

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: P1212768

Luminaire Tested: **LDA4A20950D010TE 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: P1212768
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: LDA4A20950D010TE 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 / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

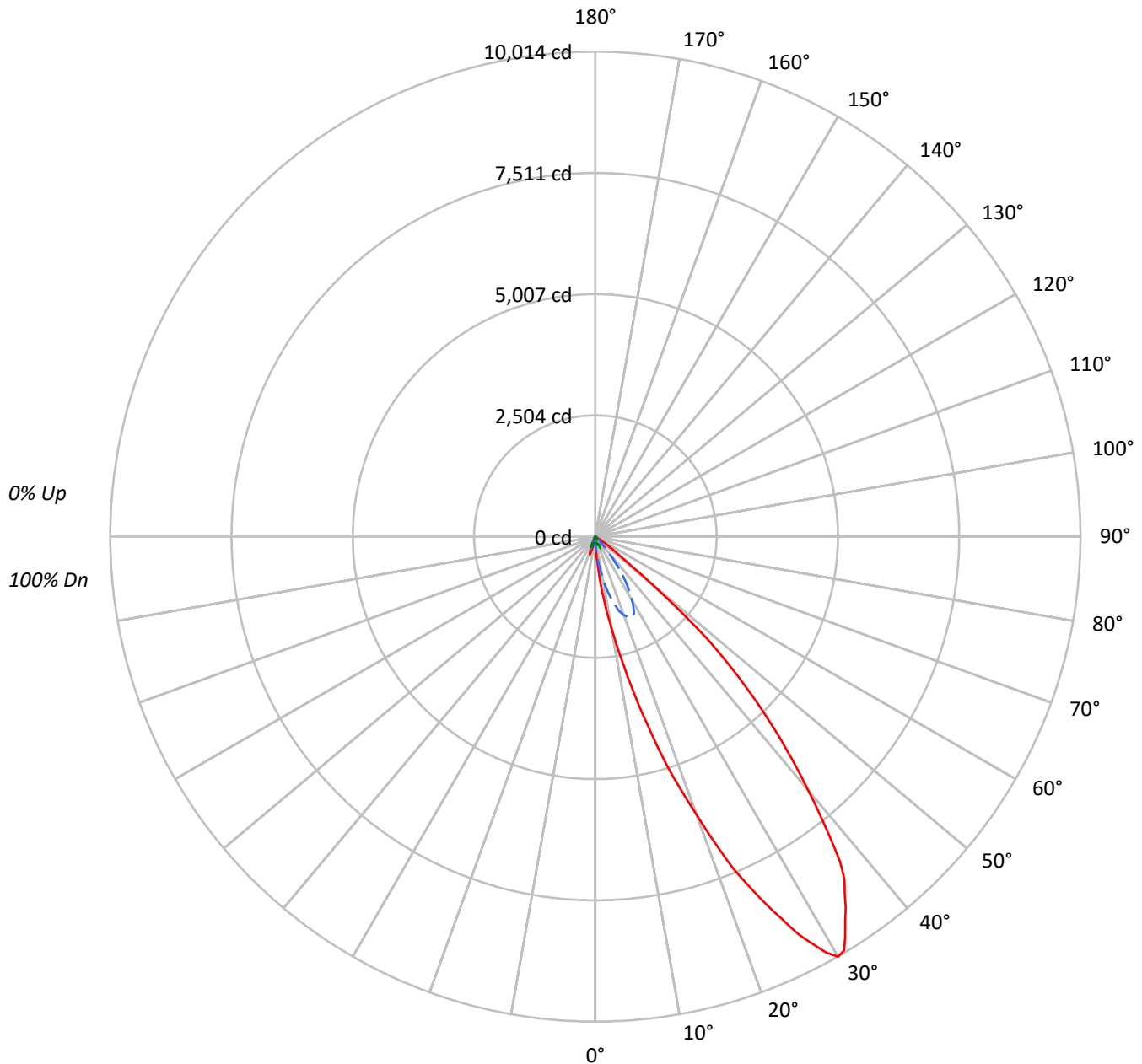
Lumens per Lamp: N/A
Luminaire Lumens: 2319.6 lumens
Efficiency: N/A
Efficacy: 80.5 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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
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	97	96		96	94	93
2	105	100	95	91		103	98	93	90		95	91	88		91	88	86		89	86	84
3	99	91	85	80		96	89	84	79		87	82	78		84	80	77		82	78	76
4	92	83	76	71		90	82	75	71		79	74	70		77	73	69		75	71	68
5	86	76	69	63		84	75	68	63		73	67	62		71	66	62		69	65	61
6	80	69	62	57		78	68	61	56		67	61	56		65	60	56		64	59	55
7	75	63	56	51		73	63	56	51		61	55	50		60	54	50		59	54	50
8	70	58	51	46		68	57	51	46		56	50	46		55	49	45		54	49	45
9	65	53	46	41		64	53	46	41		52	46	41		51	45	41		50	45	41
10	61	49	42	38		60	49	42	37		48	42	37		47	41	37		46	41	37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	18958	18958	18958
5°	82375	17892	10834
10°	237534	16107	11786
15°	486755	17775	34006
20°	803046	33052	34456
25°	1143948	21109	11541
30°	1426338	9244	4529
35°	1351491	4201	1988
40°	1100740	2125	644
45°	771012	1169	0
50°	288912	768	0
55°	61568	860	0
60°	11767	666	0
65°	3473	1167	0
70°	974	1443	0
75°	0	1906	0
80°	0	2841	0
85°	0	5661	0

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.2	1.4
10°-20°	277.8	12.0
20°-30°	709.6	30.6
30°-40°	821.8	35.4
40°-50°	424.0	18.3
50°-60°	43.8	1.9
60°-70°	4.7	0.2
70°-80°	3.0	0.1
80°-90°	2.7	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°	1019.5	44.0
0°-40°	1841.3	79.4
0°-60°	2309.1	99.5
0°-90°	2319.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2319.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	154	154	154	154	154	
5°	665	346	144	96	88	104
15°	3812	1396	139	186	266	1167
25°	8405	1822	155	97	85	3905
35°	8975	997	28	16	13	5496
45°	4420	117	7	4	0	3310
55°	286	17	4	3	0	359
65°	12	4	4	3	0	16
75°	0	3	4	4	0	0
85°	0	3	4	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°	153.7	153.7	153.7	153.7	153.7	153.7	153.7	153.7	153.7	153.7	153.7
2.5°	265.0	255.8	249.2	251.8	266.3	250.4	251.8	246.5	243.8	241.3	234.6
5°	665.3	638.8	621.6	622.9	584.5	613.7	610.9	588.5	573.9	546.0	530.1
7.5°	1248.5	1191.4	1171.6	1165.0	1169.1	1141.2	1129.1	1100.1	1061.6	1011.2	982.2
10°	1896.5	1862.0	1850.2	1828.9	1827.7	1778.6	1749.4	1712.4	1635.4	1565.2	1513.6
12.5°	2763.4	2657.3	2638.8	2599.1	2588.4	2504.9	2443.9	2389.6	2261.2	2168.2	2086.1
15°	3811.8	3725.6	3745.5	3623.6	3590.4	3453.8	3340.0	3223.3	3015.2	2873.4	2727.6
17.5°	5001.9	4892.0	4905.2	4752.7	4478.4	4503.6	4337.9	4177.6	3884.6	3695.0	3469.8
20°	6117.9	6039.6	6044.9	5842.2	5749.4	5497.6	5276.2	5085.5	4695.7	4454.5	4156.4
22.5°	7402.2	7199.3	7160.9	6885.2	6722.2	6384.4	6075.5	5822.3	5350.5	5078.8	4712.9
25°	8405.4	8266.2	8160.3	7834.2	7607.6	7167.6	6809.7	6434.6	5867.4	5566.5	5131.9
26°	8781.9	8650.5	8514.1	8163.0	7908.5	7443.3	7053.5	6650.7	6043.6	5721.6	5248.4
27°	9207.3	8992.6	8828.2	8434.6	8158.9	7669.9	7207.3	6826.9	6177.5	5821.0	5322.6
28°	9508.2	9293.4	9076.0	8648.0	8349.6	7838.1	7357.0	6942.2	6255.7	5868.7	5353.1
29°	9816.9	9588.9	9272.2	8805.7	8481.0	7942.9	7443.3	6999.2	6278.2	5866.0	5337.3
30°	10014.5	9785.0	9375.5	8894.5	8551.2	7985.2	7467.1	6988.6	6242.5	5813.0	5278.8
31°	9967.9	9757.3	9350.3	8903.6	8544.5	7960.1	7423.4	6913.0	6152.2	5718.9	5172.8
32°	9736.0	9557.1	9248.4	8841.5	8471.6	7873.9	7321.3	6793.8	6022.4	5608.9	5044.3
33°	9467.0	9318.6	9105.2	8715.6	8344.4	7743.9	7180.8	6646.6	5872.6	5459.1	4889.2
34°	9241.8	9107.9	8910.3	8545.9	8170.8	7570.4	7003.3	6461.1	5701.7	5282.9	4706.3
35°	8975.4	8853.4	8670.4	8316.6	7929.7	7337.1	6780.5	6246.3	5500.1	5073.4	4494.3
36°	8743.3	8551.2	8365.7	8021.1	7635.4	7054.8	6518.0	5994.6	5272.2	4833.5	4255.7
37°	8384.2	8192.0	7993.2	7667.2	7286.8	6731.4	6226.5	5725.5	5012.4	4653.3	4001.2
38°	7847.4	7758.6	7559.9	7249.7	6895.8	6375.0	5907.1	5419.3	4719.5	4304.8	3730.9
39°	7346.5	7273.6	7080.0	6796.5	6469.1	5991.9	5553.2	5074.8	4389.5	3997.2	3445.9
40°	6836.2	6763.3	6581.7	6325.9	6031.6	5592.9	5176.9	4707.7	4043.6	3680.5	3159.7
42.5°	5627.4	5551.8	5513.5	5252.3	4940.9	4564.6	4178.9	3754.7	3190.1	2891.9	2483.7
45°	4420.0	4351.2	4206.6	4099.4	3821.0	3508.1	3194.0	2848.1	2432.0	2137.8	1756.0
47.5°	3159.7	3126.6	3131.9	2933.1	2667.9	2421.3	2161.5	1848.8	1480.4	1110.6	815.2
50°	1505.6	1515.0	1552.0	1412.8	1214.1	1069.5	915.9	718.3	524.8	412.2	319.4
51°	975.5	986.0	1017.8	918.4	774.1	676.0	577.8	466.5	372.4	316.7	253.1
52°	660.1	660.1	666.6	608.4	536.7	481.1	424.1	359.1	290.2	249.2	200.1
53°	495.8	494.4	496.9	458.5	409.7	368.5	328.7	281.0	229.3	194.9	155.1
54°	379.1	377.7	380.4	351.2	316.7	286.3	255.8	220.1	177.5	145.8	116.6
55°	286.3	286.3	290.2	267.8	241.3	217.3	194.9	164.3	131.1	106.0	84.8
57.5°	115.3	115.3	119.3	111.3	99.4	90.1	82.3	70.2	58.2	49.1	39.7
60°	47.7	49.1	50.3	46.4	43.7	41.1	38.4	34.5	30.4	25.2	21.2
61°	35.9	35.9	37.0	34.5	33.2	30.4	29.2	26.5	23.8	19.9	17.2
62°	26.5	26.5	27.9	26.5	25.2	23.8	22.6	21.2	18.5	15.9	13.2
63°	19.9	19.9	21.2	19.9	19.9	18.5	17.2	15.9	14.6	11.9	10.5
64°	15.9	15.9	15.9	14.6	14.6	14.6	13.2	13.2	10.5	9.4	8.0
65°	11.9	11.9	11.9	11.9	10.5	10.5	10.5	9.4	9.4	6.7	6.7
66°	9.4	9.4	9.4	8.0	8.0	8.0	8.0	8.0	6.7	5.3	4.0



TEST NUMBER: P1212768

CATALOG NUMBER: LDA4A20950D010TE 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	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
75°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	0.0	0.0	1.4	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°	153.7	153.7	153.7	153.7	153.7	153.7	153.7	153.7	153.7	153.7	153.7
2.5°	237.2	236.0	222.8	222.8	228.0	220.1	216.1	206.8	177.5	151.0	127.3
5°	524.8	510.2	465.2	451.9	450.5	413.5	392.3	345.9	202.8	144.5	109.9
7.5°	968.9	925.1	848.3	807.1	756.7	727.7	676.0	596.3	230.6	135.2	99.4
10°	1432.7	1383.6	1269.6	1196.7	1158.4	1064.2	978.1	869.3	258.4	128.6	98.1
12.5°	1964.1	1854.2	1745.5	1615.5	1500.3	1416.8	1273.7	1146.5	277.0	127.3	107.3
15°	2539.4	2401.5	2215.9	2041.1	1878.0	1758.7	1566.6	1395.6	283.6	139.2	140.5
17.5°	3183.5	2925.1	2657.3	2418.8	2194.7	2034.4	1795.8	1594.4	279.7	170.9	223.9
20°	3786.6	3443.2	3080.2	2748.7	2432.0	2223.9	1948.3	1729.5	281.0	251.8	302.2
22.5°	4265.0	3847.5	3404.9	3000.7	2599.1	2349.8	2048.9	1801.2	315.5	269.2	205.4
25°	4617.6	4125.9	3618.3	3153.1	2730.2	2450.6	2120.7	1822.3	294.2	155.1	116.6
26°	4711.7	4193.4	3658.0	3175.5	2746.2	2450.6	2110.0	1799.8	254.5	123.1	96.7
27°	4764.7	4224.0	3664.6	3164.9	2726.3	2422.7	2071.6	1754.8	208.1	103.3	82.3
28°	4771.3	4210.6	3631.5	3121.1	2670.6	2363.1	2002.5	1685.8	172.3	87.5	67.6
29°	4735.4	4161.6	3567.8	3048.2	2585.8	2275.6	1908.4	1601.1	147.2	75.6	56.9
30°	4659.9	4075.4	3471.1	2950.3	2475.7	2169.5	1798.5	1507.0	128.6	64.9	47.7
31°	4551.4	3957.5	3366.5	2833.7	2360.5	2063.6	1695.2	1411.5	114.0	54.4	39.7
32°	4410.8	3818.4	3231.3	2707.6	2257.0	1962.8	1595.7	1314.8	102.1	46.4	33.2
33°	4254.3	3660.6	3084.1	2576.5	2157.7	1859.5	1491.0	1212.7	91.4	38.4	27.9
34°	4074.1	3486.9	2927.6	2445.2	2051.6	1745.5	1378.3	1108.0	79.6	31.8	23.8
35°	3868.7	3293.6	2759.4	2326.1	1933.8	1622.2	1260.5	996.6	70.2	27.9	19.9
36°	3646.1	3092.1	2589.7	2189.4	1806.5	1493.8	1135.8	884.0	60.9	23.8	17.2
37°	3412.9	2882.6	2420.2	2034.4	1666.0	1357.1	1007.3	762.1	53.0	19.9	14.6
38°	3166.3	2672.0	2255.7	1887.4	1517.5	1210.0	876.0	628.3	46.4	17.2	13.2
39°	2914.4	2463.9	2092.8	1725.7	1365.1	1065.6	750.0	487.8	41.1	14.6	11.9
40°	2667.9	2267.7	1920.5	1549.3	1212.7	923.7	628.3	359.1	35.9	13.2	9.4
42.5°	2112.7	1741.6	1378.3	1033.8	845.5	585.8	348.6	188.2	25.2	9.4	6.7
45°	1382.3	1029.7	743.5	503.6	437.3	247.8	161.7	116.6	18.5	6.7	5.3
47.5°	572.5	417.5	290.2	209.5	169.7	132.5	103.3	75.6	13.2	5.3	5.3
50°	251.8	198.7	157.7	123.1	107.3	86.1	66.2	46.4	8.0	4.0	4.0
51°	201.4	160.4	123.1	98.1	87.5	70.2	54.4	37.0	8.0	4.0	4.0
52°	159.0	124.5	96.7	75.6	70.2	56.9	45.0	30.4	6.7	4.0	4.0
53°	122.0	94.1	72.9	59.6	55.7	46.4	37.0	25.2	5.3	4.0	4.0
54°	90.1	71.6	56.9	46.4	45.0	37.0	30.4	21.2	5.3	4.0	4.0
55°	66.2	55.7	43.7	37.0	35.9	30.4	25.2	17.2	5.3	4.0	4.0
57.5°	34.5	29.2	23.8	21.2	21.2	19.9	17.2	10.5	4.0	2.7	4.0
60°	18.5	15.9	13.2	11.9	14.6	13.2	11.9	6.7	4.0	2.7	4.0
61°	14.6	13.2	10.5	9.4	11.9	10.5	10.5	5.3	4.0	4.0	4.0
62°	11.9	10.5	9.4	8.0	10.5	9.4	9.4	5.3	4.0	4.0	4.0
63°	9.4	8.0	6.7	6.7	9.4	9.4	8.0	4.0	4.0	4.0	4.0
64°	6.7	6.7	5.3	5.3	8.0	8.0	6.7	4.0	4.0	4.0	4.0
65°	5.3	5.3	4.0	4.0	6.7	6.7	6.7	4.0	4.0	4.0	4.0
66°	4.0	4.0	4.0	2.7	5.3	6.7	6.7	2.7	4.0	4.0	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	5.3	5.3	2.7	4.0	4.0	4.0
75°	1.4	1.4	1.4	1.4	4.0	5.3	5.3	2.7	4.0	4.0	4.0
77.5°	1.4	1.4	1.4	1.4	4.0	5.3	5.3	2.7	4.0	4.0	5.3
80°	1.4	1.4	1.4	1.4	4.0	5.3	5.3	2.7	4.0	4.0	5.3
82.5°	1.4	1.4	1.4	1.4	4.0	5.3	5.3	2.7	4.0	4.0	5.3
85°	1.4	1.4	1.4	1.4	4.0	5.3	5.3	2.7	4.0	4.0	5.3
87.5°	1.4	1.4	1.4	1.4	4.0	5.3	5.3	2.7	4.0	4.0	5.3
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°	153.7	153.7	153.7
2.5°	115.3	108.7	107.3
5°	95.5	88.8	87.5
7.5°	87.5	82.3	80.9
10°	90.1	91.4	94.1
12.5°	115.3	127.3	137.8
15°	185.5	233.3	266.3
17.5°	323.3	357.8	380.4
20°	283.6	261.1	262.5
22.5°	159.0	143.2	141.9
25°	96.7	87.5	84.8
26°	80.9	72.9	70.2
27°	66.2	59.6	56.9
28°	54.4	49.1	47.7
29°	46.4	39.7	38.4
30°	38.4	33.2	31.8
31°	31.8	27.9	26.5
32°	27.9	23.8	21.2
33°	22.6	19.9	18.5
34°	19.9	15.9	14.6
35°	15.9	13.2	13.2
36°	14.6	11.9	10.5
37°	11.9	9.4	9.4
38°	10.5	8.0	6.7
39°	9.4	6.7	5.3
40°	8.0	5.3	4.0
42.5°	5.3	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°	2.7	0.0	0.0
54°	2.7	0.0	0.0
55°	2.7	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	1.4	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: P1212768

CATALOG NUMBER: LDA4A20950D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

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



Report Generated By 670245859 / DESKTOP-T8S5UU9

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— 0°-180° - - 45°-225° - - - 90°-270°

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

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