

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: P1212822

Luminaire Tested: **LDA4A35950D010TE 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: P1212822
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: LDA4A35950D010TE 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

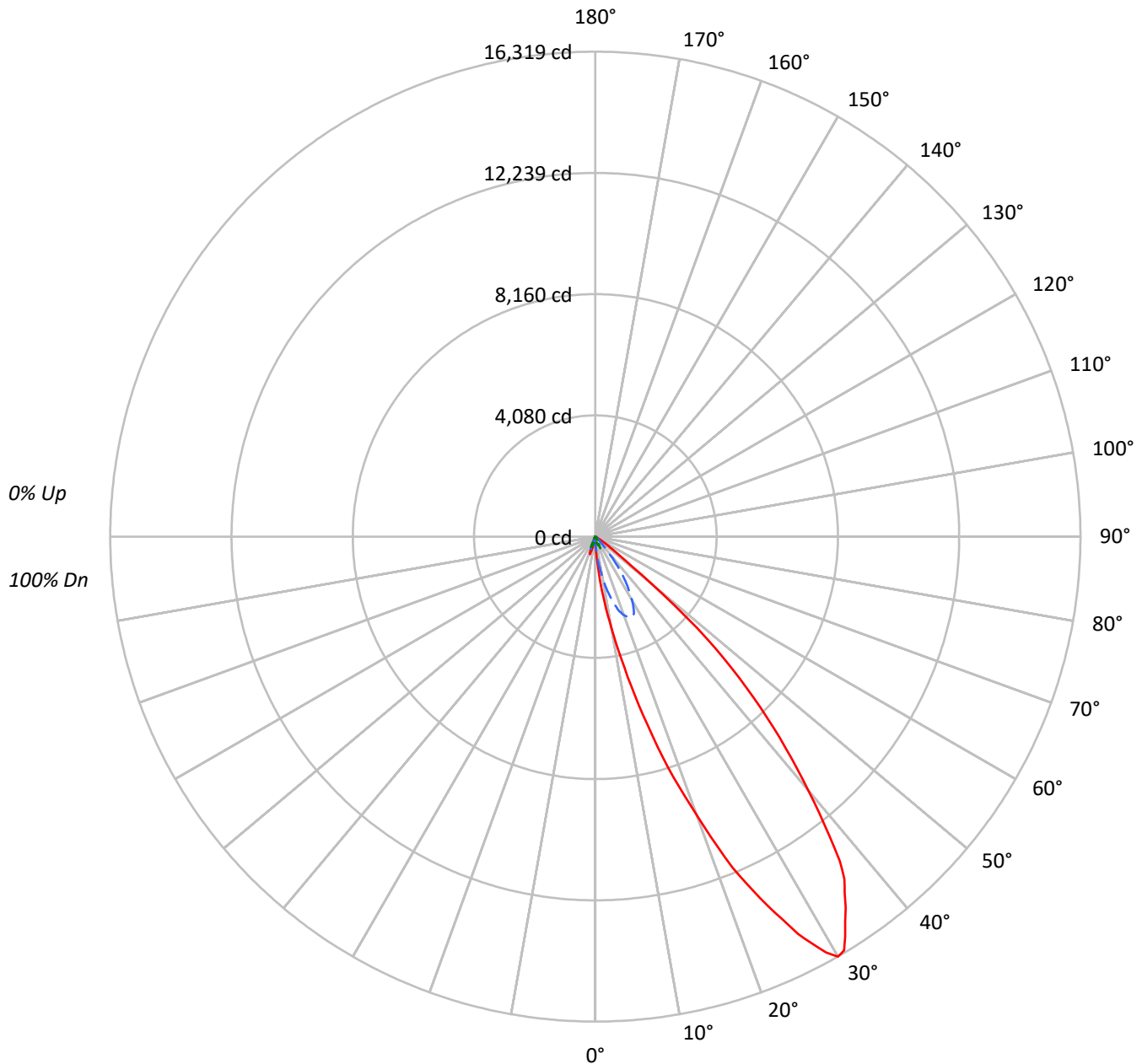
Lumens per Lamp: N/A
Luminaire Lumens: 3779.7 lumens
Efficiency: N/A
Efficacy: 80.2 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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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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	97	96	96	94	93	91		
2	105	100	95	91	103	98	93	90	95	91	88	91	88	86	89	86	84	82		
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74		
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66		
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	60		
6	80	69	62	57	78	68	61	56	67	61	56	65	60	56	64	59	55	53		
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48		
8	70	58	51	46	68	58	51	46	56	50	46	55	49	45	54	49	45	43		
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39		
10	61	49	42	38	60	49	42	38	48	42	37	47	41	37	46	41	37	36		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	30910	30910	30910
5°	134242	29146	17656
10°	387093	26252	19201
15°	793189	28962	55433
20°	1308587	53857	56127
25°	1864146	34378	18809
30°	2324299	15069	7392
35°	2202327	6821	3252
40°	1793721	3478	1031
45°	1256418	1884	0
50°	470806	1228	0
55°	100319	1376	0
60°	19168	1085	0
65°	5662	1868	0
70°	1587	2308	0
75°	0	3050	0
80°	0	4546	0
85°	0	9057	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.5	1.4
10°-20°	452.6	12.0
20°-30°	1156.3	30.6
30°-40°	1339.1	35.4
40°-50°	690.9	18.3
50°-60°	71.3	1.9
60°-70°	7.7	0.2
70°-80°	4.8	0.1
80°-90°	4.4	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°	1661.4	44.0
0°-40°	3000.5	79.4
0°-60°	3762.8	99.6
0°-90°	3779.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3779.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	251	251	251	251	251	
5°	1084	564	235	156	143	169
15°	6212	2274	227	302	434	1901
25°	13697	2970	253	158	138	6363
35°	14626	1624	45	26	22	8956
45°	7203	190	11	6	0	5394
55°	466	28	6	4	0	584
65°	19	6	6	4	0	25
75°	0	4	6	6	0	1
85°	0	4	6	6	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°	250.6	250.6	250.6	250.6	250.6	250.6	250.6	250.6	250.6	250.6	250.6
2.5°	431.9	416.8	406.0	410.3	434.1	408.3	410.3	401.6	397.5	393.0	382.2
5°	1084.2	1040.9	1012.9	1015.0	952.4	1000.1	995.7	959.0	935.2	889.8	863.8
7.5°	2034.6	1941.6	1909.2	1898.4	1905.0	1859.5	1840.1	1792.5	1729.9	1647.9	1600.5
10°	3090.6	3034.4	3015.1	2980.5	2978.4	2898.4	2851.0	2790.4	2665.2	2550.6	2466.5
12.5°	4503.1	4330.4	4300.1	4235.3	4218.0	4082.0	3982.6	3894.1	3684.5	3533.3	3399.4
15°	6211.5	6071.1	6103.6	5904.8	5850.7	5628.4	5442.6	5252.5	4913.4	4682.4	4444.8
17.5°	8150.9	7971.7	7993.2	7744.9	7297.8	7338.8	7069.0	6807.5	6330.3	6021.4	5654.2
20°	9969.3	9841.9	9850.6	9520.3	9368.9	8958.7	8597.9	8286.9	7651.9	7258.9	6773.0
22.5°	12062.2	11731.7	11669.2	11219.8	10954.2	10403.5	9900.3	9487.8	8718.9	8276.1	7680.2
25°	13697.2	13470.4	13297.5	12766.2	12397.0	11680.0	11096.8	10485.6	9561.2	9070.9	8362.5
26°	14310.6	14096.7	13874.2	13301.9	12887.3	12129.2	11494.3	10837.6	9848.6	9323.7	8552.6
27°	15003.8	14653.9	14386.1	13744.6	13295.5	12498.5	11744.7	11124.9	10066.6	9485.6	8673.6
28°	15494.1	15144.2	14789.9	14092.4	13606.4	12772.9	11988.7	11312.8	10194.0	9563.3	8723.3
29°	15997.4	15625.8	15109.7	14349.4	13820.1	12943.3	12129.2	11405.6	10230.8	9559.1	8697.3
30°	16319.2	15945.5	15278.0	14494.1	13934.8	13012.5	12168.0	11388.3	10172.4	9472.7	8602.3
31°	16243.6	15900.0	15237.1	14509.4	13923.9	12971.5	12096.8	11265.3	10025.6	9319.3	8429.6
32°	15865.6	15573.9	15070.8	14407.7	13805.2	12831.1	11930.5	11070.8	9814.0	9140.0	8220.1
33°	15427.0	15185.2	14837.5	14202.6	13597.8	12619.4	11701.5	10831.2	9569.9	8896.0	7967.2
34°	15060.0	14841.8	14520.0	13926.1	13314.9	12336.5	11412.1	10528.8	9291.3	8608.7	7669.4
35°	14625.9	14427.2	14129.1	13552.6	12921.9	11956.5	11049.4	10178.9	8962.9	8267.6	7323.8
36°	14247.9	13934.8	13632.4	13070.9	12442.2	11496.4	10621.6	9768.6	8591.4	7876.6	6934.9
37°	13662.6	13349.4	13025.5	12494.1	11874.3	10969.4	10146.4	9330.2	8168.2	7582.8	6520.3
38°	12787.8	12643.2	12319.3	11813.9	11237.3	10388.5	9626.0	8831.3	7690.8	7014.9	6079.7
39°	11971.5	11852.7	11537.3	11075.2	10541.8	9764.2	9049.5	8269.8	7153.1	6513.8	5615.4
40°	11140.0	11021.3	10725.4	10308.5	9828.9	9114.1	8436.1	7671.4	6589.3	5997.6	5148.7
42.5°	9170.3	9047.3	8984.6	8559.1	8051.6	7438.2	6809.7	6118.5	5198.4	4712.7	4047.4
45°	7202.7	7090.4	6855.1	6680.1	6226.6	5716.9	5205.0	4641.3	3963.1	3483.6	2861.8
47.5°	5148.7	5094.9	5103.5	4779.5	4347.6	3946.0	3522.6	3012.8	2412.4	1809.8	1328.2
50°	2453.5	2468.5	2529.0	2302.2	1978.3	1742.9	1492.5	1170.5	855.2	671.7	520.5
51°	1589.6	1606.9	1658.7	1496.7	1261.3	1101.5	941.6	760.2	606.8	516.3	412.5
52°	1075.6	1075.6	1086.4	991.2	874.6	784.0	691.2	585.3	473.0	406.0	326.1
53°	807.8	805.6	810.0	747.2	667.4	600.4	535.7	457.9	373.7	317.5	252.6
54°	617.7	615.6	619.8	572.3	516.3	466.5	416.8	358.6	289.4	237.6	190.1
55°	466.5	466.5	473.0	436.3	393.0	354.2	317.5	267.8	213.7	172.7	138.2
57.5°	187.9	187.9	194.4	181.5	162.0	146.8	133.8	114.4	95.0	80.0	64.7
60°	77.7	80.0	82.2	75.5	71.3	66.9	62.7	56.1	49.7	41.1	34.5
61°	58.3	58.3	60.5	56.1	54.1	49.7	47.5	43.3	38.9	32.4	28.1
62°	43.3	43.3	45.3	43.3	41.1	38.9	36.7	34.5	30.3	25.9	21.6
63°	32.4	32.4	34.5	32.4	32.4	30.3	28.1	25.9	23.8	19.4	17.3
64°	25.9	25.9	25.9	23.8	23.8	23.8	21.6	21.6	17.3	15.1	13.0
65°	19.4	19.4	19.4	19.4	17.3	17.3	17.3	15.1	15.1	10.8	10.8
66°	15.1	15.1	15.1	13.0	13.0	13.0	13.0	13.0	10.8	8.6	6.4



TEST NUMBER: P1212822

CATALOG NUMBER: LDA4A35950D010TE 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	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	0.0	0.0	2.2	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°	250.6	250.6	250.6	250.6	250.6	250.6	250.6	250.6	250.6	250.6	250.6
2.5°	386.7	384.5	362.9	362.9	371.4	358.6	352.0	337.0	289.4	246.2	207.4
5°	855.2	831.6	758.1	736.4	734.2	673.9	639.3	563.7	330.4	235.4	179.3
7.5°	1578.8	1507.5	1382.3	1315.4	1233.2	1185.8	1101.5	971.9	375.9	220.4	162.0
10°	2334.7	2254.7	2069.1	1950.2	1887.6	1734.3	1593.9	1416.8	421.1	209.6	159.8
12.5°	3200.7	3021.4	2844.3	2632.8	2444.8	2308.8	2075.4	1868.2	451.4	207.4	174.9
15°	4138.1	3913.5	3611.2	3325.9	3060.3	2865.9	2552.9	2274.2	462.2	226.8	229.0
17.5°	5187.8	4766.5	4330.4	3941.6	3576.6	3315.3	2926.5	2598.1	455.7	278.6	365.0
20°	6170.4	5611.1	5019.4	4479.3	3963.1	3624.0	3174.9	2818.5	457.9	410.3	492.4
22.5°	6950.1	6269.8	5548.4	4889.8	4235.3	3829.2	3338.9	2935.1	514.1	438.5	334.8
25°	7524.5	6723.4	5896.2	5138.1	4449.0	3993.4	3455.6	2969.7	479.4	252.6	190.1
26°	7677.9	6833.5	5960.9	5174.8	4475.0	3993.4	3438.3	2932.9	414.6	200.9	157.7
27°	7764.3	6883.0	5971.7	5157.6	4442.6	3947.9	3375.6	2859.6	339.1	168.5	133.8
28°	7775.1	6861.6	5917.7	5086.2	4351.9	3850.8	3263.4	2747.2	280.8	142.6	110.1
29°	7716.8	6781.6	5814.0	4967.5	4213.7	3708.3	3110.0	2608.9	239.8	123.1	93.0
30°	7593.7	6641.2	5656.4	4807.6	4034.5	3535.5	2930.8	2455.6	209.6	105.8	77.7
31°	7416.6	6449.1	5485.7	4617.5	3846.5	3362.7	2762.3	2300.2	185.7	88.5	64.7
32°	7187.8	6222.3	5265.5	4412.3	3678.1	3198.5	2600.3	2142.5	166.3	75.5	54.1
33°	6932.7	5965.3	5025.8	4198.6	3516.0	3030.0	2429.6	1976.1	149.0	62.7	45.3
34°	6639.0	5682.2	4770.9	3984.8	3343.4	2844.3	2246.1	1805.5	129.6	51.9	38.9
35°	6304.3	5366.9	4496.6	3790.3	3151.1	2643.6	2054.0	1624.1	114.4	45.3	32.4
36°	5941.5	5038.8	4220.2	3567.9	2943.7	2434.0	1850.9	1440.6	99.3	38.9	28.1
37°	5561.4	4697.5	3943.8	3315.3	2714.7	2211.7	1641.3	1241.9	86.3	32.4	23.8
38°	5159.5	4354.1	3675.9	3075.5	2472.9	1971.8	1427.6	1023.7	75.5	28.1	21.6
39°	4749.3	4015.0	3410.3	2812.1	2224.6	1736.5	1222.4	794.8	66.9	23.8	19.4
40°	4347.6	3695.3	3129.5	2524.8	1976.1	1505.3	1023.7	585.3	58.3	21.6	15.1
42.5°	3442.7	2838.0	2246.1	1684.6	1377.9	954.6	567.9	306.7	41.1	15.1	10.8
45°	2252.5	1678.1	1211.6	820.8	712.8	403.8	263.4	190.1	30.3	10.8	8.6
47.5°	933.0	680.4	473.0	341.2	276.4	216.0	168.5	123.1	21.6	8.6	8.6
50°	410.3	324.0	257.0	200.9	174.9	140.4	108.0	75.5	13.0	6.4	6.4
51°	328.3	261.2	200.9	159.8	142.6	114.4	88.5	60.5	13.0	6.4	6.4
52°	259.2	202.9	157.7	123.1	114.4	93.0	73.5	49.7	10.8	6.4	6.4
53°	198.7	153.3	118.8	97.1	90.8	75.5	60.5	41.1	8.6	6.4	6.4
54°	146.8	116.6	93.0	75.5	73.5	60.5	49.7	34.5	8.6	6.4	6.4
55°	108.0	90.8	71.3	60.5	58.3	49.7	41.1	28.1	8.6	6.4	6.4
57.5°	56.1	47.5	38.9	34.5	34.5	32.4	28.1	17.3	6.4	4.4	6.4
60°	30.3	25.9	21.6	19.4	23.8	21.6	19.4	10.8	6.4	4.4	6.4
61°	23.8	21.6	17.3	15.1	19.4	17.3	17.3	8.6	6.4	6.4	6.4
62°	19.4	17.3	15.1	13.0	17.3	15.1	15.1	8.6	6.4	6.4	6.4
63°	15.1	13.0	10.8	10.8	15.1	15.1	13.0	6.4	6.4	6.4	6.4
64°	10.8	10.8	8.6	8.6	13.0	13.0	10.8	6.4	6.4	6.4	6.4
65°	8.6	8.6	6.4	6.4	10.8	10.8	10.8	6.4	6.4	6.4	6.4
66°	6.4	6.4	6.4	4.4	8.6	10.8	10.8	4.4	6.4	6.4	6.4



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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°	2.2	2.2	2.2	2.2	6.4	8.6	8.6	4.4	6.4	6.4	6.4
75°	2.2	2.2	2.2	2.2	6.4	8.6	8.6	4.4	6.4	6.4	6.4
77.5°	2.2	2.2	2.2	2.2	6.4	8.6	8.6	4.4	6.4	6.4	8.6
80°	2.2	2.2	2.2	2.2	6.4	8.6	8.6	4.4	6.4	6.4	8.6
82.5°	2.2	2.2	2.2	2.2	6.4	8.6	8.6	4.4	6.4	6.4	8.6
85°	2.2	2.2	2.2	2.2	6.4	8.6	8.6	4.4	6.4	6.4	8.6
87.5°	2.2	2.2	2.2	2.2	6.4	8.6	8.6	4.4	6.4	6.4	8.6
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°	250.6	250.6	250.6
2.5°	187.9	177.1	174.9
5°	155.5	144.7	142.6
7.5°	142.6	133.8	131.8
10°	146.8	149.0	153.3
12.5°	187.9	207.4	224.5
15°	302.3	380.0	434.1
17.5°	527.1	583.1	619.8
20°	462.2	425.5	427.6
22.5°	259.2	233.2	231.2
25°	157.7	142.6	138.2
26°	131.8	118.8	114.4
27°	108.0	97.1	93.0
28°	88.5	80.0	77.7
29°	75.5	64.7	62.7
30°	62.7	54.1	51.9
31°	51.9	45.3	43.3
32°	45.3	38.9	34.5
33°	36.7	32.4	30.3
34°	32.4	25.9	23.8
35°	25.9	21.6	21.6
36°	23.8	19.4	17.3
37°	19.4	15.1	15.1
38°	17.3	13.0	10.8
39°	15.1	10.8	8.6
40°	13.0	8.6	6.4
42.5°	8.6	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°	4.4	0.0	0.0
54°	4.4	0.0	0.0
55°	4.4	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	2.2	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: P1212822

CATALOG NUMBER: LDA4A35950D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

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



Report Generated By 670245859 / DESKTOP-T8S5UU9

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— 0°-180° - - 45°-225° - - - 90°-270°

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

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