

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: P1192069

Luminaire Tested: **LDA6A25927D010TE LARL20NF 6LAL1 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: P1192069
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26268)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt
Description: PORTFOLIO 6" Lensed Adjustable, Self-flange Trim Ring, 20° Narrow Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

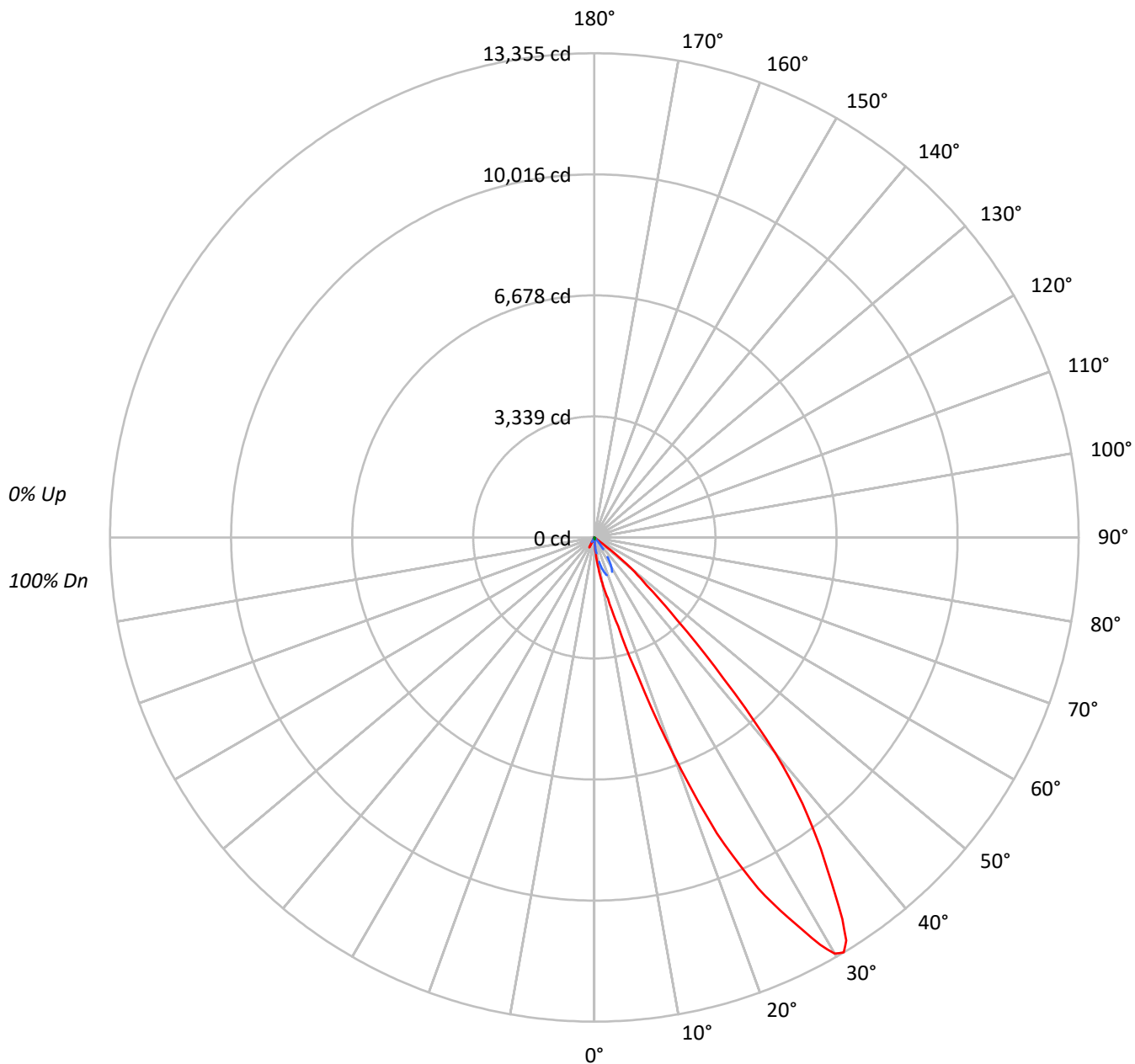
Lumens per Lamp: N/A
Luminaire Lumens: 2034.5 lumens
Efficiency: N/A
Efficacy: 65.2 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 31.2
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

TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
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		94	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	70		79	74	70		77	72	69		75	71	68
5	86	75	68	63	84	74	68	63		72	67	62		71	66	62		69	65	61
6	80	69	62	56	78	68	61	56		66	60	56		65	59	55		63	59	55
7	74	63	56	50	73	62	55	50		61	55	50		59	54	50		58	53	49
8	69	58	50	45	68	57	50	45		56	49	45		55	49	45		54	48	44
9	65	53	46	41	63	52	45	41		51	45	40		50	44	40		49	44	40
10	60	49	41	37	59	48	41	37		47	41	37		46	40	36		45	40	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	2516	2516	2516
5°	24472	2229	919
10°	72371	1586	579
15°	143667	1078	499
20°	370589	881	700
25°	645866	1052	4990
30°	838952	1101	2804
35°	751713	482	268
40°	555741	179	0
45°	250274	194	0
50°	112900	213	0
55°	10074	239	0
60°	1217	274	0
65°	519	415	0
70°	401	513	0
75°	0	678	0
80°	0	1010	284
85°	0	2013	566



TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	18.3	0.9
10°-20°	171.3	8.4
20°-30°	676.4	33.2
30°-40°	816.3	40.1
40°-50°	316.8	15.6
50°-60°	27.9	1.4
60°-70°	2.7	0.1
70°-80°	2.5	0.1
80°-90°	2.4	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°	866.0	42.6
0°-40°	1682.3	82.7
0°-60°	2027.0	99.6
0°-90°	2034.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2034.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	46	46	46	46	46	
5°	445	217	40	20	17	71
15°	2531	958	19	12	9	928
25°	10678	1133	17	55	82	4883
35°	11232	576	7	7	4	6904
45°	3228	40	2	2	0	2836
55°	105	5	2	2	0	254
65°	4	3	3	2	0	5
75°	0	3	3	3	0	1
85°	0	3	3	3	1	0
90°	0	0	0	0	0	

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9
2.5°	144.3	137.2	129.3	132.5	134.1	137.9	134.8	122.8	130.0	124.4	119.6
5°	444.7	436.8	421.7	424.2	419.4	424.9	412.2	386.9	391.6	383.7	363.1
7.5°	867.3	834.1	809.4	811.0	796.8	803.1	779.3	735.7	731.0	690.5	684.2
10°	1300.1	1283.5	1254.2	1250.1	1224.8	1227.9	1190.6	1132.8	1116.9	1070.1	1043.2
12.5°	1725.1	1697.3	1656.1	1647.3	1606.2	1606.9	1556.2	1491.1	1467.4	1419.0	1381.7
15°	2531.4	2491.6	2397.3	2361.6	2247.4	2230.0	2104.7	1957.3	1885.9	1802.7	1693.3
17.5°	4019.3	3994.0	3809.3	3706.9	3475.4	3245.6	3110.0	2791.4	2605.1	2372.0	2169.8
20°	6352.4	6399.2	6076.6	5848.2	5418.4	4933.2	4590.9	4010.5	3623.0	3221.0	2840.5
22.5°	8833.6	8853.5	8523.0	8238.3	7738.2	7071.4	6282.6	5578.7	4868.3	4177.8	3550.0
25°	10677.7	10620.5	10256.7	9915.0	9388.7	8707.7	7941.0	7000.9	6029.8	5081.5	4162.0
26°	11240.4	11209.7	10845.0	10435.8	9856.3	9165.1	8367.6	7418.7	6392.9	5371.6	4349.0
27°	11762.1	11742.4	11346.7	10891.8	10242.4	9518.7	8683.9	7735.7	6667.1	5596.1	4484.6
28°	12290.9	12268.7	11789.9	11261.9	10556.3	9769.9	8902.6	7947.3	6843.9	5727.7	4540.9
29°	12849.8	12807.0	12195.0	11533.9	10765.6	9916.6	9016.8	8044.1	6904.1	5760.3	4526.7
30°	13253.4	13186.7	12487.6	11705.9	10851.3	9962.5	9029.4	8041.8	6866.8	5692.7	4435.6
31°	13354.9	13287.5	12569.2	11703.5	10788.7	9892.9	8938.3	7929.2	6711.5	5529.4	4281.6
32°	13109.1	13047.2	12362.3	11436.2	10590.4	9724.7	8756.8	7720.7	6470.5	5285.3	4073.2
33°	12560.4	12513.6	11923.0	11085.1	10306.6	9486.1	8496.7	7424.1	6127.9	4974.6	3828.3
34°	11868.3	11834.4	11380.0	10672.0	9946.7	9158.7	8159.9	7033.4	5676.9	4622.6	3561.0
35°	11232.5	11207.2	10839.3	10211.5	9535.2	8753.6	7733.4	6552.1	5212.4	4243.6	3275.7
36°	10620.5	10599.2	10279.7	9696.2	9043.7	8278.8	7196.7	5976.6	4713.7	3850.4	2980.0
37°	9981.5	9962.5	9688.3	9133.4	8491.3	7711.1	6559.3	5363.7	4207.2	3457.9	2676.3
38°	9318.8	9303.0	9051.8	8498.3	7846.7	7017.4	5832.4	4730.4	3713.2	3075.1	2403.6
39°	8579.3	8565.7	8334.2	7754.0	7057.9	6200.2	5084.0	4112.9	3244.7	2703.2	2139.6
40°	7765.8	7747.7	7516.1	6867.7	6164.5	5359.0	4365.0	3546.1	2802.5	2356.1	1907.4
42.5°	5279.8	5259.9	5087.9	4710.5	4033.6	3515.8	2892.7	2373.6	1985.8	1717.2	1485.7
45°	3228.2	3230.5	3140.1	2907.0	2499.5	2211.7	1873.2	1625.2	1450.7	1347.7	1186.8
47.5°	1952.6	1952.6	1912.1	1793.2	1610.1	1495.2	1354.8	1239.0	1105.9	1004.3	830.0
50°	1323.8	1324.7	1262.8	1269.3	1147.2	1075.8	941.7	800.6	669.9	522.5	372.6
51°	979.9	984.6	927.5	953.7	819.6	759.5	632.6	513.0	397.2	283.1	163.3
52°	599.4	608.0	569.1	593.0	515.3	427.3	324.2	239.4	161.0	112.6	78.5
53°	278.3	285.3	265.6	276.7	230.6	180.0	136.3	111.0	88.8	72.1	53.1
54°	147.4	149.0	142.7	139.5	126.8	111.7	92.7	76.9	60.2	48.4	35.7
55°	105.4	105.4	102.2	99.0	88.8	76.2	61.7	52.2	39.6	31.7	23.0
57.5°	32.5	32.5	32.5	31.0	26.9	23.0	18.3	15.8	12.7	12.0	9.5
60°	11.1	11.1	11.1	10.4	9.5	8.8	7.9	7.2	6.3	6.3	5.6
61°	7.9	7.9	7.9	7.9	7.2	7.2	6.3	5.6	4.7	5.6	4.7
62°	6.3	7.2	6.3	6.3	6.3	5.6	4.7	4.7	4.0	4.7	4.0
63°	5.6	5.6	5.6	5.6	4.7	4.7	4.0	4.0	3.2	4.0	4.0
64°	4.7	4.7	4.7	4.7	4.0	4.0	3.2	3.2	2.5	3.2	3.2
65°	4.0	4.0	4.0	4.0	3.2	3.2	3.2	2.5	2.5	3.2	3.2
66°	3.2	3.2	3.2	3.2	3.2	2.5	2.5	2.5	1.6	2.5	2.5

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	1.6	1.6	1.6	1.6	0.9	0.9	0.9	0.9	0.9	1.6	1.6
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9	45.9
2.5°	114.9	107.0	105.4	105.4	88.8	92.0	86.4	82.5	57.9	44.3	33.2
5°	351.1	322.6	310.7	300.5	255.3	251.2	223.6	217.3	77.8	40.5	25.3
7.5°	654.8	611.2	583.5	556.4	483.6	463.7	416.2	404.3	105.4	34.1	19.9
10°	1000.5	937.8	889.5	825.3	731.0	689.6	620.0	594.6	128.4	28.5	19.0
12.5°	1325.4	1254.2	1188.4	1103.6	975.8	910.1	818.0	785.7	137.2	23.7	17.4
15°	1606.2	1511.0	1429.4	1338.2	1195.4	1112.2	999.6	957.7	130.0	19.0	15.1
17.5°	1962.1	1801.1	1659.3	1531.6	1376.2	1274.7	1144.0	1075.8	105.4	16.7	13.5
20°	2488.4	2164.2	1914.6	1708.4	1492.7	1366.7	1221.6	1139.3	76.2	15.1	13.5
22.5°	2984.0	2521.0	2138.0	1843.1	1553.1	1402.5	1251.7	1160.6	53.8	15.1	15.8
25°	3388.3	2789.8	2292.6	1932.0	1586.3	1409.5	1240.6	1132.8	42.0	17.4	31.0
26°	3501.6	2856.3	2322.7	1939.0	1581.6	1399.3	1221.6	1107.4	37.3	23.7	57.9
27°	3572.1	2886.4	2323.6	1927.9	1564.1	1378.5	1193.1	1073.3	32.5	36.4	97.5
28°	3586.4	2872.1	2296.7	1897.0	1534.1	1350.9	1161.4	1032.1	30.1	45.9	111.0
29°	3547.7	2821.5	2247.4	1851.9	1497.5	1317.5	1123.3	986.9	26.2	34.8	72.1
30°	3460.4	2737.4	2175.3	1794.1	1458.8	1280.4	1076.7	933.1	21.5	17.4	32.5
31°	3329.5	2621.6	2086.5	1725.8	1415.1	1232.7	1020.4	872.8	18.3	12.0	19.0
32°	3164.0	2483.0	1987.4	1656.1	1365.9	1174.8	954.6	805.4	16.7	9.5	15.8
33°	2973.6	2337.0	1885.2	1585.6	1307.3	1105.9	883.8	733.2	15.1	10.4	15.8
34°	2765.9	2188.0	1769.4	1511.7	1239.0	1030.6	808.5	648.5	13.5	9.5	12.0
35°	2540.9	2033.5	1665.6	1446.8	1162.1	948.9	731.7	576.3	12.0	7.2	7.9
36°	2346.6	1882.7	1564.8	1364.3	1078.2	864.8	652.5	498.6	10.4	4.7	5.6
37°	2134.8	1741.6	1471.4	1278.8	987.8	778.5	573.2	421.7	9.5	3.2	4.7
38°	1937.4	1611.6	1377.8	1180.4	895.1	691.2	492.2	346.4	8.8	3.2	4.0
39°	1758.4	1493.6	1290.6	1075.8	797.5	600.1	410.6	272.0	7.9	2.5	4.0
40°	1604.6	1388.0	1185.9	965.6	696.8	509.8	329.0	201.4	7.2	2.5	4.0
42.5°	1304.8	1113.8	895.1	682.6	451.1	288.5	147.4	73.7	5.6	2.5	3.2
45°	997.3	792.7	590.6	410.6	232.2	111.7	54.7	40.5	4.7	2.5	3.2
47.5°	647.7	475.7	317.2	179.1	77.8	45.2	28.5	20.6	4.0	2.5	3.2
50°	239.4	132.5	69.8	43.6	30.1	19.0	12.7	12.0	4.0	2.5	3.2
51°	98.3	64.2	43.6	29.4	19.0	13.5	10.4	10.4	4.0	2.5	3.2
52°	58.6	40.5	29.4	21.5	14.2	10.4	7.9	8.8	4.0	2.5	3.2
53°	38.9	27.8	21.5	16.7	11.1	7.9	5.6	6.3	4.0	2.5	3.2
54°	26.2	19.9	15.8	12.7	7.9	6.3	3.2	5.6	3.2	2.5	3.2
55°	18.3	14.2	12.0	9.5	5.6	4.0	2.5	4.7	3.2	2.5	3.2
57.5°	7.9	7.2	6.3	5.6	2.5	1.6	0.9	4.0	3.2	2.5	3.2
60°	5.6	4.7	4.0	4.0	0.9	0.9	0.0	3.2	3.2	2.5	3.2
61°	4.7	4.0	4.0	3.2	0.9	0.9	0.0	3.2	4.0	2.5	3.2
62°	4.0	4.0	3.2	3.2	0.9	0.0	0.0	3.2	4.0	2.5	4.0
63°	3.2	3.2	3.2	3.2	0.9	0.0	0.0	3.2	4.0	2.5	4.0
64°	3.2	3.2	3.2	3.2	0.0	0.0	0.0	3.2	4.0	2.5	4.0
65°	3.2	2.5	2.5	2.5	0.0	0.0	0.0	3.2	4.0	3.2	4.0
66°	2.5	2.5	2.5	2.5	0.0	0.0	0.0	3.2	4.0	3.2	4.0



TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	1.6	1.6	1.6	1.6	0.0	0.0	0.0	2.5	4.0	3.2	4.7
75°	0.9	1.6	1.6	1.6	0.0	0.0	0.0	3.2	4.0	3.2	4.7
77.5°	0.9	1.6	1.6	1.6	0.0	0.0	0.0	3.2	4.0	3.2	4.7
80°	0.9	1.6	1.6	1.6	0.0	0.0	0.0	3.2	4.0	3.2	4.7
82.5°	0.9	1.6	1.6	1.6	0.0	0.0	0.0	3.2	4.0	3.2	4.7
85°	0.9	1.6	1.6	1.6	0.0	0.0	0.0	3.2	4.0	3.2	4.7
87.5°	0.9	1.6	1.6	1.6	0.0	0.0	0.0	3.2	4.0	3.2	4.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	45.9	45.9	45.9
2.5°	27.8	25.3	23.7
5°	19.9	18.3	16.7
7.5°	16.7	14.2	13.5
10°	15.1	11.1	10.4
12.5°	12.7	9.5	8.8
15°	12.0	9.5	8.8
17.5°	12.0	9.5	8.8
20°	12.7	12.0	12.0
22.5°	18.3	19.9	20.6
25°	55.4	71.4	82.5
26°	130.0	195.1	261.6
27°	197.4	287.8	306.8
28°	177.5	206.2	200.6
29°	85.7	96.8	88.0
30°	38.0	45.2	44.3
31°	24.6	27.8	26.9
32°	20.6	19.0	18.3
33°	16.7	13.5	11.1
34°	11.1	8.8	7.2
35°	7.2	4.7	4.0
36°	4.7	2.5	1.6
37°	3.2	1.6	0.9
38°	3.2	0.9	0.0
39°	2.5	0.9	0.0
40°	2.5	0.9	0.0
42.5°	2.5	0.0	0.0
45°	1.6	0.0	0.0
47.5°	1.6	0.0	0.0
50°	2.5	0.9	0.0
51°	2.5	0.0	0.0
52°	2.5	0.0	0.0
53°	1.6	0.0	0.0
54°	1.6	0.0	0.0
55°	1.6	0.0	0.0
57.5°	1.6	0.0	0.0
60°	1.6	0.0	0.0
61°	2.5	0.0	0.0
62°	2.5	0.0	0.0
63°	2.5	0.0	0.0
64°	2.5	0.9	0.0
65°	2.5	0.9	0.0
66°	2.5	0.9	0.0



TEST NUMBER: P1192069

CATALOG NUMBER: LDA6A25927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	3.2	0.9	0.0
75°	3.2	0.9	0.0
77.5°	3.2	0.9	0.0
80°	3.2	1.6	0.9
82.5°	3.2	1.6	0.9
85°	3.2	1.6	0.9
87.5°	3.2	1.6	0.9
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



Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



— 0°-180° - - 45°-225° - - - 90°-270°

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report





67.5°	2.5	2.5	2.5	2.5	2.5	2.5	1.6	1.6	1.6	2.5	2.5
70°	2.5	2.5	1.6	1.6	1.6	1.6	1.6	0.9	0.9	2.5	2.5

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



67.5°	2.5	2.5	2.5	2.5	0.0	0.0	0.0	3.2	4.0	3.2	4.0
70°	2.5	2.5	2.5	2.5	0.0	0.0	0.0	3.2	4.0	3.2	4.7

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



67.5°	3.2	0.9	0.0
70°	3.2	0.9	0.0

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)