

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: P1212762

Luminaire Tested: **LDA4A20950D010TE LAR15SP 4LA1 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: P1212762
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25648)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A20950D010TE LAR15SP 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 15° Spot
Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

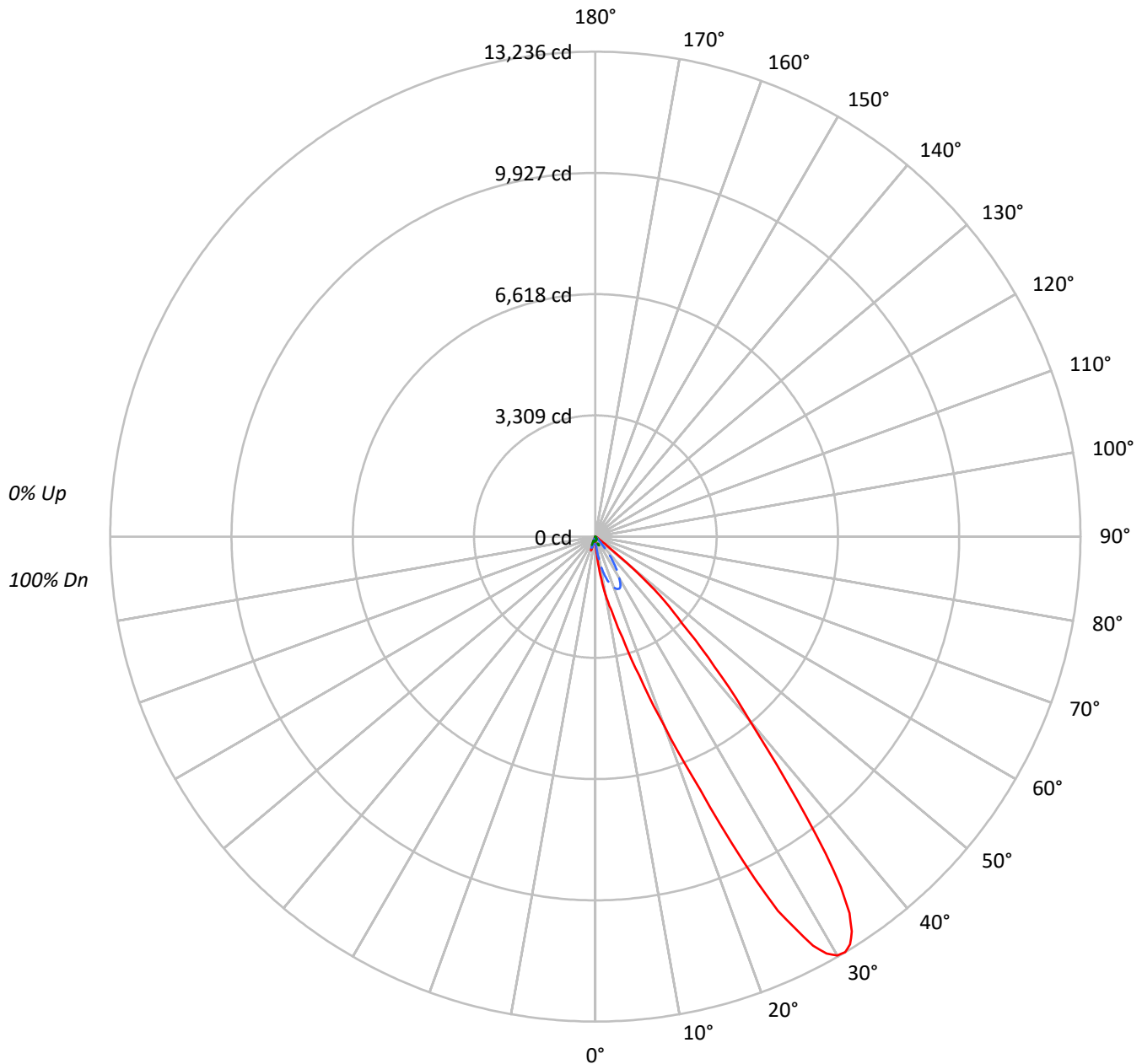
Lumens per Lamp: N/A
Luminaire Lumens: 2135.4 lumens
Efficiency: N/A
Efficacy: 74.1 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 28.8
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	98	96	96	94	93	91		
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82		
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74		
4	92	83	77	71	90	82	76	71	80	74	70	78	73	69	76	72	68	67		
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60		
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	56	54		
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49		
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44		
9	65	54	47	42	64	53	46	42	52	46	41	51	45	41	50	45	41	40		
10	61	49	42	38	60	49	42	38	48	42	38	47	41	37	46	41	37	36		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	15357	15357	15357
5°	68916	14437	9361
10°	203980	13276	11961
15°	364166	15719	33661
20°	721349	30965	36176
25°	1403676	20210	10289
30°	1880211	7549	3589
35°	1759329	3192	1415
40°	1054286	1514	435
45°	585062	925	0
50°	214612	768	0
55°	32773	581	0
60°	7203	666	0
65°	2335	788	0
70°	505	974	0
75°	0	1906	0
80°	0	2841	0
85°	0	5661	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.4	1.3
10°-20°	230.6	10.8
20°-30°	688.5	32.2
30°-40°	815.4	38.2
40°-50°	338.3	15.8
50°-60°	26.3	1.2
60°-70°	3.6	0.2
70°-80°	2.8	0.1
80°-90°	2.6	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°	946.5	44.3
0°-40°	1761.8	82.5
0°-60°	2126.4	99.6
0°-90°	2135.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2135.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	124	124	124	124	124	
5°	557	281	117	81	76	88
15°	2852	1204	123	184	264	941
25°	10314	1565	148	86	76	4711
35°	11684	872	21	12	9	6771
45°	3354	77	5	4	0	2734
55°	152	10	3	1	0	223
65°	8	3	3	3	0	10
75°	0	3	4	3	0	0
85°	0	3	4	3	0	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°	124.5	124.5	124.5	124.5	124.5	124.5	124.5	124.5	124.5	124.5	124.5
2.5°	215.9	205.4	210.7	201.4	206.8	197.4	190.8	197.4	197.4	192.2	184.2
5°	556.6	553.9	564.6	539.4	545.9	518.2	494.2	500.9	495.6	478.4	447.8
7.5°	1060.2	1049.5	1061.5	1025.6	1027.0	980.6	944.8	952.7	929.0	899.8	846.8
10°	1628.6	1614.1	1627.3	1585.0	1577.0	1512.1	1461.6	1469.6	1415.2	1367.5	1286.8
12.5°	2121.5	2120.4	2077.8	2085.8	2069.9	1970.5	1938.7	1941.4	1867.2	1814.2	1717.4
15°	2851.8	2879.6	2887.6	2833.2	2735.2	2555.0	2475.4	2445.0	2324.4	2235.5	2096.3
17.5°	3974.0	4012.6	3881.3	3913.2	3751.5	3469.3	3311.7	3217.6	2990.9	2823.9	2572.1
20°	5495.5	5462.4	5272.8	5249.0	4973.3	4610.2	4278.9	4101.3	3752.8	3509.1	3141.9
22.5°	7459.4	7434.2	7109.5	6965.1	6388.7	5877.1	5447.7	5002.5	4484.3	4158.4	3660.1
25°	10313.8	10198.4	9572.9	9162.3	8148.5	7279.1	6563.5	5871.8	5078.1	4724.2	4090.8
26°	11364.6	11336.8	10684.8	10144.2	8922.4	7843.7	6879.0	6185.8	5311.2	4897.8	4212.6
27°	11995.4	12216.7	11609.8	10997.5	9661.8	8369.7	7251.3	6439.0	5492.8	5019.7	4290.9
28°	12649.9	12793.1	12249.8	11481.2	10254.2	8788.5	7533.7	6609.9	5604.0	5079.3	4317.5
29°	13010.5	13148.2	12643.3	11922.5	10642.4	9060.2	7700.5	6685.5	5645.2	5078.1	4293.5
30°	13201.2	13329.9	12836.8	12137.2	10802.8	9144.9	7736.4	6655.0	5605.5	5017.1	4225.8
31°	13235.8	13343.1	12856.7	12130.6	10741.8	9040.3	7635.6	6529.0	5499.4	4904.4	4123.9
32°	13119.2	13202.6	12708.4	11934.5	10467.4	8775.2	7426.2	6334.3	5337.7	4763.9	3992.8
33°	12846.2	12995.8	12392.8	11538.2	9990.3	8382.9	7129.4	6079.8	5136.4	4581.1	3832.4
34°	12394.2	12489.7	11865.5	10918.0	9354.3	7905.9	6765.0	5784.4	4905.8	4365.0	3650.8
35°	11683.9	11768.8	11078.4	10080.5	8629.5	7368.0	6348.9	5458.3	4647.3	4122.6	3449.5
36°	10700.7	10781.6	10059.3	9150.2	7898.1	6807.3	5910.2	5103.2	4367.8	3862.8	3236.1
37°	9551.9	9622.0	8979.3	8237.2	7179.7	6240.2	5466.3	4742.7	4072.3	3597.8	3033.4
38°	8441.3	8504.9	7985.4	7381.2	6486.7	5686.3	5023.7	4369.1	3767.5	3331.5	2820.0
39°	7439.5	7495.1	7076.4	6578.1	5826.8	5154.9	4582.4	3998.1	3461.3	3065.1	2600.0
40°	6547.7	6595.3	6250.7	5841.3	5227.8	4658.0	4153.0	3638.9	3161.8	2806.8	2394.5
42.5°	4806.4	4817.0	4611.6	4370.5	3893.3	3566.0	3206.8	2835.8	2487.3	2243.5	1981.2
45°	3354.0	3485.1	3351.4	3191.0	2849.1	2643.8	2414.5	2190.4	1989.0	1754.6	1494.8
47.5°	2411.9	2417.2	2337.6	2236.8	1966.5	1826.0	1637.8	1366.4	1166.2	833.6	618.8
50°	1118.4	1056.1	1060.2	991.2	883.8	702.3	587.0	418.8	334.0	238.6	192.2
51°	665.2	618.8	625.5	576.5	504.9	393.6	334.0	267.8	231.9	180.2	148.5
52°	388.2	372.4	371.1	348.5	296.8	273.0	241.3	201.4	176.2	139.2	115.3
53°	282.3	271.6	271.6	257.1	221.4	205.4	182.8	155.1	135.2	106.0	87.5
54°	210.7	202.7	202.7	193.5	178.9	153.7	137.8	115.3	100.8	82.3	64.9
55°	152.4	147.2	147.2	140.5	129.8	111.3	99.4	83.4	74.3	59.6	47.7
57.5°	63.5	60.9	60.9	58.2	55.7	47.7	45.0	38.4	33.2	29.2	23.8
60°	29.2	27.9	29.2	27.9	25.2	26.5	22.6	19.9	18.5	15.9	13.2
61°	22.6	21.2	21.2	21.2	18.5	18.5	17.2	15.9	14.6	11.9	10.5
62°	17.2	15.9	15.9	15.9	14.6	14.6	13.2	11.9	11.9	9.4	8.0
63°	13.2	11.9	11.9	11.9	10.5	10.5	10.5	9.4	9.4	8.0	6.7
64°	9.4	9.4	9.4	9.4	9.4	8.0	8.0	8.0	6.7	5.3	5.3
65°	8.0	6.7	8.0	6.7	6.7	6.7	6.7	6.7	5.3	4.0	4.0
66°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	4.0	2.7



TEST NUMBER: P1212762

CATALOG NUMBER: LDA4A20950D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4
75°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4
80°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4
85°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4
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°	124.5	124.5	124.5	124.5	124.5	124.5	124.5	124.5	124.5	124.5	124.5
2.5°	180.2	185.5	181.6	170.9	176.2	173.7	168.4	164.3	140.5	122.0	103.3
5°	425.5	429.3	406.8	367.1	353.9	332.7	302.1	281.0	159.0	116.6	91.4
7.5°	804.3	777.8	756.7	682.4	650.7	601.6	543.3	502.2	181.6	109.9	84.8
10°	1217.8	1175.4	1131.7	1022.9	966.1	890.4	807.0	759.3	205.4	106.0	84.8
12.5°	1627.3	1570.4	1490.8	1371.6	1290.7	1188.6	1074.7	989.9	222.6	108.7	98.1
15°	1982.3	1913.6	1826.0	1690.8	1596.8	1469.6	1321.1	1204.5	230.6	123.1	136.4
17.5°	2369.4	2244.8	2100.5	1928.2	1824.7	1677.6	1510.7	1368.8	230.6	156.3	218.6
20°	2814.7	2586.7	2354.8	2113.7	1967.9	1814.2	1635.3	1482.8	239.9	235.9	300.9
22.5°	3229.4	2915.3	2588.0	2274.0	2071.3	1904.2	1722.8	1547.7	278.3	259.8	200.1
25°	3551.4	3152.7	2766.9	2385.3	2156.0	1970.5	1775.8	1565.1	254.5	148.5	108.7
26°	3635.0	3204.2	2802.7	2398.7	2160.1	1969.1	1770.4	1546.4	213.4	117.9	87.5
27°	3678.6	3221.4	2805.4	2386.6	2144.1	1946.7	1741.3	1508.0	170.9	95.5	71.6
28°	3678.6	3201.5	2777.5	2353.4	2103.0	1904.2	1690.8	1447.1	139.2	78.2	56.9
29°	3641.6	3150.0	2721.9	2303.2	2047.4	1844.5	1622.0	1375.5	117.9	64.9	46.4
30°	3570.0	3074.3	2647.7	2238.2	1975.8	1776.9	1546.4	1301.2	102.1	53.0	37.0
31°	3469.3	2989.5	2556.3	2167.9	1909.5	1714.8	1477.6	1225.8	88.8	42.4	30.4
32°	3348.7	2883.5	2462.2	2095.0	1855.3	1656.5	1406.1	1146.3	76.8	35.9	26.5
33°	3209.5	2764.2	2364.1	2023.5	1802.3	1590.3	1327.8	1060.2	66.2	29.2	22.6
34°	3055.8	2633.1	2263.4	1946.7	1737.2	1506.6	1236.4	968.8	56.9	25.2	18.5
35°	2888.8	2485.9	2160.1	1868.6	1664.3	1413.9	1138.3	871.9	49.1	21.2	15.9
36°	2708.7	2348.2	2059.3	1790.3	1574.2	1313.3	1031.0	772.5	42.4	17.2	14.6
37°	2528.4	2218.3	1960.0	1706.8	1469.6	1199.3	918.3	669.2	37.0	14.6	11.9
38°	2357.5	2092.5	1861.9	1610.1	1347.6	1073.4	801.7	565.8	31.8	13.2	10.5
39°	2197.1	1970.5	1761.1	1494.8	1221.8	951.4	689.1	458.5	27.9	11.9	9.4
40°	2052.8	1855.3	1651.1	1366.4	1091.9	826.9	575.1	341.8	23.8	9.4	8.0
42.5°	1747.9	1538.6	1269.5	952.7	738.1	479.8	267.8	127.3	17.2	6.7	6.7
45°	1154.3	887.8	603.0	359.1	242.4	145.8	108.7	76.8	13.2	5.3	5.3
47.5°	385.6	245.1	178.9	128.6	109.9	87.5	70.2	47.7	9.4	4.0	4.0
50°	147.2	119.3	98.1	74.3	66.2	53.0	42.4	27.9	6.7	4.0	4.0
51°	115.3	94.1	76.8	58.2	53.0	42.4	34.5	23.8	5.3	4.0	4.0
52°	88.8	72.9	59.6	45.0	42.4	34.5	29.2	19.9	5.3	2.7	4.0
53°	67.6	55.7	45.0	34.5	33.2	27.9	23.8	15.9	4.0	2.7	4.0
54°	50.3	42.4	35.9	27.9	27.9	23.8	19.9	13.2	4.0	2.7	4.0
55°	38.4	31.8	27.9	21.2	22.6	19.9	17.2	10.5	4.0	2.7	4.0
57.5°	19.9	18.5	15.9	13.2	14.6	13.2	11.9	6.7	4.0	2.7	4.0
60°	11.9	10.5	9.4	8.0	9.4	9.4	9.4	4.0	4.0	2.7	4.0
61°	9.4	8.0	6.7	6.7	8.0	8.0	8.0	4.0	4.0	2.7	4.0
62°	6.7	6.7	5.3	5.3	8.0	6.7	6.7	4.0	4.0	2.7	4.0
63°	5.3	5.3	5.3	4.0	6.7	6.7	6.7	4.0	4.0	2.7	4.0
64°	4.0	4.0	4.0	4.0	5.3	6.7	6.7	2.7	4.0	2.7	4.0
65°	4.0	4.0	2.7	2.7	5.3	5.3	5.3	2.7	4.0	2.7	4.0
66°	2.7	2.7	2.7	2.7	5.3	5.3	5.3	2.7	4.0	2.7	4.0



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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	1.4	1.4	1.4	1.4	4.0	4.0	5.3	2.7	4.0	4.0	4.0
75°	1.4	1.4	1.4	1.4	4.0	4.0	5.3	2.7	4.0	4.0	4.0
77.5°	1.4	1.4	1.4	1.4	4.0	4.0	5.3	2.7	4.0	4.0	5.3
80°	1.4	1.4	1.4	1.4	4.0	4.0	5.3	2.7	4.0	4.0	5.3
82.5°	1.4	1.4	1.4	1.4	4.0	4.0	5.3	2.7	4.0	4.0	5.3
85°	1.4	1.4	1.4	1.4	4.0	4.0	5.3	2.7	4.0	4.0	5.3
87.5°	1.4	1.4	1.4	1.4	4.0	4.0	5.3	2.7	4.0	4.0	4.0
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°	124.5	124.5	124.5
2.5°	94.1	90.1	87.5
5°	80.9	76.8	75.6
7.5°	75.6	74.3	75.6
10°	83.4	88.8	95.5
12.5°	111.3	131.1	141.9
15°	184.2	239.9	263.6
17.5°	324.7	369.7	396.2
20°	286.3	261.1	275.6
22.5°	155.1	135.2	139.2
25°	86.1	74.3	75.6
26°	69.0	59.6	59.6
27°	55.7	47.7	47.7
28°	45.0	38.4	38.4
29°	35.9	30.4	30.4
30°	29.2	25.2	25.2
31°	23.8	19.9	19.9
32°	19.9	17.2	15.9
33°	17.2	14.6	13.2
34°	14.6	11.9	10.5
35°	11.9	9.4	9.4
36°	10.5	8.0	8.0
37°	9.4	6.7	6.7
38°	8.0	5.3	5.3
39°	6.7	5.3	4.0
40°	5.3	4.0	2.7
42.5°	4.0	2.7	1.4
45°	4.0	1.4	0.0
47.5°	2.7	1.4	0.0
50°	2.7	0.0	0.0
51°	2.7	0.0	0.0
52°	2.7	0.0	0.0
53°	1.4	0.0	0.0
54°	2.7	0.0	0.0
55°	1.4	0.0	0.0
57.5°	2.7	0.0	0.0
60°	2.7	0.0	0.0
61°	2.7	0.0	0.0
62°	2.7	0.0	0.0
63°	2.7	0.0	0.0
64°	2.7	1.4	0.0
65°	2.7	1.4	0.0
66°	2.7	1.4	0.0



TEST NUMBER: P1212762

CATALOG NUMBER: LDA4A20950D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.7	1.4	0.0
75°	2.7	1.4	0.0
77.5°	2.7	1.4	0.0
80°	2.7	1.4	0.0
82.5°	2.7	1.4	0.0
85°	2.7	1.4	0.0
87.5°	2.7	1.4	0.0
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°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.7	2.7
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7	1.4	1.4

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67.5°	2.7	1.4	2.7	2.7	4.0	5.3	5.3	2.7	4.0	2.7	4.0
70°	1.4	1.4	1.4	1.4	4.0	4.0	5.3	2.7	4.0	2.7	4.0

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67.5°	2.7	1.4	0.0
70°	2.7	1.4	0.0

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(END OF REPORT)