

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: P1192132

Luminaire Tested: **LDA6A30950D010TE LARL20NF 6LAL1 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: P1192132
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26268)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A30950D010TE LARL20NF 6LAL1 30° Tilt
Description: PORTFOLIO 6" Lensed Adjustable, Self-flange Trim Ring, 20° Narrow Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

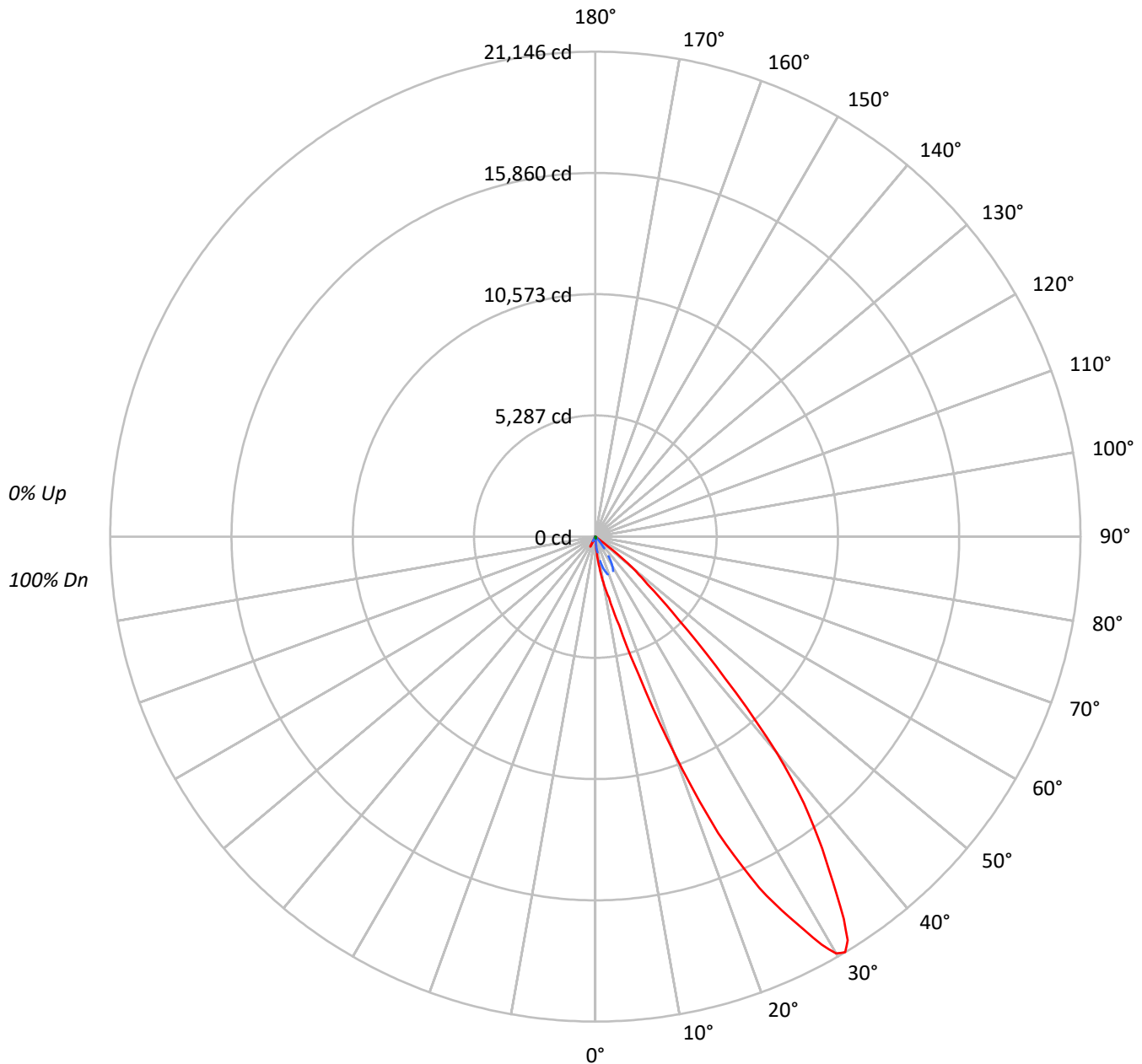
Lumens per Lamp: N/A
Luminaire Lumens: 3221.1 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 39.8
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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1121 Highway 74 South

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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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91		
2	105	100	95	91	103	98	93	90	94	91	88	91	88	86	89	86	84	82		
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74		
4	92	83	76	71	90	82	75	70	79	74	70	77	72	69	75	71	68	66		
5	86	75	68	63	84	74	68	63	73	67	62	71	66	62	69	65	61	59		
6	80	69	62	56	78	68	61	56	66	60	56	65	59	55	63	59	55	53		
7	74	63	56	50	73	62	55	50	61	55	50	59	54	50	58	53	49	48		
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	54	48	44	43		
9	65	53	46	41	63	52	45	41	51	45	40	50	44	40	49	44	40	39		
10	60	49	41	37	59	48	41	37	47	41	37	46	41	36	45	40	36	35		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	3985	3985	3985
5°	38752	3527	1453
10°	114594	2516	902
15°	227476	1708	783
20°	586779	1388	1097
25°	1022642	1675	7894
30°	1328363	1753	4450
35°	1190254	750	415
40°	879941	265	0
45°	396266	287	0
50°	178775	316	0
55°	15952	354	0
60°	1930	406	0
65°	804	649	0
70°	593	801	0
75°	0	1059	0
80°	0	1578	379
85°	0	3145	755



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	29.0	0.9
10°-20°	271.2	8.4
20°-30°	1071.0	33.3
30°-40°	1292.4	40.1
40°-50°	501.5	15.6
50°-60°	44.1	1.4
60°-70°	4.1	0.1
70°-80°	4.0	0.1
80°-90°	3.7	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°	1371.2	42.6
0°-40°	2663.6	82.7
0°-60°	3209.3	99.6
0°-90°	3221.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3221.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	73	73	73	73	73	
5°	704	344	64	31	26	112
15°	4008	1516	30	19	14	1469
25°	16907	1794	28	88	130	7732
35°	17785	912	11	11	6	10932
45°	5111	64	4	3	0	4490
55°	167	8	4	3	0	403
65°	6	5	5	4	0	7
75°	0	5	5	5	0	1
85°	0	5	5	5	1	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°	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7
2.5°	228.5	217.3	204.7	209.7	212.1	218.4	213.4	194.6	205.8	197.1	189.6
5°	704.2	691.6	667.8	671.5	664.0	672.8	652.7	612.6	620.2	607.6	574.9
7.5°	1373.2	1320.5	1281.5	1284.1	1261.5	1271.5	1233.9	1164.8	1157.3	1093.2	1083.3
10°	2058.6	2032.2	1985.8	1979.5	1939.3	1944.3	1885.4	1793.7	1768.6	1694.6	1651.9
12.5°	2731.4	2687.4	2622.3	2608.4	2543.1	2544.4	2464.1	2361.1	2323.5	2246.8	2188.0
15°	4008.1	3945.2	3795.8	3739.3	3558.6	3530.9	3332.7	3099.2	2986.3	2854.4	2681.1
17.5°	6364.0	6323.8	6031.4	5869.4	5502.8	5139.0	4924.3	4419.6	4124.6	3755.6	3435.5
20°	10058.2	10132.2	9621.2	9259.8	8579.6	7811.3	7269.1	6350.2	5736.3	5100.0	4497.5
22.5°	13987.1	14018.4	13494.9	13044.4	12252.2	11196.6	9947.6	8833.0	7708.4	6615.1	5620.9
25°	16906.7	16816.4	16240.1	15699.1	14865.7	13787.5	12573.6	11084.9	9547.3	8046.0	6590.0
26°	17797.9	17748.8	17171.4	16523.8	15606.2	14511.7	13248.9	11746.5	10122.2	8505.3	6886.2
27°	18623.9	18592.5	17966.1	17245.5	16217.6	15071.6	13749.8	12248.5	10556.5	8860.7	7100.8
28°	19461.1	19425.8	18667.8	17831.7	16714.7	15469.4	14096.3	12583.7	10836.4	9069.0	7189.9
29°	20345.9	20278.2	19309.2	18262.3	17046.0	15701.7	14277.0	12736.8	10931.8	9120.5	7167.4
30°	20984.9	20879.4	19772.3	18534.8	17181.6	15774.4	14297.1	12733.0	10872.7	9013.9	7023.0
31°	21145.6	21038.9	19901.6	18530.8	17082.3	15664.1	14152.7	12554.8	10626.7	8755.2	6779.4
32°	20756.4	20658.5	19574.0	18107.9	16768.5	15397.9	13865.2	12224.7	10245.1	8368.6	6449.4
33°	19887.8	19813.8	18878.6	17551.9	16319.2	15020.1	13453.5	11755.1	9702.9	7876.5	6061.4
34°	18792.1	18738.0	18018.8	16897.9	15749.3	14501.7	12920.0	11136.4	8988.7	7319.3	5638.6
35°	17785.4	17745.1	17162.8	16168.6	15097.8	13860.2	12244.9	10374.5	8253.0	6719.2	5186.6
36°	16816.4	16782.4	16276.5	15352.7	14319.7	13108.3	11394.9	9463.2	7463.6	6096.7	4718.5
37°	15804.6	15774.4	15340.1	14461.5	13444.7	12209.6	10385.8	8492.8	6661.5	5475.4	4237.7
38°	14755.2	14730.1	14332.1	13456.0	12424.3	11111.4	9234.8	7490.0	5879.4	4869.1	3805.9
39°	13584.1	13562.7	13196.1	12277.3	11175.2	9817.1	8049.8	6512.2	5137.6	4280.3	3387.9
40°	12296.1	12267.3	11900.8	10874.0	9760.6	8485.4	6911.2	5614.5	4437.2	3730.6	3020.1
42.5°	8359.7	8328.3	8056.0	7458.6	6386.6	5566.9	4580.4	3758.1	3144.4	2718.8	2352.3
45°	5111.3	5115.1	4971.9	4602.9	3957.8	3502.1	2966.1	2573.2	2297.0	2133.9	1879.2
47.5°	3091.6	3091.6	3027.5	2839.3	2549.4	2367.4	2145.1	1961.9	1751.0	1590.3	1314.1
50°	2096.2	2097.5	1999.5	2009.6	1816.4	1703.4	1491.2	1267.9	1060.7	827.2	589.9
51°	1551.5	1559.0	1468.7	1510.0	1297.9	1202.6	1001.7	812.1	628.9	448.1	258.5
52°	948.9	962.7	901.3	938.9	815.9	676.6	513.3	379.1	254.9	178.3	124.3
53°	440.5	451.9	420.5	438.0	365.2	285.0	215.9	175.8	140.6	114.3	84.1
54°	233.5	236.1	225.9	220.9	200.8	177.0	147.0	121.8	95.4	76.5	56.5
55°	166.9	166.9	161.9	156.9	140.6	120.5	97.9	82.9	62.7	50.2	36.4
57.5°	51.5	51.5	51.5	48.9	42.6	36.4	28.8	25.1	20.1	18.8	15.1
60°	17.6	17.6	17.6	16.2	15.1	13.8	12.6	11.2	10.0	10.0	8.8
61°	12.6	12.6	12.6	12.6	11.2	11.2	10.0	8.8	7.6	8.8	7.6
62°	10.0	11.2	10.0	10.0	10.0	8.8	7.6	7.6	6.2	7.6	6.2
63°	8.8	8.8	8.8	8.8	7.6	7.6	6.2	6.2	5.0	6.2	6.2
64°	7.6	7.6	7.6	7.6	6.2	6.2	5.0	5.0	3.7	5.0	5.0
65°	6.2	6.2	6.2	6.2	5.0	5.0	5.0	3.7	3.7	5.0	5.0
66°	5.0	5.0	5.0	5.0	5.0	3.7	3.7	3.7	2.6	3.7	3.7



TEST NUMBER: P1192132

CATALOG NUMBER: LDA6A30950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	2.6	2.6	2.6	2.6	1.2	1.2	1.2	1.2	1.2	2.6	2.6
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
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°	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7
2.5°	182.0	169.4	166.9	166.9	140.6	145.6	136.8	130.5	91.5	70.3	52.7
5°	556.1	510.8	492.0	475.7	404.2	397.9	354.0	343.9	122.9	64.1	40.2
7.5°	1036.8	967.7	923.8	881.2	765.6	734.2	658.9	640.1	166.9	53.9	31.4
10°	1584.0	1484.9	1408.3	1306.7	1157.3	1092.1	981.6	941.5	203.4	45.2	30.1
12.5°	2098.8	1985.8	1881.6	1747.3	1545.2	1441.0	1295.3	1243.8	217.3	37.6	27.7
15°	2543.1	2392.4	2263.2	2118.9	1892.8	1761.0	1582.9	1516.3	205.8	30.1	23.8
17.5°	3106.7	2851.9	2627.2	2425.1	2179.1	2018.3	1811.3	1703.4	166.9	26.4	21.4
20°	3940.1	3426.8	3031.4	2704.9	2363.6	2163.9	1934.3	1803.8	120.5	23.8	21.4
22.5°	4724.7	3991.6	3385.3	2918.4	2459.1	2220.4	1981.9	1837.6	85.3	23.8	25.1
25°	5364.8	4417.2	3630.2	3059.0	2511.7	2231.8	1964.5	1793.7	66.5	27.7	48.9
26°	5544.4	4522.6	3677.9	3070.2	2504.1	2215.4	1934.3	1753.6	59.1	37.6	91.5
27°	5656.0	4570.3	3679.1	3052.7	2476.6	2182.8	1889.2	1699.6	51.5	57.7	154.3
28°	5678.6	4547.7	3636.5	3003.7	2428.8	2138.9	1838.9	1634.3	47.6	72.7	175.8
29°	5617.1	4467.4	3558.6	2932.2	2371.1	2086.2	1778.7	1562.8	41.4	55.2	114.3
30°	5479.0	4334.3	3444.4	2840.6	2309.6	2027.2	1704.6	1477.3	33.9	27.7	51.5
31°	5272.0	4151.1	3303.7	2732.6	2240.6	1951.9	1615.4	1382.1	28.8	18.8	30.1
32°	5009.6	3931.4	3146.8	2622.3	2162.8	1860.4	1511.3	1275.2	26.4	15.1	25.1
33°	4708.3	3700.3	2984.9	2510.5	2069.8	1751.0	1399.6	1161.2	23.8	16.2	25.1
34°	4379.5	3464.4	2801.7	2393.8	1961.9	1631.9	1280.3	1026.8	21.4	15.1	18.8
35°	4023.0	3219.7	2637.2	2290.8	1840.2	1502.5	1158.6	912.5	18.8	11.2	12.6
36°	3715.5	2981.3	2477.9	2160.3	1707.2	1369.5	1033.0	789.6	16.2	7.6	8.8
37°	3380.3	2757.8	2329.7	2024.6	1564.1	1232.6	907.5	667.8	15.1	5.0	7.6
38°	3067.8	2552.0	2181.6	1869.0	1417.2	1094.5	779.5	548.6	13.8	5.0	6.2
39°	2784.1	2364.8	2043.4	1703.4	1262.7	950.1	650.2	430.6	12.6	3.7	6.2
40°	2540.6	2197.9	1877.8	1528.8	1103.3	807.1	520.8	318.8	11.2	3.7	6.2
42.5°	2066.2	1763.6	1417.2	1080.7	714.3	456.9	233.5	116.7	8.8	3.7	5.0
45°	1579.0	1255.3	935.1	650.2	367.8	177.0	86.5	64.1	7.6	3.7	5.0
47.5°	1025.5	753.1	502.0	283.7	122.9	71.6	45.2	32.7	6.2	3.7	5.0
50°	379.1	209.7	110.3	69.1	47.6	30.1	20.1	18.8	6.2	3.7	5.0
51°	155.6	101.7	69.1	46.5	30.1	21.4	16.2	16.2	6.2	3.7	5.0
52°	92.9	64.1	46.5	33.9	22.6	16.2	12.6	13.8	6.2	3.7	5.0
53°	61.5	43.9	33.9	26.4	17.6	12.6	8.8	10.0	6.2	3.7	5.0
54°	41.4	31.4	25.1	20.1	12.6	10.0	5.0	8.8	5.0	3.7	5.0
55°	28.8	22.6	18.8	15.1	8.8	6.2	3.7	7.6	5.0	3.7	5.0
57.5°	12.6	11.2	10.0	8.8	3.7	2.6	1.2	6.2	5.0	3.7	5.0
60°	8.8	7.6	6.2	6.2	1.2	1.2	0.0	5.0	5.0	3.7	5.0
61°	7.6	6.2	6.2	5.0	1.2	1.2	0.0	5.0	6.2	3.7	5.0
62°	6.2	6.2	5.0	5.0	1.2	0.0	0.0	5.0	6.2	3.7	6.2
63°	5.0	5.0	5.0	5.0	1.2	0.0	0.0	5.0	6.2	3.7	6.2
64°	5.0	5.0	5.0	5.0	0.0	0.0	0.0	5.0	6.2	3.7	6.2
65°	5.0	3.7	3.7	3.7	0.0	0.0	0.0	5.0	6.2	5.0	6.2
66°	3.7	3.7	3.7	3.7	0.0	0.0	0.0	5.0	6.2	5.0	6.2



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CATALOG NUMBER: LDA6A30950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	2.6	2.6	2.6	2.6	0.0	0.0	0.0	3.7	6.2	5.0	7.6
75°	1.2	2.6	2.6	2.6	0.0	0.0	0.0	5.0	6.2	5.0	7.6
77.5°	1.2	2.6	2.6	2.6	0.0	0.0	0.0	5.0	6.2	5.0	7.6
80°	1.2	2.6	2.6	2.6	0.0	0.0	0.0	5.0	6.2	5.0	7.6
82.5°	1.2	2.6	2.6	2.6	0.0	0.0	0.0	5.0	6.2	5.0	7.6
85°	1.2	2.6	2.6	2.6	0.0	0.0	0.0	5.0	6.2	5.0	7.6
87.5°	1.2	2.6	2.6	2.6	0.0	0.0	0.0	5.0	6.2	5.0	7.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1192132

CATALOG NUMBER: LDA6A30950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	72.7	72.7	72.7
2.5°	43.9	40.2	37.6
5°	31.4	28.8	26.4
7.5°	26.4	22.6	21.4
10°	23.8	17.6	16.2
12.5°	20.1	15.1	13.8
15°	18.8	15.1	13.8
17.5°	18.8	15.1	13.8
20°	20.1	18.8	18.8
22.5°	28.8	31.4	32.7
25°	87.9	112.9	130.5
26°	205.8	308.8	414.2
27°	312.5	455.7	485.8
28°	281.1	326.4	317.6
29°	135.5	153.2	139.4
30°	60.2	71.6	70.3
31°	38.9	43.9	42.6
32°	32.7	30.1	28.8
33°	26.4	21.4	17.6
34°	17.6	13.8	11.2
35°	11.2	7.6	6.2
36°	7.6	3.7	2.6
37°	5.0	2.6	1.2
38°	5.0	1.2	0.0
39°	3.7	1.2	0.0
40°	3.7	1.2	0.0
42.5°	3.7	0.0	0.0
45°	2.6	0.0	0.0
47.5°	2.6	0.0	0.0
50°	3.7	1.2	0.0
51°	3.7	0.0	0.0
52°	3.7	0.0	0.0
53°	2.6	0.0	0.0
54°	2.6	0.0	0.0
55°	2.6	0.0	0.0
57.5°	2.6	0.0	0.0
60°	2.6	0.0	0.0
61°	3.7	0.0	0.0
62°	3.7	0.0	0.0
63°	3.7	0.0	0.0
64°	3.7	1.2	0.0
65°	3.7	1.2	0.0
66°	3.7	1.2	0.0



TEST NUMBER: P1192132

CATALOG NUMBER: LDA6A30950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	5.0	1.2	0.0
75°	5.0	1.2	0.0
77.5°	5.0	1.2	0.0
80°	5.0	2.6	1.2
82.5°	5.0	2.6	1.2
85°	5.0	2.6	1.2
87.5°	5.0	2.6	1.2
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°	3.7	3.7	3.7	3.7	3.7	3.7	2.6	2.6	2.6	3.7	3.7
70°	3.7	3.7	2.6	2.6	2.6	2.6	2.6	1.2	1.2	3.7	3.7

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67.5°	3.7	3.7	3.7	3.7	0.0	0.0	0.0	5.0	6.2	5.0	6.2
70°	3.7	3.7	3.7	3.7	0.0	0.0	0.0	5.0	6.2	5.0	7.6

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67.5°	5.0	1.2	0.0
70°	5.0	1.2	0.0

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(END OF REPORT)