

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: P1191455

Luminaire Tested: **LDA4A10935D010TE 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: P1191455
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: LDA4A10935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

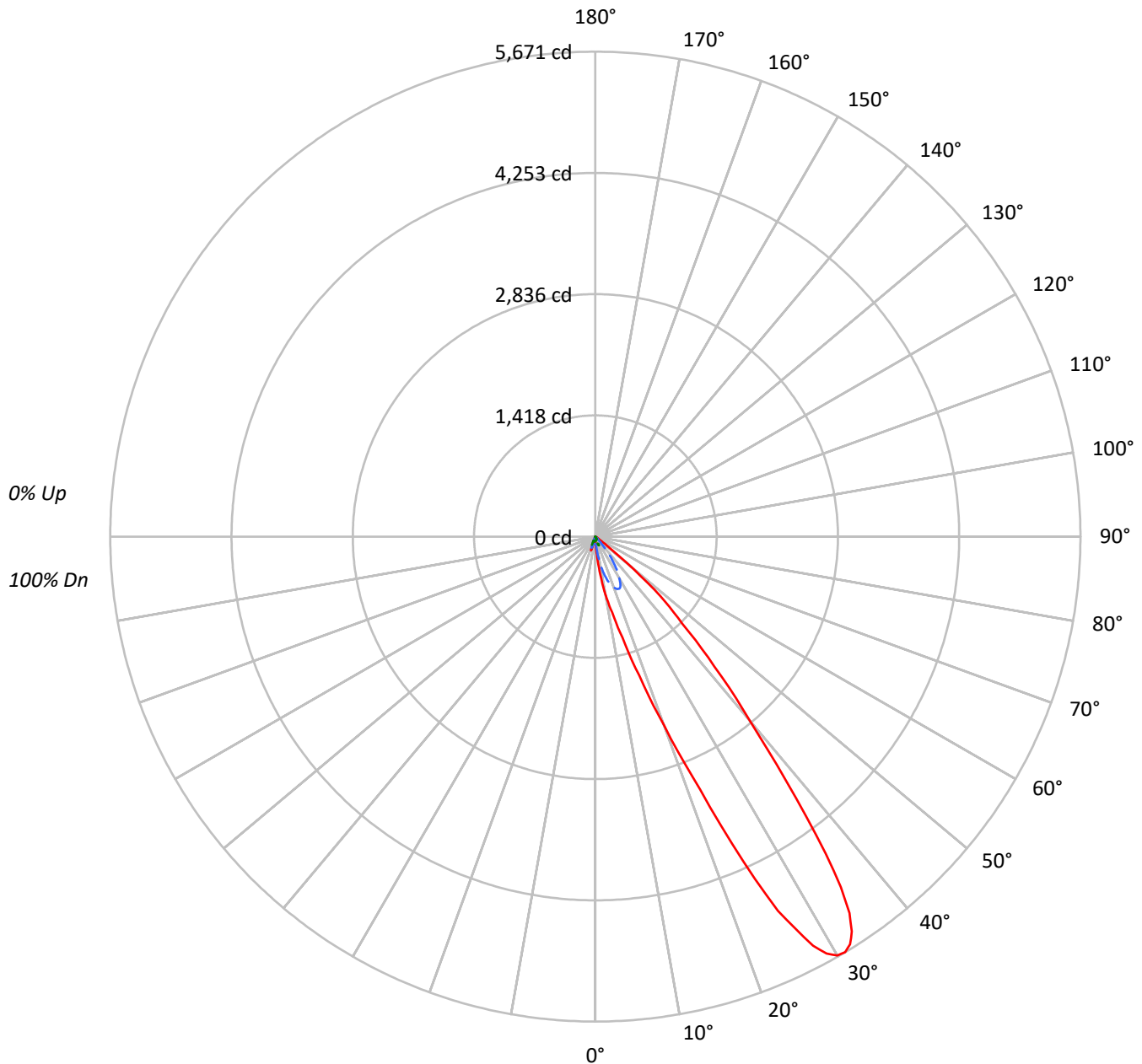
Lumens per Lamp: N/A
Luminaire Lumens: 914.8 lumens
Efficiency: N/A
Efficacy: 73.8 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 12.4
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
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°	6587	6587	6587
5°	29518	6178	4012
10°	87398	5699	5123
15°	156033	6755	14430
20°	309056	13257	15502
25°	601412	8656	4410
30°	805583	3233	1538
35°	753805	1355	587
40°	451699	628	177
45°	250666	401	0
50°	91955	326	0
55°	14043	237	0
60°	3084	271	0
65°	992	321	0
70°	180	397	0
75°	0	810	0
80°	0	1208	0
85°	0	2406	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	11.7	1.3
10°-20°	98.8	10.8
20°-30°	295.0	32.2
30°-40°	349.3	38.2
40°-50°	144.9	15.8
50°-60°	11.3	1.2
60°-70°	1.5	0.2
70°-80°	1.1	0.1
80°-90°	1.1	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°	405.5	44.3
0°-40°	754.9	82.5
0°-60°	911.0	99.6
0°-90°	914.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	914.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	53	53	53	53	53	
5°	238	120	50	35	32	38
15°	1222	516	53	79	113	403
25°	4419	670	64	37	32	2018
35°	5006	374	9	5	4	2901
45°	1437	33	2	2	0	1172
55°	65	5	1	0	0	96
65°	3	1	1	1	0	4
75°	0	1	2	1	0	0
85°	0	1	2	1	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°	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4
2.5°	92.6	88.0	90.3	86.4	88.5	84.6	81.8	84.6	84.6	82.3	79.0
5°	238.4	237.3	241.9	231.1	233.9	222.0	211.8	214.6	212.3	204.9	192.0
7.5°	454.2	449.6	454.7	439.4	440.1	420.2	404.8	408.2	398.0	385.6	362.8
10°	697.8	691.5	697.3	679.0	675.6	647.8	626.3	629.6	606.4	585.9	551.3
12.5°	908.9	908.4	890.2	893.7	886.9	844.2	830.6	831.8	800.0	777.2	735.8
15°	1221.9	1233.8	1237.2	1213.9	1171.8	1094.7	1060.7	1047.5	995.8	957.9	898.2
17.5°	1702.7	1719.2	1663.0	1676.6	1607.3	1486.5	1418.8	1378.6	1281.5	1209.9	1102.0
20°	2354.5	2340.4	2259.1	2248.9	2130.9	1975.3	1833.3	1757.3	1608.0	1503.4	1346.2
22.5°	3196.0	3185.1	3046.0	2984.3	2737.3	2518.1	2334.1	2143.3	1921.3	1781.7	1568.2
25°	4419.0	4369.6	4101.6	3925.6	3491.2	3118.8	2812.2	2515.8	2175.7	2024.1	1752.7
26°	4869.2	4857.3	4578.0	4346.3	3822.8	3360.7	2947.3	2650.4	2275.7	2098.5	1804.9
27°	5139.5	5234.3	4974.2	4712.0	4139.6	3586.0	3106.8	2758.8	2353.4	2150.7	1838.4
28°	5419.9	5481.3	5248.5	4919.2	4393.4	3765.5	3227.8	2832.1	2401.1	2176.3	1849.7
29°	5574.4	5633.4	5417.1	5108.2	4559.8	3881.9	3299.3	2864.4	2418.7	2175.7	1839.5
30°	5656.1	5711.2	5500.1	5200.2	4628.4	3918.2	3314.7	2851.3	2401.7	2149.6	1810.6
31°	5670.9	5716.8	5508.5	5197.4	4602.3	3873.3	3271.5	2797.4	2356.3	2101.3	1766.9
32°	5620.9	5656.7	5444.9	5113.3	4484.9	3759.7	3181.8	2714.0	2287.0	2041.2	1710.6
33°	5504.0	5568.2	5309.8	4943.6	4280.4	3591.7	3054.6	2604.9	2200.7	1962.8	1642.0
34°	5310.4	5351.3	5083.8	4677.8	4007.9	3387.3	2898.4	2478.3	2101.9	1870.2	1564.2
35°	5006.1	5042.4	4746.6	4319.0	3697.3	3156.9	2720.2	2338.6	1991.1	1766.3	1477.9
36°	4584.7	4619.4	4310.0	3920.5	3384.0	2916.6	2532.2	2186.5	1871.4	1655.1	1386.5
37°	4092.6	4122.6	3847.2	3529.3	3076.2	2673.6	2342.0	2032.0	1744.8	1541.5	1299.6
38°	3616.7	3643.9	3421.4	3162.5	2779.2	2436.3	2152.4	1871.9	1614.2	1427.4	1208.3
39°	3187.4	3211.4	3031.9	2818.4	2496.5	2208.7	1963.4	1712.9	1483.0	1313.2	1114.0
40°	2805.3	2825.8	2678.2	2502.8	2239.9	1995.7	1779.4	1559.1	1354.8	1202.5	1026.0
42.5°	2059.3	2063.9	1975.8	1872.5	1668.1	1527.9	1374.0	1215.0	1065.7	961.3	848.8
45°	1437.0	1493.2	1435.9	1367.2	1220.8	1132.7	1034.5	938.5	852.3	751.8	640.4
47.5°	1033.4	1035.6	1001.5	958.4	842.6	782.3	701.7	585.4	499.7	357.2	265.2
50°	479.2	452.6	454.2	424.7	378.7	300.9	251.6	179.5	143.0	102.2	82.3
51°	285.1	265.2	268.0	247.0	216.3	168.6	143.0	114.6	99.4	77.2	63.6
52°	166.4	159.6	159.0	149.3	127.1	116.9	103.3	86.4	75.5	59.6	49.4
53°	120.9	116.4	116.4	110.2	94.8	88.0	78.3	66.5	58.0	45.5	37.4
54°	90.3	86.9	86.9	82.9	76.7	65.9	59.1	49.4	43.2	35.2	27.8
55°	65.3	63.1	63.1	60.1	55.7	47.6	42.5	35.8	31.8	25.6	20.4
57.5°	27.3	26.1	26.1	25.0	23.8	20.4	19.4	16.4	14.1	12.5	10.2
60°	12.5	12.0	12.5	12.0	10.8	11.3	9.7	8.5	7.9	6.8	5.7
61°	9.7	9.0	9.0	9.0	7.9	7.9	7.4	6.8	6.2	5.1	4.6
62°	7.4	6.8	6.8	6.8	6.2	6.2	5.7	5.1	5.1	3.9	3.4
63°	5.7	5.1	5.1	5.1	4.6	4.6	4.6	3.9	3.9	3.4	2.8
64°	3.9	3.9	3.9	3.9	3.9	3.4	3.4	3.4	2.8	2.3	2.3
65°	3.4	2.8	3.4	2.8	2.8	2.8	2.8	2.8	2.3	1.7	1.7
66°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.7	1.1



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CATALOG NUMBER: LDA4A10935D010TE 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	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5
85°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5
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°	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4
2.5°	77.2	79.5	77.8	73.2	75.5	74.4	72.1	70.4	60.1	52.2	44.3
5°	182.3	183.9	174.2	157.3	151.6	142.5	129.4	120.4	68.1	49.9	39.2
7.5°	344.7	333.3	324.2	292.5	278.8	257.8	232.8	215.1	77.8	47.1	36.3
10°	521.7	503.6	484.9	438.3	414.0	381.5	345.8	325.3	88.0	45.5	36.3
12.5°	697.3	672.8	638.8	587.6	553.1	509.2	460.5	424.2	95.4	46.6	42.0
15°	849.3	819.9	782.3	724.5	684.1	629.6	566.1	516.1	98.8	52.9	58.5
17.5°	1015.2	961.8	899.9	826.2	781.8	718.8	647.3	586.6	98.8	67.0	93.6
20°	1206.0	1108.3	1008.9	905.6	843.1	777.2	700.7	635.3	102.8	101.0	128.9
22.5°	1383.7	1249.0	1108.8	974.3	887.4	815.8	738.1	663.1	119.2	111.3	85.7
25°	1521.6	1350.7	1185.5	1021.9	923.7	844.2	760.8	670.5	109.0	63.6	46.6
26°	1557.4	1372.8	1200.9	1027.7	925.5	843.7	758.5	662.6	91.5	50.6	37.4
27°	1576.1	1380.2	1201.9	1022.6	918.6	834.1	746.0	646.2	73.2	40.9	30.7
28°	1576.1	1371.7	1190.1	1008.3	901.1	815.8	724.5	620.1	59.6	33.5	24.5
29°	1560.2	1349.5	1166.2	986.8	877.2	790.4	695.0	589.4	50.6	27.8	19.9
30°	1529.5	1317.2	1134.4	959.0	846.5	761.3	662.6	557.5	43.7	22.7	15.9
31°	1486.5	1280.9	1095.2	928.8	818.1	734.7	633.1	525.2	38.1	18.2	13.1
32°	1434.8	1235.4	1054.9	897.6	794.8	709.7	602.4	491.2	33.0	15.3	11.3
33°	1375.1	1184.3	1012.9	867.0	772.1	681.3	568.9	454.2	28.4	12.5	9.7
34°	1309.3	1128.2	969.7	834.1	744.4	645.5	529.8	415.0	24.5	10.8	7.9
35°	1237.7	1065.1	925.5	800.6	713.2	605.8	487.7	373.6	21.0	9.0	6.8
36°	1160.5	1006.1	882.3	767.1	674.5	562.6	441.7	331.0	18.2	7.4	6.2
37°	1083.3	950.5	839.8	731.3	629.6	513.8	393.5	286.7	15.9	6.2	5.1
38°	1010.1	896.5	797.7	689.9	577.4	460.0	343.5	242.4	13.6	5.7	4.6
39°	941.4	844.2	754.6	640.4	523.5	407.6	295.3	196.4	12.0	5.1	3.9
40°	879.5	794.8	707.4	585.4	467.8	354.2	246.5	146.5	10.2	3.9	3.4
42.5°	748.8	659.2	543.9	408.2	316.3	205.6	114.6	54.5	7.4	2.8	2.8
45°	494.5	380.5	258.3	153.9	103.9	62.4	46.6	33.0	5.7	2.3	2.3
47.5°	165.2	105.1	76.7	55.0	47.1	37.4	30.1	20.4	3.9	1.7	1.7
50°	63.1	51.1	42.0	31.8	28.4	22.7	18.2	12.0	2.8	1.7	1.7
51°	49.4	40.3	33.0	25.0	22.7	18.2	14.8	10.2	2.3	1.7	1.7
52°	38.1	31.2	25.6	19.4	18.2	14.8	12.5	8.5	2.3	1.1	1.7
53°	28.9	23.8	19.4	14.8	14.1	12.0	10.2	6.8	1.7	1.1	1.7
54°	21.5	18.2	15.3	12.0	12.0	10.2	8.5	5.7	1.7	1.1	1.7
55°	16.4	13.6	12.0	9.0	9.7	8.5	7.4	4.6	1.7	1.1	1.7
57.5°	8.5	7.9	6.8	5.7	6.2	5.7	5.1	2.8	1.7	1.1	1.7
60°	5.1	4.6	3.9	3.4	3.9	3.9	3.9	1.7	1.7	1.1	1.7
61°	3.9	3.4	2.8	2.8	3.4	3.4	3.4	1.7	1.7	1.1	1.7
62°	2.8	2.8	2.3	2.3	3.4	2.8	2.8	1.7	1.7	1.1	1.7
63°	2.3	2.3	2.3	1.7	2.8	2.8	2.8	1.7	1.7	1.1	1.7
64°	1.7	1.7	1.7	1.7	2.3	2.8	2.8	1.1	1.7	1.1	1.7
65°	1.7	1.7	1.1	1.1	2.3	2.3	2.3	1.1	1.7	1.1	1.7
66°	1.1	1.1	1.1	1.1	2.3	2.3	2.3	1.1	1.7	1.1	1.7



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CATALOG NUMBER: LDA4A10935D010TE 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°	0.5	0.5	0.5	0.5	1.7	1.7	2.3	1.1	1.7	1.7	1.7
75°	0.5	0.5	0.5	0.5	1.7	1.7	2.3	1.1	1.7	1.7	1.7
77.5°	0.5	0.5	0.5	0.5	1.7	1.7	2.3	1.1	1.7	1.7	2.3
80°	0.5	0.5	0.5	0.5	1.7	1.7	2.3	1.1	1.7	1.7	2.3
82.5°	0.5	0.5	0.5	0.5	1.7	1.7	2.3	1.1	1.7	1.7	2.3
85°	0.5	0.5	0.5	0.5	1.7	1.7	2.3	1.1	1.7	1.7	2.3
87.5°	0.5	0.5	0.5	0.5	1.7	1.7	2.3	1.1	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):

	135°	157.5°	180°
0°	53.4	53.4	53.4
2.5°	40.3	38.6	37.4
5°	34.6	33.0	32.4
7.5°	32.4	31.8	32.4
10°	35.8	38.1	40.9
12.5°	47.6	56.2	60.8
15°	79.0	102.8	113.0
17.5°	139.1	158.5	169.8
20°	122.7	111.8	118.1
22.5°	66.5	58.0	59.6
25°	36.9	31.8	32.4
26°	29.6	25.6	25.6
27°	23.8	20.4	20.4
28°	19.4	16.4	16.4
29°	15.3	13.1	13.1
30°	12.5	10.8	10.8
31°	10.2	8.5	8.5
32°	8.5	7.4	6.8
33°	7.4	6.2	5.7
34°	6.2	5.1	4.6
35°	5.1	3.9	3.9
36°	4.6	3.4	3.4
37°	3.9	2.8	2.8
38°	3.4	2.3	2.3
39°	2.8	2.3	1.7
40°	2.3	1.7	1.1
42.5°	1.7	1.1	0.5
45°	1.7	0.5	0.0
47.5°	1.1	0.5	0.0
50°	1.1	0.0	0.0
51°	1.1	0.0	0.0
52°	1.1	0.0	0.0
53°	0.5	0.0	0.0
54°	1.1	0.0	0.0
55°	0.5	0.0	0.0
57.5°	1.1	0.0	0.0
60°	1.1	0.0	0.0
61°	1.1	0.0	0.0
62°	1.1	0.0	0.0
63°	1.1	0.0	0.0
64°	1.1	0.5	0.0
65°	1.1	0.5	0.0
66°	1.1	0.5	0.0



TEST NUMBER: P1191455

CATALOG NUMBER: LDA4A10935D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.1	0.5	0.0
75°	1.1	0.5	0.0
77.5°	1.1	0.5	0.0
80°	1.1	0.5	0.0
82.5°	1.1	0.5	0.0
85°	1.1	0.5	0.0
87.5°	1.1	0.5	0.0
90°	0.0	0.0	0.0

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Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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Peachtree City, GA 30269



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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.1	1.1
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.1	1.1	0.5	0.5

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67.5°	1.1	0.5	1.1	1.1	1.7	2.3	2.3	1.1	1.7	1.1	1.7
70°	0.5	0.5	0.5	0.5	1.7	1.7	2.3	1.1	1.7	1.1	1.7

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67.5°	1.1	0.5	0.0
70°	1.1	0.5	0.0

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(END OF REPORT)