

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: P1192062

Luminaire Tested: **LDA6A20950D010TE 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: P1192062
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: LDA6A20950D010TE 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

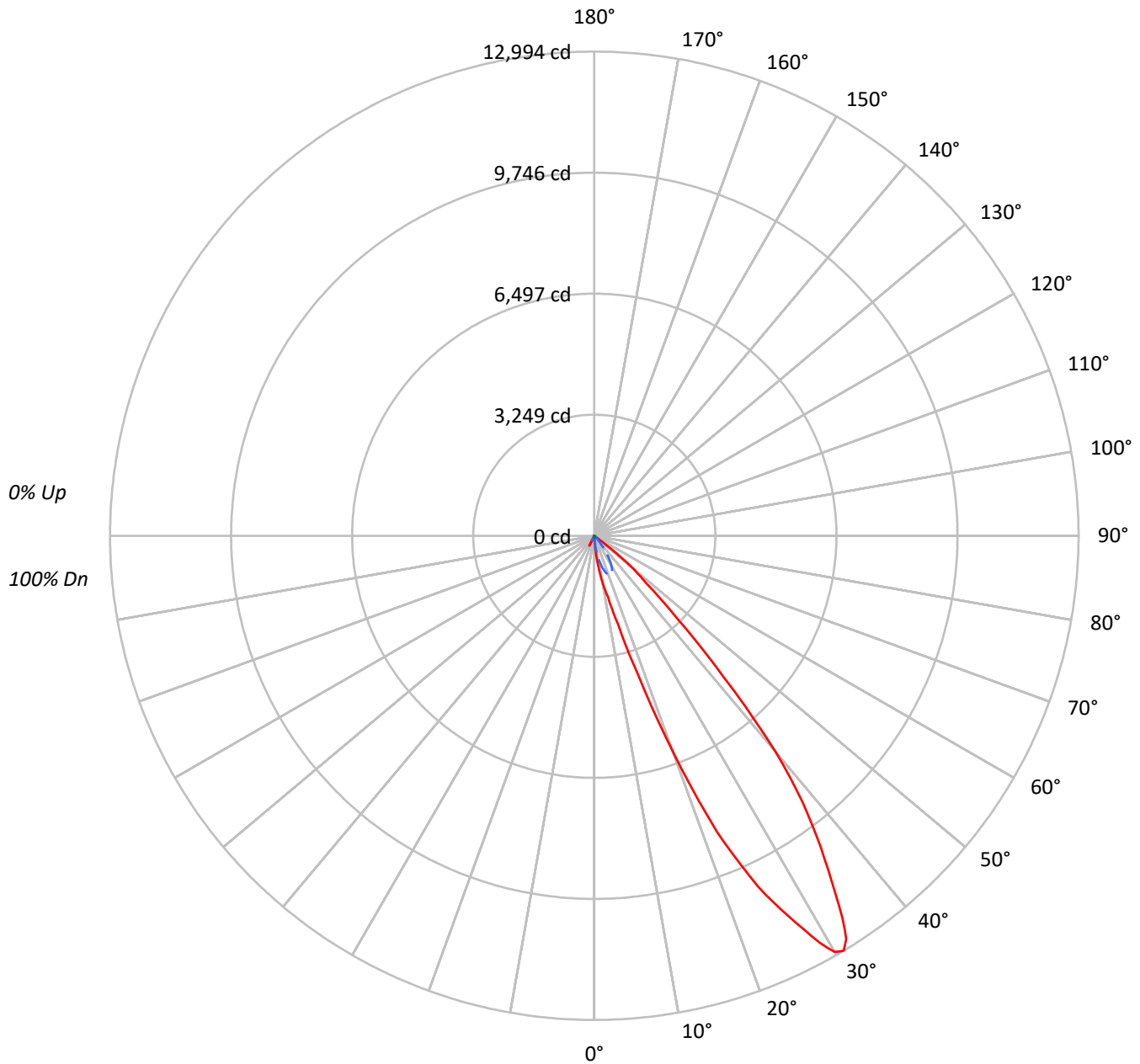
Lumens per Lamp: N/A
Luminaire Lumens: 1979.4 lumens
Efficiency: N/A
Efficacy: 79.8 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 24.8
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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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°	2450	2450	2450
5°	23811	2168	891
10°	70423	1548	557
15°	139779	1050	482
20°	360578	858	671
25°	628421	1034	4857
30°	816290	1082	2741
35°	731422	468	254
40°	540735	165	0
45°	243514	178	0
50°	109856	196	0
55°	9806	220	0
60°	1184	252	0
65°	493	389	0
70°	369	481	0
75°	0	635	0
80°	0	947	253
85°	0	1887	503



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	17.8	0.9
10°-20°	166.7	8.4
20°-30°	658.2	33.3
30°-40°	794.2	40.1
40°-50°	308.2	15.6
50°-60°	27.1	1.4
60°-70°	2.5	0.1
70°-80°	2.4	0.1
80°-90°	2.3	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°	842.6	42.6
0°-40°	1636.8	82.7
0°-60°	1972.1	99.6
0°-90°	1979.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1979.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	45	45	45	45	45	
5°	433	211	39	19	16	69
15°	2463	932	18	12	8	903
25°	10389	1102	17	54	80	4751
35°	10929	561	7	7	4	6718
45°	3141	39	2	2	0	2759
55°	103	5	2	2	0	247
65°	4	3	3	2	0	4
75°	0	3	3	3	0	1
85°	0	3	3	3	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°	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7
2.5°	140.4	133.4	125.7	128.9	130.4	134.3	131.0	119.5	126.6	121.1	116.5
5°	432.7	425.0	410.4	412.7	408.0	413.5	401.1	376.5	381.2	373.3	353.3
7.5°	843.9	811.5	787.6	789.2	775.2	781.5	758.3	715.8	711.2	671.7	665.6
10°	1265.1	1248.8	1220.3	1216.5	1191.7	1194.8	1158.6	1102.3	1086.8	1041.4	1015.1
12.5°	1678.5	1651.4	1611.3	1602.8	1562.7	1563.5	1514.1	1450.9	1427.8	1380.8	1344.5
15°	2462.9	2424.3	2332.5	2297.8	2186.8	2169.8	2047.9	1904.4	1835.0	1754.1	1647.6
17.5°	3910.7	3886.1	3706.2	3606.7	3381.6	3157.9	3026.0	2716.0	2534.7	2307.8	2111.1
20°	6180.8	6226.4	5912.4	5690.2	5272.2	4800.0	4466.8	3902.3	3525.1	3133.9	2763.7
22.5°	8595.1	8614.4	8292.8	8015.8	7529.2	6880.4	6112.9	5428.0	4736.8	4065.0	3454.2
25°	10389.3	10333.8	9979.7	9647.1	9135.0	8472.5	7726.6	6811.8	5866.8	4944.3	4049.7
26°	10937.0	10906.9	10552.0	10154.0	9590.3	8917.5	8141.5	7218.3	6220.2	5226.6	4231.7
27°	11444.5	11425.2	11040.3	10597.6	9965.9	9261.5	8449.4	7526.9	6487.0	5444.9	4363.5
28°	11959.0	11937.4	11471.5	10957.9	10271.2	9506.1	8662.3	7732.7	6659.1	5572.9	4418.2
29°	12502.7	12461.2	11865.7	11222.3	10474.9	9648.8	8773.2	7826.8	6717.7	5604.6	4404.4
30°	12895.4	12830.6	12150.3	11389.7	10558.2	9693.5	8785.6	7824.5	6681.5	5539.0	4315.8
31°	12994.2	12928.6	12229.8	11387.4	10497.2	9625.6	8697.0	7715.0	6530.3	5380.1	4166.0
32°	12755.0	12694.9	12028.4	11127.5	10304.4	9462.2	8520.3	7512.1	6295.6	5142.6	3963.1
33°	12221.2	12175.7	11601.1	10785.7	10028.3	9230.0	8267.3	7223.7	5962.4	4840.3	3724.8
34°	11547.8	11514.8	11072.7	10383.9	9678.0	8911.3	7939.6	6843.4	5523.5	4497.7	3464.9
35°	10929.3	10904.6	10546.6	9935.6	9277.7	8517.2	7524.5	6375.1	5071.7	4129.0	3187.2
36°	10333.8	10313.0	10002.1	9434.4	8799.6	8055.2	7002.3	5815.3	4586.4	3746.5	2899.4
37°	9712.1	9693.5	9426.7	8886.8	8261.9	7502.9	6382.2	5218.9	4093.5	3364.7	2604.1
38°	9067.2	9051.7	8807.2	8268.9	7634.8	6828.0	5674.9	4602.6	3613.0	2992.1	2338.6
39°	8347.6	8334.4	8109.2	7544.6	6867.3	6032.7	4946.7	4001.7	3157.1	2630.3	2081.9
40°	7556.1	7538.3	7313.2	6682.1	5998.0	5214.2	4246.9	3450.2	2726.7	2292.5	1855.9
42.5°	5137.1	5117.9	4950.5	4583.4	3924.6	3421.0	2814.7	2309.4	1932.2	1670.8	1445.5
45°	3141.0	3143.2	3055.3	2828.5	2432.0	2152.1	1822.7	1581.2	1411.5	1311.3	1154.7
47.5°	1899.8	1899.8	1860.6	1744.8	1566.6	1454.8	1318.2	1205.7	1076.1	977.3	807.7
50°	1288.1	1289.0	1228.7	1234.9	1116.1	1046.8	916.3	779.1	651.8	508.4	362.5
51°	953.4	958.0	902.5	927.9	797.7	738.9	615.5	499.0	386.5	275.4	158.9
52°	583.1	591.7	553.9	577.0	501.4	415.7	315.5	232.9	156.6	109.5	76.3
53°	270.8	277.7	258.4	269.3	224.5	175.1	132.7	108.1	86.3	70.1	51.7
54°	143.4	145.1	138.8	135.7	123.3	108.7	90.3	74.8	58.6	47.1	34.7
55°	102.6	102.6	99.5	96.5	86.3	74.2	60.1	51.0	38.6	30.9	22.4
57.5°	31.6	31.6	31.6	30.1	26.2	22.4	17.7	15.4	12.4	11.5	9.2
60°	10.8	10.8	10.8	10.0	9.2	8.5	7.7	7.0	6.1	6.1	5.3
61°	7.7	7.7	7.7	7.7	7.0	7.0	6.1	5.3	4.7	5.3	4.7
62°	6.1	7.0	6.1	6.1	6.1	5.3	4.7	4.7	3.8	4.7	3.8
63°	5.3	5.3	5.3	5.3	4.7	4.7	3.8	3.8	3.0	3.8	3.8
64°	4.7	4.7	4.7	4.7	3.8	3.8	3.0	3.0	2.3	3.0	3.0
65°	3.8	3.8	3.8	3.8	3.0	3.0	3.0	2.3	2.3	3.0	3.0
66°	3.0	3.0	3.0	3.0	3.0	2.3	2.3	2.3	1.6	2.3	2.3

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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TEST NUMBER: P1192062

CATALOG NUMBER: LDA6A20950D010TE 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°	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8	1.6	1.6
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7
2.5°	111.8	104.2	102.6	102.6	86.3	89.4	84.1	80.3	56.3	43.3	32.3
5°	341.7	314.0	302.3	292.3	248.4	244.6	217.6	211.3	75.6	39.4	24.8
7.5°	637.2	594.7	567.7	541.5	470.5	451.3	405.0	393.3	102.6	33.2	19.3
10°	973.4	912.5	865.4	803.0	711.2	671.1	603.2	578.4	125.0	27.8	18.5
12.5°	1289.6	1220.3	1156.3	1073.8	949.5	885.5	796.0	764.4	133.4	23.2	17.1
15°	1562.7	1470.2	1390.8	1302.0	1163.2	1082.2	972.6	931.8	126.6	18.5	14.7
17.5°	1909.1	1752.5	1614.5	1490.3	1339.0	1240.4	1113.0	1046.8	102.6	16.2	13.2
20°	2421.3	2105.8	1862.7	1662.2	1452.4	1329.8	1188.6	1108.4	74.2	14.7	13.2
22.5°	2903.5	2452.8	2080.3	1793.5	1511.1	1364.6	1217.9	1129.2	52.4	14.7	15.4
25°	3296.7	2714.3	2230.7	1879.8	1543.6	1371.4	1207.1	1102.3	40.9	17.1	30.1
26°	3407.0	2779.2	2260.0	1886.8	1538.9	1361.4	1188.6	1077.6	36.2	23.2	56.3
27°	3475.7	2808.4	2260.9	1876.0	1521.8	1341.4	1161.0	1044.4	31.6	35.6	94.8
28°	3489.6	2794.6	2234.6	1845.9	1492.6	1314.4	1130.1	1004.3	29.3	44.7	108.1
29°	3451.9	2745.2	2186.8	1801.8	1457.0	1281.9	1092.9	960.4	25.4	33.9	70.1
30°	3366.9	2663.5	2116.6	1745.5	1419.3	1245.7	1047.6	907.8	20.9	17.1	31.6
31°	3239.7	2550.8	2030.2	1679.3	1377.0	1199.4	992.8	849.3	17.7	11.5	18.5
32°	3078.4	2415.8	1933.9	1611.3	1329.0	1143.2	928.7	783.6	16.2	9.2	15.4
33°	2893.3	2273.9	1834.4	1542.7	1271.9	1076.1	860.1	713.5	14.7	10.0	15.4
34°	2691.2	2129.0	1721.6	1470.9	1205.7	1002.8	786.8	631.1	13.2	9.2	11.5
35°	2472.2	1978.6	1620.6	1407.6	1130.9	923.3	712.0	560.8	11.5	7.0	7.7
36°	2283.2	1832.0	1522.7	1327.6	1049.0	841.6	634.8	485.2	10.0	4.7	5.3
37°	2077.3	1694.6	1431.7	1244.3	961.1	757.4	557.8	410.4	9.2	3.0	4.7
38°	1885.1	1568.1	1340.6	1148.6	870.9	672.6	478.9	337.1	8.5	3.0	3.8
39°	1710.8	1453.2	1255.7	1046.8	775.9	584.0	399.5	264.6	7.7	2.3	3.8
40°	1561.2	1350.5	1153.9	939.5	678.0	496.0	320.2	195.9	7.0	2.3	3.8
42.5°	1269.6	1083.8	870.9	664.1	438.9	280.8	143.4	71.8	5.3	2.3	3.0
45°	970.4	771.3	574.6	399.5	226.0	108.7	53.2	39.4	4.7	2.3	3.0
47.5°	630.2	462.8	308.5	174.3	75.6	43.9	27.8	20.1	3.8	2.3	3.0
50°	232.9	128.9	67.9	42.4	29.3	18.5	12.4	11.5	3.8	2.3	3.0
51°	95.7	62.4	42.4	28.5	18.5	13.2	10.0	10.0	3.8	2.3	3.0
52°	57.1	39.4	28.5	20.9	13.8	10.0	7.7	8.5	3.8	2.3	3.0
53°	37.8	27.0	20.9	16.2	10.8	7.7	5.3	6.1	3.8	2.3	3.0
54°	25.4	19.3	15.4	12.4	7.7	6.1	3.0	5.3	3.0	2.3	3.0
55°	17.7	13.8	11.5	9.2	5.3	3.8	2.3	4.7	3.0	2.3	3.0
57.5°	7.7	7.0	6.1	5.3	2.3	1.6	0.8	3.8	3.0	2.3	3.0
60°	5.3	4.7	3.8	3.8	0.8	0.8	0.0	3.0	3.0	2.3	3.0
61°	4.7	3.8	3.8	3.0	0.8	0.8	0.0	3.0	3.8	2.3	3.0
62°	3.8	3.8	3.0	3.0	0.8	0.0	0.0	3.0	3.8	2.3	3.8
63°	3.0	3.0	3.0	3.0	0.8	0.0	0.0	3.0	3.8	2.3	3.8
64°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	3.0	3.8	2.3	3.8
65°	3.0	2.3	2.3	2.3	0.0	0.0	0.0	3.0	3.8	3.0	3.8
66°	2.3	2.3	2.3	2.3	0.0	0.0	0.0	3.0	3.8	3.0	3.8



TEST NUMBER: P1192062

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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°	1.6	1.6	1.6	1.6	0.0	0.0	0.0	2.3	3.8	3.0	4.7
75°	0.8	1.6	1.6	1.6	0.0	0.0	0.0	3.0	3.8	3.0	4.7
77.5°	0.8	1.6	1.6	1.6	0.0	0.0	0.0	3.0	3.8	3.0	4.7
80°	0.8	1.6	1.6	1.6	0.0	0.0	0.0	3.0	3.8	3.0	4.7
82.5°	0.8	1.6	1.6	1.6	0.0	0.0	0.0	3.0	3.8	3.0	4.7
85°	0.8	1.6	1.6	1.6	0.0	0.0	0.0	3.0	3.8	3.0	4.7
87.5°	0.8	1.6	1.6	1.6	0.0	0.0	0.0	3.0	3.8	3.0	4.7
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°	44.7	44.7	44.7
2.5°	27.0	24.8	23.2
5°	19.3	17.7	16.2
7.5°	16.2	13.8	13.2
10°	14.7	10.8	10.0
12.5°	12.4	9.2	8.5
15°	11.5	9.2	8.5
17.5°	11.5	9.2	8.5
20°	12.4	11.5	11.5
22.5°	17.7	19.3	20.1
25°	54.0	69.5	80.3
26°	126.6	189.8	254.6
27°	192.1	280.0	298.5
28°	172.7	200.5	195.1
29°	83.3	94.1	85.6
30°	37.0	43.9	43.3
31°	23.9	27.0	26.2
32°	20.1	18.5	17.7
33°	16.2	13.2	10.8
34°	10.8	8.5	7.0
35°	7.0	4.7	3.8
36°	4.7	2.3	1.6
37°	3.0	1.6	0.8
38°	3.0	0.8	0.0
39°	2.3	0.8	0.0
40°	2.3	0.8	0.0
42.5°	2.3	0.0	0.0
45°	1.6	0.0	0.0
47.5°	1.6	0.0	0.0
50°	2.3	0.8	0.0
51°	2.3	0.0	0.0
52°	2.3	0.0	0.0
53°	1.6	0.0	0.0
54°	1.6	0.0	0.0
55°	1.6	0.0	0.0
57.5°	1.6	0.0	0.0
60°	1.6	0.0	0.0
61°	2.3	0.0	0.0
62°	2.3	0.0	0.0
63°	2.3	0.0	0.0
64°	2.3	0.8	0.0
65°	2.3	0.8	0.0
66°	2.3	0.8	0.0



TEST NUMBER: P1192062

CATALOG NUMBER: LDA6A20950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	3.0	0.8	0.0
75°	3.0	0.8	0.0
77.5°	3.0	0.8	0.0
80°	3.0	1.6	0.8
82.5°	3.0	1.6	0.8
85°	3.0	1.6	0.8
87.5°	3.0	1.6	0.8
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°	2.3	2.3	2.3	2.3	2.3	2.3	1.6	1.6	1.6	2.3	2.3
70°	2.3	2.3	1.6	1.6	1.6	1.6	1.6	0.8	0.8	2.3	2.3

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67.5°	2.3	2.3	2.3	2.3	0.0	0.0	0.0	3.0	3.8	3.0	3.8
70°	2.3	2.3	2.3	2.3	0.0	0.0	0.0	3.0	3.8	3.0	4.7

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67.5°	3.0	0.8	0.0
70°	3.0	0.8	0.0

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(END OF REPORT)