

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: P1191659

Luminaire Tested: **LDA4A20940D010TE 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: P1191659
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: LDA4A20940D010TE 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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

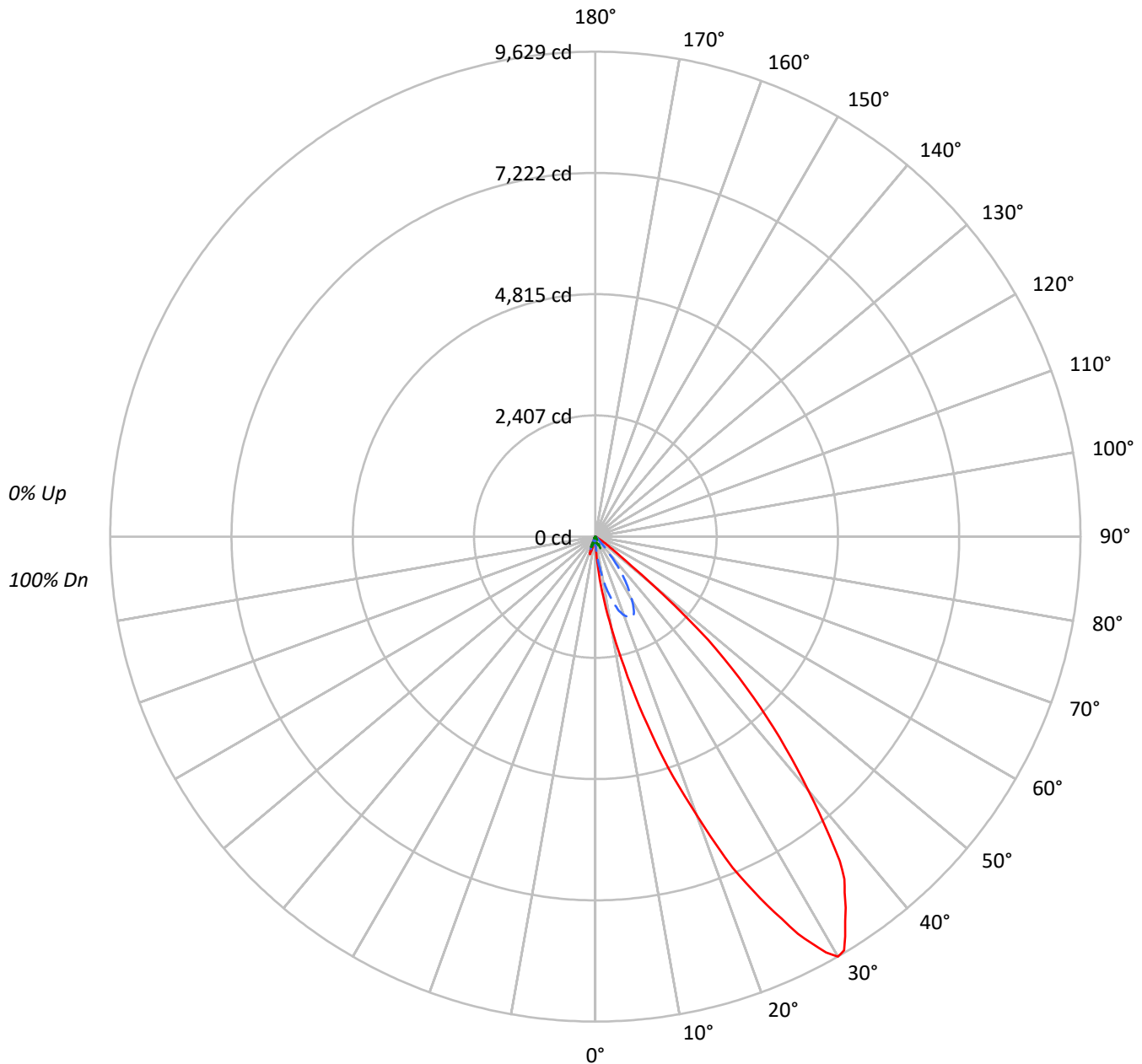
Lumens per Lamp: N/A
Luminaire Lumens: 2230.3 lumens
Efficiency: N/A
Efficacy: 77.4 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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
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°	18230	18230	18230
5°	79206	17198	10413
10°	228403	15493	11335
15°	468034	17086	32703
20°	772160	31778	33130
25°	1099948	20292	11092
30°	1371475	8887	4358
35°	1299511	4035	1912
40°	1058408	2045	612
45°	741358	1116	0
50°	277802	729	0
55°	59202	817	0
60°	11323	641	0
65°	3327	1109	0
70°	938	1370	0
75°	0	1811	0
80°	0	2699	0
85°	0	5378	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.0	1.4
10°-20°	267.1	12.0
20°-30°	682.3	30.6
30°-40°	790.2	35.4
40°-50°	407.7	18.3
50°-60°	42.1	1.9
60°-70°	4.5	0.2
70°-80°	2.9	0.1
80°-90°	2.6	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°	980.3	44.0
0°-40°	1770.5	79.4
0°-60°	2220.2	99.6
0°-90°	2230.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2230.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	148	148	148	148	148	
5°	640	333	139	92	84	100
15°	3665	1342	134	178	256	1122
25°	8082	1752	149	93	82	3755
35°	8630	958	27	15	13	5285
45°	4250	112	6	4	0	3183
55°	275	16	4	3	0	345
65°	11	4	4	3	0	15
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°	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8
2.5°	254.8	246.0	239.6	242.1	256.1	240.8	242.1	237.0	234.4	232.0	225.6
5°	639.7	614.2	597.7	598.9	562.0	590.1	587.4	565.9	551.8	525.0	509.7
7.5°	1200.5	1145.6	1126.5	1120.2	1124.1	1097.3	1085.7	1057.8	1020.8	972.3	944.4
10°	1823.6	1790.4	1779.0	1758.6	1757.4	1710.2	1682.1	1646.5	1572.5	1505.0	1455.4
12.5°	2657.1	2555.1	2537.3	2499.1	2488.8	2408.6	2349.9	2297.7	2174.2	2084.8	2005.9
15°	3665.2	3582.3	3601.4	3484.2	3452.3	3321.0	3211.5	3099.3	2899.2	2762.9	2622.7
17.5°	4809.5	4703.8	4716.5	4569.9	4306.2	4330.4	4171.1	4016.9	3735.2	3552.9	3336.3
20°	5882.6	5807.3	5812.4	5617.5	5528.3	5286.2	5073.3	4889.9	4515.1	4283.2	3996.5
22.5°	7117.5	6922.4	6885.5	6620.4	6463.7	6138.8	5841.8	5598.4	5144.7	4883.5	4531.6
25°	8082.1	7948.3	7846.4	7532.9	7315.0	6891.9	6547.8	6187.1	5641.7	5352.4	4934.5
26°	8444.1	8317.8	8186.6	7849.0	7604.3	7157.0	6782.2	6394.9	5811.2	5501.5	5046.5
27°	8853.2	8646.7	8488.7	8110.2	7845.1	7374.9	6930.1	6564.3	5939.9	5597.1	5117.9
28°	9142.5	8936.0	8726.9	8315.4	8028.5	7536.6	7074.0	6675.2	6015.1	5643.0	5147.2
29°	9439.3	9220.1	8915.6	8467.0	8154.8	7637.4	7157.0	6730.0	6036.7	5640.4	5132.0
30°	9629.3	9408.7	9014.9	8552.4	8222.3	7678.1	7179.9	6719.8	6002.4	5589.4	5075.8
31°	9584.5	9382.0	8990.7	8561.2	8215.9	7653.9	7137.9	6647.1	5915.6	5498.9	4973.8
32°	9361.5	9189.5	8892.7	8501.4	8145.8	7571.1	7039.7	6532.5	5790.8	5393.2	4850.3
33°	9102.9	8960.2	8755.0	8380.4	8023.5	7446.1	6904.6	6391.0	5646.7	5249.1	4701.2
34°	8886.3	8757.6	8567.6	8217.2	7856.5	7279.2	6733.9	6212.6	5482.4	5079.7	4525.3
35°	8630.2	8512.9	8336.9	7996.7	7624.7	7054.9	6519.7	6006.1	5288.6	4878.3	4321.4
36°	8407.0	8222.3	8043.9	7712.6	7341.7	6783.5	6267.3	5764.0	5069.4	4647.6	4092.0
37°	8061.7	7876.9	7685.8	7372.3	7006.5	6472.5	5987.0	5505.3	4819.6	4474.3	3847.3
38°	7545.6	7460.2	7269.1	6970.9	6630.6	6129.8	5679.9	5210.9	4538.0	4139.2	3587.4
39°	7063.9	6993.8	6807.7	6535.1	6220.3	5761.4	5339.6	4879.6	4220.7	3843.5	3313.4
40°	6573.3	6503.2	6328.6	6082.6	5799.6	5377.8	4977.8	4526.6	3888.1	3538.9	3038.2
42.5°	5411.0	5338.3	5301.4	5050.3	4750.9	4389.0	4018.2	3610.3	3067.4	2780.7	2388.2
45°	4250.0	4183.8	4044.8	3941.7	3674.0	3373.2	3071.2	2738.6	2338.5	2055.6	1688.5
47.5°	3038.2	3006.3	3011.4	2820.3	2565.3	2328.2	2078.4	1777.7	1423.5	1067.9	783.8
50°	1447.7	1456.7	1492.3	1358.5	1167.4	1028.4	880.7	690.7	504.6	396.3	307.1
51°	938.0	948.1	978.7	883.1	744.3	650.0	555.6	448.6	358.1	304.5	243.4
52°	634.7	634.7	641.0	585.0	516.1	462.6	407.8	345.3	279.0	239.6	192.4
53°	476.7	475.4	477.8	440.9	393.9	354.3	316.1	270.2	220.5	187.4	149.1
54°	364.5	363.2	365.8	337.7	304.5	275.3	246.0	211.6	170.7	140.2	112.1
55°	275.3	275.3	279.0	257.5	232.0	208.9	187.4	158.0	126.1	101.9	81.5
57.5°	110.9	110.9	114.7	107.0	95.6	86.6	79.1	67.5	56.0	47.2	38.2
60°	45.9	47.2	48.4	44.6	42.0	39.5	36.9	33.2	29.2	24.2	20.4
61°	34.5	34.5	35.6	33.2	31.9	29.2	28.1	25.5	22.9	19.1	16.5
62°	25.5	25.5	26.8	25.5	24.2	22.9	21.7	20.4	17.8	15.3	12.7
63°	19.1	19.1	20.4	19.1	19.1	17.8	16.5	15.3	14.0	11.4	10.1
64°	15.3	15.3	15.3	14.0	14.0	14.0	12.7	12.7	10.1	9.0	7.7
65°	11.4	11.4	11.4	11.4	10.1	10.1	10.1	9.0	9.0	6.4	6.4
66°	9.0	9.0	9.0	7.7	7.7	7.7	7.7	7.7	6.4	5.1	3.8



TEST NUMBER: P1191659

CATALOG NUMBER: LDA4A20940D010TE 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	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
75°	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
85°	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	1.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8	147.8
2.5°	228.1	226.9	214.2	214.2	219.2	211.6	207.8	198.8	170.7	145.2	122.4
5°	504.6	490.6	447.3	434.5	433.2	397.6	377.2	332.6	195.0	138.9	105.7
7.5°	931.6	889.5	815.7	776.1	727.6	699.7	650.0	573.4	221.7	130.0	95.6
10°	1377.6	1330.4	1220.8	1150.7	1113.8	1023.3	940.5	835.9	248.5	123.7	94.3
12.5°	1888.6	1782.9	1678.4	1553.4	1442.6	1362.3	1224.7	1102.4	266.3	122.4	103.2
15°	2441.7	2309.1	2130.7	1962.6	1805.8	1691.1	1506.3	1341.9	272.7	133.8	135.1
17.5°	3061.1	2812.6	2555.1	2325.8	2110.3	1956.2	1726.7	1533.1	268.9	164.3	215.3
20°	3641.0	3310.8	2961.7	2643.0	2338.5	2138.4	1873.4	1663.0	270.2	242.1	290.6
22.5°	4101.0	3699.5	3273.9	2885.3	2499.1	2259.4	1970.1	1731.9	303.4	258.8	197.5
25°	4440.0	3967.2	3479.1	3031.8	2625.2	2356.3	2039.1	1752.2	282.9	149.1	112.1
26°	4530.5	4032.1	3517.3	3053.4	2640.6	2356.3	2028.8	1730.6	244.7	118.4	93.0
27°	4581.4	4061.5	3523.7	3043.2	2621.4	2329.5	1991.9	1687.3	200.1	99.3	79.1
28°	4587.8	4048.7	3491.8	3001.1	2567.9	2272.2	1925.5	1621.0	165.7	84.1	65.0
29°	4553.3	4001.5	3430.6	2931.0	2486.3	2188.1	1835.0	1539.5	141.5	72.7	54.7
30°	4480.7	3918.7	3337.6	2836.8	2380.5	2086.1	1729.3	1449.0	123.7	62.4	45.9
31°	4376.3	3805.3	3237.0	2724.7	2269.7	1984.2	1630.0	1357.2	109.6	52.3	38.2
32°	4241.2	3671.5	3107.0	2603.5	2170.2	1887.3	1534.3	1264.2	98.2	44.6	31.9
33°	4090.7	3519.8	2965.5	2477.4	2074.7	1788.0	1433.7	1166.1	87.9	36.9	26.8
34°	3917.4	3352.8	2815.0	2351.2	1972.7	1678.4	1325.3	1065.4	76.5	30.6	22.9
35°	3719.9	3166.9	2653.3	2236.6	1859.4	1559.8	1212.0	958.3	67.5	26.8	19.1
36°	3505.9	2973.2	2490.1	2105.2	1737.0	1436.3	1092.1	850.0	58.6	22.9	16.5
37°	3281.6	2771.7	2327.1	1956.2	1601.9	1304.9	968.6	732.8	51.0	19.1	14.0
38°	3044.5	2569.2	2168.9	1814.8	1459.1	1163.5	842.3	604.1	44.6	16.5	12.7
39°	2802.3	2369.1	2012.3	1659.3	1312.6	1024.6	721.2	469.0	39.5	14.0	11.4
40°	2565.3	2180.5	1846.6	1489.7	1166.1	888.2	604.1	345.3	34.5	12.7	9.0
42.5°	2031.4	1674.6	1325.3	994.0	813.0	563.3	335.2	181.0	24.2	9.0	6.4
45°	1329.1	990.1	714.9	484.2	420.5	238.3	155.5	112.1	17.8	6.4	5.1
47.5°	550.5	401.4	279.0	201.4	163.2	127.4	99.3	72.7	12.7	5.1	5.1
50°	242.1	191.1	151.6	118.4	103.2	82.8	63.7	44.6	7.7	3.8	3.8
51°	193.7	154.2	118.4	94.3	84.1	67.5	52.3	35.6	7.7	3.8	3.8
52°	152.9	119.7	93.0	72.7	67.5	54.7	43.3	29.2	6.4	3.8	3.8
53°	117.3	90.5	70.1	57.3	53.6	44.6	35.6	24.2	5.1	3.8	3.8
54°	86.6	68.8	54.7	44.6	43.3	35.6	29.2	20.4	5.1	3.8	3.8
55°	63.7	53.6	42.0	35.6	34.5	29.2	24.2	16.5	5.1	3.8	3.8
57.5°	33.2	28.1	22.9	20.4	20.4	19.1	16.5	10.1	3.8	2.6	3.8
60°	17.8	15.3	12.7	11.4	14.0	12.7	11.4	6.4	3.8	2.6	3.8
61°	14.0	12.7	10.1	9.0	11.4	10.1	10.1	5.1	3.8	3.8	3.8
62°	11.4	10.1	9.0	7.7	10.1	9.0	9.0	5.1	3.8	3.8	3.8
63°	9.0	7.7	6.4	6.4	9.0	9.0	7.7	3.8	3.8	3.8	3.8
64°	6.4	6.4	5.1	5.1	7.7	7.7	6.4	3.8	3.8	3.8	3.8
65°	5.1	5.1	3.8	3.8	6.4	6.4	6.4	3.8	3.8	3.8	3.8
66°	3.8	3.8	3.8	2.6	5.1	6.4	6.4	2.6	3.8	3.8	3.8



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CATALOG NUMBER: LDA4A20940D010TE 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°	1.3	1.3	1.3	1.3	3.8	5.1	5.1	2.6	3.8	3.8	3.8
75°	1.3	1.3	1.3	1.3	3.8	5.1	5.1	2.6	3.8	3.8	3.8
77.5°	1.3	1.3	1.3	1.3	3.8	5.1	5.1	2.6	3.8	3.8	5.1
80°	1.3	1.3	1.3	1.3	3.8	5.1	5.1	2.6	3.8	3.8	5.1
82.5°	1.3	1.3	1.3	1.3	3.8	5.1	5.1	2.6	3.8	3.8	5.1
85°	1.3	1.3	1.3	1.3	3.8	5.1	5.1	2.6	3.8	3.8	5.1
87.5°	1.3	1.3	1.3	1.3	3.8	5.1	5.1	2.6	3.8	3.8	5.1
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°	147.8	147.8	147.8
2.5°	110.9	104.5	103.2
5°	91.8	85.4	84.1
7.5°	84.1	79.1	77.8
10°	86.6	87.9	90.5
12.5°	110.9	122.4	132.5
15°	178.4	224.3	256.1
17.5°	310.9	344.0	365.8
20°	272.7	251.1	252.4
22.5°	152.9	137.7	136.4
25°	93.0	84.1	81.5
26°	77.8	70.1	67.5
27°	63.7	57.3	54.7
28°	52.3	47.2	45.9
29°	44.6	38.2	36.9
30°	36.9	31.9	30.6
31°	30.6	26.8	25.5
32°	26.8	22.9	20.4
33°	21.7	19.1	17.8
34°	19.1	15.3	14.0
35°	15.3	12.7	12.7
36°	14.0	11.4	10.1
37°	11.4	9.0	9.0
38°	10.1	7.7	6.4
39°	9.0	6.4	5.1
40°	7.7	5.1	3.8
42.5°	5.1	2.6	1.3
45°	3.8	1.3	0.0
47.5°	2.6	1.3	0.0
50°	2.6	0.0	0.0
51°	2.6	0.0	0.0
52°	2.6	0.0	0.0
53°	2.6	0.0	0.0
54°	2.6	0.0	0.0
55°	2.6	0.0	0.0
57.5°	2.6	0.0	0.0
60°	2.6	0.0	0.0
61°	2.6	0.0	0.0
62°	2.6	0.0	0.0
63°	2.6	1.3	0.0
64°	2.6	1.3	0.0
65°	2.6	1.3	0.0
66°	2.6	1.3	0.0



TEST NUMBER: P1191659

CATALOG NUMBER: LDA4A20940D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	3.8	1.3	0.0
75°	3.8	1.3	0.0
77.5°	3.8	1.3	0.0
80°	3.8	1.3	0.0
82.5°	3.8	1.3	0.0
85°	3.8	1.3	0.0
87.5°	2.6	1.3	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°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	3.8	2.6
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.3	1.3

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67.5°	2.6	2.6	2.6	2.6	5.1	5.1	5.1	2.6	3.8	3.8	3.8
70°	1.3	1.3	1.3	2.6	3.8	5.1	5.1	2.6	3.8	3.8	3.8

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67.5°	2.6	1.3	0.0
70°	2.6	1.3	0.0

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(END OF REPORT)