

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: P1191599

Luminaire Tested: **LDA4A20927D010TE LAR15SP 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: P1191599
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25648)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A20927D010TE LAR15SP 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 15° Spot
Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

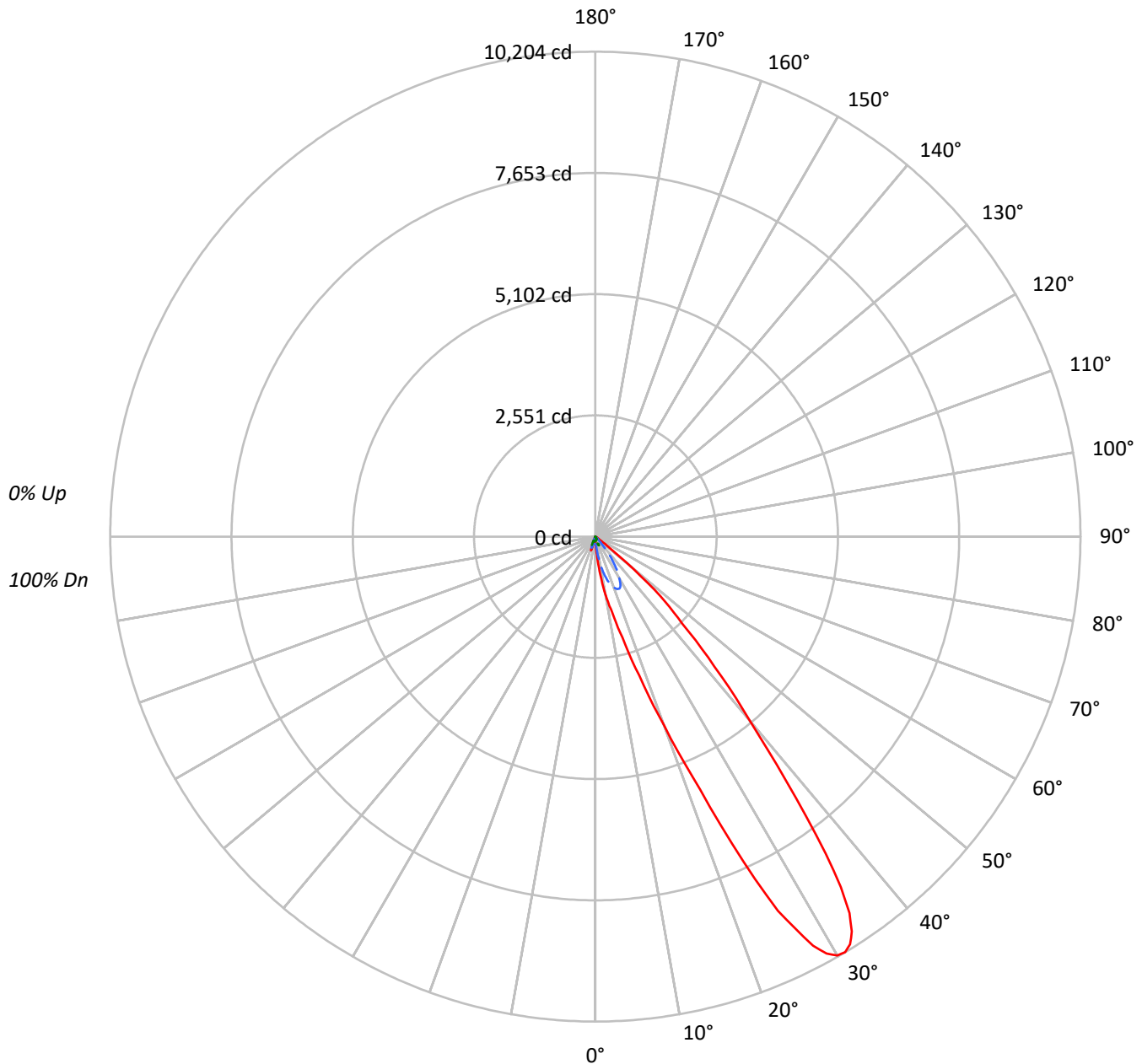
Lumens per Lamp: N/A
Luminaire Lumens: 1645.9 lumens
Efficiency: N/A
Efficacy: 57.2 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 4LA1 30° Tilt

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 4LA1 30° Tilt

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	98	96			96
2	106	100	95	91	103	98	94	90		95	91	88			92	89	86			89
3	99	91	85	80	97	90	84	80		87	82	78			84	80	77			82
4	92	83	77	71	90	82	76	71		80	74	70			78	73	69			76
5	86	76	69	64	84	75	68	63		73	67	63			71	66	62			70
6	80	69	62	57	79	69	62	57		67	61	56			65	60	56			64
7	75	64	56	51	73	63	56	51		62	55	51			60	55	50			59
8	70	58	51	46	69	58	51	46		57	50	46			55	50	46			54
9	65	54	47	42	64	53	46	42		52	46	41			51	45	41			50
10	61	49	42	38	60	49	42	38		48	42	38			47	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	11841	11841	11841
5°	53117	11131	7206
10°	157262	10233	9218
15°	280741	12131	25961
20°	556090	23876	27880
25°	1082120	15569	7921
30°	1449511	5811	2763
35°	1356309	2469	1069
40°	812762	1143	322
45°	451042	715	0
50°	165468	576	0
55°	25246	430	0
60°	5526	493	0
65°	1780	584	0
70°	361	721	0
75°	0	1430	0
80°	0	2131	0
85°	0	4246	0



TEST NUMBER: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 4LA1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.1	1.3
10°-20°	177.8	10.8
20°-30°	530.7	32.2
30°-40°	628.6	38.2
40°-50°	260.7	15.8
50°-60°	20.2	1.2
60°-70°	2.7	0.2
70°-80°	2.1	0.1
80°-90°	1.9	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°	729.7	44.3
0°-40°	1358.2	82.5
0°-60°	1639.2	99.6
0°-90°	1645.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1645.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	96	96	96	96	96	
5°	429	217	90	62	58	68
15°	2198	929	95	142	203	726
25°	7951	1206	114	66	58	3632
35°	9007	672	16	9	7	5220
45°	2586	59	4	3	0	2108
55°	117	8	2	1	0	172
65°	6	2	2	2	0	8
75°	0	2	3	2	0	0
85°	0	2	3	2	0	0
90°	0	0	0	0	0	

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0
2.5°	166.5	158.4	162.5	155.2	159.4	152.2	147.1	152.2	152.2	148.1	142.0
5°	429.0	427.0	435.3	415.7	420.9	399.5	381.1	386.2	382.1	368.8	345.3
7.5°	817.2	809.1	818.3	790.7	791.8	756.0	728.3	734.6	716.2	693.7	652.8
10°	1255.6	1244.3	1254.5	1221.8	1215.7	1165.6	1126.8	1132.9	1091.1	1054.3	992.0
12.5°	1635.5	1634.5	1601.9	1608.0	1595.7	1519.1	1494.6	1496.6	1439.4	1398.6	1324.0
15°	2198.5	2219.9	2226.0	2184.1	2108.6	1969.7	1908.3	1884.8	1791.9	1723.4	1616.1
17.5°	3063.8	3093.3	2992.3	3016.7	2892.1	2674.6	2553.0	2480.4	2305.8	2177.1	1982.9
20°	4236.5	4211.0	4064.9	4046.6	3834.0	3554.1	3298.7	3161.8	2893.2	2705.1	2422.2
22.5°	5750.5	5731.1	5480.9	5369.4	4925.0	4530.8	4199.8	3856.6	3457.1	3205.7	2821.7
25°	7951.1	7862.2	7380.0	7063.3	6281.8	5611.7	5060.0	4526.7	3914.8	3642.0	3153.7
26°	8761.2	8739.8	8237.2	7820.3	6878.4	6046.8	5303.1	4768.8	4094.6	3775.8	3247.7
27°	9247.4	9418.2	8950.2	8478.3	7448.5	6452.4	5590.1	4964.0	4234.5	3869.8	3307.9
28°	9752.2	9862.5	9443.6	8851.1	7905.2	6775.3	5807.7	5095.8	4320.4	3915.8	3328.3
29°	10030.1	10136.2	9747.0	9191.3	8204.5	6984.7	5936.5	5154.0	4351.9	3914.8	3310.0
30°	10177.2	10276.2	9896.1	9356.8	8328.1	7050.0	5964.1	5130.5	4321.4	3867.7	3257.8
31°	10203.7	10286.4	9911.5	9351.7	8281.1	6969.3	5886.4	5033.4	4239.6	3781.0	3179.2
32°	10113.8	10178.2	9797.1	9200.5	8069.6	6765.0	5725.1	4883.2	4115.0	3672.7	3078.1
33°	9903.4	10018.8	9554.0	8895.0	7701.9	6462.7	5496.1	4687.1	3959.7	3531.6	2954.5
34°	9555.0	9628.6	9147.4	8416.9	7211.4	6094.9	5215.2	4459.2	3782.0	3365.1	2814.5
35°	9007.4	9072.8	8540.5	7771.2	6652.6	5680.0	4894.5	4208.0	3582.8	3178.2	2659.2
36°	8249.3	8311.8	7755.0	7054.2	6088.7	5248.0	4556.2	3934.2	3367.2	2977.9	2494.7
37°	7363.6	7417.8	6922.3	6350.3	5534.9	4810.7	4214.1	3656.3	3139.4	2773.6	2338.5
38°	6507.6	6556.6	6156.1	5690.3	5000.8	4383.6	3872.9	3368.2	2904.4	2568.3	2174.0
39°	5735.2	5778.2	5455.3	5071.2	4492.0	3974.0	3532.7	3082.2	2668.4	2363.0	2004.3
40°	5047.7	5084.5	4818.9	4503.2	4030.2	3590.9	3201.7	2805.3	2437.5	2163.7	1846.0
42.5°	3705.3	3713.5	3555.1	3369.2	3001.4	2749.2	2472.3	2186.2	1917.6	1729.6	1527.3
45°	2585.7	2686.7	2583.6	2460.0	2196.5	2038.0	1861.4	1688.6	1533.4	1352.6	1152.3
47.5°	1859.4	1863.4	1802.0	1724.4	1516.0	1407.7	1262.6	1053.3	899.1	642.6	477.1
50°	862.3	814.2	817.2	764.1	681.4	541.4	452.5	322.8	257.5	183.9	148.1
51°	512.9	477.1	482.2	444.4	389.2	303.4	257.5	206.3	178.8	139.0	114.4
52°	299.3	287.1	286.0	268.7	228.8	210.4	185.9	155.2	135.8	107.3	88.9
53°	217.6	209.4	209.4	198.2	170.6	158.4	141.0	119.5	104.3	81.7	67.5
54°	162.5	156.2	156.2	149.1	137.8	118.4	106.3	88.9	77.6	63.3	50.1
55°	117.4	113.4	113.4	108.3	100.1	85.9	76.6	64.3	57.2	45.9	36.8
57.5°	49.1	47.1	47.1	44.9	42.9	36.8	34.8	29.7	25.5	22.4	18.4
60°	22.4	21.4	22.4	21.4	19.4	20.4	17.4	15.3	14.3	12.3	10.3
61°	17.4	16.4	16.4	16.4	14.3	14.3	13.3	12.3	11.3	9.1	8.1
62°	13.3	12.3	12.3	12.3	11.3	11.3	10.3	9.1	9.1	7.1	6.1
63°	10.3	9.1	9.1	9.1	8.1	8.1	8.1	7.1	7.1	6.1	5.1
64°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	6.1	5.1	4.1	4.1
65°	6.1	5.1	6.1	5.1	5.1	5.1	5.1	5.1	4.1	3.0	3.0
66°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	3.0	2.0



TEST NUMBER: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 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	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
75°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
85°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
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: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0
2.5°	139.0	143.1	140.0	131.8	135.8	133.8	129.7	126.7	108.3	94.0	79.6
5°	328.0	331.0	313.6	282.9	272.8	256.4	233.0	216.6	122.6	89.9	70.5
7.5°	620.2	599.6	583.4	526.1	501.6	463.8	418.9	387.2	140.0	84.9	65.4
10°	938.9	906.2	872.4	788.7	744.7	686.5	622.2	585.4	158.4	81.7	65.4
12.5°	1254.5	1210.5	1149.3	1057.3	995.1	916.4	828.5	763.1	171.6	83.8	75.6
15°	1528.4	1475.2	1407.7	1303.6	1231.1	1132.9	1018.5	928.6	177.8	95.0	105.3
17.5°	1826.6	1730.6	1619.3	1486.4	1406.7	1293.3	1164.6	1055.3	177.8	120.6	168.5
20°	2169.8	1994.2	1815.3	1629.4	1517.1	1398.6	1260.6	1143.2	184.9	181.9	232.0
22.5°	2489.7	2247.6	1995.2	1753.1	1596.7	1468.0	1328.1	1193.3	214.6	200.3	154.2
25°	2737.9	2430.3	2133.0	1838.8	1662.1	1519.1	1368.9	1206.5	196.2	114.4	83.8
26°	2802.3	2470.3	2160.7	1849.1	1665.2	1518.1	1364.9	1192.1	164.5	90.9	67.5
27°	2835.9	2483.4	2162.7	1840.0	1652.9	1500.7	1342.4	1162.6	131.8	73.6	55.2
28°	2835.9	2468.2	2141.3	1814.3	1621.3	1468.0	1303.6	1115.5	107.3	60.2	43.9
29°	2807.4	2428.3	2098.4	1775.5	1578.3	1422.1	1250.5	1060.4	90.9	50.1	35.8
30°	2752.2	2370.1	2041.1	1725.4	1523.1	1369.9	1192.1	1003.2	78.6	40.8	28.7
31°	2674.6	2304.8	1970.7	1671.3	1472.2	1322.0	1139.1	945.0	68.5	32.7	23.5
32°	2581.6	2223.0	1898.2	1615.1	1430.2	1277.0	1084.0	883.7	59.2	27.5	20.4
33°	2474.3	2131.0	1822.6	1559.9	1389.3	1225.9	1023.6	817.2	51.1	22.4	17.4
34°	2355.7	2029.9	1744.8	1500.7	1339.2	1161.6	953.2	746.7	43.9	19.4	14.3
35°	2227.0	1916.6	1665.2	1440.5	1283.1	1090.0	877.5	672.2	37.8	16.4	12.3
36°	2088.1	1810.3	1587.6	1380.2	1213.7	1012.4	794.8	595.6	32.7	13.3	11.3
37°	1949.1	1710.2	1511.0	1315.8	1132.9	924.5	707.9	515.9	28.7	11.3	9.1
38°	1817.4	1613.1	1435.4	1241.2	1038.9	827.5	618.0	436.3	24.5	10.3	8.1
39°	1693.9	1519.1	1357.6	1152.3	941.9	733.6	531.3	353.5	21.4	9.1	7.1
40°	1582.5	1430.2	1272.9	1053.3	841.9	637.4	443.4	263.5	18.4	7.1	6.1
42.5°	1347.5	1186.0	978.7	734.6	569.1	369.8	206.3	98.0	13.3	5.1	5.1
45°	889.8	684.5	464.8	276.9	186.9	112.4	83.8	59.2	10.3	4.1	4.1
47.5°	297.3	189.0	137.8	99.0	84.9	67.5	54.2	36.8	7.1	3.0	3.0
50°	113.4	91.9	75.6	57.2	51.1	40.8	32.7	21.4	5.1	3.0	3.0
51°	88.9	72.5	59.2	44.9	40.8	32.7	26.5	18.4	4.1	3.0	3.0
52°	68.5	56.2	45.9	34.8	32.7	26.5	22.4	15.3	4.1	2.0	3.0
53°	52.1	42.9	34.8	26.5	25.5	21.4	18.4	12.3	3.0	2.0	3.0
54°	38.8	32.7	27.5	21.4	21.4	18.4	15.3	10.3	3.0	2.0	3.0
55°	29.7	24.5	21.4	16.4	17.4	15.3	13.3	8.1	3.0	2.0	3.0
57.5°	15.3	14.3	12.3	10.3	11.3	10.3	9.1	5.1	3.0	2.0	3.0
60°	9.1	8.1	7.1	6.1	7.1	7.1	7.1	3.0	3.0	2.0	3.0
61°	7.1	6.1	5.1	5.1	6.1	6.1	6.1	3.0	3.0	2.0	3.0
62°	5.1	5.1	4.1	4.1	6.1	5.1	5.1	3.0	3.0	2.0	3.0
63°	4.1	4.1	4.1	3.0	5.1	5.1	5.1	3.0	3.0	2.0	3.0
64°	3.0	3.0	3.0	3.0	4.1	5.1	5.1	2.0	3.0	2.0	3.0
65°	3.0	3.0	2.0	2.0	4.1	4.1	4.1	2.0	3.0	2.0	3.0
66°	2.0	2.0	2.0	2.0	4.1	4.1	4.1	2.0	3.0	2.0	3.0



TEST NUMBER: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 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°	1.0	1.0	1.0	1.0	3.0	3.0	4.1	2.0	3.0	3.0	3.0
75°	1.0	1.0	1.0	1.0	3.0	3.0	4.1	2.0	3.0	3.0	3.0
77.5°	1.0	1.0	1.0	1.0	3.0	3.0	4.1	2.0	3.0	3.0	4.1
80°	1.0	1.0	1.0	1.0	3.0	3.0	4.1	2.0	3.0	3.0	4.1
82.5°	1.0	1.0	1.0	1.0	3.0	3.0	4.1	2.0	3.0	3.0	4.1
85°	1.0	1.0	1.0	1.0	3.0	3.0	4.1	2.0	3.0	3.0	4.1
87.5°	1.0	1.0	1.0	1.0	3.0	3.0	4.1	2.0	3.0	3.0	3.0
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: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	96.0	96.0	96.0
2.5°	72.5	69.5	67.5
5°	62.3	59.2	58.2
7.5°	58.2	57.2	58.2
10°	64.3	68.5	73.6
12.5°	85.9	101.1	109.3
15°	142.0	184.9	203.3
17.5°	250.4	285.0	305.5
20°	220.7	201.3	212.4
22.5°	119.5	104.3	107.3
25°	66.5	57.2	58.2
26°	53.1	45.9	45.9
27°	42.9	36.8	36.8
28°	34.8	29.7	29.7
29°	27.5	23.5	23.5
30°	22.4	19.4	19.4
31°	18.4	15.3	15.3
32°	15.3	13.3	12.3
33°	13.3	11.3	10.3
34°	11.3	9.1	8.1
35°	9.1	7.1	7.1
36°	8.1	6.1	6.1
37°	7.1	5.1	5.1
38°	6.1	4.1	4.1
39°	5.1	4.1	3.0
40°	4.1	3.0	2.0
42.5°	3.0	2.0	1.0
45°	3.0	1.0	0.0
47.5°	2.0	1.0	0.0
50°	2.0	0.0	0.0
51°	2.0	0.0	0.0
52°	2.0	0.0	0.0
53°	1.0	0.0	0.0
54°	2.0	0.0	0.0
55°	1.0	0.0	0.0
57.5°	2.0	0.0	0.0
60°	2.0	0.0	0.0
61°	2.0	0.0	0.0
62°	2.0	0.0	0.0
63°	2.0	0.0	0.0
64°	2.0	1.0	0.0
65°	2.0	1.0	0.0
66°	2.0	1.0	0.0



TEST NUMBER: P1191599

CATALOG NUMBER: LDA4A20927D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.0	1.0	0.0
75°	2.0	1.0	0.0
77.5°	2.0	1.0	0.0
80°	2.0	1.0	0.0
82.5°	2.0	1.0	0.0
85°	2.0	1.0	0.0
87.5°	2.0	1.0	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

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°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	1.0	1.0

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°	2.0	1.0	2.0	2.0	3.0	4.1	4.1	2.0	3.0	2.0	3.0
70°	1.0	1.0	1.0	1.0	3.0	3.0	4.1	2.0	3.0	2.0	3.0

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°	2.0	1.0	0.0
70°	2.0	1.0	0.0

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)