

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: P1192139

Luminaire Tested: **LDA6A35927D010TE 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: P1192139
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: LDA6A35927D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

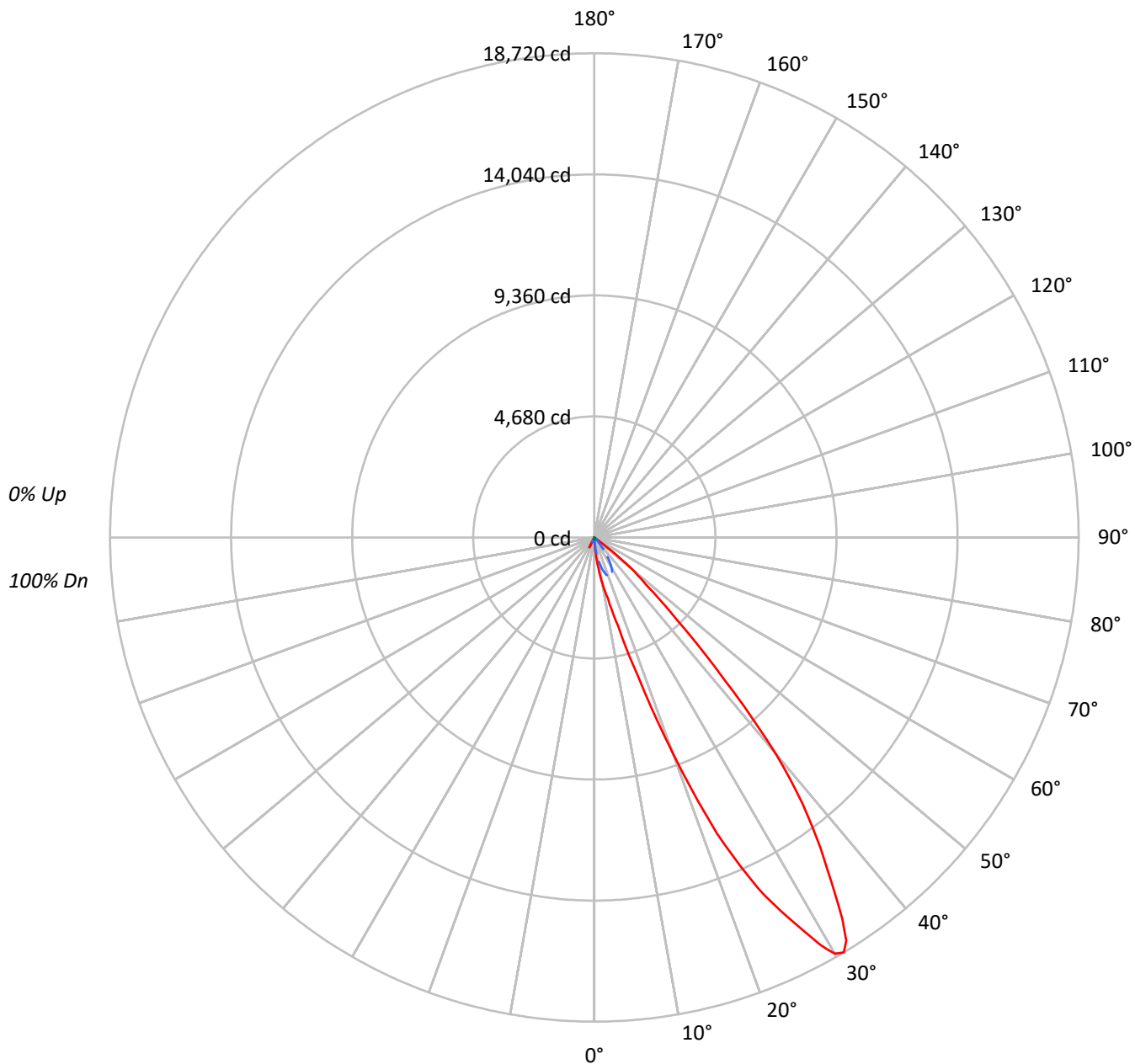
Lumens per Lamp: N/A
Luminaire Lumens: 2851.8 lumens
Efficiency: N/A
Efficacy: 59.8 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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

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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	94	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	70	79	74	70		77	72	69		75
5	86	75	68	63	84	74	68	63	72	67	62		71	66	62		69
6	80	69	62	56	78	68	61	56	66	60	56		65	59	55		63
7	74	63	56	50	73	62	55	50	61	55	50		59	54	50		58
8	69	58	50	45	68	57	50	45	56	49	45		55	49	45		54
9	65	53	46	41	63	52	45	41	51	45	40		50	44	40		49
10	60	49	41	37	59	48	41	37	47	41	37		46	40	36		45

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	3530	3530	3530
5°	34305	3120	1288
10°	101440	2221	807
15°	201375	1510	698
20°	519457	1237	980
25°	905302	1476	6998
30°	1175953	1545	3931
35°	1053677	676	381
40°	778981	250	0
45°	350804	271	0
50°	158255	298	0
55°	14117	335	0
60°	1699	384	0
65°	739	571	0
70°	561	705	0
75°	0	932	0
80°	0	1389	379
85°	0	2768	755



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.7	0.9
10°-20°	240.1	8.4
20°-30°	948.1	33.2
30°-40°	1144.1	40.1
40°-50°	444.0	15.6
50°-60°	39.1	1.4
60°-70°	3.8	0.1
70°-80°	3.6	0.1
80°-90°	3.3	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°	1213.9	42.6
0°-40°	2358.1	82.7
0°-60°	2841.2	99.6
0°-90°	2851.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2851.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	64	64	64	64	64	
5°	623	304	57	28	23	99
15°	3548	1342	27	17	12	1300
25°	14967	1588	24	78	116	6845
35°	15745	808	10	10	6	9678
45°	4525	57	4	2	0	3975
55°	148	7	4	2	0	356
65°	6	4	4	4	0	6
75°	0	4	4	4	0	1
85°	0	4	4	4	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°	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4
2.5°	202.2	192.3	181.2	185.7	187.9	193.3	188.9	172.1	182.2	174.3	167.7
5°	623.4	612.3	591.1	594.5	587.9	595.5	577.8	542.3	548.9	537.8	509.0
7.5°	1215.7	1169.1	1134.6	1136.8	1116.8	1125.7	1092.4	1031.2	1024.6	967.9	959.0
10°	1822.3	1799.1	1757.9	1752.3	1716.8	1721.2	1668.9	1587.8	1565.6	1500.0	1462.3
12.5°	2418.1	2379.1	2321.4	2309.1	2251.4	2252.4	2181.3	2090.1	2056.8	1989.0	1936.7
15°	3548.2	3492.5	3360.3	3310.2	3150.2	3125.8	2950.2	2743.6	2643.5	2526.8	2373.4
17.5°	5633.9	5598.4	5339.4	5195.9	4871.4	4549.4	4359.2	3912.7	3651.5	3324.8	3041.5
20°	8904.2	8969.7	8517.5	8197.4	7595.0	6914.9	6435.0	5621.5	5078.3	4514.8	3981.5
22.5°	12382.1	12409.9	11946.6	11547.6	10846.5	9912.0	8806.3	7819.6	6823.9	5856.0	4976.0
25°	14966.8	14886.7	14376.7	13897.9	13160.1	12205.5	11130.9	9813.1	8451.9	7122.8	5833.8
26°	15755.7	15712.5	15201.3	14627.8	13815.5	12846.6	11728.8	10398.7	8960.9	7529.4	6096.0
27°	16486.8	16459.2	15904.6	15266.9	14356.8	13342.3	12172.2	10843.1	9345.3	7844.1	6286.1
28°	17228.1	17197.0	16525.8	15785.8	14796.7	13694.4	12478.7	11139.7	9593.1	8028.5	6365.0
29°	18011.5	17951.6	17093.7	16167.0	15090.1	13900.1	12638.8	11275.4	9677.5	8074.1	6345.0
30°	18577.2	18483.7	17503.8	16408.2	15210.2	13964.4	12656.5	11272.2	9625.2	7979.4	6217.3
31°	18719.5	18625.0	17618.2	16404.7	15122.4	13866.8	12528.8	11114.3	9407.4	7750.6	6001.5
32°	18375.0	18288.2	17328.2	16030.1	14844.5	13631.1	12274.3	10822.1	9069.6	7408.3	5709.3
33°	17605.9	17540.3	16712.5	15537.9	14446.8	13296.7	11909.8	10406.4	8589.5	6972.9	5366.1
34°	16635.8	16588.2	15951.2	14958.9	13942.2	12837.8	11437.6	9858.7	7957.2	6479.4	4991.5
35°	15744.6	15709.1	15193.5	14313.4	13365.5	12269.9	10839.9	9184.0	7306.2	5948.3	4591.5
36°	14886.7	14856.9	14409.0	13591.1	12676.5	11604.3	10087.5	8377.4	6607.2	5397.1	4177.0
37°	13991.1	13964.4	13580.0	12802.3	11902.2	10808.6	9194.1	7518.3	5897.2	4847.0	3751.4
38°	13062.2	13040.0	12687.8	11912.1	10998.7	9836.3	8175.2	6630.6	5204.8	4310.4	3369.2
39°	12025.5	12006.5	11682.0	10868.7	9893.0	8690.8	7126.2	5765.0	4548.1	3789.1	2999.0
40°	10885.3	10859.9	10535.3	9626.4	8640.8	7511.7	6118.4	4970.5	3928.2	3302.6	2673.5
42.5°	7400.7	7372.8	7131.7	6602.7	5653.8	4928.1	4054.7	3327.0	2783.5	2407.0	2082.5
45°	4524.9	4528.1	4401.4	4074.7	3503.6	3100.1	2625.7	2278.0	2033.4	1889.1	1663.5
47.5°	2736.9	2736.9	2680.2	2513.5	2256.8	2095.8	1899.0	1736.7	1550.1	1407.8	1163.4
50°	1855.6	1856.8	1770.0	1779.2	1608.0	1507.9	1320.0	1122.2	939.0	732.4	522.3
51°	1373.5	1380.2	1300.0	1336.8	1148.9	1064.5	886.7	719.1	556.8	396.8	228.8
52°	840.1	852.2	797.7	831.3	722.3	599.0	454.5	335.6	225.6	157.8	110.0
53°	390.1	400.0	372.4	387.9	323.3	252.3	191.1	155.6	124.5	101.1	74.5
54°	206.6	208.9	200.0	195.5	177.8	156.6	130.0	107.8	84.3	67.8	50.1
55°	147.7	147.7	143.3	138.8	124.5	106.8	86.6	73.2	55.5	44.4	32.3
57.5°	45.6	45.6	45.6	43.4	37.7	32.3	25.6	22.2	17.8	16.8	13.3
60°	15.5	15.5	15.5	14.5	13.3	12.3	11.1	10.1	8.9	8.9	7.9
61°	11.1	11.1	11.1	11.1	10.1	10.1	8.9	7.9	6.7	7.9	6.7
62°	8.9	10.1	8.9	8.9	8.9	7.9	6.7	6.7	5.7	6.7	5.7
63°	7.9	7.9	7.9	7.9	6.7	6.7	5.7	5.7	4.4	5.7	5.7
64°	6.7	6.7	6.7	6.7	5.7	5.7	4.4	4.4	3.5	4.4	4.4
65°	5.7	5.7	5.7	5.7	4.4	4.4	4.4	3.5	3.5	4.4	4.4
66°	4.4	4.4	4.4	4.4	4.4	3.5	3.5	3.5	2.2	3.5	3.5

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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TEST NUMBER: P1192139

CATALOG NUMBER: LDA6A35927D010TE 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°	2.2	2.2	2.2	2.2	1.2	1.2	1.2	1.2	1.2	2.2	2.2
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°	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4
2.5°	161.0	149.9	147.7	147.7	124.5	129.0	121.1	115.7	81.1	62.1	46.6
5°	492.2	452.2	435.5	421.2	357.8	352.1	313.4	304.5	109.0	56.7	35.5
7.5°	917.8	856.7	817.9	780.0	677.9	650.0	583.4	566.7	147.7	47.8	27.9
10°	1402.4	1314.6	1246.8	1156.8	1024.6	966.6	869.0	833.5	180.0	39.9	26.6
12.5°	1857.8	1757.9	1665.7	1546.9	1367.8	1275.6	1146.6	1101.3	192.3	33.3	24.4
15°	2251.4	2118.0	2003.6	1875.8	1675.6	1558.9	1401.1	1342.4	182.2	26.6	21.2
17.5°	2750.2	2524.6	2325.8	2146.8	1929.1	1786.8	1603.6	1507.9	147.7	23.4	19.0
20°	3488.0	3033.6	2683.6	2394.6	2092.3	1915.8	1712.3	1596.9	106.8	21.2	19.0
22.5°	4182.7	3533.6	2996.8	2583.5	2176.9	1965.8	1754.5	1626.8	75.5	21.2	22.2
25°	4749.3	3910.4	3213.6	2708.1	2223.5	1975.7	1739.0	1587.8	58.9	24.4	43.4
26°	4908.1	4003.6	3255.7	2717.9	2216.9	1961.4	1712.3	1552.3	52.3	33.3	81.1
27°	5007.0	4045.8	3257.0	2702.4	2192.4	1932.3	1672.4	1504.5	45.6	51.0	136.6
28°	5027.0	4025.8	3219.2	2659.0	2150.3	1893.6	1628.0	1446.7	42.2	64.4	155.6
29°	4972.8	3954.8	3150.2	2595.9	2099.0	1846.7	1574.5	1383.4	36.7	48.8	101.1
30°	4850.4	3837.0	3049.1	2514.7	2044.7	1794.7	1509.1	1307.9	30.1	24.4	45.6
31°	4667.0	3674.7	2924.6	2419.1	1983.6	1727.9	1430.2	1223.3	25.6	16.8	26.6
32°	4434.9	3480.4	2785.7	2321.4	1914.5	1646.7	1338.0	1128.9	23.4	13.3	22.2
33°	4168.1	3275.7	2642.5	2222.5	1832.4	1550.1	1238.9	1027.8	21.2	14.5	22.2
34°	3876.9	3066.9	2480.2	2119.0	1736.7	1444.5	1133.3	908.9	19.0	13.3	16.8
35°	3561.5	2850.3	2334.7	2028.0	1629.0	1330.1	1025.6	807.8	16.8	10.1	11.1
36°	3289.3	2639.0	2193.4	1912.3	1511.4	1212.2	914.6	698.8	14.5	6.7	7.9
37°	2992.4	2441.2	2062.5	1792.5	1384.6	1091.2	803.4	591.1	13.3	4.4	6.7
38°	2715.7	2259.0	1931.3	1654.6	1254.7	968.9	690.0	485.5	12.3	4.4	5.7
39°	2464.7	2093.6	1809.0	1507.9	1117.8	841.1	575.5	381.2	11.1	3.5	5.7
40°	2249.2	1945.6	1662.3	1353.5	976.7	714.6	461.1	282.3	10.1	3.5	5.7
42.5°	1829.0	1561.2	1254.7	956.8	632.3	404.4	206.6	103.3	7.9	3.5	4.4
45°	1397.9	1111.1	827.8	575.5	325.5	156.6	76.7	56.7	6.7	3.5	4.4
47.5°	907.9	666.8	444.6	251.0	109.0	63.4	39.9	28.9	5.7	3.5	4.4
50°	335.6	185.7	97.9	61.2	42.2	26.6	17.8	16.8	5.7	3.5	4.4
51°	137.8	90.0	61.2	41.2	26.6	19.0	14.5	14.5	5.7	3.5	4.4
52°	82.1	56.7	41.2	30.1	20.0	14.5	11.1	12.3	5.7	3.5	4.4
53°	54.5	39.0	30.1	23.4	15.5	11.1	7.9	8.9	5.7	3.5	4.4
54°	36.7	27.9	22.2	17.8	11.1	8.9	4.4	7.9	4.4	3.5	4.4
55°	25.6	20.0	16.8	13.3	7.9	5.7	3.5	6.7	4.4	3.5	4.4
57.5°	11.1	10.1	8.9	7.9	3.5	2.2	1.2	5.7	4.4	3.5	4.4
60°	7.9	6.7	5.7	5.7	1.2	1.2	0.0	4.4	4.4	3.5	4.4
61°	6.7	5.7	5.7	4.4	1.2	1.2	0.0	4.4	5.7	3.5	4.4
62°	5.7	5.7	4.4	4.4	1.2	0.0	0.0	4.4	5.7	3.5	5.7
63°	4.4	4.4	4.4	4.4	1.2	0.0	0.0	4.4	5.7	3.5	5.7
64°	4.4	4.4	4.4	4.4	0.0	0.0	0.0	4.4	5.7	3.5	5.7
65°	4.4	3.5	3.5	3.5	0.0	0.0	0.0	4.4	5.7	4.4	5.7
66°	3.5	3.5	3.5	3.5	0.0	0.0	0.0	4.4	5.7	4.4	5.7



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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°	2.2	2.2	2.2	2.2	0.0	0.0	0.0	3.5	5.7	4.4	6.7
75°	1.2	2.2	2.2	2.2	0.0	0.0	0.0	4.4	5.7	4.4	6.7
77.5°	1.2	2.2	2.2	2.2	0.0	0.0	0.0	4.4	5.7	4.4	6.7
80°	1.2	2.2	2.2	2.2	0.0	0.0	0.0	4.4	5.7	4.4	6.7
82.5°	1.2	2.2	2.2	2.2	0.0	0.0	0.0	4.4	5.7	4.4	6.7
85°	1.2	2.2	2.2	2.2	0.0	0.0	0.0	4.4	5.7	4.4	6.7
87.5°	1.2	2.2	2.2	2.2	0.0	0.0	0.0	4.4	5.7	4.4	6.7
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°	64.4	64.4	64.4
2.5°	39.0	35.5	33.3
5°	27.9	25.6	23.4
7.5°	23.4	20.0	19.0
10°	21.2	15.5	14.5
12.5°	17.8	13.3	12.3
15°	16.8	13.3	12.3
17.5°	16.8	13.3	12.3
20°	17.8	16.8	16.8
22.5°	25.6	27.9	28.9
25°	77.7	100.1	115.7
26°	182.2	273.5	366.7
27°	276.7	403.4	430.1
28°	248.8	289.0	281.1
29°	120.1	135.6	123.3
30°	53.3	63.4	62.1
31°	34.5	39.0	37.7
32°	28.9	26.6	25.6
33°	23.4	19.0	15.5
34°	15.5	12.3	10.1
35°	10.1	6.7	5.7
36°	6.7	3.5	2.2
37°	4.4	2.2	1.2
38°	4.4	1.2	0.0
39°	3.5	1.2	0.0
40°	3.5	1.2	0.0
42.5°	3.5	0.0	0.0
45°	2.2	0.0	0.0
47.5°	2.2	0.0	0.0
50°	3.5	1.2	0.0
51°	3.5	0.0	0.0
52°	3.5	0.0	0.0
53°	2.2	0.0	0.0
54°	2.2	0.0	0.0
55°	2.2	0.0	0.0
57.5°	2.2	0.0	0.0
60°	2.2	0.0	0.0
61°	3.5	0.0	0.0
62°	3.5	0.0	0.0
63°	3.5	0.0	0.0
64°	3.5	1.2	0.0
65°	3.5	1.2	0.0
66°	3.5	1.2	0.0



TEST NUMBER: P1192139

CATALOG NUMBER: LDA6A35927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	4.4	1.2	0.0
75°	4.4	1.2	0.0
77.5°	4.4	1.2	0.0
80°	4.4	2.2	1.2
82.5°	4.4	2.2	1.2
85°	4.4	2.2	1.2
87.5°	4.4	2.2	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°	3.5	3.5	3.5	3.5	3.5	3.5	2.2	2.2	2.2	3.5	3.5
70°	3.5	3.5	2.2	2.2	2.2	2.2	2.2	1.2	1.2	3.5	3.5

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67.5°	3.5	3.5	3.5	3.5	0.0	0.0	0.0	4.4	5.7	4.4	5.7
70°	3.5	3.5	3.5	3.5	0.0	0.0	0.0	4.4	5.7	4.4	6.7

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67.5°	4.4	1.2	0.0
70°	4.4	1.2	0.0

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(END OF REPORT)