24.4	24.4	25.2	23.5	22.5	20.7	19.9	18.0	16.2	13.5	11.7
62°	18.0	18.0	19.0	18.0	17.2	16.2	15.3	14.5	12.7	10.8	9.0
63°	13.5	13.5	14.5	13.5	13.5	12.7	11.7	10.8	10.0	8.2	7.2
64°	10.8	10.8	10.8	10.0	10.0	10.0	9.0	9.0	7.2	6.3	5.5
65°	8.2	8.2	8.2	8.2	7.2	7.2	7.2	6.3	6.3	4.5	4.5
66°	6.3	6.3	6.3	5.5	5.5	5.5	5.5	5.5	4.5	3.5	2.7

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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Peachtree City, GA 30269



TEST NUMBER: P1191551

CATALOG NUMBER: LDA4A15935D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
75°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6	104.6
2.5°	161.5	160.6	151.6	151.6	155.2	149.7	147.0	140.7	121.0	102.8	86.6
5°	357.3	347.3	316.6	307.6	306.8	281.5	267.0	235.5	138.0	98.3	74.9
7.5°	659.5	629.7	577.4	549.4	515.2	495.3	460.1	406.0	157.0	92.0	67.6
10°	975.3	941.9	864.3	814.6	788.6	724.5	665.9	591.8	175.9	87.5	66.8
12.5°	1337.0	1262.2	1188.3	1099.8	1021.4	964.5	867.0	780.4	188.6	86.6	73.1
15°	1728.7	1634.9	1508.5	1389.4	1278.4	1197.3	1066.4	950.0	193.1	94.8	95.6
17.5°	2167.1	1991.2	1808.9	1646.6	1494.0	1384.9	1222.5	1085.3	190.4	116.3	152.5
20°	2577.6	2344.0	2096.7	1871.2	1655.6	1513.9	1326.3	1177.4	191.3	171.4	205.6
22.5°	2903.3	2619.1	2317.8	2042.6	1769.2	1599.7	1394.9	1226.0	214.8	183.1	139.9
25°	3143.3	2808.6	2463.0	2146.4	1858.5	1668.1	1443.5	1240.5	200.3	105.5	79.4
26°	3207.4	2854.6	2490.1	2161.6	1869.4	1668.1	1436.3	1225.2	173.2	83.9	65.9
27°	3243.4	2875.4	2494.6	2154.4	1855.9	1649.2	1410.1	1194.5	141.7	70.4	55.9
28°	3247.9	2866.4	2472.0	2124.7	1818.0	1608.7	1363.2	1147.6	117.3	59.6	46.0
29°	3223.6	2833.0	2428.8	2075.1	1760.2	1549.1	1299.1	1089.8	100.1	51.4	38.7
30°	3172.2	2774.3	2362.9	2008.4	1685.3	1477.0	1224.3	1025.9	87.5	44.2	32.5
31°	3098.2	2694.0	2291.6	1928.9	1606.8	1404.7	1153.9	960.8	77.6	37.0	27.0
32°	3002.6	2599.2	2199.6	1843.2	1536.4	1336.2	1086.3	895.0	69.4	31.6	22.5
33°	2896.1	2491.9	2099.5	1753.9	1468.8	1265.9	1015.0	825.5	62.3	26.2	19.0
34°	2773.4	2373.7	1993.0	1664.6	1396.6	1188.3	938.3	754.2	54.1	21.7	16.2
35°	2633.6	2242.0	1878.4	1583.3	1316.3	1104.3	858.0	678.4	47.9	19.0	13.5
36°	2482.0	2104.9	1762.9	1490.5	1229.7	1016.7	773.2	601.8	41.5	16.2	11.7
37°	2323.2	1962.3	1647.4	1384.9	1134.1	923.9	685.6	518.7	36.1	13.5	10.0
38°	2155.4	1818.8	1535.6	1284.7	1033.1	823.8	596.3	427.6	31.6	11.7	9.0
39°	1984.0	1677.3	1424.6	1174.6	929.3	725.3	510.7	332.0	28.0	10.0	8.2
40°	1816.1	1543.6	1307.3	1054.6	825.5	628.8	427.6	244.5	24.4	9.0	6.3
42.5°	1438.1	1185.5	938.3	703.8	575.6	398.7	237.3	128.0	17.2	6.3	4.5
45°	941.0	701.0	506.2	342.8	297.7	168.7	110.0	79.4	12.7	4.5	3.5
47.5°	389.7	284.2	197.6	142.5	115.5	90.3	70.4	51.4	9.0	3.5	3.5
50°	171.4	135.3	107.3	83.9	73.1	58.6	45.1	31.6	5.5	2.7	2.7
51°	137.2	109.2	83.9	66.8	59.6	47.9	37.0	25.2	5.5	2.7	2.7
52°	108.3	84.8	65.9	51.4	47.9	38.7	30.7	20.7	4.5	2.7	2.7
53°	83.0	64.1	49.6	40.6	37.9	31.6	25.2	17.2	3.5	2.7	2.7
54°	61.4	48.7	38.7	31.6	30.7	25.2	20.7	14.5	3.5	2.7	2.7
55°	45.1	37.9	29.7	25.2	24.4	20.7	17.2	11.7	3.5	2.7	2.7
57.5°	23.5	19.9	16.2	14.5	14.5	13.5	11.7	7.2	2.7	1.8	2.7
60°	12.7	10.8	9.0	8.2	10.0	9.0	8.2	4.5	2.7	1.8	2.7
61°	10.0	9.0	7.2	6.3	8.2	7.2	7.2	3.5	2.7	2.7	2.7
62°	8.2	7.2	6.3	5.5	7.2	6.3	6.3	3.5	2.7	2.7	2.7
63°	6.3	5.5	4.5	4.5	6.3	6.3	5.5	2.7	2.7	2.7	2.7
64°	4.5	4.5	3.5	3.5	5.5	5.5	4.5	2.7	2.7	2.7	2.7
65°	3.5	3.5	2.7	2.7	4.5	4.5	4.5	2.7	2.7	2.7	2.7
66°	2.7	2.7	2.7	1.8	3.5	4.5	4.5	1.8	2.7	2.7	2.7



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CATALOG NUMBER: LDA4A15935D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	2.7
75°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	2.7
77.5°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
80°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
82.5°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
85°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
87.5°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	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):

	135°	157.5°	180°
0°	104.6	104.6	104.6
2.5°	78.5	74.0	73.1
5°	64.9	60.4	59.6
7.5°	59.6	55.9	55.1
10°	61.4	62.3	64.1
12.5°	78.5	86.6	93.8
15°	126.3	158.7	181.4
17.5°	220.1	243.5	259.0
20°	193.1	177.7	178.6
22.5°	108.3	97.5	96.5
25°	65.9	59.6	57.7
26°	55.1	49.6	47.9
27°	45.1	40.6	38.7
28°	37.0	33.4	32.5
29°	31.6	27.0	26.2
30°	26.2	22.5	21.7
31°	21.7	19.0	18.0
32°	19.0	16.2	14.5
33°	15.3	13.5	12.7
34°	13.5	10.8	10.0
35°	10.8	9.0	9.0
36°	10.0	8.2	7.2
37°	8.2	6.3	6.3
38°	7.2	5.5	4.5
39°	6.3	4.5	3.5
40°	5.5	3.5	2.7
42.5°	3.5	1.8	1.0
45°	2.7	1.0	0.0
47.5°	1.8	1.0	0.0
50°	1.8	0.0	0.0
51°	1.8	0.0	0.0
52°	1.8	0.0	0.0
53°	1.8	0.0	0.0
54°	1.8	0.0	0.0
55°	1.8	0.0	0.0
57.5°	1.8	0.0	0.0
60°	1.8	0.0	0.0
61°	1.8	0.0	0.0
62°	1.8	0.0	0.0
63°	1.8	1.0	0.0
64°	1.8	1.0	0.0
65°	1.8	1.0	0.0
66°	1.8	1.0	0.0



TEST NUMBER: P1191551

CATALOG NUMBER: LDA4A15935D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.7	1.0	0.0
75°	2.7	1.0	0.0
77.5°	2.7	1.0	0.0
80°	2.7	1.0	0.0
82.5°	2.7	1.0	0.0
85°	2.7	1.0	0.0
87.5°	1.8	1.0	0.0
90°	0.0	0.0	0.0

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Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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Peachtree City, GA 30269



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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.7	1.8
70°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.0	1.0

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67.5°	1.8	1.8	1.8	1.8	3.5	3.5	3.5	1.8	2.7	2.7	2.7
70°	1.0	1.0	1.0	1.8	2.7	3.5	3.5	1.8	2.7	2.7	2.7

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67.5°	1.8	1.0	0.0
70°	1.8	1.0	0.0

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(END OF REPORT)