

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: P1192167

Luminaire Tested: **LDA6A35950D010TE 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: P1192167
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: LDA6A35950D010TE 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

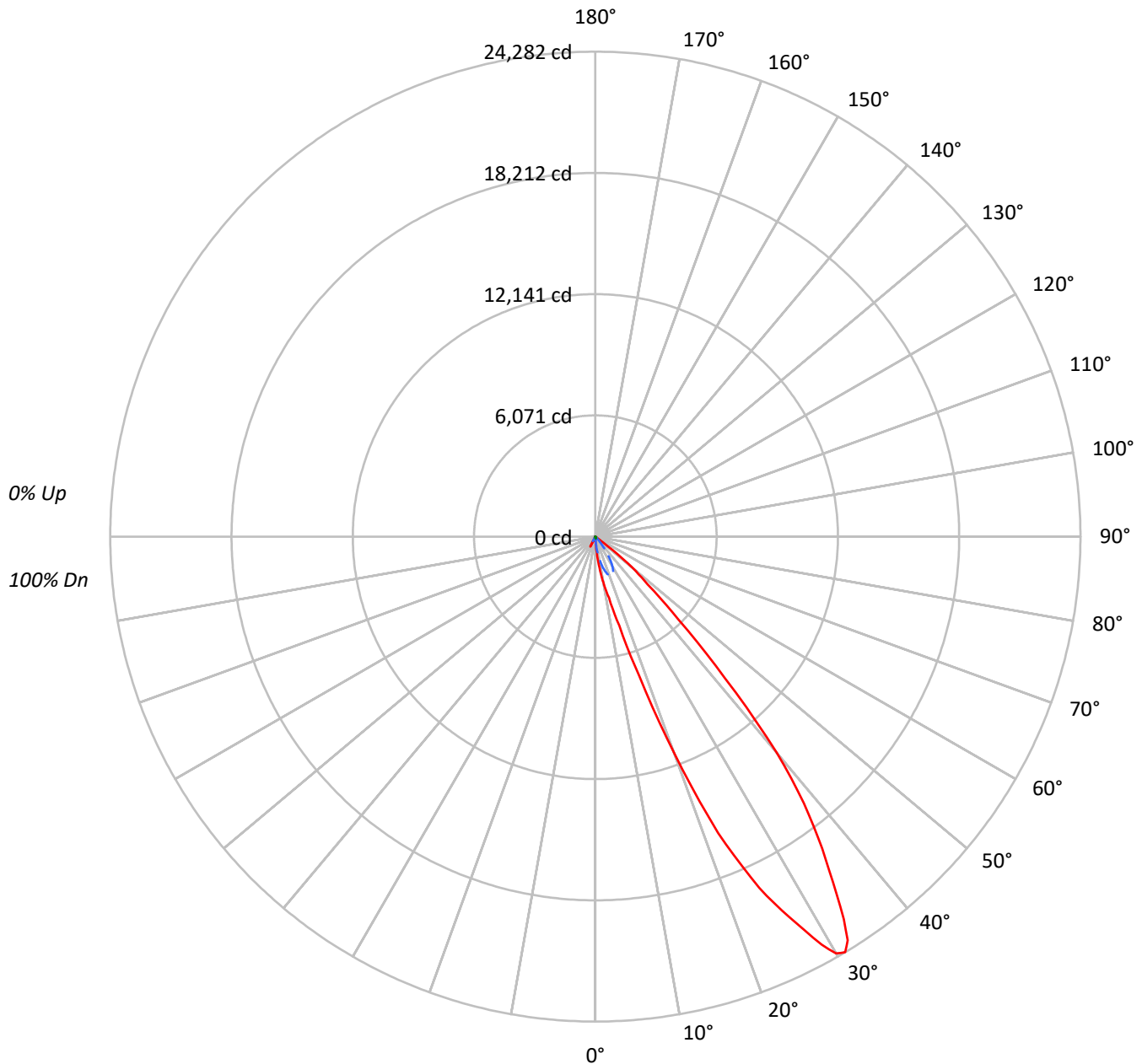
Lumens per Lamp: N/A
Luminaire Lumens: 3698.8 lumens
Efficiency: N/A
Efficacy: 77.5 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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	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°	4583	4583	4583
5°	44497	4050	1667
10°	131594	2883	1041
15°	261199	1964	902
20°	673803	1604	1254
25°	1174308	1923	9079
30°	1525374	2013	5115
35°	1366790	877	482
40°	1010457	315	0
45°	455039	341	0
50°	205290	375	0
55°	18331	421	0
60°	2226	482	0
65°	934	726	0
70°	705	898	0
75°	0	1186	0
80°	0	1768	505
85°	0	3522	1006



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.3	0.9
10°-20°	311.5	8.4
20°-30°	1229.9	33.3
30°-40°	1484.1	40.1
40°-50°	575.9	15.6
50°-60°	50.6	1.4
60°-70°	4.8	0.1
70°-80°	4.6	0.1
80°-90°	4.2	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°	1574.6	42.6
0°-40°	3058.7	82.7
0°-60°	3685.3	99.6
0°-90°	3698.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3698.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	84	84	84	84	84	
5°	809	395	74	36	30	128
15°	4602	1741	35	22	16	1687
25°	19414	2060	32	101	150	8879
35°	20423	1048	13	13	7	12554
45°	5869	74	4	3	0	5156
55°	192	9	4	3	0	462
65°	7	6	6	4	0	8
75°	0	6	6	6	0	1
85°	0	6	6	6	2	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°	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6
2.5°	262.4	249.3	234.9	240.8	243.7	250.8	244.9	223.4	236.5	226.2	217.8
5°	808.6	794.2	766.8	771.2	762.4	772.7	749.6	703.5	712.2	697.5	660.1
7.5°	1577.0	1516.4	1471.8	1474.6	1448.7	1460.3	1416.9	1337.6	1328.9	1255.4	1243.8
10°	2364.0	2333.8	2280.4	2273.2	2227.1	2232.7	2165.0	2059.8	2030.9	1945.9	1897.0
12.5°	3136.4	3085.9	3011.0	2995.1	2920.2	2921.8	2829.4	2711.3	2668.1	2580.2	2512.5
15°	4602.3	4530.2	4358.7	4293.8	4086.4	4054.5	3826.8	3558.8	3429.1	3277.8	3078.7
17.5°	7308.0	7261.8	6925.8	6739.9	6319.0	5901.1	5654.6	5075.2	4736.5	4312.6	3945.0
20°	11549.9	11635.1	11048.3	10633.2	9851.9	8969.8	8347.0	7292.1	6587.3	5856.4	5164.4
22.5°	16061.4	16097.6	15496.5	14979.0	14069.6	12857.3	11423.0	10143.0	8851.5	7596.2	6454.7
25°	19414.1	19310.5	18648.9	18027.5	17070.4	15832.2	14438.4	12729.1	10963.2	9239.3	7567.5
26°	20437.7	20381.5	19718.3	18974.6	17921.1	16663.9	15214.0	13488.7	11623.6	9766.8	7907.5
27°	21386.0	21350.1	20630.8	19803.5	18623.0	17306.8	15789.2	14065.3	12122.1	10174.8	8154.0
28°	22347.4	22307.2	21436.5	20476.7	19193.6	17763.8	16186.9	14450.0	12443.7	10414.1	8256.2
29°	23363.5	23285.8	22173.0	20970.8	19574.2	18030.6	16394.4	14625.8	12553.2	10473.1	8230.4
30°	24097.2	23976.2	22705.0	21283.7	19729.8	18114.2	16417.4	14621.5	12485.5	10350.8	8064.7
31°	24281.9	24159.3	22853.5	21279.3	19616.0	17987.2	16251.8	14416.9	12202.8	10053.8	7784.9
32°	23834.9	23722.6	22477.2	20793.6	19255.6	17681.8	15921.8	14037.8	11764.6	9609.9	7405.9
33°	22837.6	22752.4	21678.6	20155.0	18739.7	17247.9	15448.8	13498.8	11141.9	9044.9	6960.4
34°	21579.1	21517.3	20691.2	19404.1	18085.2	16652.4	14836.4	12788.2	10321.8	8404.8	6474.7
35°	20423.3	20377.1	19708.3	18566.5	17337.1	15915.8	14060.9	11913.1	9477.3	7715.7	5955.9
36°	19310.5	19271.5	18690.7	17629.7	16443.6	15052.6	13085.1	10866.8	8570.4	7001.0	5418.1
37°	18148.7	18114.2	17615.3	16606.4	15438.8	14020.3	11926.2	9752.5	7649.5	6287.5	4866.3
38°	16943.7	16914.8	16458.0	15451.9	14267.0	12759.3	10604.4	8600.7	6751.5	5591.2	4370.3
39°	15598.9	15574.2	15153.4	14098.3	12832.8	11273.2	9243.6	7477.9	5899.7	4915.2	3890.4
40°	14119.9	14086.8	13665.9	12486.8	11208.4	9743.8	7936.2	6447.3	5095.3	4283.9	3468.0
42.5°	9599.6	9563.7	9250.8	8564.8	7333.9	6392.7	5259.6	4315.6	3610.7	3122.1	2701.2
45°	5869.4	5873.6	5709.5	5285.5	4544.6	4021.5	3406.0	2954.8	2637.6	2450.4	2157.8
47.5°	3550.1	3550.1	3476.7	3260.6	2927.4	2718.5	2463.2	2253.0	2010.8	1826.2	1509.2
50°	2407.1	2408.6	2296.0	2307.6	2085.7	1955.9	1712.4	1455.9	1217.9	949.9	677.6
51°	1781.6	1790.4	1686.5	1733.9	1490.5	1380.7	1150.2	932.5	722.2	514.7	297.0
52°	1089.7	1105.6	1035.0	1078.2	936.8	776.8	589.6	435.2	292.7	204.7	142.6
53°	506.0	518.9	482.9	503.2	419.5	327.2	248.0	201.9	161.3	131.0	96.7
54°	268.0	271.0	259.6	253.7	230.6	203.1	168.8	139.8	109.5	88.0	64.9
55°	191.8	191.8	186.0	180.3	161.3	138.5	112.3	95.2	72.1	57.7	41.8
57.5°	59.0	59.0	59.0	56.2	49.0	41.8	33.1	28.7	23.1	21.5	17.2
60°	20.3	20.3	20.3	18.7	17.2	15.9	14.4	13.1	11.5	11.5	10.0
61°	14.4	14.4	14.4	14.4	13.1	13.1	11.5	10.0	8.7	10.0	8.7
62°	11.5	13.1	11.5	11.5	11.5	10.0	8.7	8.7	7.2	8.7	7.2
63°	10.0	10.0	10.0	10.0	8.7	8.7	7.2	7.2	5.6	7.2	7.2
64°	8.7	8.7	8.7	8.7	7.2	7.2	5.6	5.6	4.4	5.6	5.6
65°	7.2	7.2	7.2	7.2	5.6	5.6	5.6	4.4	4.4	5.6	5.6
66°	5.6	5.6	5.6	5.6	5.6	4.4	4.4	4.4	2.8	4.4	4.4



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CATALOG NUMBER: LDA6A35950D010TE 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°	2.8	2.8	2.8	2.8	1.6	1.6	1.6	1.6	1.6	2.8	2.8
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6	83.6
2.5°	209.0	194.7	191.8	191.8	161.3	167.2	157.2	150.1	105.1	80.8	60.5
5°	638.6	586.8	564.9	546.2	464.2	457.0	406.4	395.0	141.3	73.6	46.2
7.5°	1190.7	1111.2	1060.9	1011.9	879.1	843.2	756.8	735.0	191.8	62.1	36.2
10°	1819.1	1705.2	1617.2	1500.5	1328.9	1254.0	1127.2	1081.0	233.6	51.8	34.6
12.5°	2409.9	2280.4	2160.6	2006.5	1774.4	1654.6	1487.4	1428.4	249.3	43.4	31.8
15°	2920.2	2747.4	2599.0	2433.0	2173.7	2022.4	1817.5	1741.4	236.5	34.6	27.5
17.5°	3567.5	3275.0	3016.9	2784.8	2502.2	2317.8	2079.9	1955.9	191.8	30.3	24.6
20°	4524.6	3935.0	3480.9	3106.2	2714.1	2485.1	2221.1	2071.4	138.5	27.5	24.6
22.5°	5425.6	4583.6	3887.3	3351.3	2823.8	2550.0	2276.0	2110.2	98.0	27.5	28.7
25°	6160.5	5072.2	4168.4	3512.7	2884.3	2562.8	2255.8	2059.8	76.4	31.8	56.2
26°	6366.8	5193.4	4223.3	3525.7	2875.6	2544.0	2221.1	2013.6	67.7	43.4	105.1
27°	6495.0	5248.0	4224.8	3505.5	2843.8	2506.6	2169.3	1951.7	59.0	66.5	177.2
28°	6520.9	5222.2	4175.8	3449.3	2789.2	2456.1	2111.6	1876.8	54.9	83.6	201.9
29°	6450.4	5129.9	4086.4	3367.0	2722.8	2395.5	2042.4	1794.6	47.4	63.3	131.0
30°	6291.6	4977.2	3955.3	3261.9	2652.2	2327.8	1957.5	1696.4	39.0	31.8	59.0
31°	6053.8	4766.7	3793.7	3138.0	2573.0	2241.4	1855.2	1586.9	33.1	21.5	34.6
32°	5752.6	4514.3	3613.7	3011.0	2483.5	2136.3	1735.4	1464.3	30.3	17.2	28.7
33°	5406.5	4249.2	3427.7	2882.8	2376.8	2010.8	1607.2	1333.3	27.5	18.7	28.7
34°	5029.0	3978.4	3217.2	2748.7	2253.0	1873.9	1470.2	1179.2	24.6	17.2	21.5
35°	4619.8	3697.3	3028.5	2630.5	2113.2	1725.5	1330.5	1047.9	21.5	13.1	14.4
36°	4266.6	3423.4	2845.3	2480.7	1960.3	1572.6	1186.3	906.6	18.7	8.7	10.0
37°	3881.7	3166.7	2675.3	2325.0	1796.0	1415.3	1042.2	766.8	17.2	5.6	8.7
38°	3522.7	2930.2	2505.0	2146.2	1627.5	1256.8	895.0	629.8	15.9	5.6	7.2
39°	3197.0	2715.6	2346.6	1955.9	1450.0	1091.2	746.5	494.4	14.4	4.4	7.2
40°	2917.4	2523.8	2156.2	1755.7	1266.9	926.8	598.3	366.2	13.1	4.4	7.2
42.5°	2372.4	2025.2	1627.5	1241.0	820.1	524.7	268.0	134.2	10.0	4.4	5.6
45°	1813.3	1441.2	1073.8	746.5	422.3	203.1	99.5	73.6	8.7	4.4	5.6
47.5°	1177.6	864.8	576.5	325.7	141.3	82.1	51.8	37.4	7.2	4.4	5.6
50°	435.2	240.8	127.0	79.2	54.9	34.6	23.1	21.5	7.2	4.4	5.6
51°	178.8	116.7	79.2	53.4	34.6	24.6	18.7	18.7	7.2	4.4	5.6
52°	106.7	73.6	53.4	39.0	25.9	18.7	14.4	15.9	7.2	4.4	5.6
53°	70.5	50.5	39.0	30.3	20.3	14.4	10.0	11.5	7.2	4.4	5.6
54°	47.4	36.2	28.7	23.1	14.4	11.5	5.6	10.0	5.6	4.4	5.6
55°	33.1	25.9	21.5	17.2	10.0	7.2	4.4	8.7	5.6	4.4	5.6
57.5°	14.4	13.1	11.5	10.0	4.4	2.8	1.6	7.2	5.6	4.4	5.6
60°	10.0	8.7	7.2	7.2	1.6	1.6	0.0	5.6	5.6	4.4	5.6
61°	8.7	7.2	7.2	5.6	1.6	1.6	0.0	5.6	7.2	4.4	5.6
62°	7.2	7.2	5.6	5.6	1.6	0.0	0.0	5.6	7.2	4.4	7.2
63°	5.6	5.6	5.6	5.6	1.6	0.0	0.0	5.6	7.2	4.4	7.2
64°	5.6	5.6	5.6	5.6	0.0	0.0	0.0	5.6	7.2	4.4	7.2
65°	5.6	4.4	4.4	4.4	0.0	0.0	0.0	5.6	7.2	5.6	7.2
66°	4.4	4.4	4.4	4.4	0.0	0.0	0.0	5.6	7.2	5.6	7.2

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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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°	2.8	2.8	2.8	2.8	0.0	0.0	0.0	4.4	7.2	5.6	8.7
75°	1.6	2.8	2.8	2.8	0.0	0.0	0.0	5.6	7.2	5.6	8.7
77.5°	1.6	2.8	2.8	2.8	0.0	0.0	0.0	5.6	7.2	5.6	8.7
80°	1.6	2.8	2.8	2.8	0.0	0.0	0.0	5.6	7.2	5.6	8.7
82.5°	1.6	2.8	2.8	2.8	0.0	0.0	0.0	5.6	7.2	5.6	8.7
85°	1.6	2.8	2.8	2.8	0.0	0.0	0.0	5.6	7.2	5.6	8.7
87.5°	1.6	2.8	2.8	2.8	0.0	0.0	0.0	5.6	7.2	5.6	8.7
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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CATALOG NUMBER: LDA6A35950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	83.6	83.6	83.6
2.5°	50.5	46.2	43.4
5°	36.2	33.1	30.3
7.5°	30.3	25.9	24.6
10°	27.5	20.3	18.7
12.5°	23.1	17.2	15.9
15°	21.5	17.2	15.9
17.5°	21.5	17.2	15.9
20°	23.1	21.5	21.5
22.5°	33.1	36.2	37.4
25°	100.8	129.8	150.1
26°	236.5	354.6	475.7
27°	359.0	523.1	557.8
28°	322.9	374.7	364.7
29°	155.7	176.0	160.1
30°	69.3	82.1	80.8
31°	44.6	50.5	49.0
32°	37.4	34.6	33.1
33°	30.3	24.6	20.3
34°	20.3	15.9	13.1
35°	13.1	8.7	7.2
36°	8.7	4.4	2.8
37°	5.6	2.8	1.6
38°	5.6	1.6	0.0
39°	4.4	1.6	0.0
40°	4.4	1.6	0.0
42.5°	4.4	0.0	0.0
45°	2.8	0.0	0.0
47.5°	2.8	0.0	0.0
50°	4.4	1.6	0.0
51°	4.4	0.0	0.0
52°	4.4	0.0	0.0
53°	2.8	0.0	0.0
54°	2.8	0.0	0.0
55°	2.8	0.0	0.0
57.5°	2.8	0.0	0.0
60°	2.8	0.0	0.0
61°	4.4	0.0	0.0
62°	4.4	0.0	0.0
63°	4.4	0.0	0.0
64°	4.4	1.6	0.0
65°	4.4	1.6	0.0
66°	4.4	1.6	0.0

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

Scaled Data Report



TEST NUMBER: P1192167

CATALOG NUMBER: LDA6A35950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	5.6	1.6	0.0
75°	5.6	1.6	0.0
77.5°	5.6	1.6	0.0
80°	5.6	2.8	1.6
82.5°	5.6	2.8	1.6
85°	5.6	2.8	1.6
87.5°	5.6	2.8	1.6
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



Report Generated By 670245859 / DESKTOP-T8S5UU9

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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	4.4	4.4	4.4	4.4	4.4	4.4	2.8	2.8	2.8	4.4	4.4
70°	4.4	4.4	2.8	2.8	2.8	2.8	2.8	1.6	1.6	4.4	4.4

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67.5°	4.4	4.4	4.4	4.4	0.0	0.0	0.0	5.6	7.2	5.6	7.2
70°	4.4	4.4	4.4	4.4	0.0	0.0	0.0	5.6	7.2	5.6	8.7

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67.5°	5.6	1.6	0.0
70°	5.6	1.6	0.0

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(END OF REPORT)