

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: P1191443

Luminaire Tested: **LDA4A10930D010TE LAR25NF 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: P1191443
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25649)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A10930D010TE LAR25NF 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 25°
Narrow Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

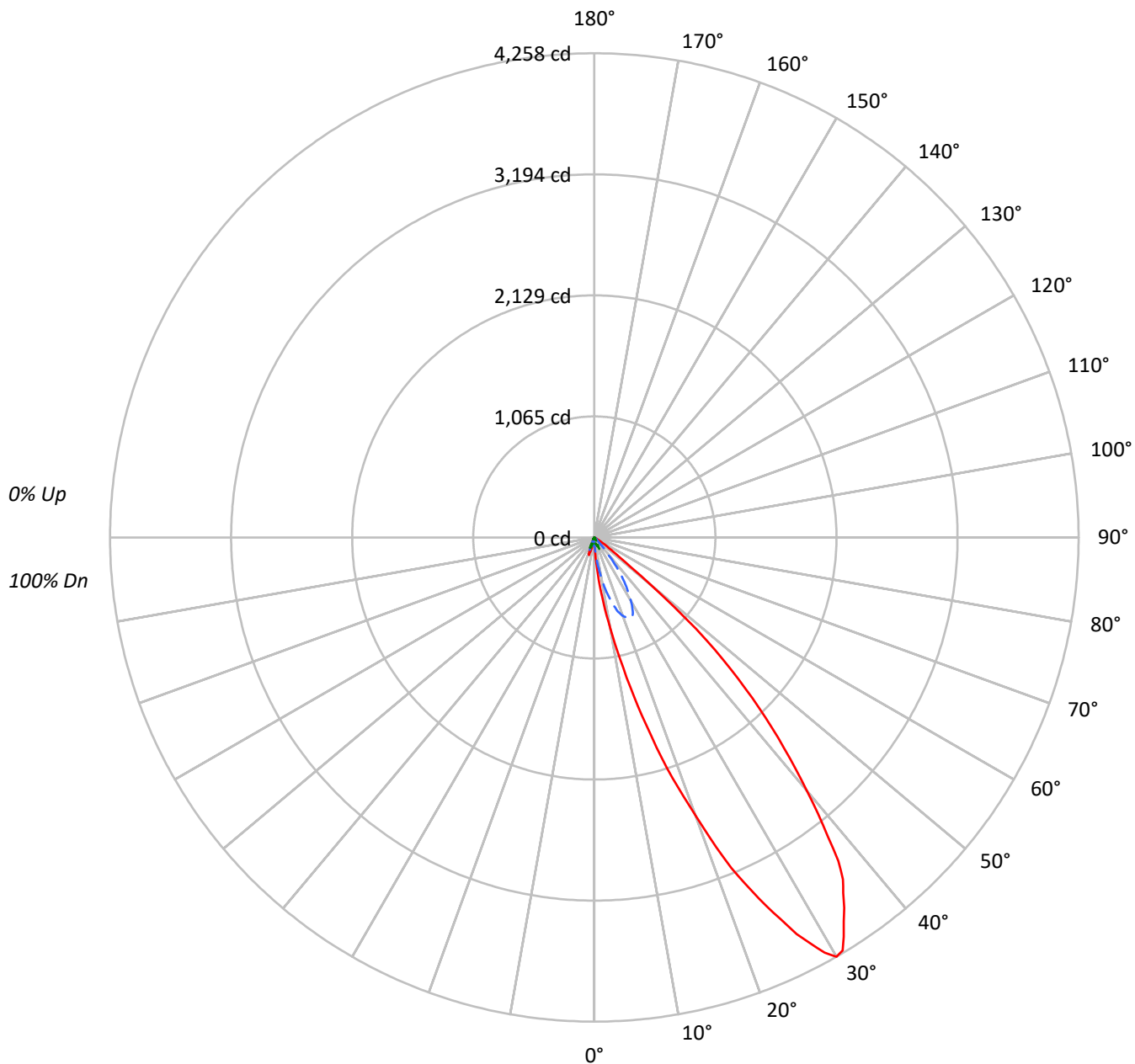
Lumens per Lamp: N/A
Luminaire Lumens: 986.1 lumens
Efficiency: N/A
Efficacy: 79.5 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 12.4
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		95	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	71		79	74	70			77	73	69			75
5	86	76	69	63	84	75	68	63		73	67	62			71	66	62			69
6	80	69	62	57	78	68	61	56		67	61	56			65	60	56			64
7	75	63	56	51	73	63	56	51		61	55	50			60	54	50			59
8	70	58	51	46	68	58	51	46		56	50	46			55	49	45			54
9	65	53	46	41	64	53	46	41		52	46	41			51	45	41			50
10	61	49	42	38	60	49	42	38		48	42	37			47	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8054	8054	8054
5°	35028	7602	4606
10°	101000	6839	5010
15°	206945	7560	14455
20°	341425	14058	14649
25°	486383	8982	4899
30°	606427	3931	1923
35°	574603	1777	843
40°	468010	902	274
45°	327820	488	0
50°	122849	326	0
55°	26193	366	0
60°	5008	271	0
65°	1488	496	0
70°	397	613	0
75°	0	810	0
80°	0	1208	0
85°	0	2406	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.7	1.4
10°-20°	118.1	12.0
20°-30°	301.7	30.6
30°-40°	349.4	35.4
40°-50°	180.3	18.3
50°-60°	18.6	1.9
60°-70°	2.0	0.2
70°-80°	1.3	0.1
80°-90°	1.1	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°	433.5	44.0
0°-40°	782.9	79.4
0°-60°	981.7	99.6
0°-90°	986.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	986.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	65	65	65	65	65	
5°	283	147	61	41	37	44
15°	1621	593	59	79	113	496
25°	3574	775	66	41	36	1660
35°	3816	424	12	7	6	2337
45°	1879	50	3	2	0	1407
55°	122	7	2	1	0	152
65°	5	2	2	1	0	7
75°	0	1	2	2	0	0
85°	0	1	2	2	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°	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
2.5°	112.7	108.8	106.0	107.1	113.2	106.5	107.1	104.8	103.7	102.5	99.7
5°	282.9	271.6	264.3	264.8	248.5	260.9	259.7	250.2	244.1	232.2	225.5
7.5°	530.8	506.6	498.2	495.4	497.0	485.2	480.1	467.7	451.4	429.9	417.5
10°	806.4	791.8	786.7	777.6	777.1	756.2	743.9	728.1	695.3	665.5	643.5
12.5°	1174.9	1129.8	1121.9	1105.0	1100.5	1065.0	1039.1	1015.9	961.3	921.9	886.9
15°	1620.6	1584.0	1592.4	1540.6	1526.5	1468.5	1420.0	1370.4	1281.9	1221.7	1159.6
17.5°	2126.7	2079.9	2085.5	2020.7	1904.1	1914.8	1844.4	1776.1	1651.7	1571.0	1475.3
20°	2601.1	2567.9	2570.2	2483.9	2444.5	2337.5	2243.3	2162.2	1996.5	1893.9	1767.2
22.5°	3147.2	3060.9	3044.6	2927.3	2858.0	2714.4	2583.0	2475.4	2274.8	2159.4	2003.9
25°	3573.8	3514.5	3469.4	3330.9	3234.4	3047.4	2895.2	2735.8	2494.6	2366.8	2181.9
26°	3733.7	3678.0	3619.9	3470.6	3362.4	3164.6	2998.9	2827.6	2569.5	2432.6	2231.5
27°	3914.6	3823.4	3753.5	3586.1	3468.9	3260.9	3064.3	2902.6	2626.5	2474.9	2263.1
28°	4042.5	3951.3	3858.8	3676.8	3550.1	3332.5	3127.9	2951.7	2659.7	2495.1	2275.9
29°	4173.8	4076.9	3942.3	3743.9	3605.9	3377.1	3164.6	2975.9	2669.3	2494.0	2269.2
30°	4257.8	4160.3	3986.2	3781.6	3635.7	3395.1	3174.8	2971.3	2654.1	2471.5	2244.5
31°	4238.1	4148.5	3975.5	3785.6	3632.9	3384.4	3156.2	2939.2	2615.8	2431.5	2199.4
32°	4139.4	4063.4	3932.1	3759.1	3601.9	3347.8	3112.8	2888.5	2560.5	2384.7	2144.7
33°	4025.0	3962.0	3871.3	3705.6	3547.8	3292.5	3053.1	2825.9	2496.9	2321.0	2078.8
34°	3929.3	3872.3	3788.4	3633.5	3474.0	3218.8	2977.5	2747.1	2424.2	2246.1	2000.9
35°	3816.0	3764.2	3686.4	3535.9	3371.5	3119.5	2882.9	2655.8	2338.5	2157.1	1910.9
36°	3717.4	3635.7	3556.8	3410.3	3246.3	2999.6	2771.3	2548.8	2241.5	2055.1	1809.4
37°	3564.7	3482.9	3398.5	3259.9	3098.1	2862.0	2647.4	2434.3	2131.1	1978.4	1701.2
38°	3336.5	3298.8	3214.2	3082.3	2931.9	2710.4	2511.6	2304.2	2006.7	1830.3	1586.2
39°	3123.5	3092.5	3010.3	2889.6	2750.4	2547.6	2361.0	2157.6	1866.3	1699.6	1465.1
40°	2906.6	2875.5	2798.3	2689.7	2564.4	2378.0	2201.0	2001.6	1719.2	1564.8	1343.4
42.5°	2392.6	2360.5	2344.2	2233.1	2100.7	1940.7	1776.8	1596.4	1356.3	1229.6	1055.9
45°	1879.3	1850.0	1788.6	1742.9	1624.5	1491.6	1358.1	1211.0	1034.0	908.9	746.7
47.5°	1343.4	1329.3	1331.6	1247.0	1134.3	1029.6	919.0	786.0	629.5	472.2	346.6
50°	640.2	644.1	659.8	600.7	516.1	454.7	389.4	305.4	223.2	175.3	135.8
51°	414.7	419.2	432.8	390.5	329.1	287.4	245.7	198.3	158.3	134.6	107.6
52°	280.6	280.6	283.4	258.7	228.3	204.6	180.4	152.7	123.4	106.0	85.1
53°	210.8	210.2	211.3	195.0	174.1	156.7	139.7	119.5	97.4	82.8	66.0
54°	161.1	160.6	161.8	149.3	134.6	121.8	108.8	93.5	75.5	62.0	49.5
55°	121.8	121.8	123.4	113.9	102.5	92.5	82.8	69.9	55.8	45.1	36.0
57.5°	49.0	49.0	50.7	47.4	42.3	38.3	34.9	29.8	24.8	20.9	16.9
60°	20.3	20.9	21.4	19.7	18.6	17.5	16.3	14.6	13.0	10.7	9.0
61°	15.2	15.2	15.8	14.6	14.1	13.0	12.4	11.2	10.2	8.4	7.4
62°	11.2	11.2	11.8	11.2	10.7	10.2	9.6	9.0	7.9	6.8	5.6
63°	8.4	8.4	9.0	8.4	8.4	7.9	7.4	6.8	6.2	5.1	4.5
64°	6.8	6.8	6.8	6.2	6.2	6.2	5.6	5.6	4.5	3.9	3.4
65°	5.1	5.1	5.1	5.1	4.5	4.5	4.5	3.9	3.9	2.8	2.8
66°	3.9	3.9	3.9	3.4	3.4	3.4	3.4	3.4	2.8	2.3	1.7



TEST NUMBER: P1191443

CATALOG NUMBER: LDA4A10930D010TE LAR25NF 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	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
85°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5
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°	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
2.5°	100.9	100.2	94.6	94.6	96.9	93.5	91.8	87.9	75.5	64.2	54.1
5°	223.2	216.9	197.8	192.2	191.6	175.8	166.7	147.1	86.2	61.4	46.7
7.5°	411.9	393.3	360.6	343.1	321.7	309.4	287.4	253.6	98.1	57.4	42.3
10°	609.1	588.3	539.8	508.9	492.6	452.4	415.9	369.6	109.9	54.6	41.7
12.5°	835.1	788.3	742.1	686.9	637.9	602.4	541.5	487.5	117.8	54.1	45.6
15°	1079.6	1021.0	942.2	867.8	798.5	747.8	666.0	593.3	120.6	59.2	59.7
17.5°	1353.5	1243.7	1129.8	1028.4	933.1	865.0	763.5	677.9	118.8	72.7	95.3
20°	1609.9	1463.9	1309.5	1168.7	1034.0	945.5	828.3	735.3	119.5	107.1	128.5
22.5°	1813.3	1635.9	1447.6	1275.8	1105.0	999.1	871.1	765.8	134.1	114.4	87.4
25°	1963.2	1754.2	1538.3	1340.6	1160.8	1041.9	901.6	774.8	125.1	66.0	49.5
26°	2003.2	1782.9	1555.2	1350.2	1167.5	1041.9	897.1	765.3	108.1	52.4	41.1
27°	2025.8	1795.9	1558.1	1345.6	1159.1	1030.1	880.8	746.0	88.5	43.9	34.9
28°	2028.6	1790.3	1544.0	1327.0	1135.4	1004.7	851.5	716.7	73.2	37.2	28.8
29°	2013.4	1769.4	1516.9	1296.0	1099.4	967.5	811.4	680.7	62.5	32.1	24.2
30°	1981.3	1732.8	1475.8	1254.4	1052.6	922.4	764.6	640.7	54.6	27.6	20.3
31°	1935.1	1682.6	1431.3	1204.7	1003.6	877.4	720.7	600.2	48.4	23.1	16.9
32°	1875.3	1623.4	1373.9	1151.2	959.6	834.6	678.4	559.0	43.4	19.7	14.1
33°	1808.9	1556.4	1311.3	1095.4	917.4	790.6	633.9	515.6	38.8	16.3	11.8
34°	1732.2	1482.5	1244.8	1039.6	872.3	742.1	586.1	471.0	33.8	13.5	10.2
35°	1644.9	1400.4	1173.3	988.9	822.2	689.7	535.9	423.8	29.8	11.8	8.4
36°	1550.2	1314.6	1101.0	930.9	768.1	635.1	482.9	375.9	26.0	10.2	7.4
37°	1451.1	1225.6	1028.9	865.0	708.3	577.0	428.2	324.0	22.5	8.4	6.2
38°	1346.2	1136.1	959.1	802.5	645.2	514.5	372.4	267.1	19.7	7.4	5.6
39°	1239.1	1047.5	889.7	733.7	580.4	453.1	318.9	207.4	17.5	6.2	5.1
40°	1134.3	964.1	816.5	658.8	515.6	392.7	267.1	152.7	15.2	5.6	3.9
42.5°	898.2	740.4	586.1	439.6	359.5	249.0	148.1	80.0	10.7	3.9	2.8
45°	587.7	437.8	316.1	214.1	186.0	105.3	68.8	49.5	7.9	2.8	2.3
47.5°	243.4	177.6	123.4	89.0	72.1	56.3	43.9	32.1	5.6	2.3	2.3
50°	107.1	84.6	67.0	52.4	45.6	36.7	28.1	19.7	3.4	1.7	1.7
51°	85.6	68.1	52.4	41.7	37.2	29.8	23.1	15.8	3.4	1.7	1.7
52°	67.6	53.0	41.1	32.1	29.8	24.2	19.1	13.0	2.8	1.7	1.7
53°	51.8	40.0	31.0	25.3	23.7	19.7	15.8	10.7	2.3	1.7	1.7
54°	38.3	30.4	24.2	19.7	19.1	15.8	13.0	9.0	2.3	1.7	1.7
55°	28.1	23.7	18.6	15.8	15.2	13.0	10.7	7.4	2.3	1.7	1.7
57.5°	14.6	12.4	10.2	9.0	9.0	8.4	7.4	4.5	1.7	1.1	1.7
60°	7.9	6.8	5.6	5.1	6.2	5.6	5.1	2.8	1.7	1.1	1.7
61°	6.2	5.6	4.5	3.9	5.1	4.5	4.5	2.3	1.7	1.7	1.7
62°	5.1	4.5	3.9	3.4	4.5	3.9	3.9	2.3	1.7	1.7	1.7
63°	3.9	3.4	2.8	2.8	3.9	3.9	3.4	1.7	1.7	1.7	1.7
64°	2.8	2.8	2.3	2.3	3.4	3.4	2.8	1.7	1.7	1.7	1.7
65°	2.3	2.3	1.7	1.7	2.8	2.8	2.8	1.7	1.7	1.7	1.7
66°	1.7	1.7	1.7	1.1	2.3	2.8	2.8	1.1	1.7	1.7	1.7



TEST NUMBER: P1191443

CATALOG NUMBER: LDA4A10930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	0.5	0.5	0.5	0.5	1.7	2.3	2.3	1.1	1.7	1.7	1.7
75°	0.5	0.5	0.5	0.5	1.7	2.3	2.3	1.1	1.7	1.7	1.7
77.5°	0.5	0.5	0.5	0.5	1.7	2.3	2.3	1.1	1.7	1.7	2.3
80°	0.5	0.5	0.5	0.5	1.7	2.3	2.3	1.1	1.7	1.7	2.3
82.5°	0.5	0.5	0.5	0.5	1.7	2.3	2.3	1.1	1.7	1.7	2.3
85°	0.5	0.5	0.5	0.5	1.7	2.3	2.3	1.1	1.7	1.7	2.3
87.5°	0.5	0.5	0.5	0.5	1.7	2.3	2.3	1.1	1.7	1.7	2.3
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°	65.3	65.3	65.3
2.5°	49.0	46.2	45.6
5°	40.6	37.7	37.2
7.5°	37.2	34.9	34.4
10°	38.3	38.8	40.0
12.5°	49.0	54.1	58.6
15°	78.8	99.2	113.2
17.5°	137.4	152.1	161.8
20°	120.6	111.1	111.6
22.5°	67.6	60.9	60.2
25°	41.1	37.2	36.0
26°	34.4	31.0	29.8
27°	28.1	25.3	24.2
28°	23.1	20.9	20.3
29°	19.7	16.9	16.3
30°	16.3	14.1	13.5
31°	13.5	11.8	11.2
32°	11.8	10.2	9.0
33°	9.6	8.4	7.9
34°	8.4	6.8	6.2
35°	6.8	5.6	5.6
36°	6.2	5.1	4.5
37°	5.1	3.9	3.9
38°	4.5	3.4	2.8
39°	3.9	2.8	2.3
40°	3.4	2.3	1.7
42.5°	2.3	1.1	0.5
45°	1.7	0.5	0.0
47.5°	1.1	0.5	0.0
50°	1.1	0.0	0.0
51°	1.1	0.0	0.0
52°	1.1	0.0	0.0
53°	1.1	0.0	0.0
54°	1.1	0.0	0.0
55°	1.1	0.0	0.0
57.5°	1.1	0.0	0.0
60°	1.1	0.0	0.0
61°	1.1	0.0	0.0
62°	1.1	0.0	0.0
63°	1.1	0.5	0.0
64°	1.1	0.5	0.0
65°	1.1	0.5	0.0
66°	1.1	0.5	0.0



TEST NUMBER: P1191443

CATALOG NUMBER: LDA4A10930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.7	0.5	0.0
75°	1.7	0.5	0.0
77.5°	1.7	0.5	0.0
80°	1.7	0.5	0.0
82.5°	1.7	0.5	0.0
85°	1.7	0.5	0.0
87.5°	1.1	0.5	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°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.7	1.1
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5

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67.5°	1.1	1.1	1.1	1.1	2.3	2.3	2.3	1.1	1.7	1.7	1.7
70°	0.5	0.5	0.5	1.1	1.7	2.3	2.3	1.1	1.7	1.7	1.7

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67.5°	1.1	0.5	0.0
70°	1.1	0.5	0.0

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(END OF REPORT)