

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: P1212744

Luminaire Tested: **LDA4A15950D010TE 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: P1212744
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: LDA4A15950D010TE 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 / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

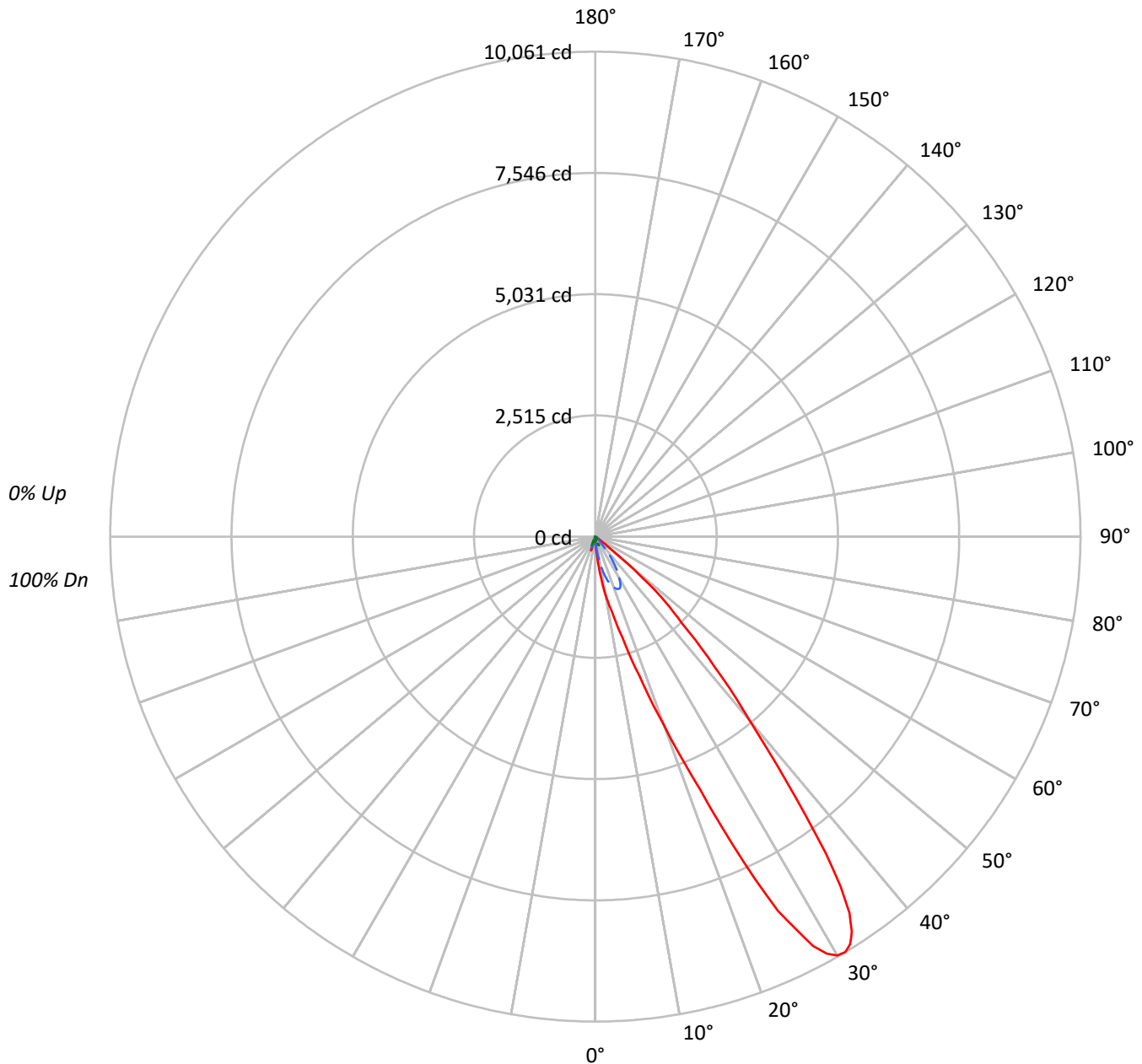
Lumens per Lamp: N/A
Luminaire Lumens: 1623.0 lumens
Efficiency: N/A
Efficacy: 79.6 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 20.4
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

TEST NUMBER: P1212744

CATALOG NUMBER: LDA4A15950D010TE LAR15SP 4LA1 30° Tilt

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1212744

CATALOG NUMBER: LDA4A15950D010TE 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	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	98	96	96	94	93	91		
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82		
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74		
4	92	83	77	71	90	82	76	71	80	74	70	78	73	69	76	72	68	67		
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60		
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	56	54		
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49		
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44		
9	65	54	47	42	64	53	46	42	52	46	41	51	45	41	50	45	41	40		
10	61	49	42	38	60	49	42	38	48	42	38	47	41	37	46	41	37	36		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	11681	11681	11681
5°	52387	10970	7107
10°	155045	10095	9081
15°	276808	11965	25590
20°	548319	23535	27499
25°	1066972	15352	7812
30°	1429229	5726	2720
35°	1337336	2424	1069
40°	801394	1143	322
45°	444727	698	0
50°	163146	576	0
55°	24924	430	0
60°	5477	493	0
65°	1780	584	0
70°	361	721	0
75°	0	1430	0
80°	0	2131	0
85°	0	4246	0

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1212744

CATALOG NUMBER: LDA4A15950D010TE LAR15SP 4LA1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	20.8	1.3
10°-20°	175.3	10.8
20°-30°	523.3	32.2
30°-40°	619.8	38.2
40°-50°	257.1	15.8
50°-60°	20.0	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°	719.4	44.3
0°-40°	1339.2	82.5
0°-60°	1616.3	99.6
0°-90°	1623.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1623.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	95	95	95	95	95	
5°	423	214	89	61	57	67
15°	2168	916	94	140	200	716
25°	7840	1190	113	66	57	3581
35°	8881	663	16	9	7	5147
45°	2550	58	4	3	0	2078
55°	116	8	2	1	0	170
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: P1212744

CATALOG NUMBER: LDA4A15950D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7
2.5°	164.2	156.1	160.2	153.2	157.1	150.1	145.1	150.1	150.1	146.1	140.0
5°	423.1	421.1	429.1	410.0	415.0	393.8	375.6	380.7	376.7	363.6	340.5
7.5°	805.8	797.7	806.8	779.7	780.7	745.4	718.1	724.3	706.2	684.0	643.8
10°	1237.9	1226.9	1237.0	1204.7	1198.6	1149.3	1111.0	1117.1	1075.9	1039.5	978.1
12.5°	1612.7	1611.6	1579.4	1585.5	1573.5	1497.9	1473.7	1475.8	1419.3	1379.0	1305.4
15°	2167.7	2188.8	2194.9	2153.6	2079.1	1942.1	1881.7	1858.6	1766.8	1699.3	1593.6
17.5°	3020.9	3050.1	2950.4	2974.6	2851.7	2637.1	2517.3	2445.8	2273.5	2146.6	1955.3
20°	4177.3	4152.2	4008.1	3990.0	3780.5	3504.5	3252.6	3117.6	2852.7	2667.3	2388.4
22.5°	5670.2	5651.0	5404.3	5294.3	4856.3	4467.4	4141.1	3802.6	3408.7	3161.0	2782.2
25°	7839.8	7752.3	7276.9	6964.6	6193.9	5533.2	4989.2	4463.5	3860.1	3591.1	3109.5
26°	8638.8	8617.6	8122.0	7711.0	6782.2	5962.3	5229.0	4702.2	4037.3	3723.0	3202.3
27°	9118.2	9286.5	8825.1	8359.6	7344.4	6362.1	5512.1	4894.6	4175.3	3815.7	3261.6
28°	9615.7	9724.5	9311.5	8727.4	7794.6	6680.5	5726.4	5024.4	4259.9	3861.0	3281.8
29°	9889.7	9994.5	9610.7	9062.8	8089.7	6887.0	5853.4	5082.0	4291.1	3860.1	3263.6
30°	10034.8	10132.5	9757.8	9226.0	8211.5	6951.4	5880.7	5058.7	4261.0	3813.7	3212.4
31°	10061.1	10142.6	9772.9	9221.0	8165.2	6871.8	5804.0	4963.1	4180.4	3728.0	3134.8
32°	9972.4	10035.8	9660.1	9071.8	7956.7	6670.5	5644.9	4814.9	4057.5	3621.4	3035.0
33°	9764.9	9878.6	9420.3	8770.6	7594.1	6372.2	5419.3	4621.6	3904.3	3482.2	2913.1
34°	9421.5	9494.0	9019.5	8299.2	7110.7	6009.5	5142.4	4396.9	3729.1	3318.1	2775.1
35°	8881.4	8945.9	8421.1	7662.6	6559.5	5600.7	4826.1	4149.1	3532.7	3133.7	2622.0
36°	8134.0	8195.4	7646.4	6955.5	6003.6	5174.5	4492.7	3879.2	3320.1	2936.3	2459.8
37°	7260.7	7314.0	6825.6	6261.4	5457.6	4743.4	4155.1	3605.2	3095.5	2734.8	2305.7
38°	6416.6	6465.0	6070.2	5610.8	4930.7	4322.3	3818.8	3321.1	2863.7	2532.3	2143.5
39°	5655.0	5697.3	5379.1	5000.2	4429.2	3918.4	3483.4	3039.0	2631.2	2329.9	1976.4
40°	4977.1	5013.4	4751.4	4440.2	3973.9	3540.7	3156.9	2766.0	2403.4	2133.6	1820.2
42.5°	3653.5	3661.6	3505.4	3322.1	2959.4	2710.8	2437.8	2155.6	1890.7	1705.4	1505.9
45°	2549.5	2649.2	2547.5	2425.7	2165.7	2009.6	1835.3	1665.0	1512.0	1333.7	1136.2
47.5°	1833.3	1837.4	1776.8	1700.4	1494.9	1388.1	1245.0	1038.5	886.4	633.7	470.4
50°	850.2	802.9	805.8	753.5	671.9	533.8	446.3	318.2	253.9	181.4	146.1
51°	505.8	470.4	475.5	438.3	383.8	299.2	253.9	203.5	176.3	137.0	112.8
52°	295.2	283.1	282.0	264.9	225.7	207.5	183.4	153.2	134.1	105.8	87.7
53°	214.6	206.4	206.4	195.4	168.2	156.1	138.9	117.8	102.6	80.6	66.6
54°	160.2	154.1	154.1	147.1	136.0	116.9	104.8	87.7	76.5	62.4	49.4
55°	115.9	111.8	111.8	106.8	98.7	84.7	75.6	63.4	56.5	45.3	36.3
57.5°	48.4	46.4	46.4	44.4	42.2	36.3	34.2	29.2	25.3	22.2	18.2
60°	22.2	21.1	22.2	21.1	19.1	20.2	17.2	15.2	14.0	12.1	10.1
61°	17.2	16.1	16.1	16.1	14.0	14.0	13.0	12.1	11.0	9.0	8.1
62°	13.0	12.1	12.1	12.1	11.0	11.0	10.1	9.0	9.0	7.1	6.1
63°	10.1	9.0	9.0	9.0	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	4.0	4.0
65°	6.1	5.1	6.1	5.1	5.1	5.1	5.1	5.1	4.0	3.0	3.0
66°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	2.0



TEST NUMBER: P1212744

CATALOG NUMBER: LDA4A15950D010TE 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: P1212744

CATALOG NUMBER: LDA4A15950D010TE 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°	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7
2.5°	137.0	140.9	138.0	129.9	134.1	131.9	127.9	124.9	106.8	92.6	78.5
5°	323.3	326.4	309.3	278.9	268.8	252.8	229.6	213.6	120.8	88.6	69.5
7.5°	611.4	591.2	575.2	518.8	494.5	457.4	413.0	381.8	138.0	83.7	64.5
10°	925.6	893.5	860.3	777.6	734.3	676.9	613.5	577.2	156.1	80.6	64.5
12.5°	1237.0	1193.7	1133.3	1042.5	981.1	903.6	816.9	752.4	169.2	82.6	74.6
15°	1507.0	1454.4	1388.1	1285.3	1213.8	1117.1	1004.2	915.6	175.2	93.7	103.8
17.5°	1801.1	1706.3	1596.6	1465.7	1387.2	1275.2	1148.3	1040.5	175.2	118.9	166.2
20°	2139.5	1966.3	1790.0	1606.7	1495.9	1379.0	1243.0	1127.2	182.4	179.3	228.6
22.5°	2454.9	2216.0	1967.3	1728.5	1574.5	1447.6	1309.6	1176.6	211.6	197.4	152.2
25°	2699.6	2396.5	2103.3	1813.1	1638.8	1497.9	1349.8	1189.6	193.4	112.8	82.6
26°	2763.1	2435.8	2130.4	1823.2	1642.0	1496.9	1345.8	1175.5	162.2	89.6	66.6
27°	2796.2	2448.8	2132.5	1814.2	1629.8	1479.7	1323.6	1146.3	129.9	72.5	54.5
28°	2796.2	2433.6	2111.3	1789.0	1598.6	1447.6	1285.3	1099.9	105.8	59.4	43.3
29°	2768.2	2394.3	2069.0	1750.7	1556.4	1402.1	1232.9	1045.6	89.6	49.4	35.4
30°	2713.7	2337.0	2012.5	1701.4	1501.9	1350.9	1175.5	989.1	77.6	40.2	28.2
31°	2637.1	2272.5	1943.0	1647.9	1451.5	1303.4	1123.2	931.7	67.5	32.2	23.1
32°	2545.5	2191.9	1871.6	1592.7	1410.2	1259.2	1068.7	871.3	58.4	27.2	20.2
33°	2439.7	2101.2	1797.0	1538.2	1370.0	1208.7	1009.3	805.8	50.3	22.2	17.2
34°	2322.8	2001.5	1720.6	1479.7	1320.6	1145.4	939.8	736.3	43.3	19.1	14.0
35°	2196.0	1889.8	1642.0	1420.3	1265.2	1074.8	865.3	662.9	37.3	16.1	12.1
36°	2058.9	1785.0	1565.4	1360.8	1196.6	998.3	783.6	587.3	32.2	13.0	11.0
37°	1921.9	1686.3	1489.8	1297.4	1117.1	911.6	698.0	508.7	28.2	11.0	9.0
38°	1792.0	1590.5	1415.2	1223.9	1024.5	815.9	609.4	430.1	24.1	10.1	8.1
39°	1670.0	1497.9	1338.8	1136.2	928.7	723.3	523.7	348.6	21.1	9.0	7.1
40°	1560.3	1410.2	1255.1	1038.5	830.0	628.6	437.2	260.0	18.2	7.1	6.1
42.5°	1328.7	1169.5	964.9	724.3	561.1	364.6	203.5	96.7	13.0	5.1	5.1
45°	877.4	675.0	458.3	273.0	184.4	110.8	82.6	58.4	10.1	4.0	4.0
47.5°	293.2	186.4	136.0	97.8	83.7	66.6	53.4	36.3	7.1	3.0	3.0
50°	111.8	90.6	74.6	56.5	50.3	40.2	32.2	21.1	5.1	3.0	3.0
51°	87.7	71.4	58.4	44.4	40.2	32.2	26.2	18.2	4.0	3.0	3.0
52°	67.5	55.4	45.3	34.2	32.2	26.2	22.2	15.2	4.0	2.0	3.0
53°	51.4	42.2	34.2	26.2	25.3	21.1	18.2	12.1	3.0	2.0	3.0
54°	38.3	32.2	27.2	21.1	21.1	18.2	15.2	10.1	3.0	2.0	3.0
55°	29.2	24.1	21.1	16.1	17.2	15.2	13.0	8.1	3.0	2.0	3.0
57.5°	15.2	14.0	12.1	10.1	11.0	10.1	9.0	5.1	3.0	2.0	3.0
60°	9.0	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	4.0	4.0	6.1	5.1	5.1	3.0	3.0	2.0	3.0
63°	4.0	4.0	4.0	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	4.0	5.1	5.1	2.0	3.0	2.0	3.0
65°	3.0	3.0	2.0	2.0	4.0	4.0	4.0	2.0	3.0	2.0	3.0
66°	2.0	2.0	2.0	2.0	4.0	4.0	4.0	2.0	3.0	2.0	3.0



TEST NUMBER: P1212744

CATALOG NUMBER: LDA4A15950D010TE 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	4.0	2.0	3.0	3.0	3.0
75°	1.0	1.0	1.0	1.0	3.0	3.0	4.0	2.0	3.0	3.0	3.0
77.5°	1.0	1.0	1.0	1.0	3.0	3.0	4.0	2.0	3.0	3.0	4.0
80°	1.0	1.0	1.0	1.0	3.0	3.0	4.0	2.0	3.0	3.0	4.0
82.5°	1.0	1.0	1.0	1.0	3.0	3.0	4.0	2.0	3.0	3.0	4.0
85°	1.0	1.0	1.0	1.0	3.0	3.0	4.0	2.0	3.0	3.0	4.0
87.5°	1.0	1.0	1.0	1.0	3.0	3.0	4.0	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

TEST NUMBER: P1212744

CATALOG NUMBER: LDA4A15950D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	94.7	94.7	94.7
2.5°	71.4	68.5	66.6
5°	61.4	58.4	57.4
7.5°	57.4	56.5	57.4
10°	63.4	67.5	72.5
12.5°	84.7	99.7	107.7
15°	140.0	182.4	200.4
17.5°	246.8	281.1	301.2
20°	217.6	198.4	209.5
22.5°	117.8	102.6	105.8
25°	65.5	56.5	57.4
26°	52.3	45.3	45.3
27°	42.2	36.3	36.3
28°	34.2	29.2	29.2
29°	27.2	23.1	23.1
30°	22.2	19.1	19.1
31°	18.2	15.2	15.2
32°	15.2	13.0	12.1
33°	13.0	11.0	10.1
34°	11.0	9.0	8.1
35°	9.0	7.1	7.1
36°	8.1	6.1	6.1
37°	7.1	5.1	5.1
38°	6.1	4.0	4.0
39°	5.1	4.0	3.0
40°	4.0	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: P1212744

CATALOG NUMBER: LDA4A15950D010TE 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



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



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	4.0	4.0	2.0	3.0	2.0	3.0
70°	1.0	1.0	1.0	1.0	3.0	3.0	4.0	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)