

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: P179909

Luminaire Tested: **LDA6A55830D010TE LARH20SP 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179909
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26689)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A55830D010TE LARH20SP 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4468.8 lumens
Efficiency: N/A
Efficacy: 73.3 lumens/watt
Spacing Criteria (0/90/45): 2.34 / 0.96 / 1.3
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

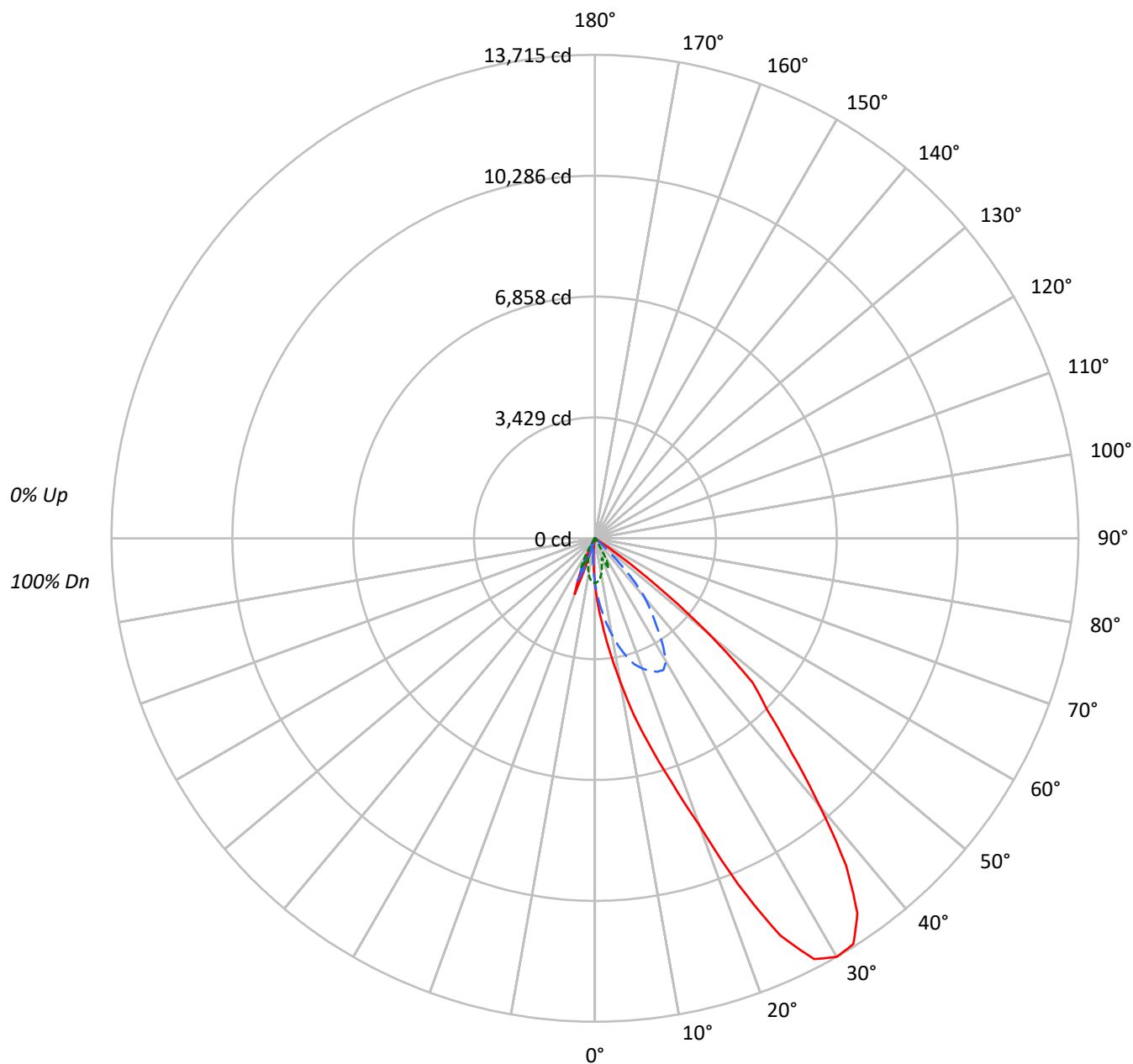
Input Watts (W): 61
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	97	96	96	94	93	91		
2	105	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	76	71	90	82	76	71	80	74	70	77	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	70	62	57	79	69	62	57	67	61	57	66	60	56	64	59	56	54		
7	75	64	57	51	74	63	56	51	62	56	51	60	55	51	59	54	50	49		
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44		
9	66	54	47	42	64	54	47	42	53	46	42	52	46	42	51	45	42	40		
10	62	50	43	38	61	50	43	38	49	43	38	48	42	38	47	42	38	36		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	69737	69737	69737
5°	136347	66289	24185
10°	229499	56918	5366
15°	349503	43099	8808
20°	505041	34916	98219
25°	751628	56483	28387
30°	868153	19338	5615
35°	868427	4323	3032
40°	709801	2412	1861
45°	537498	1566	1194
50°	356952	1066	819
55°	57384	918	640
60°	3596	954	526
65°	1129	1245	623
70°	625	1394	769
75°	402	1631	1017
80°	316	2431	1515
85°	629	4843	1824



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.8	3.0
10°-20°	567.8	12.7
20°-30°	1336.6	29.9
30°-40°	1408.3	31.5
40°-50°	878.1	19.6
50°-60°	126.2	2.8
60°-70°	8.0	0.2
70°-80°	6.3	0.1
80°-90°	4.7	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°	2037.2	45.6
0°-40°	3445.5	77.1
0°-60°	4449.7	99.6
0°-90°	4468.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4468.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1272	1272	1272	1272	1272	
5°	2478	2006	1205	626	440	287
15°	6158	3486	759	132	155	1834
25°	12426	4179	934	676	469	5591
35°	12976	3061	65	60	45	7827
45°	6933	847	20	22	15	5426
55°	600	15	10	11	7	1079
65°	9	7	10	8	5	13
75°	2	5	8	8	5	2
85°	1	5	8	6	3	1
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1
2.5°	1857.1	1844.6	1848.4	1819.5	1781.0	1798.3	1754.9	1755.9	1728.9	1660.5	1630.6
5°	2477.7	2475.8	2472.9	2419.9	2351.5	2359.2	2295.6	2271.5	2202.1	2081.6	2005.5
7.5°	3248.7	3249.7	3235.2	3106.1	3029.9	3025.1	2924.9	2852.6	2723.5	2533.6	2394.8
10°	4122.8	4149.8	4123.7	3925.2	3783.6	3785.5	3605.3	3466.5	3259.3	2982.7	2785.1
12.5°	5149.1	5153.0	5112.5	4851.4	4635.5	4619.1	4377.2	4112.2	3797.0	3435.7	3148.5
15°	6158.2	6185.1	6133.1	5811.2	5510.5	5465.2	5156.9	4807.0	4415.8	3880.9	3485.8
17.5°	7277.0	7234.6	7096.8	6636.2	6274.8	6208.3	5876.8	5419.0	4919.8	4273.1	3754.6
20°	8657.1	8671.5	8379.5	7691.4	7080.4	6821.2	6436.7	5935.5	5313.0	4561.3	3933.9
22.5°	10628.8	10550.8	9924.4	8811.3	7892.8	7546.9	6998.5	6307.5	5606.9	4780.0	4067.9
25°	12426.2	12220.9	11643.6	10112.3	8674.4	8246.5	7678.9	6624.6	5850.7	4941.9	4178.7
27.5°	13458.3	13366.8	12712.4	11167.6	9305.7	8703.3	7904.4	6857.8	5995.3	5021.9	4210.5
30°	13714.7	13731.1	13149.0	11517.4	9455.0	8766.9	7941.0	6851.1	5898.0	4879.3	4027.4
32.5°	13649.1	13560.5	12832.9	11130.9	9057.0	8430.6	7582.5	6544.6	5510.5	4454.3	3571.5
35°	12976.5	12846.4	11951.1	10125.8	8381.5	7772.4	7003.3	6042.5	4969.9	3912.7	3060.8
37.5°	11696.6	11546.3	10513.2	8919.2	7571.0	7055.4	6390.4	5483.6	4423.5	3407.7	2611.7
40°	9918.6	9731.6	8868.1	7762.7	6699.8	6339.3	5777.5	4845.6	3856.8	2929.7	2197.3
42.5°	8256.2	8166.5	7648.1	6699.8	5983.7	5635.8	5069.2	4201.8	3292.1	2441.1	1626.8
45°	6933.0	6873.2	6529.2	5926.9	5200.2	4874.5	4340.6	3494.4	2504.7	1644.1	847.1
47.5°	6068.5	5916.3	5579.9	4947.7	4140.1	3734.4	3225.6	2302.3	1412.8	728.6	260.2
50°	4185.4	4199.9	3820.2	3123.4	2436.3	2093.2	1728.9	1059.1	467.4	159.0	45.3
52.5°	2204.0	2041.2	1774.2	1325.1	922.3	703.5	513.7	212.0	84.8	31.8	24.1
55°	600.4	527.2	421.1	297.8	160.9	112.8	74.2	39.5	27.9	22.2	15.4
57.5°	58.8	55.9	51.1	41.4	35.7	32.8	29.9	24.1	19.3	13.5	9.6
60°	32.8	31.8	29.9	26.0	23.1	21.2	19.3	16.4	11.6	8.7	7.7
62.5°	18.3	17.3	16.4	14.5	12.5	11.6	11.6	9.6	7.7	6.7	6.7
65°	8.7	8.7	8.7	8.7	8.7	7.7	6.7	6.7	6.7	6.7	6.7
67.5°	6.7	6.7	6.7	5.8	5.8	5.8	5.8	5.8	5.8	4.8	5.8
70°	3.9	3.9	4.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.8
72.5°	1.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	4.8
75°	1.9	1.9	1.9	1.9	2.9	2.9	2.9	2.9	3.9	3.9	4.8
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.9	2.9	3.9	3.9	4.8
80°	1.0	1.0	1.0	1.9	1.9	1.9	1.9	2.9	3.9	3.9	4.8
82.5°	1.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	3.9	3.9	4.8
85°	1.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	2.9	3.9	4.8
87.5°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	2.9	3.9	4.8
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1
2.5°	1599.8	1552.5	1505.3	1458.1	1456.2	1428.2	1386.8	1331.9	1286.6	1248.0	1210.4
5°	1929.4	1832.0	1734.7	1637.4	1608.4	1558.3	1468.7	1367.5	1280.8	1204.6	1131.4
7.5°	2259.9	2096.1	1941.9	1789.6	1728.9	1652.8	1513.0	1366.6	1241.3	1129.5	1020.6
10°	2554.8	2316.8	2099.9	1886.0	1798.3	1699.0	1511.1	1325.1	1166.1	1022.5	883.7
12.5°	2826.6	2495.1	2220.4	1950.6	1831.1	1710.6	1481.2	1259.6	1069.7	898.2	738.2
15°	3065.6	2658.9	2305.2	1979.5	1833.0	1688.4	1418.6	1169.0	956.0	759.4	585.9
17.5°	3236.2	2740.8	2333.2	1953.5	1782.9	1621.0	1326.1	1059.1	829.8	624.5	456.8
20°	3340.2	2774.5	2318.7	1905.3	1724.1	1556.4	1257.7	998.4	775.8	598.5	484.8
22.5°	3408.7	2807.3	2324.5	1904.3	1723.1	1565.1	1286.6	1043.7	862.5	767.1	753.6
25°	3481.9	2853.6	2366.9	1947.7	1779.0	1632.5	1362.7	1125.6	974.3	933.8	939.6
27.5°	3478.1	2833.3	2326.4	1910.1	1732.8	1584.4	1268.3	968.5	826.9	713.2	671.7
30°	3270.9	2599.1	2050.8	1584.4	1375.2	1193.1	776.8	505.0	348.9	305.5	262.1
32.5°	2786.1	2105.7	1533.3	1095.7	860.6	642.8	305.5	161.9	137.8	115.6	105.0
35°	2316.8	1678.8	1146.8	662.1	418.3	259.2	109.9	72.3	68.4	64.6	64.6
37.5°	1914.9	1318.4	741.1	279.5	153.2	93.5	53.0	48.2	46.3	45.3	45.3
40°	1497.6	859.6	320.9	92.5	49.1	42.4	37.6	35.7	34.7	33.7	34.7
42.5°	883.7	346.0	93.5	34.7	32.8	30.8	27.9	27.0	27.0	26.0	27.0
45°	300.7	89.6	30.8	25.1	23.1	23.1	21.2	21.2	21.2	20.2	22.2
47.5°	78.1	27.9	20.2	18.3	17.3	17.3	16.4	16.4	16.4	16.4	17.3
50°	27.0	18.3	14.5	13.5	12.5	13.5	12.5	12.5	12.5	12.5	13.5
52.5°	16.4	12.5	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
55°	10.6	9.6	8.7	8.7	8.7	8.7	8.7	9.6	9.6	9.6	9.6
57.5°	8.7	7.7	7.7	7.7	7.7	7.7	8.7	7.7	7.7	8.7	9.6
60°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	8.7	8.7	9.6
62.5°	6.7	7.7	7.7	7.7	7.7	7.7	7.7	8.7	8.7	8.7	9.6
65°	6.7	6.7	6.7	7.7	7.7	7.7	8.7	8.7	8.7	9.6	9.6
67.5°	5.8	5.8	6.7	6.7	7.7	7.7	7.7	8.7	8.7	8.7	9.6
70°	5.8	5.8	5.8	6.7	6.7	6.7	6.7	7.7	7.7	8.7	8.7
72.5°	4.8	5.8	5.8	6.7	6.7	6.7	6.7	7.7	7.7	7.7	8.7
75°	4.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	7.7	7.7	8.7
77.5°	4.8	5.8	5.8	6.7	6.7	6.7	6.7	7.7	7.7	7.7	8.7
80°	4.8	5.8	5.8	6.7	6.7	6.7	6.7	7.7	7.7	7.7	7.7
82.5°	4.8	5.8	5.8	6.7	6.7	6.7	6.7	7.7	7.7	7.7	7.7
85°	4.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	7.7	7.7	7.7
87.5°	4.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1
2.5°	1158.4	1142.0	1084.2	1076.5	1066.8	1019.6	1000.3	967.6	921.3	907.8	891.4
5°	1045.6	991.7	906.9	883.7	858.7	784.5	739.2	685.2	625.5	592.7	561.8
7.5°	902.0	826.9	714.1	668.8	640.9	559.9	487.6	415.4	327.7	277.6	245.7
10°	742.1	638.9	521.4	469.3	431.7	314.2	245.7	213.9	184.1	160.0	138.8
12.5°	581.1	464.5	331.5	271.8	241.9	200.5	162.9	123.4	109.9	108.9	105.0
15°	426.0	295.9	223.6	201.4	180.2	129.1	128.2	128.2	132.0	134.9	135.9
17.5°	314.2	260.2	204.3	190.8	200.5	208.2	221.7	241.9	258.3	304.5	294.9
20°	460.7	456.8	498.2	551.2	588.8	668.8	770.0	884.7	1004.2	1137.2	1238.4
22.5°	790.2	886.6	961.8	1025.4	1059.1	1149.7	1229.7	1269.2	1292.3	1280.8	1264.4
25°	965.6	1000.3	977.2	955.0	957.9	876.0	816.3	740.1	675.6	616.8	582.1
27.5°	577.3	528.1	458.7	410.5	400.9	346.0	305.5	263.1	250.6	212.0	195.6
30°	208.2	193.7	171.5	154.2	152.3	137.8	129.1	119.5	118.5	109.9	105.0
32.5°	94.4	94.4	86.7	88.7	86.7	83.8	82.9	80.0	80.0	77.1	75.2
35°	61.7	62.6	61.7	61.7	60.7	60.7	60.7	58.8	59.8	57.8	54.9
37.5°	45.3	46.3	44.3	45.3	45.3	45.3	45.3	44.3	43.4	41.4	40.5
40°	34.7	34.7	34.7	34.7	34.7	34.7	34.7	33.7	33.7	32.8	30.8
42.5°	27.0	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.0	27.0
45°	22.2	23.1	22.2	23.1	23.1	23.1	22.2	22.2	22.2	21.2	20.2
47.5°	17.3	17.3	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	15.4
50°	13.5	13.5	13.5	13.5	13.5	13.5	14.5	13.5	13.5	13.5	13.5
52.5°	10.6	11.6	11.6	12.5	12.5	12.5	12.5	12.5	11.6	11.6	10.6
55°	9.6	10.6	10.6	11.6	11.6	11.6	11.6	10.6	10.6	10.6	9.6
57.5°	9.6	10.6	10.6	10.6	10.6	10.6	10.6	9.6	9.6	8.7	8.7
60°	9.6	9.6	9.6	10.6	10.6	9.6	9.6	8.7	8.7	7.7	7.7
62.5°	9.6	9.6	9.6	10.6	10.6	9.6	9.6	8.7	7.7	7.7	6.7
65°	9.6	10.6	9.6	10.6	10.6	9.6	9.6	8.7	7.7	7.7	6.7
67.5°	9.6	10.6	10.6	10.6	9.6	9.6	9.6	8.7	7.7	7.7	6.7
70°	8.7	9.6	9.6	9.6	9.6	9.6	8.7	8.7	7.7	7.7	6.7
72.5°	8.7	9.6	8.7	9.6	9.6	8.7	8.7	8.7	7.7	7.7	6.7
75°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	7.7	7.7	6.7	6.7
77.5°	8.7	8.7	8.7	8.7	8.7	8.7	7.7	7.7	7.7	6.7	6.7
80°	8.7	8.7	8.7	8.7	8.7	8.7	7.7	7.7	6.7	6.7	5.8
82.5°	7.7	8.7	8.7	8.7	8.7	8.7	7.7	7.7	6.7	6.7	5.8
85°	7.7	7.7	7.7	7.7	7.7	7.7	6.7	6.7	5.8	4.8	4.8
87.5°	6.7	7.7	6.7	6.7	6.7	6.7	5.8	4.8	3.9	3.9	2.9
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: P179909

CATALOG NUMBER: LDA6A55830D010TE LARH20SP 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1	1272.1
2.5°	865.4	841.3	842.3	846.1	822.1	809.5	806.6	794.1
5°	520.4	492.5	487.6	483.8	450.1	436.6	426.0	439.5
7.5°	223.6	213.0	211.1	208.2	192.7	185.0	181.2	185.0
10°	110.8	104.1	105.0	106.0	101.2	98.3	97.3	96.4
12.5°	109.9	108.9	109.9	109.9	110.8	108.9	109.9	109.9
15°	142.6	142.6	145.5	147.4	152.3	151.3	153.2	155.2
17.5°	355.6	337.3	346.9	346.9	390.3	351.8	384.5	354.6
20°	1397.4	1462.9	1529.4	1585.3	1642.2	1659.5	1693.3	1683.6
22.5°	1239.3	1247.1	1237.4	1226.8	1223.9	1226.8	1174.8	1182.5
25°	532.0	528.1	512.7	496.3	501.1	505.0	486.7	469.3
27.5°	182.1	177.3	172.5	168.7	166.7	163.8	158.0	154.2
30°	103.1	100.2	98.3	97.3	95.4	93.5	90.6	88.7
32.5°	74.2	72.3	71.3	70.4	68.4	66.5	63.6	62.6
35°	54.9	53.0	52.0	51.1	49.1	47.2	46.3	45.3
37.5°	40.5	38.5	38.5	38.5	35.7	33.7	32.8	31.8
40°	30.8	29.9	29.9	29.9	27.9	27.0	26.0	26.0
42.5°	27.0	26.0	26.0	26.0	24.1	23.1	23.1	22.2
45°	20.2	19.3	19.3	18.3	17.3	17.3	16.4	15.4
47.5°	15.4	14.5	14.5	14.5	13.5	12.5	12.5	11.6
50°	12.5	12.5	11.6	12.5	10.6	10.6	10.6	9.6
52.5°	10.6	10.6	9.6	9.6	8.7	8.7	8.7	7.7
55°	9.6	8.7	8.7	8.7	7.7	7.7	7.7	6.7
57.5°	7.7	7.7	6.7	6.7	5.8	5.8	5.8	5.8
60°	6.7	6.7	5.8	5.8	4.8	4.8	4.8	4.8
62.5°	6.7	5.8	5.8	5.8	4.8	4.8	4.8	4.8
65°	6.7	5.8	5.8	5.8	4.8	4.8	4.8	4.8
67.5°	6.7	5.8	5.8	5.8	4.8	4.8	4.8	4.8
70°	6.7	6.7	5.8	5.8	5.8	4.8	4.8	4.8
72.5°	6.7	6.7	5.8	5.8	5.8	5.8	4.8	4.8
75°	5.8	5.8	5.8	5.8	4.8	4.8	4.8	4.8
77.5°	5.8	5.8	5.8	5.8	4.8	4.8	4.8	4.8
80°	5.8	5.8	4.8	4.8	4.8	4.8	4.8	4.8
82.5°	5.8	4.8	4.8	4.8	4.8	3.9	3.9	3.9
85°	3.9	3.9	3.9	3.9	2.9	2.9	2.9	2.9
87.5°	2.9	1.9	1.9	1.9	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



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - 90°-270°













(END OF REPORT)