

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: P1212816

Luminaire Tested: **LDA4A35950D010TE LAR15SP 4LA1 30° Tilt**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: P1212816
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: LDA4A35950D010TE 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

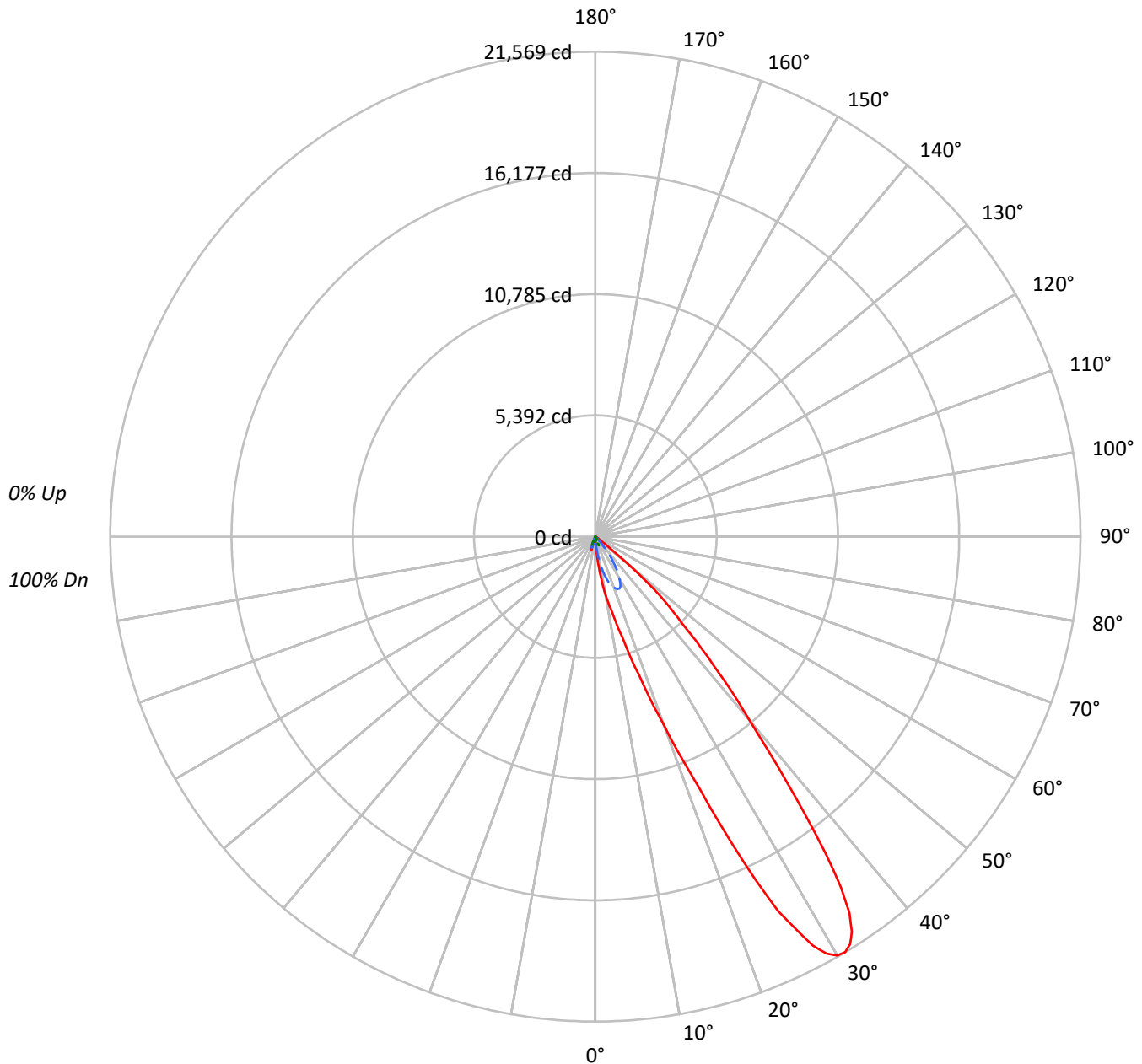
Lumens per Lamp: N/A
Luminaire Lumens: 3479.5 lumens
Efficiency: N/A
Efficacy: 73.9 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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

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CATALOG NUMBER: LDA4A35950D010TE LAR15SP 4LA1 30° Tilt

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



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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
RCR																					
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102
1	112	109	106	104		110	107	104	102		103	101	99		99	98	96		96	94	93
2	106	100	95	91		103	98	94	90		95	91	88		92	89	86		89	86	84
3	99	91	85	80		97	90	84	80		87	82	78		84	80	77		82	79	76
4	92	83	77	71		90	82	76	71		80	74	70		78	73	69		76	72	68
5	86	76	69	64		84	75	68	63		73	67	63		71	66	62		70	65	62
6	80	69	62	57		79	69	62	57		67	61	56		65	60	56		64	59	56
7	75	64	56	51		73	63	56	51		62	55	51		60	55	50		59	54	50
8	70	58	51	46		69	58	51	46		57	50	46		55	50	46		54	49	45
9	65	54	47	42		64	53	46	42		52	46	41		51	45	41		50	45	41
10	61	49	42	38		60	49	42	38		48	42	38		47	41	37		46	41	37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	25027	25027	25027
5°	112302	23538	15229
10°	332409	21630	19476
15°	593420	25629	54871
20°	1175475	50470	58963
25°	2287380	32908	16740
30°	3063952	12291	5854
35°	2866960	5195	2274
40°	1718012	2431	708
45°	953386	1500	0
50°	349723	1228	0
55°	53418	946	0
60°	11718	1085	0
65°	3794	1284	0
70°	793	1587	0
75°	0	3050	0
80°	0	4546	0
85°	0	9057	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.6	1.3
10°-20°	375.8	10.8
20°-30°	1121.9	32.2
30°-40°	1328.7	38.2
40°-50°	551.2	15.8
50°-60°	42.8	1.2
60°-70°	5.9	0.2
70°-80°	4.5	0.1
80°-90°	4.1	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°	1542.3	44.3
0°-40°	2871.0	82.5
0°-60°	3465.0	99.6
0°-90°	3479.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3479.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	203	203	203	203	203	
5°	907	458	190	132	123	144
15°	4647	1963	201	300	430	1534
25°	16807	2550	242	140	123	7677
35°	19040	1421	34	19	15	11034
45°	5466	125	9	6	0	4456
55°	248	17	4	2	0	364
65°	13	4	4	4	0	16
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°	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9
2.5°	352.0	334.8	343.4	328.2	336.8	321.8	311.0	321.8	321.8	313.1	300.1
5°	907.0	902.7	920.0	878.9	889.7	844.4	805.6	816.2	807.6	779.6	729.9
7.5°	1727.5	1710.3	1729.7	1671.5	1673.7	1598.0	1539.6	1552.6	1513.8	1466.3	1380.0
10°	2654.0	2630.3	2651.7	2582.6	2569.7	2464.0	2381.8	2394.9	2306.3	2228.6	2096.7
12.5°	3457.3	3455.1	3385.9	3399.0	3373.1	3211.1	3159.2	3163.6	3042.6	2956.2	2798.5
15°	4647.1	4692.4	4705.4	4616.9	4457.1	4163.4	4033.8	3984.1	3787.7	3643.0	3416.2
17.5°	6476.2	6538.8	6325.0	6376.9	6113.4	5653.4	5396.4	5243.2	4873.9	4601.8	4191.5
20°	8955.2	8901.2	8592.4	8553.6	8104.4	7512.8	6972.9	6683.4	6115.6	5718.1	5120.1
22.5°	12155.5	12114.4	11585.4	11350.1	10410.7	9577.2	8877.5	8151.8	7307.7	6776.3	5964.4
25°	16807.0	16619.1	15599.8	14930.4	13278.4	11861.8	10695.8	9568.5	8274.9	7698.5	6666.2
26°	18519.4	18474.0	17411.7	16530.6	14539.5	12781.8	11209.6	10080.3	8655.1	7981.4	6864.8
27°	19547.3	19907.9	18918.8	17921.3	15744.5	13639.0	11816.5	10492.7	8950.9	8179.9	6992.3
28°	20614.0	20847.3	19962.0	18709.4	16709.8	14321.4	12276.5	10771.3	9132.3	8277.2	7035.4
29°	21201.4	21426.1	20603.2	19428.4	17342.5	14764.2	12548.5	10894.3	9199.2	8274.9	6996.5
30°	21512.4	21721.8	20918.6	19778.3	17603.8	14902.4	12606.9	10844.7	9134.3	8175.8	6886.5
31°	21568.6	21743.4	20950.9	19767.5	17504.4	14731.7	12442.8	10639.5	8961.7	7992.0	6720.3
32°	21378.4	21514.6	20709.1	19447.9	17057.5	14299.8	12101.5	10322.2	8698.2	7763.2	6506.4
33°	20933.6	21177.6	20195.1	18802.3	16280.1	13660.6	11617.7	9907.5	8370.0	7465.1	6245.1
34°	20197.2	20352.8	19335.7	17791.7	15243.6	12883.3	11024.0	9426.0	7994.3	7113.1	5949.3
35°	19039.8	19178.0	18052.9	16426.9	14062.4	12006.5	10345.8	8894.7	7573.1	6718.0	5621.0
36°	17437.5	17569.3	16392.3	14911.0	12870.3	11093.1	9631.1	8315.9	7117.6	6294.7	5273.4
37°	15565.3	15679.7	14632.3	13423.1	11699.9	10168.9	8907.7	7728.6	6635.9	5863.0	4943.0
38°	13755.7	13859.4	13012.8	12028.1	10570.5	9266.2	8186.6	7119.7	6139.2	5428.8	4595.2
39°	12123.1	12213.8	11531.4	10719.5	9495.1	8400.3	7467.3	6515.1	5640.4	4994.7	4236.9
40°	10669.8	10747.5	10186.2	9518.8	8519.0	7590.5	6767.7	5929.9	5152.4	4573.8	3902.1
42.5°	7832.3	7849.6	7514.8	7121.9	6344.4	5811.1	5225.9	4621.2	4053.3	3656.0	3228.3
45°	5465.5	5679.2	5461.2	5199.9	4642.8	4308.1	3934.5	3569.5	3241.4	2859.1	2435.9
47.5°	3930.2	3938.9	3809.3	3645.2	3204.7	2975.6	2669.2	2226.4	1900.3	1358.3	1008.5
50°	1822.5	1721.1	1727.5	1615.3	1440.3	1144.5	956.6	682.3	544.1	388.6	313.1
51°	1084.1	1008.5	1019.3	939.4	822.7	641.3	544.1	436.2	377.8	293.7	241.8
52°	632.7	606.8	604.7	567.9	483.6	444.8	393.0	328.2	287.2	226.8	187.9
53°	460.0	442.7	442.7	418.9	360.6	334.8	298.0	252.6	220.2	172.7	142.5
54°	343.4	330.4	330.4	315.3	291.5	250.4	224.5	187.9	164.1	133.8	105.8
55°	248.4	239.6	239.6	229.0	211.5	181.4	161.9	136.0	121.0	97.1	77.7
57.5°	103.6	99.3	99.3	95.0	90.8	77.7	73.3	62.7	53.9	47.5	38.9
60°	47.5	45.3	47.5	45.3	41.1	43.3	36.7	32.4	30.3	25.9	21.6
61°	36.7	34.5	34.5	34.5	30.3	30.3	28.1	25.9	23.8	19.4	17.3
62°	28.1	25.9	25.9	25.9	23.8	23.8	21.6	19.4	19.4	15.1	13.0
63°	21.6	19.4	19.4	19.4	17.3	17.3	17.3	15.1	15.1	13.0	10.8
64°	15.1	15.1	15.1	15.1	15.1	13.0	13.0	13.0	10.8	8.6	8.6
65°	13.0	10.8	13.0	10.8	10.8	10.8	10.8	10.8	8.6	6.4	6.4
66°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	6.4	4.4



TEST NUMBER: P1212816

CATALOG NUMBER: LDA4A35950D010TE 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	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2
80°	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2
85°	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2
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°	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9
2.5°	293.7	302.3	295.9	278.5	287.2	282.9	274.2	267.8	229.0	198.7	168.5
5°	693.2	699.6	662.9	598.2	576.6	541.9	492.4	457.8	259.1	190.1	149.0
7.5°	1310.8	1267.6	1233.1	1112.1	1060.2	980.4	885.4	818.4	295.9	179.3	138.2
10°	1984.5	1915.5	1844.1	1667.0	1574.2	1451.1	1315.1	1237.3	334.8	172.7	138.2
12.5°	2651.7	2558.9	2429.3	2235.0	2103.4	1937.1	1751.4	1613.1	362.9	177.1	159.8
15°	3230.6	3118.3	2975.6	2755.5	2602.1	2394.9	2152.9	1962.9	375.9	200.7	222.4
17.5°	3861.1	3658.0	3422.6	3141.9	2973.5	2733.8	2461.8	2230.8	375.9	254.8	356.4
20°	4586.6	4215.2	3837.3	3444.3	3206.8	2956.2	2664.8	2416.5	390.8	384.5	490.3
22.5°	5262.6	4750.7	4217.4	3705.5	3375.1	3103.0	2807.2	2522.3	453.5	423.3	326.1
25°	5787.3	5137.3	4508.9	3887.0	3513.4	3211.1	2893.7	2550.3	414.6	241.8	177.1
26°	5923.3	5221.5	4567.2	3908.6	3519.8	3208.9	2885.1	2520.1	347.6	192.2	142.5
27°	5994.6	5249.5	4571.5	3889.2	3494.0	3172.2	2837.4	2457.4	278.5	155.5	116.6
28°	5994.6	5217.3	4526.1	3835.1	3427.0	3103.0	2755.5	2358.0	226.8	127.4	92.8
29°	5934.1	5132.9	4435.5	3753.2	3336.3	3005.9	2643.2	2241.4	192.2	105.8	75.5
30°	5817.6	5009.9	4314.5	3647.3	3219.7	2895.8	2520.1	2120.6	166.3	86.3	60.5
31°	5653.4	4871.7	4165.5	3532.8	3111.7	2794.4	2407.7	1997.4	144.7	69.2	49.7
32°	5456.9	4699.0	4012.2	3414.0	3023.2	2699.4	2291.1	1867.9	125.2	58.3	43.3
33°	5230.2	4504.7	3852.4	3297.4	2936.9	2591.4	2163.7	1727.5	108.0	47.5	36.7
34°	4979.7	4290.9	3688.3	3172.2	2831.0	2455.3	2014.8	1578.5	92.8	41.1	30.3
35°	4707.6	4051.1	3519.8	3044.8	2712.2	2304.1	1854.9	1420.8	80.0	34.5	25.9
36°	4413.9	3826.5	3355.8	2917.4	2565.4	2140.0	1680.0	1258.9	69.2	28.1	23.8
37°	4120.2	3614.9	3193.8	2781.4	2394.9	1954.4	1496.6	1090.4	60.5	23.8	19.4
38°	3841.8	3409.7	3034.0	2623.7	2196.2	1749.2	1306.4	922.2	51.9	21.6	17.3
39°	3580.3	3211.1	2869.9	2435.9	1991.0	1550.4	1122.9	747.1	45.3	19.4	15.1
40°	3345.0	3023.2	2690.6	2226.4	1779.4	1347.5	937.2	557.1	38.9	15.1	13.0
42.5°	2848.2	2507.1	2068.8	1552.6	1202.9	781.8	436.2	207.4	28.1	10.8	10.8
45°	1880.8	1446.8	982.5	585.2	395.3	237.6	177.1	125.2	21.6	8.6	8.6
47.5°	628.5	399.5	291.5	209.6	179.3	142.5	114.4	77.7	15.1	6.4	6.4
50°	239.6	194.4	159.8	121.0	108.0	86.3	69.2	45.3	10.8	6.4	6.4
51°	187.9	153.3	125.2	95.0	86.3	69.2	56.1	38.9	8.6	6.4	6.4
52°	144.7	118.8	97.1	73.3	69.2	56.1	47.5	32.4	8.6	4.4	6.4
53°	110.1	90.8	73.3	56.1	53.9	45.3	38.9	25.9	6.4	4.4	6.4
54°	82.2	69.2	58.3	45.3	45.3	38.9	32.4	21.6	6.4	4.4	6.4
55°	62.7	51.9	45.3	34.5	36.7	32.4	28.1	17.3	6.4	4.4	6.4
57.5°	32.4	30.3	25.9	21.6	23.8	21.6	19.4	10.8	6.4	4.4	6.4
60°	19.4	17.3	15.1	13.0	15.1	15.1	15.1	6.4	6.4	4.4	6.4
61°	15.1	13.0	10.8	10.8	13.0	13.0	13.0	6.4	6.4	4.4	6.4
62°	10.8	10.8	8.6	8.6	13.0	10.8	10.8	6.4	6.4	4.4	6.4
63°	8.6	8.6	8.6	6.4	10.8	10.8	10.8	6.4	6.4	4.4	6.4
64°	6.4	6.4	6.4	6.4	8.6	10.8	10.8	4.4	6.4	4.4	6.4
65°	6.4	6.4	4.4	4.4	8.6	8.6	8.6	4.4	6.4	4.4	6.4
66°	4.4	4.4	4.4	4.4	8.6	8.6	8.6	4.4	6.4	4.4	6.4



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CATALOG NUMBER: LDA4A35950D010TE LAR15SP 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°	2.2	2.2	2.2	2.2	6.4	6.4	8.6	4.4	6.4	6.4	6.4
75°	2.2	2.2	2.2	2.2	6.4	6.4	8.6	4.4	6.4	6.4	6.4
77.5°	2.2	2.2	2.2	2.2	6.4	6.4	8.6	4.4	6.4	6.4	8.6
80°	2.2	2.2	2.2	2.2	6.4	6.4	8.6	4.4	6.4	6.4	8.6
82.5°	2.2	2.2	2.2	2.2	6.4	6.4	8.6	4.4	6.4	6.4	8.6
85°	2.2	2.2	2.2	2.2	6.4	6.4	8.6	4.4	6.4	6.4	8.6
87.5°	2.2	2.2	2.2	2.2	6.4	6.4	8.6	4.4	6.4	6.4	6.4
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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CATALOG NUMBER: LDA4A35950D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	202.9	202.9	202.9
2.5°	153.3	146.8	142.5
5°	131.8	125.2	123.0
7.5°	123.0	121.0	123.0
10°	136.0	144.7	155.5
12.5°	181.4	213.7	231.0
15°	300.1	390.8	429.7
17.5°	529.0	602.5	645.7
20°	466.4	425.4	449.2
22.5°	252.6	220.2	226.8
25°	140.4	121.0	123.0
26°	112.2	97.1	97.1
27°	90.8	77.7	77.7
28°	73.3	62.7	62.7
29°	58.3	49.7	49.7
30°	47.5	41.1	41.1
31°	38.9	32.4	32.4
32°	32.4	28.1	25.9
33°	28.1	23.8	21.6
34°	23.8	19.4	17.3
35°	19.4	15.1	15.1
36°	17.3	13.0	13.0
37°	15.1	10.8	10.8
38°	13.0	8.6	8.6
39°	10.8	8.6	6.4
40°	8.6	6.4	4.4
42.5°	6.4	4.4	2.2
45°	6.4	2.2	0.0
47.5°	4.4	2.2	0.0
50°	4.4	0.0	0.0
51°	4.4	0.0	0.0
52°	4.4	0.0	0.0
53°	2.2	0.0	0.0
54°	4.4	0.0	0.0
55°	2.2	0.0	0.0
57.5°	4.4	0.0	0.0
60°	4.4	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	2.2	0.0
65°	4.4	2.2	0.0
66°	4.4	2.2	0.0



TEST NUMBER: P1212816

CATALOG NUMBER: LDA4A35950D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	4.4	2.2	0.0
75°	4.4	2.2	0.0
77.5°	4.4	2.2	0.0
80°	4.4	2.2	0.0
82.5°	4.4	2.2	0.0
85°	4.4	2.2	0.0
87.5°	4.4	2.2	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°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	4.4	4.4
70°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	4.4	4.4	2.2	2.2

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67.5°	4.4	2.2	4.4	4.4	6.4	8.6	8.6	4.4	6.4	4.4	6.4
70°	2.2	2.2	2.2	2.2	6.4	6.4	8.6	4.4	6.4	4.4	6.4

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67.5°	4.4	2.2	0.0
70°	4.4	2.2	0.0

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(END OF REPORT)