

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: P179669

Luminaire Tested: **LDA6A45830D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179669
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26674)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A45830D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4434.9 lumens
Efficiency: N/A
Efficacy: 83.7 lumens/watt
Spacing Criteria (0/90/45): 2.68 / 0.47 / 1.42
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

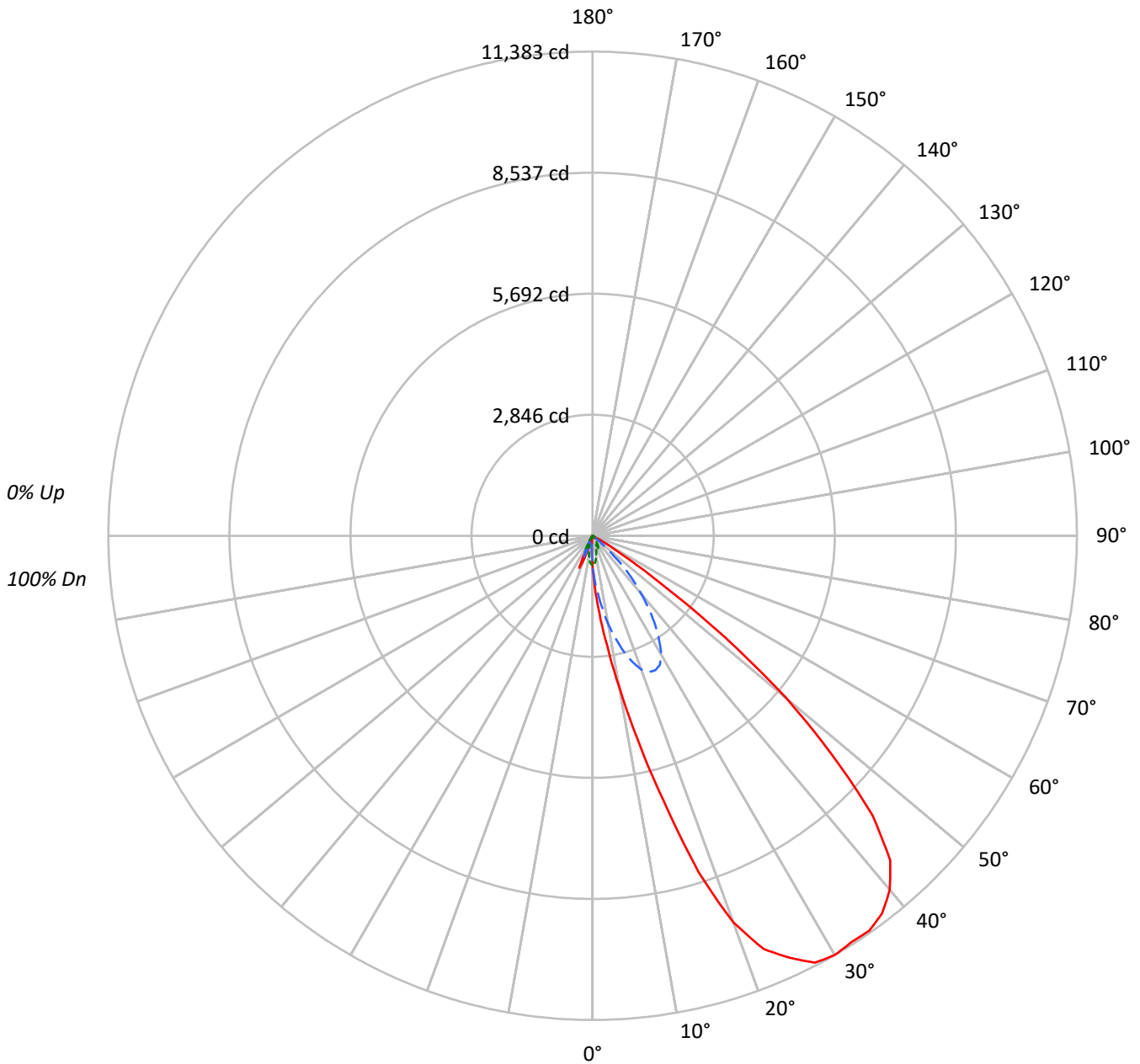
Input Watts (W): 53
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	109	106	103	110	107	104	101	102	100	98	99	97	95	95	94	92	91																			
2	105	99	94	89	102	97	92	88	94	90	86	90	87	85	88	85	83	81																			
3	98	89	83	78	95	88	82	78	85	80	76	83	79	75	80	77	74	72																			
4	91	81	74	69	89	80	73	68	78	72	67	75	71	67	73	69	66	64																			
5	84	74	66	61	82	73	66	61	71	65	60	69	64	59	67	63	59	57																			
6	78	67	59	54	77	66	59	54	65	58	53	63	57	53	61	57	53	51																			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	47	56	51	47	45																			
8	68	56	48	43	66	55	48	43	54	48	43	53	47	43	52	46	42	41																			
9	63	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	38	37																			
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	38308	38308	38308
5°	100957	34949	11270
10°	201583	26786	4476
15°	366988	18803	4892
20°	564307	13494	30873
25°	661804	20154	25550
30°	720567	12654	7444
35°	758386	5247	3085
40°	777650	2311	1753
45°	721889	1520	1295
50°	506346	1168	588
55°	185179	841	373
60°	39109	855	219
65°	3308	1012	259
70°	1106	1250	465
75°	212	1652	826
80°	316	2462	1231
85°	0	4906	1258



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.9	2.0
10°-20°	483.4	10.9
20°-30°	1168.4	26.3
30°-40°	1373.6	31.0
40°-50°	1037.7	23.4
50°-60°	260.3	5.9
60°-70°	12.6	0.3
70°-80°	6.0	0.1
80°-90°	4.9	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°	1739.8	39.2
0°-40°	3113.4	70.2
0°-60°	4411.4	99.5
0°-90°	4434.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4434.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	699	699	699	699	699	
5°	1835	1332	635	270	205	229
15°	6466	2805	331	89	86	1957
25°	10941	3490	333	463	422	5033
35°	11332	2572	78	56	46	7056
45°	9311	1010	20	21	17	6861
55°	1938	28	9	8	4	2143
65°	26	7	8	7	2	69
75°	1	5	8	7	4	3
85°	0	5	8	6	2	0
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°	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8
2.5°	1219.2	1199.6	1185.9	1162.3	1150.6	1155.5	1131.0	1097.6	1087.8	1058.4	1007.5
5°	1834.6	1814.1	1781.7	1731.7	1694.5	1688.6	1640.6	1560.2	1509.3	1433.8	1331.9
7.5°	2590.3	2572.6	2518.7	2444.2	2381.5	2358.0	2287.4	2146.3	2033.6	1882.7	1707.2
10°	3621.3	3552.7	3451.7	3300.8	3156.7	3090.1	2965.6	2732.4	2549.1	2342.3	2104.2
12.5°	4913.9	4792.4	4628.7	4402.4	4154.4	4029.9	3832.0	3475.2	3154.8	2800.0	2453.0
15°	6466.3	6343.8	6106.6	5755.8	5356.9	5157.0	4864.9	4302.4	3825.1	3304.7	2804.9
17.5°	8298.0	8098.1	7782.5	7273.9	6656.5	6342.8	5929.3	5150.1	4438.6	3759.4	3112.6
20°	9673.0	9527.0	9228.1	8695.9	7959.9	7556.1	7000.4	5927.3	5009.0	4123.0	3345.9
22.5°	10516.8	10385.5	10111.1	9666.2	8989.9	8542.1	7915.8	6609.4	5452.0	4374.9	3462.5
25°	10941.2	10847.1	10656.0	10267.9	9676.9	9227.1	8594.0	7114.1	5751.9	4511.1	3489.9
27.5°	11314.6	11156.8	10846.1	10581.5	10058.2	9600.5	9000.7	7365.0	5856.7	4495.5	3420.4
30°	11383.2	11293.0	11048.0	10669.7	10182.6	9720.1	9087.9	7328.8	5738.2	4313.2	3231.2
32.5°	11324.4	11246.0	11060.8	10648.2	10103.3	9592.7	8898.8	7030.8	5390.2	3975.1	2911.7
35°	11332.2	11207.8	10883.4	10530.6	9850.4	9250.6	8436.2	6485.9	4903.2	3536.0	2571.6
37.5°	11182.3	10977.5	10709.9	10255.2	9336.9	8593.0	7662.0	5783.2	4317.1	3088.1	2174.7
40°	10866.7	10710.9	10355.1	9656.4	8461.7	7526.7	6666.3	4976.7	3677.1	2599.1	1772.9
42.5°	10351.2	10165.0	9668.1	8614.6	7194.5	6379.1	5604.9	4151.5	3047.9	2125.7	1391.7
45°	9311.4	9027.2	8377.4	7121.0	5909.7	5217.8	4586.6	3385.1	2470.7	1663.1	1010.4
47.5°	7650.2	7408.1	6721.1	5672.5	4718.9	4183.8	3645.8	2669.6	1838.6	1069.2	519.4
50°	5937.1	5746.0	5221.7	4301.4	3505.6	2986.2	2562.8	1704.3	980.0	492.0	233.3
52.5°	3906.5	3785.9	3336.1	2685.3	2013.0	1642.6	1333.8	739.9	456.7	218.5	80.4
55°	1937.5	1782.7	1568.1	1162.3	840.9	680.2	577.2	364.6	189.1	62.7	28.4
57.5°	789.9	755.6	680.2	525.3	403.8	341.1	272.5	113.7	42.1	25.5	17.6
60°	356.7	341.1	296.0	207.8	112.7	69.6	49.0	31.4	21.6	15.7	11.8
62.5°	62.7	57.8	51.0	39.2	31.4	27.4	23.5	17.6	13.7	10.8	8.8
65°	25.5	25.5	23.5	20.6	16.7	15.7	13.7	10.8	8.8	7.8	6.9
67.5°	13.7	12.7	12.7	10.8	9.8	8.8	7.8	6.9	6.9	5.9	5.9
70°	6.9	6.9	6.9	5.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
72.5°	3.9	3.9	3.9	3.9	3.9	3.9	2.9	2.9	2.9	3.9	3.9
75°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.9	3.9	3.9	4.9
77.5°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.9	3.9	3.9	4.9
80°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.9	3.9	3.9	4.9
82.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.9	2.9	3.9	4.9
85°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.9	2.9	3.9	4.9
87.5°	0.0	0.0	1.0	1.0	1.0	2.0	2.0	2.9	2.9	3.9	4.9
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°	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8
2.5°	1005.5	954.6	915.4	878.1	869.3	838.9	810.5	761.5	717.4	676.2	629.2
5°	1292.7	1192.7	1109.4	1028.1	1001.6	950.6	882.0	793.8	711.5	635.1	554.7
7.5°	1605.3	1435.8	1287.8	1150.6	1102.5	1030.0	919.3	793.8	675.2	565.5	467.5
10°	1912.1	1659.2	1435.8	1237.8	1165.3	1071.2	919.3	759.5	608.6	481.2	384.2
12.5°	2208.0	1861.1	1559.2	1297.6	1202.5	1084.9	894.8	699.8	524.3	398.9	317.5
15°	2439.3	2031.6	1646.5	1321.1	1202.5	1066.3	837.9	616.4	439.1	331.3	258.7
17.5°	2612.8	2132.6	1675.9	1298.6	1161.4	1008.5	751.7	518.4	361.6	274.4	204.8
20°	2713.7	2158.1	1645.5	1232.9	1082.9	921.2	644.9	427.3	306.8	231.3	165.6
22.5°	2737.3	2122.8	1574.9	1148.6	993.8	830.1	550.8	382.2	296.0	236.2	206.8
25°	2710.8	2051.2	1481.8	1063.3	909.5	747.8	516.5	411.6	354.8	333.2	356.7
27.5°	2605.9	1917.9	1367.2	968.3	813.4	662.5	490.0	414.6	356.7	346.9	336.2
30°	2418.7	1717.0	1190.8	791.9	628.2	502.8	347.9	247.0	197.0	199.9	198.0
32.5°	2125.7	1425.0	932.0	553.7	432.2	340.1	230.3	146.0	137.2	137.2	135.2
35°	1803.3	1157.4	700.7	389.1	300.9	239.1	137.2	106.8	90.2	78.4	70.6
37.5°	1475.0	900.7	483.2	262.7	191.1	122.5	65.7	53.9	48.0	45.1	44.1
40°	1141.8	634.1	308.7	144.1	84.3	53.9	42.1	36.3	33.3	32.3	32.3
42.5°	844.8	408.7	166.6	56.8	45.1	37.2	30.4	26.5	25.5	25.5	24.5
45°	508.6	204.8	62.7	35.3	29.4	26.5	22.5	20.6	19.6	19.6	20.6
47.5°	235.2	76.4	34.3	23.5	21.6	19.6	17.6	16.7	16.7	16.7	17.6
50°	85.3	33.3	21.6	16.7	15.7	14.7	13.7	12.7	12.7	13.7	13.7
52.5°	32.3	20.6	15.7	12.7	11.8	11.8	10.8	10.8	10.8	10.8	10.8
55°	19.6	14.7	11.8	9.8	9.8	8.8	8.8	8.8	8.8	8.8	8.8
57.5°	12.7	10.8	8.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
60°	9.8	7.8	6.9	6.9	6.9	6.9	6.9	7.8	7.8	7.8	7.8
62.5°	7.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9	7.8	7.8	7.8
65°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	7.8	7.8	7.8	8.8
67.5°	5.9	5.9	5.9	5.9	5.9	6.9	6.9	6.9	7.8	7.8	7.8
70°	4.9	4.9	5.9	5.9	5.9	6.9	6.9	6.9	7.8	7.8	7.8
72.5°	4.9	5.9	5.9	5.9	5.9	6.9	6.9	6.9	7.8	7.8	7.8
75°	4.9	5.9	5.9	5.9	6.9	6.9	6.9	6.9	7.8	7.8	7.8
77.5°	4.9	5.9	5.9	5.9	6.9	6.9	6.9	7.8	7.8	7.8	8.8
80°	4.9	5.9	5.9	6.9	6.9	6.9	6.9	7.8	7.8	7.8	8.8
82.5°	4.9	5.9	5.9	6.9	6.9	6.9	7.8	7.8	7.8	8.8	8.8
85°	4.9	5.9	5.9	6.9	6.9	6.9	7.8	7.8	7.8	7.8	8.8
87.5°	4.9	5.9	5.9	6.9	6.9	6.9	6.9	7.8	7.8	7.8	7.8
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8
2.5°	603.7	563.5	535.1	509.6	499.8	477.3	452.8	424.4	400.8	398.9	379.3
5°	500.8	444.9	404.8	379.3	366.5	343.0	314.6	296.0	269.5	261.7	242.1
7.5°	404.8	352.8	315.6	292.1	277.4	248.9	216.6	196.0	174.4	157.8	136.2
10°	329.3	279.3	239.1	215.6	200.9	170.5	137.2	113.7	94.1	90.2	88.2
12.5°	264.6	213.6	173.5	148.0	132.3	103.9	95.1	91.1	88.2	85.3	85.3
15°	205.8	153.9	110.7	100.9	98.0	95.1	93.1	91.1	89.2	88.2	89.2
17.5°	149.9	108.8	103.9	102.9	100.9	100.9	102.9	103.9	105.8	107.8	110.7
20°	132.3	133.3	144.1	151.9	149.0	163.7	184.2	200.9	241.1	265.6	298.9
22.5°	237.2	272.5	322.4	352.8	369.5	418.5	472.4	553.7	594.9	653.7	706.6
25°	405.7	446.9	490.0	501.8	510.6	515.5	508.6	471.4	462.6	445.9	441.0
27.5°	303.8	284.2	291.1	294.0	291.1	287.2	275.4	254.8	249.9	242.1	244.0
30°	179.3	173.5	181.3	180.3	180.3	180.3	176.4	159.7	151.9	143.1	137.2
32.5°	132.3	121.5	112.7	104.9	101.9	97.0	94.1	87.2	84.3	80.4	80.4
35°	65.7	62.7	62.7	60.8	59.8	60.8	60.8	57.8	55.9	54.9	54.9
37.5°	43.1	43.1	44.1	43.1	43.1	43.1	43.1	42.1	41.2	40.2	40.2
40°	32.3	32.3	33.3	33.3	32.3	32.3	32.3	31.4	31.4	31.4	31.4
42.5°	25.5	25.5	25.5	25.5	24.5	25.5	25.5	25.5	24.5	24.5	23.5
45°	21.6	20.6	20.6	20.6	20.6	20.6	21.6	20.6	20.6	19.6	19.6
47.5°	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	16.7	16.7
50°	13.7	13.7	13.7	13.7	13.7	12.7	12.7	11.8	11.8	10.8	10.8
52.5°	10.8	10.8	9.8	9.8	9.8	9.8	9.8	9.8	8.8	8.8	8.8
55°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	7.8	6.9	6.9
57.5°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	6.9	6.9	5.9
60°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	6.9	5.9	5.9	5.9
62.5°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	6.9	5.9	5.9	4.9
65°	8.8	8.8	8.8	8.8	7.8	7.8	7.8	6.9	6.9	5.9	5.9
67.5°	8.8	8.8	8.8	8.8	8.8	7.8	7.8	7.8	6.9	6.9	5.9
70°	8.8	8.8	8.8	8.8	8.8	7.8	7.8	7.8	6.9	6.9	5.9
72.5°	8.8	8.8	8.8	8.8	8.8	7.8	7.8	7.8	6.9	6.9	5.9
75°	8.8	8.8	8.8	8.8	8.8	7.8	7.8	7.8	6.9	6.9	5.9
77.5°	8.8	8.8	8.8	8.8	8.8	7.8	7.8	7.8	6.9	6.9	5.9
80°	8.8	8.8	8.8	8.8	8.8	7.8	7.8	7.8	6.9	6.9	5.9
82.5°	8.8	8.8	8.8	8.8	8.8	7.8	7.8	7.8	6.9	6.9	5.9
85°	8.8	8.8	7.8	7.8	7.8	7.8	7.8	6.9	5.9	5.9	4.9
87.5°	7.8	7.8	7.8	7.8	7.8	6.9	6.9	5.9	4.9	4.9	3.9
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: P179669

CATALOG NUMBER: LDA6A45830D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	698.8	698.8	698.8	698.8	698.8	698.8	698.8	698.8
2.5°	375.4	361.6	358.7	362.6	346.9	346.9	346.9	353.8
5°	234.2	220.5	216.6	217.6	204.8	196.0	200.9	204.8
7.5°	127.4	112.7	107.8	107.8	95.1	90.2	91.1	93.1
10°	85.3	83.3	83.3	82.3	80.4	79.4	80.4	80.4
12.5°	82.3	81.3	81.3	80.4	80.4	79.4	79.4	80.4
15°	86.2	86.2	86.2	85.3	85.3	84.3	86.2	86.2
17.5°	109.8	111.7	115.6	117.6	121.5	117.6	124.5	123.5
20°	322.4	354.8	414.6	437.1	501.8	470.4	538.0	529.2
22.5°	730.1	753.7	763.5	768.4	769.3	800.7	805.6	816.4
25°	431.2	425.3	420.4	420.4	402.8	423.4	419.5	422.4
27.5°	230.3	228.4	223.4	225.4	216.6	223.4	225.4	225.4
30°	130.3	126.4	122.5	122.5	114.7	118.6	117.6	117.6
32.5°	75.5	73.5	71.5	70.6	68.6	68.6	67.6	67.6
35°	51.9	51.0	50.0	49.0	47.0	46.1	46.1	46.1
37.5°	38.2	37.2	36.3	36.3	35.3	33.3	33.3	33.3
40°	29.4	28.4	27.4	27.4	26.5	24.5	24.5	24.5
42.5°	22.5	21.6	20.6	19.6	19.6	18.6	17.6	17.6
45°	18.6	18.6	17.6	17.6	16.7	16.7	16.7	16.7
47.5°	15.7	15.7	14.7	14.7	14.7	13.7	13.7	12.7
50°	9.8	8.8	8.8	7.8	7.8	6.9	6.9	6.9
52.5°	7.8	6.9	6.9	5.9	5.9	4.9	4.9	4.9
55°	5.9	5.9	4.9	4.9	4.9	3.9	3.9	3.9
57.5°	4.9	4.9	3.9	3.9	3.9	2.9	2.9	2.9
60°	4.9	3.9	3.9	2.9	2.9	2.9	2.0	2.0
62.5°	4.9	3.9	3.9	2.9	2.9	2.0	2.0	2.0
65°	4.9	3.9	3.9	2.9	2.9	2.9	2.9	2.0
67.5°	4.9	4.9	3.9	3.9	3.9	2.9	2.9	2.9
70°	5.9	4.9	4.9	3.9	3.9	3.9	3.9	2.9
72.5°	5.9	4.9	4.9	4.9	3.9	3.9	3.9	3.9
75°	5.9	4.9	4.9	4.9	3.9	3.9	3.9	3.9
77.5°	5.9	4.9	4.9	4.9	3.9	3.9	3.9	3.9
80°	5.9	4.9	4.9	4.9	3.9	3.9	3.9	3.9
82.5°	4.9	4.9	4.9	3.9	3.9	3.9	3.9	3.9
85°	3.9	3.9	3.9	2.9	2.9	2.9	2.9	2.0
87.5°	2.9	2.9	2.0	2.0	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



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)