

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: P1191887

Luminaire Tested: **LDA4A35930D010TE 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: P1191887
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: LDA4A35930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

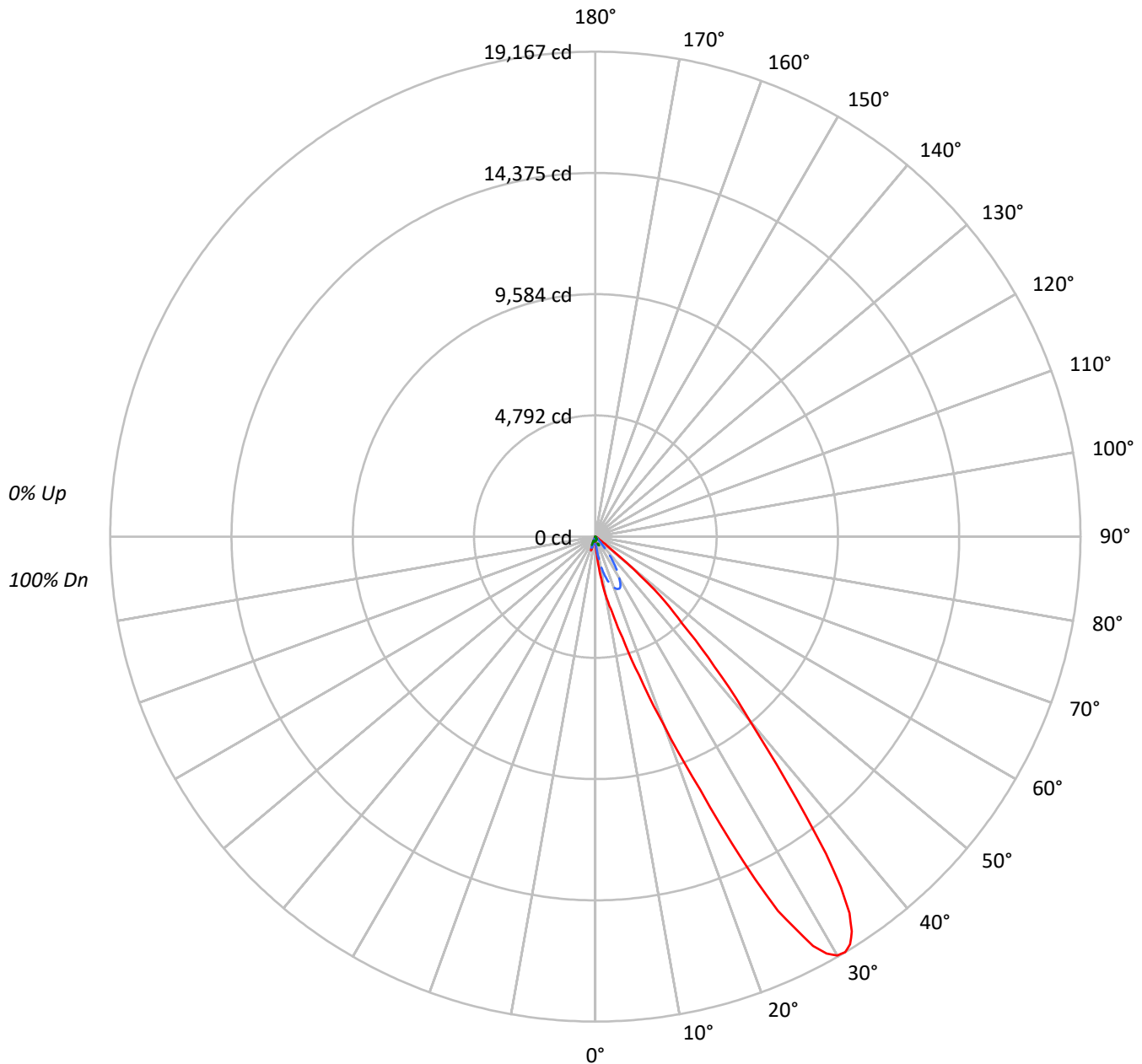
Lumens per Lamp: N/A
Luminaire Lumens: 3092.1 lumens
Efficiency: N/A
Efficacy: 65.6 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 47.1
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

TEST NUMBER: P1191887

CATALOG NUMBER: LDA4A35930D010TE LAR15SP 4LA1 30° Tilt

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	22252	22252	22252
5°	99809	20913	13546
10°	295398	19238	17309
15°	527362	22781	48767
20°	1044620	44839	52400
25°	2032729	29247	14889
30°	2722825	10924	5199
35°	2547781	4623	2018
40°	1526756	2158	612
45°	847241	1343	0
50°	310807	1094	0
55°	47439	817	0
60°	10410	937	0
65°	3356	1109	0
70°	721	1370	0
75°	0	2716	0
80°	0	4049	0
85°	0	8067	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.6	1.3
10°-20°	334.0	10.8
20°-30°	997.0	32.2
30°-40°	1180.8	38.2
40°-50°	489.8	15.8
50°-60°	38.1	1.2
60°-70°	5.2	0.2
70°-80°	4.0	0.1
80°-90°	3.7	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°	1370.6	44.3
0°-40°	2551.4	82.5
0°-60°	3079.3	99.6
0°-90°	3092.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3092.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	180	180	180	180	180	
5°	806	407	169	117	109	128
15°	4130	1744	178	267	382	1363
25°	14936	2266	215	125	109	6822
35°	16920	1263	31	17	13	9805
45°	4857	111	8	6	0	3960
55°	221	15	4	2	0	323
65°	12	4	4	4	0	14
75°	0	4	6	4	0	0
85°	0	4	6	4	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°	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4
2.5°	312.8	297.5	305.2	291.7	299.4	285.9	276.4	285.9	285.9	278.3	266.7
5°	806.1	802.1	817.5	781.0	790.7	750.3	715.8	725.4	717.8	692.7	648.6
7.5°	1535.3	1519.9	1537.1	1485.4	1487.2	1420.1	1368.3	1379.8	1345.2	1303.1	1226.2
10°	2358.5	2337.4	2356.6	2295.2	2283.6	2189.6	2116.6	2128.3	2049.6	1980.4	1863.3
12.5°	3072.3	3070.4	3009.1	3020.5	2997.6	2853.5	2807.6	2811.3	2703.9	2627.2	2487.1
15°	4129.8	4170.0	4181.6	4102.9	3960.8	3699.8	3584.7	3540.6	3366.1	3237.4	3035.9
17.5°	5755.2	5810.8	5620.9	5666.8	5432.8	5024.0	4795.7	4659.5	4331.2	4089.5	3724.9
20°	7958.3	7910.2	7635.8	7601.3	7202.1	6676.3	6196.5	5939.5	5434.6	5081.6	4550.1
22.5°	10802.2	10765.7	10295.6	10086.4	9251.7	8510.9	7889.1	7244.3	6494.0	6021.9	5300.4
25°	14935.9	14768.9	13863.1	13268.2	11800.1	10541.2	9505.0	8503.2	7353.7	6841.4	5924.1
26°	16457.6	16417.4	15473.1	14690.3	12920.8	11358.7	9961.8	8958.0	7691.4	7092.7	6100.5
27°	17371.1	17691.6	16812.6	15926.1	13991.6	12120.6	10501.0	9324.6	7954.4	7269.3	6213.9
28°	18319.1	18526.3	17739.5	16626.5	14849.5	12727.0	10909.6	9572.1	8115.6	7355.7	6252.1
29°	18841.1	19040.6	18309.5	17265.6	15411.8	13120.5	11151.5	9681.5	8175.1	7353.7	6217.6
30°	19117.3	19303.6	18589.6	17576.5	15644.0	13243.3	11203.3	9637.3	8117.6	7265.4	6119.8
31°	19167.4	19322.7	18618.4	17566.9	15555.7	13091.7	11057.5	9455.1	7964.0	7102.4	5972.0
32°	18998.4	19119.3	18403.5	17282.8	15158.5	12707.9	10754.3	9173.0	7729.8	6898.9	5782.0
33°	18603.2	18820.0	17946.8	16709.0	14467.5	12139.8	10324.3	8804.6	7438.1	6634.2	5549.9
34°	17948.7	18086.9	17183.0	15811.0	13546.5	11449.0	9796.6	8376.6	7104.3	6321.3	5286.9
35°	16920.1	17042.9	16043.2	14598.0	12496.8	10669.9	9194.1	7904.5	6730.0	5970.0	4995.2
36°	15496.2	15613.3	14567.4	13251.0	11437.4	9858.1	8558.8	7390.2	6325.1	5593.9	4686.3
37°	13832.4	13934.1	13003.4	11928.8	10397.3	9036.7	7916.0	6868.2	5897.3	5210.2	4392.7
38°	12224.3	12316.4	11564.1	10689.0	9393.7	8234.5	7275.1	6327.0	5455.9	4824.5	4083.7
39°	10773.4	10854.0	10247.6	9526.1	8438.0	7465.1	6636.0	5789.7	5012.5	4438.7	3765.1
40°	9482.0	9551.0	9052.0	8459.1	7570.6	6745.4	6014.2	5269.6	4578.8	4064.5	3467.6
42.5°	6960.4	6975.6	6678.3	6329.0	5638.1	5164.1	4644.1	4106.7	3602.0	3249.0	2868.9
45°	4857.0	5047.0	4853.3	4621.0	4125.9	3828.5	3496.6	3172.1	2880.5	2540.9	2164.7
47.5°	3492.6	3500.3	3385.2	3239.3	2847.8	2644.4	2371.9	1978.5	1688.7	1207.1	896.2
50°	1619.7	1529.5	1535.3	1435.5	1280.0	1017.0	850.1	606.4	483.6	345.4	278.3
51°	963.4	896.2	905.8	834.8	731.2	569.9	483.6	387.6	335.9	261.0	214.9
52°	562.2	539.2	537.4	504.7	429.9	395.3	349.3	291.7	255.3	201.5	167.0
53°	408.7	393.5	393.5	372.4	320.5	297.5	264.8	224.5	195.8	153.6	126.6
54°	305.2	293.6	293.6	280.1	259.0	222.6	199.5	167.0	145.9	119.0	94.0
55°	220.6	213.1	213.1	203.4	188.1	161.2	143.9	120.9	107.4	86.3	69.0
57.5°	92.1	88.3	88.3	84.4	80.6	69.0	65.3	55.6	47.9	42.2	34.5
60°	42.2	40.2	42.2	40.2	36.5	38.4	32.5	28.8	26.8	23.1	19.1
61°	32.5	30.7	30.7	30.7	26.8	26.8	25.0	23.1	21.1	17.3	15.4
62°	25.0	23.1	23.1	23.1	21.1	21.1	19.1	17.3	17.3	13.4	11.5
63°	19.1	17.3	17.3	17.3	15.4	15.4	15.4	13.4	13.4	11.5	9.6
64°	13.4	13.4	13.4	13.4	13.4	11.5	11.5	11.5	9.6	7.7	7.7
65°	11.5	9.6	11.5	9.6	9.6	9.6	9.6	9.6	7.7	5.7	5.7
66°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	5.7	3.8



TEST NUMBER: P1191887

CATALOG NUMBER: LDA4A35930D010TE 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	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
85°	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4
2.5°	261.0	268.7	263.0	247.6	255.3	251.4	243.7	237.9	203.4	176.6	149.6
5°	616.0	621.8	589.2	531.5	512.4	481.6	437.5	406.9	230.3	168.9	132.5
7.5°	1164.9	1126.4	1095.7	988.3	942.3	871.3	786.8	727.2	263.0	159.3	122.8
10°	1763.6	1702.2	1638.8	1481.5	1399.0	1289.6	1168.6	1099.6	297.5	153.6	122.8
12.5°	2356.6	2274.1	2158.8	1986.1	1869.2	1721.4	1556.4	1433.6	322.3	157.3	142.0
15°	2870.9	2771.1	2644.4	2448.6	2312.4	2128.3	1913.2	1744.4	333.9	178.4	197.7
17.5°	3431.3	3250.8	3041.6	2792.2	2642.6	2429.5	2187.6	1982.4	333.9	226.5	316.6
20°	4076.0	3746.0	3410.1	3060.9	2849.8	2627.2	2368.2	2147.4	347.3	341.6	435.7
22.5°	4676.6	4221.8	3747.9	3293.1	2999.4	2757.7	2494.7	2241.4	403.0	376.1	289.8
25°	5143.0	4565.4	4007.0	3454.2	3122.2	2853.5	2571.4	2266.4	368.4	214.9	157.3
26°	5263.9	4640.2	4058.8	3473.5	3128.0	2851.7	2563.8	2239.5	308.9	170.7	126.6
27°	5327.2	4665.2	4062.6	3456.2	3105.0	2819.0	2521.6	2183.9	247.6	138.2	103.7
28°	5327.2	4636.4	4022.3	3408.2	3045.5	2757.7	2448.6	2095.6	201.5	113.2	82.6
29°	5273.5	4561.5	3941.7	3335.3	2964.9	2671.4	2348.9	1992.0	170.7	94.0	67.2
30°	5169.9	4452.1	3834.3	3241.3	2861.2	2573.4	2239.5	1884.4	147.8	76.7	53.8
31°	5024.0	4329.3	3701.8	3139.6	2765.4	2483.3	2139.7	1775.2	128.5	61.5	44.2
32°	4849.3	4175.9	3565.6	3033.9	2686.6	2398.7	2036.0	1659.9	111.4	51.8	38.4
33°	4647.9	4003.0	3423.6	2930.4	2609.9	2302.9	1922.9	1535.3	96.0	42.2	32.5
34°	4425.3	3813.2	3277.7	2819.0	2515.8	2181.9	1790.4	1402.8	82.6	36.5	26.8
35°	4183.6	3600.1	3128.0	2705.9	2410.4	2047.6	1648.4	1262.7	71.0	30.7	23.1
36°	3922.6	3400.6	2982.2	2592.5	2279.8	1901.8	1493.1	1118.8	61.5	25.0	21.1
37°	3661.6	3212.5	2838.3	2471.7	2128.3	1736.7	1329.9	969.1	53.8	21.1	17.3
38°	3414.0	3030.2	2696.2	2331.7	1951.6	1554.4	1160.9	819.5	46.1	19.1	15.4
39°	3181.8	2853.5	2550.3	2164.7	1769.3	1377.8	997.9	664.0	40.2	17.3	13.4
40°	2972.6	2686.6	2391.1	1978.5	1581.2	1197.4	832.9	495.2	34.5	13.4	11.5
42.5°	2531.2	2228.0	1838.5	1379.8	1068.9	694.7	387.6	184.3	25.0	9.6	9.6
45°	1671.5	1285.7	873.1	520.0	351.1	211.1	157.3	111.4	19.1	7.7	7.7
47.5°	558.5	355.0	259.0	186.1	159.3	126.6	101.7	69.0	13.4	5.7	5.7
50°	213.1	172.7	142.0	107.4	96.0	76.7	61.5	40.2	9.6	5.7	5.7
51°	167.0	136.2	111.4	84.4	76.7	61.5	49.9	34.5	7.7	5.7	5.7
52°	128.5	105.5	86.3	65.3	61.5	49.9	42.2	28.8	7.7	3.8	5.7
53°	97.8	80.6	65.3	49.9	47.9	40.2	34.5	23.1	5.7	3.8	5.7
54°	72.9	61.5	51.8	40.2	40.2	34.5	28.8	19.1	5.7	3.8	5.7
55°	55.6	46.1	40.2	30.7	32.5	28.8	25.0	15.4	5.7	3.8	5.7
57.5°	28.8	26.8	23.1	19.1	21.1	19.1	17.3	9.6	5.7	3.8	5.7
60°	17.3	15.4	13.4	11.5	13.4	13.4	13.4	5.7	5.7	3.8	5.7
61°	13.4	11.5	9.6	9.6	11.5	11.5	11.5	5.7	5.7	3.8	5.7
62°	9.6	9.6	7.7	7.7	11.5	9.6	9.6	5.7	5.7	3.8	5.7
63°	7.7	7.7	7.7	5.7	9.6	9.6	9.6	5.7	5.7	3.8	5.7
64°	5.7	5.7	5.7	5.7	7.7	9.6	9.6	3.8	5.7	3.8	5.7
65°	5.7	5.7	3.8	3.8	7.7	7.7	7.7	3.8	5.7	3.8	5.7
66°	3.8	3.8	3.8	3.8	7.7	7.7	7.7	3.8	5.7	3.8	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°	2.0	2.0	2.0	2.0	5.7	5.7	7.7	3.8	5.7	5.7	5.7
75°	2.0	2.0	2.0	2.0	5.7	5.7	7.7	3.8	5.7	5.7	5.7
77.5°	2.0	2.0	2.0	2.0	5.7	5.7	7.7	3.8	5.7	5.7	7.7
80°	2.0	2.0	2.0	2.0	5.7	5.7	7.7	3.8	5.7	5.7	7.7
82.5°	2.0	2.0	2.0	2.0	5.7	5.7	7.7	3.8	5.7	5.7	7.7
85°	2.0	2.0	2.0	2.0	5.7	5.7	7.7	3.8	5.7	5.7	7.7
87.5°	2.0	2.0	2.0	2.0	5.7	5.7	7.7	3.8	5.7	5.7	5.7
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°	180.4	180.4	180.4
2.5°	136.2	130.5	126.6
5°	117.1	111.4	109.4
7.5°	109.4	107.4	109.4
10°	120.9	128.5	138.2
12.5°	161.2	190.0	205.4
15°	266.7	347.3	381.9
17.5°	470.2	535.4	573.8
20°	414.6	378.1	399.2
22.5°	224.5	195.8	201.5
25°	124.8	107.4	109.4
26°	99.8	86.3	86.3
27°	80.6	69.0	69.0
28°	65.3	55.6	55.6
29°	51.8	44.2	44.2
30°	42.2	36.5	36.5
31°	34.5	28.8	28.8
32°	28.8	25.0	23.1
33°	25.0	21.1	19.1
34°	21.1	17.3	15.4
35°	17.3	13.4	13.4
36°	15.4	11.5	11.5
37°	13.4	9.6	9.6
38°	11.5	7.7	7.7
39°	9.6	7.7	5.7
40°	7.7	5.7	3.8
42.5°	5.7	3.8	2.0
45°	5.7	2.0	0.0
47.5°	3.8	2.0	0.0
50°	3.8	0.0	0.0
51°	3.8	0.0	0.0
52°	3.8	0.0	0.0
53°	2.0	0.0	0.0
54°	3.8	0.0	0.0
55°	2.0	0.0	0.0
57.5°	3.8	0.0	0.0
60°	3.8	0.0	0.0
61°	3.8	0.0	0.0
62°	3.8	0.0	0.0
63°	3.8	0.0	0.0
64°	3.8	2.0	0.0
65°	3.8	2.0	0.0
66°	3.8	2.0	0.0



TEST NUMBER: P1191887

CATALOG NUMBER: LDA4A35930D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	3.8	2.0	0.0
75°	3.8	2.0	0.0
77.5°	3.8	2.0	0.0
80°	3.8	2.0	0.0
82.5°	3.8	2.0	0.0
85°	3.8	2.0	0.0
87.5°	3.8	2.0	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°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	3.8	3.8
70°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.8	3.8	2.0	2.0

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67.5°	3.8	2.0	3.8	3.8	5.7	7.7	7.7	3.8	5.7	3.8	5.7
70°	2.0	2.0	2.0	2.0	5.7	5.7	7.7	3.8	5.7	3.8	5.7

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67.5°	3.8	2.0	0.0
70°	3.8	2.0	0.0

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(END OF REPORT)