

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: P1191821

Luminaire Tested: **LDA4A30935D010TE 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: P1191821
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: LDA4A30935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

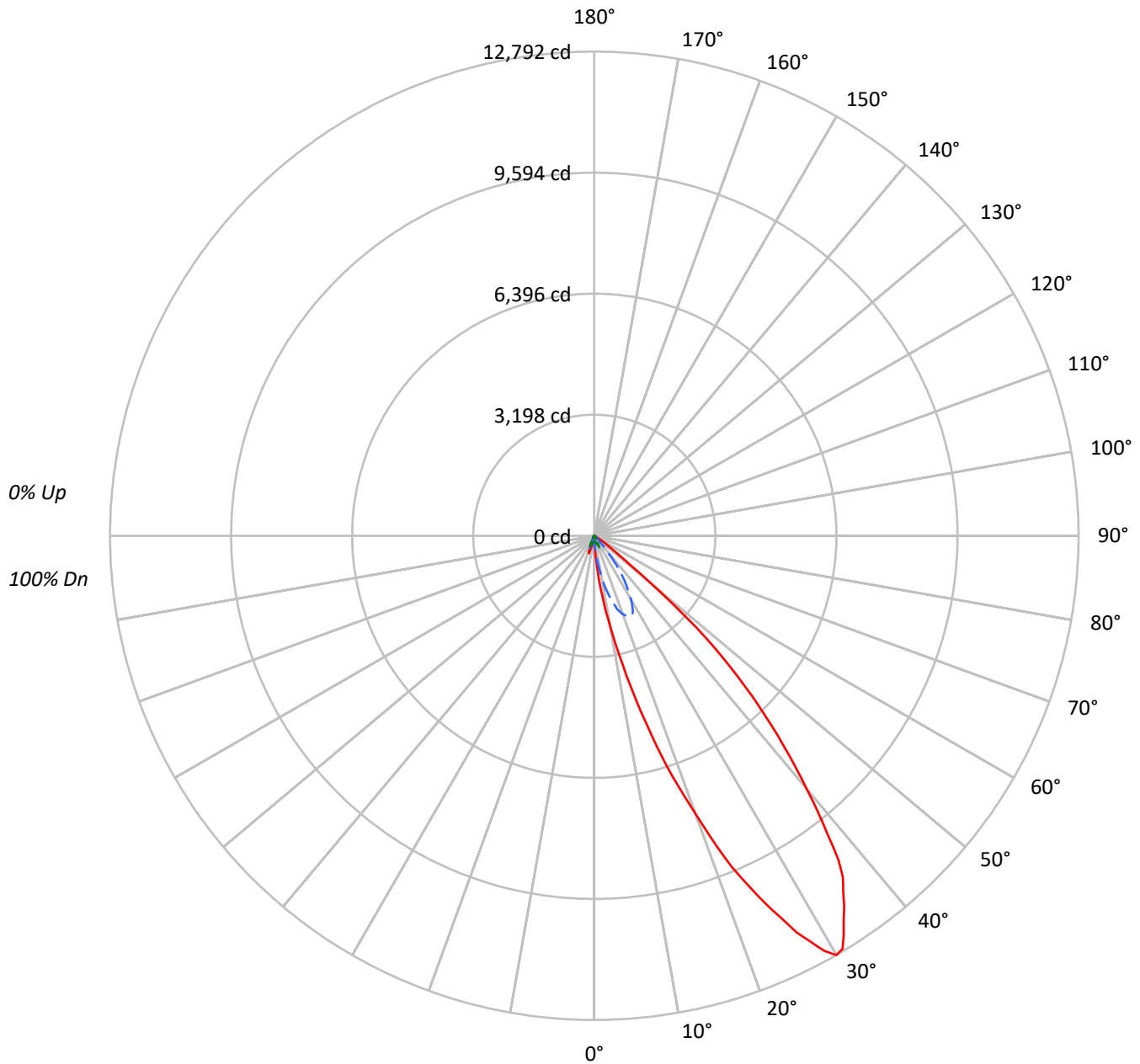
Lumens per Lamp: N/A
Luminaire Lumens: 2962.8 lumens
Efficiency: N/A
Efficacy: 75.2 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 39.4
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	0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
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°	24225	24225	24225
5°	105220	22844	13830
10°	303427	20566	15055
15°	621743	22704	43455
20°	1025757	42227	43999
25°	1461217	26961	14739
30°	1821901	11821	5783
35°	1726307	5361	2545
40°	1406010	2721	821
45°	984854	1465	0
50°	369027	979	0
55°	78621	1097	0
60°	15023	839	0
65°	4465	1488	0
70°	1226	1839	0
75°	0	2431	0
80°	0	3623	0
85°	0	7218	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.2	1.4
10°-20°	354.8	12.0
20°-30°	906.3	30.6
30°-40°	1049.7	35.4
40°-50°	541.6	18.3
50°-60°	55.9	1.9
60°-70°	6.0	0.2
70°-80°	3.8	0.1
80°-90°	3.5	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°	1302.3	44.0
0°-40°	2352.0	79.4
0°-60°	2949.5	99.6
0°-90°	2962.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2962.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	196	196	196	196	196	
5°	850	442	184	122	112	132
15°	4869	1783	178	237	340	1490
25°	10737	2328	198	124	108	4988
35°	11465	1273	36	20	17	7020
45°	5646	149	8	5	0	4228
55°	366	22	5	3	0	458
65°	15	5	5	3	0	20
75°	0	3	5	5	0	0
85°	0	3	5	5	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°	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4
2.5°	338.6	326.7	318.3	321.7	340.3	320.0	321.7	314.8	311.6	308.1	299.7
5°	849.8	815.9	794.0	795.6	746.6	783.9	780.5	751.7	733.0	697.5	677.2
7.5°	1594.7	1522.0	1496.5	1488.1	1493.1	1457.6	1442.3	1405.1	1356.1	1291.7	1254.5
10°	2422.6	2378.6	2363.3	2336.2	2334.5	2271.9	2234.7	2187.3	2089.0	1999.4	1933.3
12.5°	3529.8	3394.3	3370.6	3319.8	3306.2	3199.7	3121.7	3052.3	2888.1	2769.7	2664.7
15°	4868.9	4758.9	4784.2	4628.4	4586.2	4411.8	4266.2	4117.2	3851.4	3670.3	3484.0
17.5°	6389.2	6248.5	6265.6	6070.9	5720.4	5752.6	5540.9	5336.1	4962.0	4719.9	4432.1
20°	7814.6	7714.6	7721.5	7462.4	7344.0	7022.3	6739.6	6495.7	5998.1	5689.9	5309.0
22.5°	9455.1	9196.0	9146.9	8794.8	8586.5	8154.8	7760.4	7437.1	6834.3	6487.3	6020.1
25°	10736.6	10558.8	10423.3	10006.9	9717.4	9155.4	8698.2	8219.1	7494.6	7110.3	6555.1
26°	11217.4	11049.7	10875.4	10426.8	10101.8	9507.6	9009.8	8495.1	7719.8	7308.4	6704.0
27°	11760.8	11486.5	11276.6	10773.8	10421.6	9796.9	9206.2	8720.2	7890.7	7435.4	6798.8
28°	12145.0	11870.8	11593.2	11046.3	10665.5	10011.9	9397.4	8867.6	7990.7	7496.3	6837.7
29°	12539.6	12248.3	11843.8	11247.9	10833.0	10145.7	9507.6	8940.4	8019.4	7492.9	6817.4
30°	12791.8	12498.9	11975.8	11361.3	10922.7	10199.9	9538.0	8926.8	7973.7	7425.2	6742.9
31°	12732.5	12463.3	11943.6	11373.2	10914.3	10167.7	9482.1	8830.4	7858.5	7304.9	6607.4
32°	12436.3	12207.7	11813.3	11293.5	10821.2	10057.7	9351.8	8677.9	7692.7	7164.5	6443.2
33°	12092.6	11903.0	11630.4	11132.7	10658.7	9891.8	9172.3	8490.1	7501.3	6973.2	6245.2
34°	11804.7	11633.8	11381.6	10916.0	10436.9	9670.1	8945.4	8253.0	7283.0	6748.1	6011.7
35°	11464.6	11308.8	11075.2	10623.2	10128.8	9372.1	8661.0	7978.8	7025.7	6480.6	5740.7
36°	11168.3	10922.7	10685.8	10245.7	9753.0	9011.5	8325.9	7657.1	6734.5	6174.2	5436.0
37°	10709.4	10464.0	10210.1	9793.6	9307.7	8598.4	7953.4	7313.5	6402.6	5943.9	5110.9
38°	10023.8	9910.4	9656.5	9260.4	8808.3	8143.0	7545.4	6922.4	6028.5	5498.7	4765.6
39°	9384.0	9290.8	9043.7	8681.3	8263.2	7653.7	7093.4	6482.3	5607.0	5105.9	4401.7
40°	8732.1	8639.0	8407.1	8080.4	7704.5	7144.2	6612.6	6013.2	5165.1	4701.2	4035.9
42.5°	7188.2	7091.7	7042.6	6709.1	6311.2	5830.4	5337.8	4796.1	4074.8	3694.0	3172.6
45°	5645.9	5557.9	5373.4	5236.2	4880.7	4481.2	4080.0	3638.1	3106.5	2730.7	2243.1
47.5°	4035.9	3993.6	4000.4	3746.5	3407.9	3092.9	2761.2	2361.7	1891.1	1418.7	1041.1
50°	1923.1	1935.0	1982.5	1804.7	1550.8	1366.2	1169.8	917.5	670.5	526.5	408.0
51°	1245.9	1259.5	1300.1	1173.3	988.7	863.4	738.1	595.9	475.8	404.7	323.3
52°	843.1	843.1	851.6	777.0	685.6	614.5	541.7	458.8	370.8	318.3	255.6
53°	633.1	631.4	634.8	585.8	523.1	470.6	419.8	358.9	292.8	248.9	198.1
54°	484.2	482.5	485.9	448.6	404.7	365.6	326.7	281.1	226.9	186.2	148.9
55°	365.6	365.6	370.8	342.0	308.1	277.7	248.9	210.0	167.6	135.5	108.3
57.5°	147.3	147.3	152.3	142.2	127.0	115.1	105.0	89.7	74.5	62.7	50.8
60°	60.9	62.7	64.4	59.2	55.9	52.5	49.1	44.1	38.9	32.2	27.0
61°	45.8	45.8	47.4	44.1	42.3	38.9	37.2	33.9	30.5	25.5	22.0
62°	33.9	33.9	35.6	33.9	32.2	30.5	28.8	27.0	23.7	20.3	16.9
63°	25.5	25.5	27.0	25.5	25.5	23.7	22.0	20.3	18.6	15.3	13.6
64°	20.3	20.3	20.3	18.6	18.6	18.6	16.9	16.9	13.6	11.9	10.2
65°	15.3	15.3	15.3	15.3	13.6	13.6	13.6	11.9	11.9	8.4	8.4
66°	11.9	11.9	11.9	10.2	10.2	10.2	10.2	10.2	8.4	6.7	5.1



TEST NUMBER: P1191821

CATALOG NUMBER: LDA4A30935D010TE 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	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
75°	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7
85°	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4	196.4
2.5°	303.0	301.4	284.4	284.4	291.2	281.1	275.9	264.1	226.9	193.0	162.5
5°	670.5	651.7	594.2	577.3	575.6	528.1	501.1	441.9	259.1	184.5	140.5
7.5°	1237.5	1181.7	1083.4	1030.9	966.7	929.4	863.4	761.9	294.5	172.7	127.0
10°	1830.0	1767.5	1621.9	1528.7	1479.7	1359.4	1249.4	1110.6	330.1	164.2	125.3
12.5°	2508.9	2368.4	2229.5	2063.7	1916.4	1809.7	1626.9	1464.4	353.8	162.5	137.2
15°	3243.7	3067.6	2830.6	2607.2	2398.9	2246.5	2001.1	1782.6	362.3	177.8	179.4
17.5°	4066.4	3736.4	3394.3	3089.6	2803.6	2598.6	2293.9	2036.6	357.2	218.4	286.1
20°	4836.7	4398.2	3934.3	3511.1	3106.5	2840.8	2488.6	2209.2	358.9	321.7	385.9
22.5°	5447.9	4914.6	4349.2	3832.8	3319.8	3001.5	2617.3	2300.7	403.0	343.6	262.4
25°	5898.2	5270.1	4621.7	4027.5	3487.5	3130.3	2708.7	2327.8	375.8	198.1	148.9
26°	6018.4	5356.4	4672.5	4056.2	3507.8	3130.3	2695.1	2299.0	325.0	157.5	123.6
27°	6086.0	5395.4	4680.9	4042.8	3482.3	3094.7	2646.1	2241.4	265.8	132.0	105.0
28°	6094.5	5378.4	4638.6	3986.8	3411.2	3018.6	2558.0	2153.4	220.1	111.7	86.4
29°	6048.8	5315.7	4557.3	3893.7	3302.9	2906.7	2437.8	2045.1	188.0	96.6	72.8
30°	5952.3	5205.7	4433.7	3768.4	3162.5	2771.4	2297.3	1924.8	164.2	83.0	60.9
31°	5813.5	5055.1	4300.1	3619.5	3015.1	2635.9	2165.3	1803.0	145.6	69.4	50.8
32°	5634.0	4877.3	4127.3	3458.7	2883.1	2507.2	2038.3	1679.4	130.3	59.2	42.3
33°	5434.3	4675.9	3939.5	3291.1	2756.1	2375.1	1904.5	1549.0	116.9	49.1	35.6
34°	5204.0	4454.0	3739.7	3123.4	2620.6	2229.5	1760.6	1415.3	101.6	40.6	30.5
35°	4941.7	4207.0	3524.7	2971.1	2470.0	2072.2	1610.0	1273.1	89.7	35.6	25.5
36°	4657.3	3949.6	3307.9	2796.7	2307.5	1907.9	1450.8	1129.2	77.8	30.5	22.0
37°	4359.3	3682.1	3091.2	2598.6	2128.0	1733.6	1286.6	973.4	67.7	25.5	18.6
38°	4044.3	3412.9	2881.4	2410.8	1938.4	1545.6	1119.0	802.5	59.2	22.0	16.9
39°	3722.8	3147.2	2673.1	2204.2	1743.7	1361.1	958.3	623.0	52.5	18.6	15.3
40°	3407.9	2896.5	2453.1	1979.0	1549.0	1180.0	802.5	458.8	45.8	16.9	11.9
42.5°	2698.6	2224.5	1760.6	1320.5	1080.1	748.3	445.3	240.5	32.2	11.9	8.4
45°	1765.8	1315.4	949.7	643.3	558.7	316.6	206.6	148.9	23.7	8.4	6.7
47.5°	731.4	533.3	370.8	267.5	216.7	169.2	132.0	96.6	16.9	6.7	6.7
50°	321.7	253.9	201.4	157.5	137.2	110.0	84.7	59.2	10.2	5.1	5.1
51°	257.3	204.8	157.5	125.3	111.7	89.7	69.4	47.4	10.2	5.1	5.1
52°	203.1	159.1	123.6	96.6	89.7	72.8	57.5	38.9	8.4	5.1	5.1
53°	155.8	120.2	93.1	76.2	71.1	59.2	47.4	32.2	6.7	5.1	5.1
54°	115.1	91.4	72.8	59.2	57.5	47.4	38.9	27.0	6.7	5.1	5.1
55°	84.7	71.1	55.9	47.4	45.8	38.9	32.2	22.0	6.7	5.1	5.1
57.5°	44.1	37.2	30.5	27.0	27.0	25.5	22.0	13.6	5.1	3.4	5.1
60°	23.7	20.3	16.9	15.3	18.6	16.9	15.3	8.4	5.1	3.4	5.1
61°	18.6	16.9	13.6	11.9	15.3	13.6	13.6	6.7	5.1	5.1	5.1
62°	15.3	13.6	11.9	10.2	13.6	11.9	11.9	6.7	5.1	5.1	5.1
63°	11.9	10.2	8.4	8.4	11.9	11.9	10.2	5.1	5.1	5.1	5.1
64°	8.4	8.4	6.7	6.7	10.2	10.2	8.4	5.1	5.1	5.1	5.1
65°	6.7	6.7	5.1	5.1	8.4	8.4	8.4	5.1	5.1	5.1	5.1
66°	5.1	5.1	5.1	3.4	6.7	8.4	8.4	3.4	5.1	5.1	5.1



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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°	1.7	1.7	1.7	1.7	5.1	6.7	6.7	3.4	5.1	5.1	5.1
75°	1.7	1.7	1.7	1.7	5.1	6.7	6.7	3.4	5.1	5.1	5.1
77.5°	1.7	1.7	1.7	1.7	5.1	6.7	6.7	3.4	5.1	5.1	6.7
80°	1.7	1.7	1.7	1.7	5.1	6.7	6.7	3.4	5.1	5.1	6.7
82.5°	1.7	1.7	1.7	1.7	5.1	6.7	6.7	3.4	5.1	5.1	6.7
85°	1.7	1.7	1.7	1.7	5.1	6.7	6.7	3.4	5.1	5.1	6.7
87.5°	1.7	1.7	1.7	1.7	5.1	6.7	6.7	3.4	5.1	5.1	6.7
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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CATALOG NUMBER: LDA4A30935D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	196.4	196.4	196.4
2.5°	147.3	138.8	137.2
5°	121.9	113.4	111.7
7.5°	111.7	105.0	103.3
10°	115.1	116.9	120.2
12.5°	147.3	162.5	176.1
15°	237.0	298.0	340.3
17.5°	413.1	457.0	485.9
20°	362.3	333.4	335.2
22.5°	203.1	182.8	181.1
25°	123.6	111.7	108.3
26°	103.3	93.1	89.7
27°	84.7	76.2	72.8
28°	69.4	62.7	60.9
29°	59.2	50.8	49.1
30°	49.1	42.3	40.6
31°	40.6	35.6	33.9
32°	35.6	30.5	27.0
33°	28.8	25.5	23.7
34°	25.5	20.3	18.6
35°	20.3	16.9	16.9
36°	18.6	15.3	13.6
37°	15.3	11.9	11.9
38°	13.6	10.2	8.4
39°	11.9	8.4	6.7
40°	10.2	6.7	5.1
42.5°	6.7	3.4	1.7
45°	5.1	1.7	0.0
47.5°	3.4	1.7	0.0
50°	3.4	0.0	0.0
51°	3.4	0.0	0.0
52°	3.4	0.0	0.0
53°	3.4	0.0	0.0
54°	3.4	0.0	0.0
55°	3.4	0.0	0.0
57.5°	3.4	0.0	0.0
60°	3.4	0.0	0.0
61°	3.4	0.0	0.0
62°	3.4	0.0	0.0
63°	3.4	1.7	0.0
64°	3.4	1.7	0.0
65°	3.4	1.7	0.0
66°	3.4	1.7	0.0



TEST NUMBER: P1191821

CATALOG NUMBER: LDA4A30935D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	5.1	1.7	0.0
75°	5.1	1.7	0.0
77.5°	5.1	1.7	0.0
80°	5.1	1.7	0.0
82.5°	5.1	1.7	0.0
85°	5.1	1.7	0.0
87.5°	3.4	1.7	0.0
90°	0.0	0.0	0.0

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



Report Generated By 670245859 / DESKTOP-T8S5UU9

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report





— 0°-180° - - 45°-225° - - - 90°-270°

Classified

Cooper Lighting Solutions Photometric Lab

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Peachtree City, GA 30269

Scaled Data Report



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Cooper Lighting Solutions Photometric Lab

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Peachtree City, GA 30269

Scaled Data Report





67.5°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	5.1	3.4
70°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	1.7	1.7

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report





67.5°	3.4	3.4	3.4	3.4	6.7	6.7	6.7	3.4	5.1	5.1	5.1
70°	1.7	1.7	1.7	3.4	5.1	6.7	6.7	3.4	5.1	5.1	5.1

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

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Peachtree City, GA 30269

Scaled Data Report



67.5°	3.4	1.7	0.0
70°	3.4	1.7	0.0

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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)