

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: P1191527

Luminaire Tested: **LDA4A15930D010TE 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: P1191527
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: LDA4A15930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

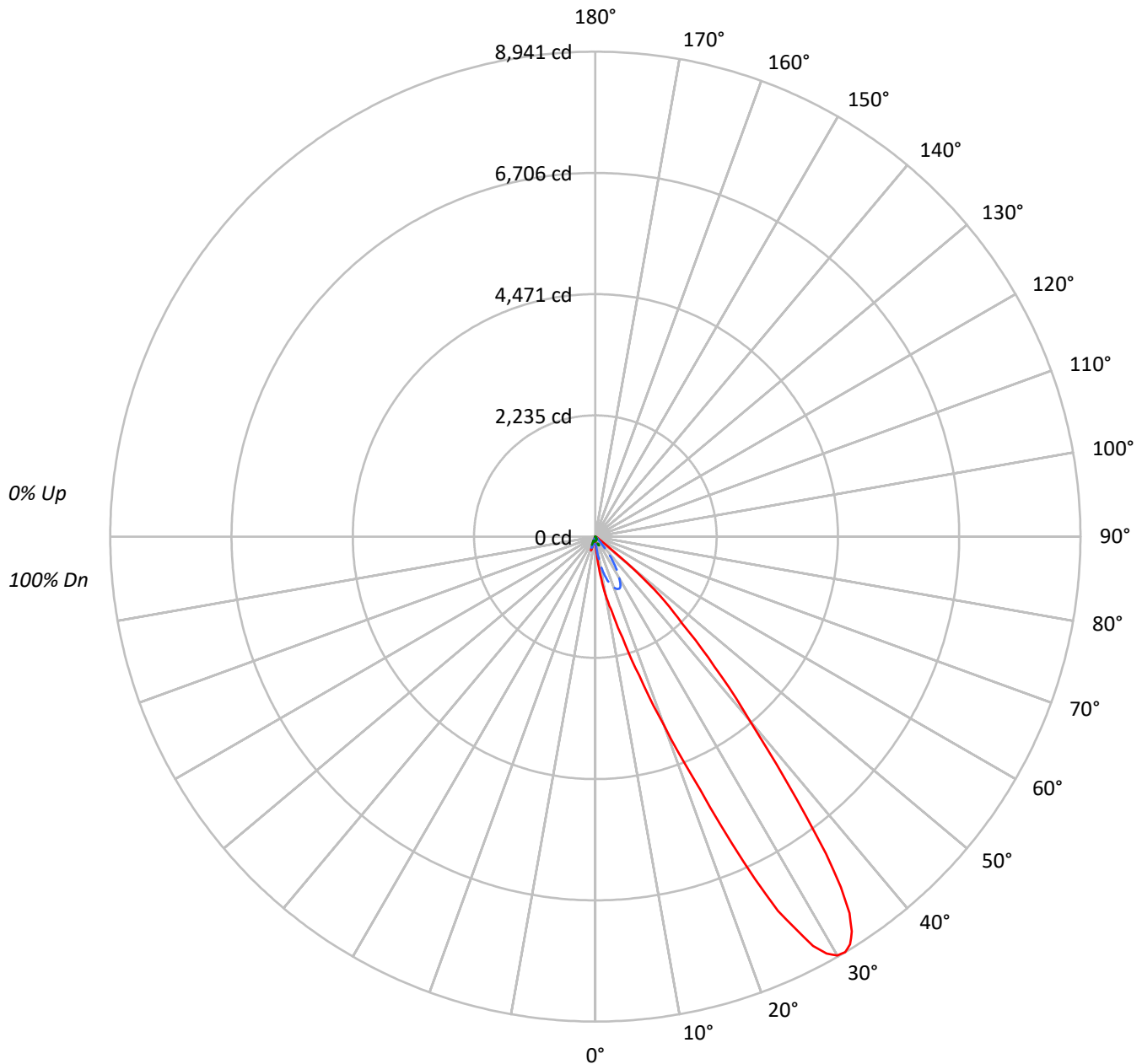
Lumens per Lamp: N/A
Luminaire Lumens: 1442.4 lumens
Efficiency: N/A
Efficacy: 70.7 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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

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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	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°	10373	10373	10373
5°	46555	9757	6315
10°	137798	8968	8079
15°	245995	10637	22743
20°	487270	20910	24428
25°	948200	13637	6941
30°	1270124	5113	2421
35°	1188461	2153	949
40°	712175	1014	290
45°	395222	611	0
50°	144974	518	0
55°	22150	387	0
60°	4835	444	0
65°	1547	525	0
70°	361	649	0
75°	0	1287	0
80°	0	1918	0
85°	0	3821	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	18.5	1.3
10°-20°	155.8	10.8
20°-30°	465.1	32.2
30°-40°	550.8	38.2
40°-50°	228.5	15.8
50°-60°	17.8	1.2
60°-70°	2.4	0.2
70°-80°	1.9	0.1
80°-90°	1.7	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°	639.3	44.3
0°-40°	1190.1	82.5
0°-60°	1436.4	99.6
0°-90°	1442.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1442.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	84	84	84	84	84	
5°	376	190	79	54	51	60
15°	1926	814	83	124	178	636
25°	6967	1057	100	58	51	3182
35°	7893	589	14	8	6	4574
45°	2266	52	4	3	0	1847
55°	103	7	2	1	0	151
65°	5	2	2	2	0	7
75°	0	2	3	2	0	0
85°	0	2	3	2	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°	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1
2.5°	145.9	138.8	142.4	136.1	139.6	133.4	128.9	133.4	133.4	129.8	124.4
5°	376.0	374.2	381.3	364.4	368.9	350.0	334.0	338.3	334.8	323.2	302.6
7.5°	716.2	709.0	717.0	692.9	693.8	662.5	638.3	643.6	627.5	607.8	572.0
10°	1100.2	1090.4	1099.2	1070.6	1065.3	1021.4	987.4	992.7	956.0	923.9	869.2
12.5°	1433.2	1432.2	1403.6	1409.0	1398.3	1331.0	1309.6	1311.4	1261.2	1225.5	1160.2
15°	1926.4	1945.2	1950.6	1913.9	1847.6	1725.8	1672.2	1651.6	1570.1	1510.1	1416.1
17.5°	2684.6	2710.5	2622.0	2643.4	2534.2	2343.6	2237.1	2173.5	2020.4	1907.6	1737.6
20°	3712.2	3689.9	3561.8	3545.7	3359.6	3114.3	2890.5	2770.5	2535.1	2370.4	2122.5
22.5°	5038.9	5021.9	4802.6	4705.0	4315.6	3970.1	3680.1	3379.2	3029.2	2809.1	2472.4
25°	6967.1	6889.2	6466.7	6189.2	5504.3	4917.1	4433.7	3966.4	3430.2	3191.3	2763.4
26°	7676.9	7658.2	7217.7	6852.6	6027.2	5298.4	4646.9	4178.6	3587.9	3308.6	2845.8
27°	8103.0	8252.5	7842.6	7429.0	6526.7	5653.9	4898.3	4349.6	3710.5	3390.8	2898.6
28°	8545.3	8641.9	8275.0	7755.7	6926.7	5936.7	5089.0	4465.1	3785.6	3431.2	2916.4
29°	8788.8	8881.8	8540.8	8053.8	7189.1	6120.3	5201.9	4516.1	3813.4	3430.2	2900.3
30°	8917.7	9004.5	8671.5	8198.9	7297.4	6177.6	5226.0	4495.5	3786.6	3389.1	2854.6
31°	8941.0	9013.4	8684.9	8194.4	7256.2	6106.8	5158.0	4410.4	3715.0	3313.0	2785.8
32°	8862.2	8918.5	8584.7	8061.8	7070.9	5927.7	5016.6	4278.8	3605.7	3218.2	2697.1
33°	8677.8	8778.8	8371.7	7794.2	6748.7	5662.8	4816.0	4107.0	3469.6	3094.6	2588.9
34°	8372.5	8437.0	8015.3	7375.2	6319.0	5340.6	4569.8	3907.4	3313.9	2948.7	2466.1
35°	7892.7	7950.0	7483.7	6809.5	5829.3	4977.1	4288.8	3687.1	3139.4	2784.8	2330.1
36°	7228.5	7283.1	6795.2	6181.1	5335.2	4598.5	3992.5	3447.3	2950.5	2609.5	2186.1
37°	6452.3	6499.8	6065.6	5564.3	4850.1	4215.3	3692.6	3203.7	2750.9	2430.4	2049.0
38°	5702.2	5745.2	5394.3	4986.0	4381.8	3841.1	3393.6	2951.3	2545.0	2250.4	1904.9
39°	5025.4	5063.1	4780.2	4443.6	3936.0	3482.2	3095.5	2700.7	2338.2	2070.6	1756.4
40°	4423.0	4455.3	4222.5	3945.8	3531.4	3146.5	2805.4	2458.1	2135.9	1896.0	1617.5
42.5°	3246.8	3253.9	3115.2	2952.3	2630.1	2408.9	2166.3	1915.6	1680.3	1515.5	1338.3
45°	2265.7	2354.3	2263.9	2155.5	1924.6	1785.8	1631.0	1479.7	1343.6	1185.1	1009.8
47.5°	1629.1	1632.8	1579.1	1511.0	1328.5	1233.5	1106.5	922.9	787.8	563.0	418.1
50°	755.5	713.5	716.2	669.5	597.1	474.4	396.5	282.8	225.5	161.2	129.8
51°	449.3	418.1	422.5	389.5	341.0	265.9	225.5	180.8	156.7	121.8	100.2
52°	262.2	251.6	250.6	235.4	200.5	184.4	163.0	136.1	119.0	94.0	77.9
53°	190.6	183.5	183.5	173.7	149.5	138.8	123.5	104.7	91.4	71.6	59.0
54°	142.4	136.9	136.9	130.6	120.8	103.8	93.1	77.9	68.0	55.5	43.9
55°	103.0	99.4	99.4	94.9	87.7	75.1	67.1	56.5	50.2	40.2	32.2
57.5°	43.0	41.2	41.2	39.4	37.6	32.2	30.4	25.9	22.4	19.6	16.1
60°	19.6	18.8	19.6	18.8	17.0	17.9	15.3	13.4	12.5	10.8	9.0
61°	15.3	14.3	14.3	14.3	12.5	12.5	11.6	10.8	9.8	8.0	7.2
62°	11.6	10.8	10.8	10.8	9.8	9.8	9.0	8.0	8.0	6.3	5.3
63°	9.0	8.0	8.0	8.0	7.2	7.2	7.2	6.3	6.3	5.3	4.5
64°	6.3	6.3	6.3	6.3	6.3	5.3	5.3	5.3	4.5	3.5	3.5
65°	5.3	4.5	5.3	4.5	4.5	4.5	4.5	4.5	3.5	2.7	2.7
66°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.7	1.8



TEST NUMBER: P1191527

CATALOG NUMBER: LDA4A15930D010TE 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

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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°	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1
2.5°	121.8	125.3	122.6	115.5	119.0	117.3	113.7	111.0	94.9	82.4	69.8
5°	287.3	290.0	274.8	247.9	239.0	224.7	204.1	189.8	107.5	78.8	61.8
7.5°	543.4	525.4	511.1	461.0	439.5	406.4	367.0	339.3	122.6	74.3	57.3
10°	822.7	794.0	764.5	691.1	652.6	601.5	545.2	512.9	138.8	71.6	57.3
12.5°	1099.2	1060.8	1007.0	926.5	871.9	802.9	726.0	668.7	150.4	73.4	66.3
15°	1339.2	1292.6	1233.5	1142.2	1078.6	992.7	892.5	813.7	155.7	83.3	92.2
17.5°	1600.5	1516.4	1418.9	1302.4	1232.6	1133.3	1020.5	924.7	155.7	105.7	147.7
20°	1901.3	1747.4	1590.7	1427.7	1329.3	1225.5	1104.7	1001.7	162.0	159.3	203.2
22.5°	2181.6	1969.4	1748.3	1536.1	1399.1	1286.3	1163.7	1045.5	188.0	175.5	135.1
25°	2399.1	2129.6	1869.1	1611.3	1456.5	1331.0	1199.5	1057.2	171.8	100.2	73.4
26°	2455.5	2164.5	1893.3	1620.3	1459.1	1330.2	1195.9	1044.7	144.1	79.6	59.0
27°	2485.0	2176.1	1895.1	1612.2	1448.3	1315.0	1176.3	1018.6	115.5	64.5	48.3
28°	2485.0	2162.7	1876.2	1589.9	1420.6	1286.3	1142.2	977.5	94.0	52.8	38.5
29°	2459.9	2127.8	1838.7	1555.8	1383.0	1246.1	1095.7	929.2	79.6	43.9	31.4
30°	2411.6	2076.8	1788.6	1512.0	1334.7	1200.4	1044.7	879.0	68.9	35.9	25.1
31°	2343.6	2019.6	1726.8	1464.5	1289.9	1158.4	998.0	828.0	60.0	28.6	20.6
32°	2262.1	1947.8	1663.2	1415.3	1253.2	1119.0	949.8	774.3	52.0	24.1	17.9
33°	2168.1	1867.4	1597.0	1366.9	1217.5	1074.1	897.0	716.2	44.7	19.6	15.3
34°	2064.3	1778.7	1528.9	1315.0	1173.5	1017.8	835.2	654.4	38.5	17.0	12.5
35°	1951.5	1679.3	1459.1	1262.2	1124.3	955.1	769.0	589.0	33.1	14.3	10.8
36°	1829.7	1586.2	1391.0	1209.4	1063.5	887.0	696.4	521.9	28.6	11.6	9.8
37°	1708.0	1498.5	1324.0	1153.0	992.7	810.1	620.3	452.0	25.1	9.8	8.0
38°	1592.5	1413.4	1257.7	1087.6	910.4	725.0	541.6	382.2	21.5	9.0	7.2
39°	1484.2	1331.0	1189.6	1009.8	825.4	642.7	465.5	309.7	18.8	8.0	6.3
40°	1386.5	1253.2	1115.3	922.9	737.6	558.5	388.5	231.0	16.1	6.3	5.3
42.5°	1180.8	1039.2	857.6	643.6	498.5	324.0	180.8	85.9	11.6	4.5	4.5
45°	779.7	599.7	407.3	242.6	163.8	98.5	73.4	52.0	9.0	3.5	3.5
47.5°	260.5	165.5	120.8	86.9	74.3	59.0	47.5	32.2	6.3	2.7	2.7
50°	99.4	80.6	66.3	50.2	44.7	35.9	28.6	18.8	4.5	2.7	2.7
51°	77.9	63.5	52.0	39.4	35.9	28.6	23.3	16.1	3.5	2.7	2.7
52°	60.0	49.2	40.2	30.4	28.6	23.3	19.6	13.4	3.5	1.8	2.7
53°	45.7	37.6	30.4	23.3	22.4	18.8	16.1	10.8	2.7	1.8	2.7
54°	34.0	28.6	24.1	18.8	18.8	16.1	13.4	9.0	2.7	1.8	2.7
55°	25.9	21.5	18.8	14.3	15.3	13.4	11.6	7.2	2.7	1.8	2.7
57.5°	13.4	12.5	10.8	9.0	9.8	9.0	8.0	4.5	2.7	1.8	2.7
60°	8.0	7.2	6.3	5.3	6.3	6.3	6.3	2.7	2.7	1.8	2.7
61°	6.3	5.3	4.5	4.5	5.3	5.3	5.3	2.7	2.7	1.8	2.7
62°	4.5	4.5	3.5	3.5	5.3	4.5	4.5	2.7	2.7	1.8	2.7
63°	3.5	3.5	3.5	2.7	4.5	4.5	4.5	2.7	2.7	1.8	2.7
64°	2.7	2.7	2.7	2.7	3.5	4.5	4.5	1.8	2.7	1.8	2.7
65°	2.7	2.7	1.8	1.8	3.5	3.5	3.5	1.8	2.7	1.8	2.7
66°	1.8	1.8	1.8	1.8	3.5	3.5	3.5	1.8	2.7	1.8	2.7



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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°	1.0	1.0	1.0	1.0	2.7	2.7	3.5	1.8	2.7	2.7	2.7
75°	1.0	1.0	1.0	1.0	2.7	2.7	3.5	1.8	2.7	2.7	2.7
77.5°	1.0	1.0	1.0	1.0	2.7	2.7	3.5	1.8	2.7	2.7	3.5
80°	1.0	1.0	1.0	1.0	2.7	2.7	3.5	1.8	2.7	2.7	3.5
82.5°	1.0	1.0	1.0	1.0	2.7	2.7	3.5	1.8	2.7	2.7	3.5
85°	1.0	1.0	1.0	1.0	2.7	2.7	3.5	1.8	2.7	2.7	3.5
87.5°	1.0	1.0	1.0	1.0	2.7	2.7	3.5	1.8	2.7	2.7	2.7
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: P1191527

CATALOG NUMBER: LDA4A15930D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	84.1	84.1	84.1
2.5°	63.5	60.8	59.0
5°	54.5	52.0	51.0
7.5°	51.0	50.2	51.0
10°	56.5	60.0	64.5
12.5°	75.1	88.6	95.7
15°	124.4	162.0	178.1
17.5°	219.3	249.8	267.7
20°	193.4	176.3	186.1
22.5°	104.7	91.4	94.0
25°	58.2	50.2	51.0
26°	46.5	40.2	40.2
27°	37.6	32.2	32.2
28°	30.4	25.9	25.9
29°	24.1	20.6	20.6
30°	19.6	17.0	17.0
31°	16.1	13.4	13.4
32°	13.4	11.6	10.8
33°	11.6	9.8	9.0
34°	9.8	8.0	7.2
35°	8.0	6.3	6.3
36°	7.2	5.3	5.3
37°	6.3	4.5	4.5
38°	5.3	3.5	3.5
39°	4.5	3.5	2.7
40°	3.5	2.7	1.8
42.5°	2.7	1.8	1.0
45°	2.7	1.0	0.0
47.5°	1.8	1.0	0.0
50°	1.8	0.0	0.0
51°	1.8	0.0	0.0
52°	1.8	0.0	0.0
53°	1.0	0.0	0.0
54°	1.8	0.0	0.0
55°	1.0	0.0	0.0
57.5°	1.8	0.0	0.0
60°	1.8	0.0	0.0
61°	1.8	0.0	0.0
62°	1.8	0.0	0.0
63°	1.8	0.0	0.0
64°	1.8	1.0	0.0
65°	1.8	1.0	0.0
66°	1.8	1.0	0.0



TEST NUMBER: P1191527

CATALOG NUMBER: LDA4A15930D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.8	1.0	0.0
75°	1.8	1.0	0.0
77.5°	1.8	1.0	0.0
80°	1.8	1.0	0.0
82.5°	1.8	1.0	0.0
85°	1.8	1.0	0.0
87.5°	1.8	1.0	0.0
90°	0.0	0.0	0.0

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Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.8	1.8
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.8	1.8	1.0	1.0

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67.5°	1.8	1.0	1.8	1.8	2.7	3.5	3.5	1.8	2.7	1.8	2.7
70°	1.0	1.0	1.0	1.0	2.7	2.7	3.5	1.8	2.7	1.8	2.7

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67.5°	1.8	1.0	0.0
70°	1.8	1.0	0.0

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(END OF REPORT)