

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: P1192146

Luminaire Tested: **LDA6A35930D010TE LARL20NF 6LAL1 30° Tilt**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: P1192146
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: LDA6A35930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

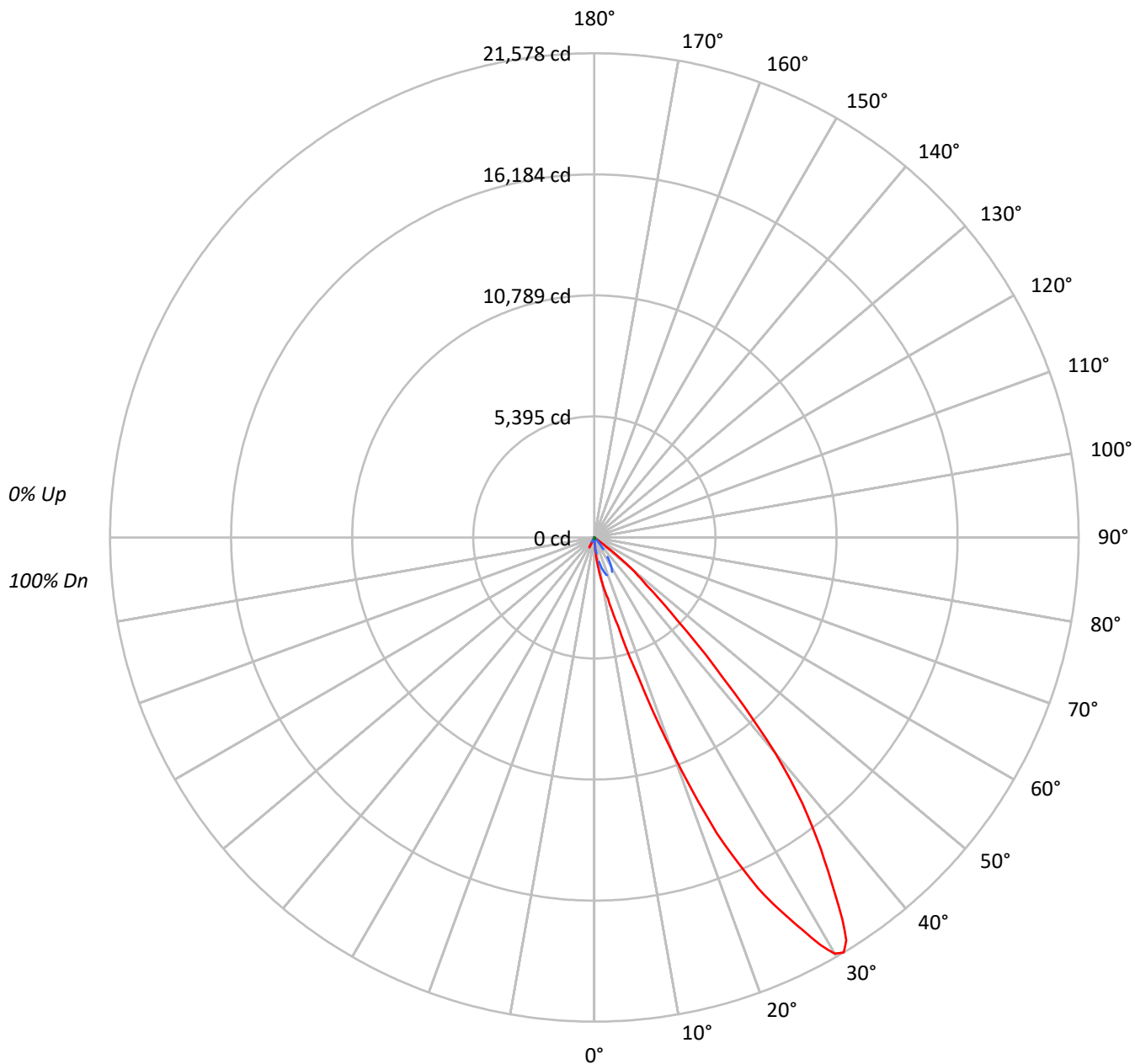
Lumens per Lamp: N/A
Luminaire Lumens: 3287.1 lumens
Efficiency: N/A
Efficacy: 68.9 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 47.7
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

TEST NUMBER: P1192146

CATALOG NUMBER: LDA6A35930D010TE LARL20NF 6LAL1 30° Tilt

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



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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°	4068	4068	4068
5°	39544	3593	1480
10°	116937	2566	935
15°	232124	1748	800
20°	598791	1423	1120
25°	1043570	1700	8057
30°	1355569	1779	4545
35°	1214627	776	428
40°	897968	279	0
45°	404375	302	0
50°	182442	333	0
55°	16286	373	0
60°	1974	428	0
65°	830	675	0
70°	625	833	0
75°	0	1101	0
80°	0	1642	379
85°	0	3271	755



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	29.6	0.9
10°-20°	276.8	8.4
20°-30°	1092.9	33.2
30°-40°	1318.9	40.1
40°-50°	511.8	15.6
50°-60°	45.0	1.4
60°-70°	4.3	0.1
70°-80°	4.1	0.1
80°-90°	3.8	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°	1399.3	42.6
0°-40°	2718.2	82.7
0°-60°	3275.0	99.6
0°-90°	3287.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3287.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	74	74	74	74	74	
5°	719	351	65	32	27	114
15°	4090	1547	31	19	14	1499
25°	17253	1830	28	90	133	7890
35°	18150	931	12	12	6	11156
45°	5216	65	4	2	0	4582
55°	170	8	4	2	0	411
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°	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2
2.5°	233.0	221.7	208.9	213.8	216.5	222.9	217.7	198.5	210.1	201.2	193.3
5°	718.6	705.7	681.6	685.3	677.6	686.5	666.0	625.1	632.8	619.9	586.6
7.5°	1401.4	1347.6	1307.9	1310.4	1287.5	1297.6	1259.1	1188.8	1180.9	1115.6	1105.5
10°	2100.7	2073.8	2026.5	2020.1	1979.1	1984.1	1923.9	1830.4	1804.8	1729.3	1685.7
12.5°	2787.2	2742.6	2675.8	2661.7	2595.1	2596.4	2514.5	2409.4	2371.0	2292.8	2232.6
15°	4090.0	4025.8	3873.4	3816.0	3631.5	3603.2	3401.0	3162.5	3047.4	2912.7	2736.2
17.5°	6494.2	6453.3	6154.9	5989.7	5615.6	5244.0	5025.0	4510.1	4209.1	3832.5	3505.8
20°	10264.1	10339.6	9818.3	9449.4	8755.2	7971.3	7417.9	6480.2	5853.8	5204.3	4589.6
22.5°	14273.4	14305.5	13771.4	13311.5	12503.1	11425.8	10151.4	9013.9	7866.2	6750.4	5736.0
25°	17252.7	17160.5	16572.6	16020.5	15170.0	14069.7	12831.1	11311.9	9742.8	8210.7	6724.8
26°	18162.4	18112.3	17523.0	16862.1	15925.8	14808.8	13520.1	11987.0	10329.4	8679.5	7027.1
27°	19005.3	18973.2	18334.0	17598.7	16549.7	15380.1	14031.3	12499.2	10772.6	9042.0	7246.3
28°	19859.4	19823.7	19049.9	18196.9	17056.9	15786.3	14384.9	12841.2	11058.4	9254.8	7337.1
29°	20762.5	20693.4	19704.6	18636.4	17395.0	16023.2	14569.3	12997.6	11155.5	9307.3	7314.1
30°	21414.7	21306.9	20177.3	18914.3	17533.4	16097.5	14589.8	12993.9	11095.4	9198.3	7166.9
31°	21578.4	21469.7	20309.2	18910.3	17432.3	15984.8	14442.6	12811.9	10844.3	8934.5	6918.4
32°	21181.4	21081.6	19974.8	18478.8	17111.9	15713.3	14149.1	12475.0	10455.0	8539.9	6581.5
33°	20294.9	20219.5	19265.2	17911.1	16653.3	15327.6	13728.9	11995.9	9901.6	8037.9	6185.5
34°	19176.9	19121.6	18387.8	17243.9	16071.8	14798.7	13184.7	11364.4	9172.7	7469.0	5754.0
35°	18149.6	18108.4	17514.1	16499.6	15407.0	14144.0	12495.5	10586.9	8422.1	6856.7	5292.8
36°	17160.5	17126.0	16609.9	15667.2	14612.7	13376.8	11628.2	9657.0	7616.5	6221.5	4814.9
37°	16128.3	16097.5	15654.3	14757.5	13720.1	12459.5	10598.5	8666.7	6797.8	5587.5	4324.5
38°	15057.3	15031.7	14625.6	13731.7	12678.7	11338.7	9423.7	7643.3	5999.8	4968.8	3883.8
39°	13862.1	13840.4	13466.3	12528.8	11404.1	10018.2	8214.7	6645.4	5242.8	4367.9	3457.2
40°	12548.0	12518.4	12144.6	11096.6	9960.5	8659.0	7052.7	5729.5	4528.1	3806.9	3081.9
42.5°	8531.1	8499.0	8221.1	7611.3	6517.4	5681.0	4674.1	3835.0	3208.6	2774.4	2400.6
45°	5215.9	5219.8	5073.9	4697.1	4038.7	3573.8	3026.9	2625.9	2344.1	2177.6	1917.5
47.5°	3154.9	3154.9	3089.5	2897.4	2601.5	2415.9	2189.0	2002.1	1786.8	1622.8	1341.2
50°	2139.2	2140.4	2040.5	2050.6	1853.6	1738.2	1521.7	1293.6	1082.3	844.1	601.9
51°	1583.1	1591.0	1498.8	1540.9	1324.4	1227.0	1022.1	828.8	641.6	457.2	263.9
52°	968.4	982.4	919.8	958.3	832.5	690.5	524.0	386.9	259.9	182.0	126.7
53°	449.5	461.1	429.1	447.1	372.8	290.7	220.2	179.3	143.5	116.6	85.8
54°	238.2	240.9	230.6	225.4	204.9	180.5	149.9	124.3	97.4	78.2	57.7
55°	170.4	170.4	165.2	160.0	143.5	123.0	99.9	84.6	64.1	51.3	37.2
57.5°	52.5	52.5	52.5	50.1	43.6	37.2	29.3	25.6	20.5	19.2	15.3
60°	18.0	18.0	18.0	16.8	15.3	14.1	12.8	11.6	10.4	10.4	8.9
61°	12.8	12.8	12.8	12.8	11.6	11.6	10.4	8.9	7.6	8.9	7.6
62°	10.4	11.6	10.4	10.4	10.4	8.9	7.6	7.6	6.4	7.6	6.4
63°	8.9	8.9	8.9	8.9	7.6	7.6	6.4	6.4	5.2	6.4	6.4
64°	7.6	7.6	7.6	7.6	6.4	6.4	5.2	5.2	3.9	5.2	5.2
65°	6.4	6.4	6.4	6.4	5.2	5.2	5.2	3.9	3.9	5.2	5.2
66°	5.2	5.2	5.2	5.2	5.2	3.9	3.9	3.9	2.5	3.9	3.9

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1192146

CATALOG NUMBER: LDA6A35930D010TE 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°	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	2.5	2.5
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°	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2
2.5°	185.7	172.9	170.4	170.4	143.5	148.7	139.6	133.2	93.5	71.8	53.8
5°	567.4	521.3	502.1	485.5	412.5	406.1	361.3	350.9	125.5	65.3	40.9
7.5°	1058.1	987.6	942.7	899.3	781.4	749.4	672.5	653.2	170.4	55.0	32.1
10°	1616.6	1515.3	1437.1	1333.6	1180.9	1114.3	1001.7	960.7	207.6	46.1	30.8
12.5°	2141.6	2026.5	1920.2	1783.1	1576.7	1470.4	1322.0	1269.4	221.7	38.5	28.1
15°	2595.1	2441.5	2309.6	2162.1	1931.5	1797.2	1615.2	1547.4	210.1	30.8	24.4
17.5°	3170.4	2910.3	2680.9	2474.8	2223.8	2059.8	1848.4	1738.2	170.4	26.9	21.7
20°	4020.9	3496.9	3093.5	2760.3	2411.9	2208.2	1974.0	1840.8	123.0	24.4	21.7
22.5°	4821.3	4073.4	3454.7	2978.1	2509.3	2265.9	2022.5	1875.3	87.0	24.4	25.6
25°	5474.8	4507.7	3704.5	3121.6	2563.1	2277.5	2004.5	1830.4	67.8	28.1	50.1
26°	5657.8	4615.2	3753.1	3133.2	2555.4	2260.7	1974.0	1789.5	60.2	38.5	93.5
27°	5772.0	4663.8	3754.3	3115.2	2527.3	2227.5	1927.8	1734.3	52.5	58.9	157.6
28°	5794.9	4640.8	3710.9	3065.4	2478.5	2182.8	1876.6	1667.7	48.6	74.2	179.3
29°	5732.3	4558.7	3631.5	2992.1	2419.8	2128.8	1815.2	1594.7	42.2	56.5	116.6
30°	5591.2	4423.1	3514.9	2898.7	2356.9	2068.7	1739.5	1507.7	34.5	28.1	52.5
31°	5379.9	4235.9	3371.4	2788.7	2286.4	1992.0	1648.5	1410.3	29.3	19.2	30.8
32°	5112.1	4011.8	3211.4	2675.8	2207.0	1898.3	1542.2	1301.5	26.9	15.3	25.6
33°	4804.8	3776.3	3046.1	2561.8	2112.3	1786.8	1428.3	1184.9	24.4	16.8	25.6
34°	4469.2	3535.4	2859.0	2442.7	2002.1	1665.2	1306.4	1047.8	21.7	15.3	19.2
35°	4105.5	3285.6	2691.3	2337.7	1877.8	1533.3	1182.4	931.1	19.2	11.6	12.8
36°	3791.6	3042.2	2528.5	2204.5	1742.2	1397.4	1054.2	805.6	16.8	7.6	8.9
37°	3449.6	2814.1	2377.4	2066.2	1595.9	1257.9	926.2	681.6	15.3	5.2	7.6
38°	3130.5	2604.2	2226.2	1907.4	1446.3	1117.1	795.5	559.8	14.1	5.2	6.4
39°	2841.2	2413.4	2085.4	1738.2	1288.7	969.6	663.6	439.4	12.8	3.9	6.4
40°	2592.7	2243.0	1916.3	1560.2	1125.9	823.6	531.6	325.3	11.6	3.9	6.4
42.5°	2108.4	1799.6	1446.3	1103.0	728.9	466.3	238.2	119.1	8.9	3.9	5.2
45°	1611.5	1281.0	954.3	663.6	375.3	180.5	88.3	65.3	7.6	3.9	5.2
47.5°	1046.5	768.6	512.4	289.5	125.5	73.0	46.1	33.3	6.4	3.9	5.2
50°	386.9	213.8	112.7	70.5	48.6	30.8	20.5	19.2	6.4	3.9	5.2
51°	158.8	103.8	70.5	47.3	30.8	21.7	16.8	16.8	6.4	3.9	5.2
52°	94.7	65.3	47.3	34.5	23.2	16.8	12.8	14.1	6.4	3.9	5.2
53°	62.9	44.9	34.5	26.9	18.0	12.8	8.9	10.4	6.4	3.9	5.2
54°	42.2	32.1	25.6	20.5	12.8	10.4	5.2	8.9	5.2	3.9	5.2
55°	29.3	23.2	19.2	15.3	8.9	6.4	3.9	7.6	5.2	3.9	5.2
57.5°	12.8	11.6	10.4	8.9	3.9	2.5	1.2	6.4	5.2	3.9	5.2
60°	8.9	7.6	6.4	6.4	1.2	1.2	0.0	5.2	5.2	3.9	5.2
61°	7.6	6.4	6.4	5.2	1.2	1.2	0.0	5.2	6.4	3.9	5.2
62°	6.4	6.4	5.2	5.2	1.2	0.0	0.0	5.2	6.4	3.9	6.4
63°	5.2	5.2	5.2	5.2	1.2	0.0	0.0	5.2	6.4	3.9	6.4
64°	5.2	5.2	5.2	5.2	0.0	0.0	0.0	5.2	6.4	3.9	6.4
65°	5.2	3.9	3.9	3.9	0.0	0.0	0.0	5.2	6.4	5.2	6.4
66°	3.9	3.9	3.9	3.9	0.0	0.0	0.0	5.2	6.4	5.2	6.4



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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	2.5	2.5	2.5	2.5	0.0	0.0	0.0	3.9	6.4	5.2	7.6
75°	1.2	2.5	2.5	2.5	0.0	0.0	0.0	5.2	6.4	5.2	7.6
77.5°	1.2	2.5	2.5	2.5	0.0	0.0	0.0	5.2	6.4	5.2	7.6
80°	1.2	2.5	2.5	2.5	0.0	0.0	0.0	5.2	6.4	5.2	7.6
82.5°	1.2	2.5	2.5	2.5	0.0	0.0	0.0	5.2	6.4	5.2	7.6
85°	1.2	2.5	2.5	2.5	0.0	0.0	0.0	5.2	6.4	5.2	7.6
87.5°	1.2	2.5	2.5	2.5	0.0	0.0	0.0	5.2	6.4	5.2	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

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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	74.2	74.2	74.2
2.5°	44.9	40.9	38.5
5°	32.1	29.3	26.9
7.5°	26.9	23.2	21.7
10°	24.4	18.0	16.8
12.5°	20.5	15.3	14.1
15°	19.2	15.3	14.1
17.5°	19.2	15.3	14.1
20°	20.5	19.2	19.2
22.5°	29.3	32.1	33.3
25°	89.8	115.4	133.2
26°	210.1	315.1	422.7
27°	318.8	465.1	495.6
28°	287.0	333.1	324.0
29°	138.3	156.3	142.3
30°	61.4	73.0	71.8
31°	39.7	44.9	43.6
32°	33.3	30.8	29.3
33°	26.9	21.7	18.0
34°	18.0	14.1	11.6
35°	11.6	7.6	6.4
36°	7.6	3.9	2.5
37°	5.2	2.5	1.2
38°	5.2	1.2	0.0
39°	3.9	1.2	0.0
40°	3.9	1.2	0.0
42.5°	3.9	0.0	0.0
45°	2.5	0.0	0.0
47.5°	2.5	0.0	0.0
50°	3.9	1.2	0.0
51°	3.9	0.0	0.0
52°	3.9	0.0	0.0
53°	2.5	0.0	0.0
54°	2.5	0.0	0.0
55°	2.5	0.0	0.0
57.5°	2.5	0.0	0.0
60°	2.5	0.0	0.0
61°	3.9	0.0	0.0
62°	3.9	0.0	0.0
63°	3.9	0.0	0.0
64°	3.9	1.2	0.0
65°	3.9	1.2	0.0
66°	3.9	1.2	0.0



TEST NUMBER: P1192146

CATALOG NUMBER: LDA6A35930D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	5.2	1.2	0.0
75°	5.2	1.2	0.0
77.5°	5.2	1.2	0.0
80°	5.2	2.5	1.2
82.5°	5.2	2.5	1.2
85°	5.2	2.5	1.2
87.5°	5.2	2.5	1.2
90°	0.0	0.0	0.0

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Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	3.9	3.9	3.9	3.9	3.9	3.9	2.5	2.5	2.5	3.9	3.9
70°	3.9	3.9	2.5	2.5	2.5	2.5	2.5	1.2	1.2	3.9	3.9

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67.5°	3.9	3.9	3.9	3.9	0.0	0.0	0.0	5.2	6.4	5.2	6.4
70°	3.9	3.9	3.9	3.9	0.0	0.0	0.0	5.2	6.4	5.2	7.6

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67.5°	5.2	1.2	0.0
70°	5.2	1.2	0.0

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(END OF REPORT)