

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: P179642

Luminaire Tested: **LDA6A45935D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179642
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26670)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A45935D010TE LARH20SP 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3769.9 lumens
Efficiency: N/A
Efficacy: 71.1 lumens/watt
Spacing Criteria (0/90/45): 2.28 / 0.6 / 1.28
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

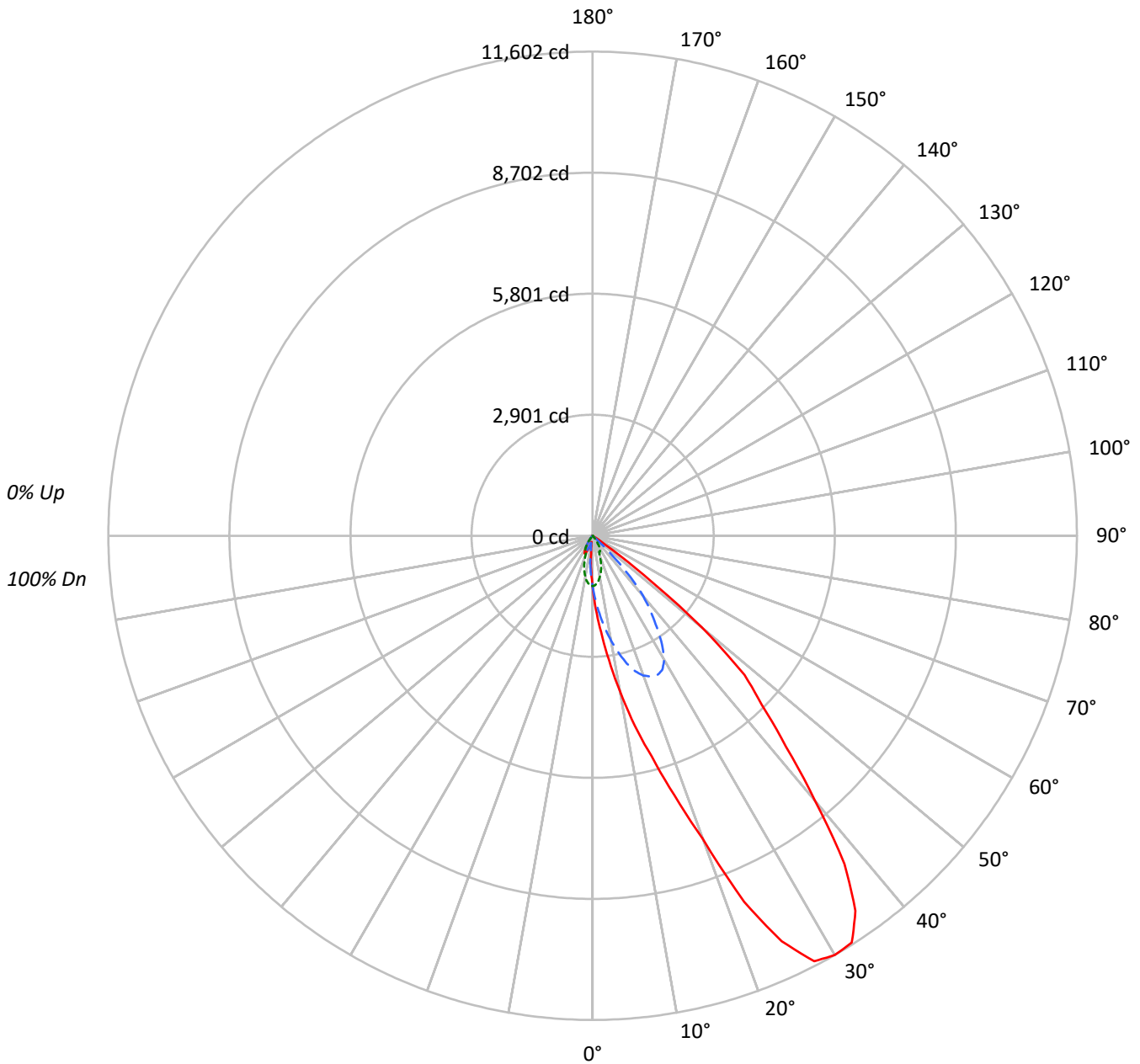
Input Watts (W): 53
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P179642

CATALOG NUMBER: LDA6A45935D010TE LARH20SP 6LA1LI 30°

Luminous Intensity Polar Plot





TEST NUMBER: P179642

CATALOG NUMBER: LDA6A45935D010TE LARH20SP 6LA1LI 30°

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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	113	109	106	104	110	107	105	102	103	101	99	99	98	96	96	95	93	91								
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	84	83								
3	99	91	85	81	97	90	84	80	87	83	79	85	81	77	82	79	76	75								
4	92	84	77	72	91	82	76	71	80	75	71	78	73	70	76	72	69	67								
5	86	76	69	64	85	75	69	64	74	68	63	72	67	63	70	66	62	61								
6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55								
7	76	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49								
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45								
9	66	55	48	43	65	54	47	43	53	47	43	52	47	43	51	46	42	41								
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39	37								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	66146	66146	66146
5°	127294	63367	23734
10°	210556	55610	8539
15°	310847	44870	13610
20°	451358	28574	23038
25°	648394	24957	27933
30°	734391	21617	20326
35°	734447	11230	10433
40°	593211	4186	4365
45°	444201	1442	1574
50°	290788	580	503
55°	34178	487	76
60°	1020	559	0
65°	221	662	0
70°	128	817	0
75°	0	1250	0
80°	0	1863	253
85°	0	3711	503



TEST NUMBER: P179642

CATALOG NUMBER: LDA6A45935D010TE LARH20SP 6LA1LI 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	124.5	3.3
10°-20°	504.4	13.4
20°-30°	1106.7	29.4
30°-40°	1228.6	32.6
40°-50°	711.2	18.9
50°-60°	84.5	2.2
60°-70°	3.3	0.1
70°-80°	3.5	0.1
80°-90°	3.3	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°	1735.6	46.0
0°-40°	2964.2	78.6
0°-60°	3759.9	99.7
0°-90°	3769.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3769.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1207	1207	1207	1207	1207	
5°	2313	1870	1152	659	431	266
15°	5477	3168	791	214	240	1645
25°	10720	3679	413	459	462	4841
35°	10974	2684	168	165	156	6616
45°	5730	632	19	22	20	4478
55°	358	5	5	3	1	787
65°	2	3	5	3	0	3
75°	0	3	6	3	0	0
85°	0	3	6	3	1	0
90°	0	0	0	0	0	



TEST NUMBER: P179642

CATALOG NUMBER: LDA6A45935D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6
2.5°	1754.8	1720.1	1685.3	1682.8	1654.0	1615.8	1642.1	1586.2	1603.1	1560.8	1534.5
5°	2313.2	2275.1	2224.2	2209.8	2160.7	2103.9	2125.1	2026.8	2016.6	1935.3	1870.0
7.5°	2997.8	2953.8	2874.1	2836.0	2754.7	2669.9	2680.1	2522.5	2475.0	2341.2	2221.7
10°	3782.5	3751.1	3636.7	3557.9	3430.0	3306.3	3285.1	3052.1	2948.7	2738.6	2550.4
12.5°	4662.8	4616.2	4457.8	4338.3	4163.8	4007.0	3960.4	3626.5	3441.0	3136.8	2869.9
15°	5477.1	5445.8	5309.3	5129.7	4908.5	4706.0	4626.4	4236.6	3943.4	3539.3	3168.1
17.5°	6521.0	6434.6	6188.9	5836.4	5520.3	5318.7	5222.1	4734.0	4374.7	3881.6	3407.9
20°	7736.9	7620.0	7243.8	6755.7	6231.2	5877.0	5664.4	5139.0	4694.2	4121.4	3563.8
22.5°	9496.8	9258.7	8544.4	7670.0	6940.4	6467.6	6163.4	5400.0	4927.2	4271.4	3650.3
25°	10719.5	10510.2	9857.8	8708.0	7538.6	6994.7	6566.8	5616.1	5079.7	4360.3	3679.1
27.5°	11494.0	11383.0	10632.2	9483.3	8001.3	7293.8	6809.9	5752.5	5137.3	4357.8	3620.6
30°	11601.6	11608.3	10911.8	9690.8	8037.7	7301.4	6757.4	5694.0	5017.9	4193.4	3428.3
32.5°	11555.0	11462.6	10603.4	9297.7	7634.4	6987.9	6471.0	5447.4	4729.8	3863.0	3094.4
35°	10974.5	10768.6	9860.3	8419.9	7047.2	6432.0	5949.9	5052.6	4271.4	3424.9	2683.5
37.5°	9910.3	9584.1	8569.8	7342.9	6327.0	5784.7	5420.3	4547.6	3796.9	2969.0	2275.1
40°	8289.4	7938.6	7223.4	6366.8	5566.1	5194.1	4844.2	3993.4	3262.2	2503.0	1880.2
42.5°	6858.2	6665.9	6132.1	5476.3	4943.3	4560.3	4226.5	3416.4	2750.4	2049.7	1332.0
45°	5729.6	5599.1	5262.7	4781.5	4252.7	3903.6	3599.4	2773.3	2009.9	1301.5	632.1
47.5°	4934.0	4789.1	4407.8	3901.1	3280.0	2900.4	2558.1	1729.4	1097.3	503.3	147.4
50°	3409.6	3238.5	2832.6	2344.5	1813.3	1527.7	1288.8	699.0	288.1	87.3	16.9
52.5°	1543.0	1424.4	1170.2	897.3	593.1	440.6	287.2	121.2	30.5	12.7	9.3
55°	357.6	313.5	238.1	146.6	72.9	48.3	32.2	12.7	9.3	6.8	5.1
57.5°	22.9	20.3	17.8	14.4	11.9	10.2	9.3	6.8	5.1	4.2	3.4
60°	9.3	9.3	8.5	6.8	5.9	5.1	5.1	3.4	3.4	3.4	3.4
62.5°	4.2	4.2	4.2	3.4	2.5	2.5	2.5	2.5	2.5	2.5	3.4
65°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.5	2.5	3.4
67.5°	0.8	0.8	0.8	0.8	1.7	1.7	1.7	1.7	2.5	2.5	3.4
70°	0.8	0.8	0.8	0.8	1.7	1.7	1.7	1.7	2.5	3.4	3.4
72.5°	0.0	0.8	0.8	0.8	1.7	1.7	1.7	1.7	2.5	3.4	3.4
75°	0.0	0.0	0.8	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4
77.5°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	1.7	2.5	3.4	3.4
80°	0.0	0.0	0.8	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4
82.5°	0.0	0.0	0.8	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4
85°	0.0	0.0	0.8	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4
87.5°	0.0	0.0	0.8	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4
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: P179642

CATALOG NUMBER: LDA6A45935D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6
2.5°	1495.5	1459.1	1421.0	1382.0	1364.2	1335.4	1289.6	1257.4	1228.6	1190.5	1142.2
5°	1791.2	1709.9	1624.3	1544.7	1505.7	1454.9	1365.9	1293.9	1226.9	1151.5	1076.9
7.5°	2086.1	1945.5	1809.9	1680.2	1617.5	1544.7	1407.4	1296.4	1191.3	1087.1	985.4
10°	2347.9	2144.6	1950.5	1770.1	1685.3	1587.9	1408.3	1260.0	1127.8	999.0	876.1
12.5°	2592.0	2316.6	2063.2	1829.4	1718.4	1601.4	1383.7	1207.4	1049.0	899.0	755.8
15°	2807.2	2459.8	2142.9	1857.3	1727.7	1587.9	1338.8	1137.1	960.0	790.6	606.7
17.5°	2960.6	2542.0	2171.7	1841.2	1695.5	1540.4	1265.9	1049.8	858.3	649.9	430.4
20°	3041.9	2567.4	2153.1	1790.4	1633.6	1465.9	1180.3	957.5	738.0	489.8	351.6
22.5°	3070.7	2552.1	2101.4	1718.4	1553.1	1382.8	1093.0	860.9	599.9	415.2	360.1
25°	3057.1	2506.4	2034.4	1633.6	1468.4	1297.3	1008.3	737.2	485.5	412.6	383.8
27.5°	2966.5	2403.9	1909.0	1506.5	1340.5	1171.0	860.9	544.0	429.6	387.2	394.9
30°	2766.5	2195.4	1694.6	1298.9	1142.2	963.4	585.5	399.9	337.2	341.5	341.5
32.5°	2444.5	1883.6	1395.5	1032.0	829.5	600.8	333.8	250.8	255.0	254.2	250.8
35°	2049.7	1538.7	1071.0	633.8	406.7	276.2	168.6	163.5	168.6	167.8	165.2
37.5°	1687.0	1179.5	663.5	254.2	163.5	119.5	100.0	100.0	101.7	101.7	100.8
40°	1272.7	693.1	232.2	83.9	58.5	55.9	56.8	56.8	57.6	58.5	59.3
42.5°	712.6	228.8	61.0	33.0	33.0	31.4	31.4	31.4	33.0	33.0	33.9
45°	192.3	49.1	20.3	19.5	18.6	17.8	17.8	17.8	18.6	18.6	19.5
47.5°	28.8	14.4	11.9	11.0	11.0	10.2	10.2	10.2	11.0	11.0	11.0
50°	11.0	8.5	7.6	6.8	6.8	6.8	5.9	5.9	6.8	6.8	6.8
52.5°	6.8	5.9	5.1	4.2	5.1	4.2	4.2	4.2	5.1	5.1	5.1
55°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	5.1	5.1
57.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	5.1	5.1
60°	3.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	5.1	5.1
62.5°	3.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	5.1	5.1
65°	3.4	4.2	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1
67.5°	3.4	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
70°	4.2	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
72.5°	4.2	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.9
75°	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.9	5.9
77.5°	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.9	5.9	5.9
80°	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.9	5.9	5.9
82.5°	4.2	4.2	5.1	5.1	5.1	5.9	5.1	5.9	5.9	5.9	5.9
85°	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.9	5.9	5.9	5.9
87.5°	4.2	4.2	5.1	5.1	5.1	5.9	5.1	5.1	5.9	5.9	5.9
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: P179642

CATALOG NUMBER: LDA6A45935D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6
2.5°	1108.3	1088.8	1053.2	1028.7	1018.5	998.1	960.0	955.8	910.0	886.3	861.7
5°	1013.4	965.1	904.9	866.8	844.8	801.6	742.3	715.1	659.2	622.8	569.4
7.5°	897.3	822.8	740.6	692.3	656.7	583.8	478.7	416.0	333.0	284.7	250.0
10°	764.3	665.1	540.6	460.9	402.5	316.9	251.7	231.3	209.3	191.5	174.5
12.5°	608.4	441.5	321.1	274.5	252.5	227.1	200.0	176.2	172.0	173.7	179.6
15°	414.3	294.9	254.2	235.6	220.3	195.7	201.7	208.4	214.4	218.6	226.2
17.5°	311.8	272.8	233.0	233.9	239.8	245.7	255.0	265.2	273.7	279.6	289.8
20°	307.6	283.0	288.1	298.3	305.0	313.5	329.6	338.9	349.9	357.6	368.6
22.5°	334.7	356.7	363.5	371.1	381.3	390.6	407.6	420.3	428.7	436.4	444.0
25°	397.4	414.3	420.3	426.2	433.0	439.8	450.8	461.8	459.2	461.8	462.6
27.5°	401.6	414.3	416.9	420.3	420.3	426.2	426.2	433.0	422.0	420.3	416.9
30°	345.7	349.9	352.5	352.5	349.1	353.3	349.1	354.2	341.5	337.2	333.0
32.5°	255.0	261.0	258.4	257.6	255.0	259.3	254.2	259.3	248.3	245.7	241.5
35°	163.5	172.9	168.6	171.2	169.5	173.7	170.3	173.7	165.2	164.4	161.8
37.5°	102.5	105.9	104.2	105.1	105.1	107.6	105.9	107.6	104.2	104.2	101.7
40°	60.2	61.9	61.9	62.7	63.5	64.4	63.5	65.2	63.5	64.4	61.9
42.5°	34.7	35.6	35.6	36.4	37.3	37.3	37.3	39.0	37.3	38.1	36.4
45°	19.5	21.2	20.3	21.2	21.2	22.0	22.0	22.0	22.0	22.0	21.2
47.5°	11.9	12.7	12.7	12.7	12.7	12.7	13.6	13.6	12.7	12.7	12.7
50°	7.6	7.6	7.6	7.6	8.5	8.5	8.5	7.6	7.6	7.6	6.8
52.5°	5.1	5.1	5.1	5.1	5.9	5.1	5.1	5.1	4.2	4.2	4.2
55°	5.1	5.1	5.1	5.1	5.1	4.2	4.2	4.2	3.4	2.5	2.5
57.5°	5.1	5.1	5.1	5.1	5.1	4.2	4.2	3.4	3.4	2.5	2.5
60°	5.1	5.1	5.1	5.1	5.1	4.2	4.2	3.4	3.4	2.5	2.5
62.5°	5.1	5.1	5.1	5.1	5.1	4.2	4.2	3.4	3.4	2.5	2.5
65°	5.1	5.1	5.1	5.1	5.1	4.2	4.2	4.2	3.4	2.5	2.5
67.5°	5.1	5.9	5.1	5.1	5.1	5.1	4.2	4.2	3.4	2.5	2.5
70°	5.1	5.9	5.1	5.1	5.1	5.1	4.2	4.2	3.4	2.5	2.5
72.5°	5.9	5.9	5.9	5.1	5.1	5.1	5.1	4.2	3.4	2.5	2.5
75°	5.9	5.9	5.9	5.1	5.1	5.1	5.1	4.2	3.4	2.5	2.5
77.5°	5.9	5.9	5.9	5.9	5.9	5.1	5.1	4.2	3.4	3.4	2.5
80°	5.9	5.9	5.9	5.9	5.9	5.1	5.1	4.2	3.4	3.4	2.5
82.5°	5.9	5.9	5.9	5.9	5.9	5.1	5.1	4.2	3.4	3.4	2.5
85°	5.9	5.9	5.9	5.9	5.9	5.1	5.1	4.2	3.4	3.4	2.5
87.5°	5.9	5.9	5.9	5.9	5.9	5.1	5.1	4.2	3.4	3.4	2.5
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: P179642

CATALOG NUMBER: LDA6A45935D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6	1206.6
2.5°	867.7	859.2	853.3	839.7	832.1	823.6	810.9	805.0
5°	550.8	525.3	509.2	485.5	449.1	457.6	438.1	431.3
7.5°	237.3	226.2	222.8	217.8	209.3	205.1	204.2	202.5
10°	162.7	153.4	152.5	153.4	154.2	153.4	153.4	153.4
12.5°	183.0	183.9	185.6	188.1	189.0	189.0	188.1	188.1
15°	230.5	232.2	234.7	238.1	239.8	239.8	239.8	239.8
17.5°	295.7	298.3	302.5	305.9	309.3	309.3	309.3	310.1
20°	380.4	380.4	385.5	389.8	392.3	393.2	394.0	394.9
22.5°	455.9	456.7	460.1	463.5	466.0	465.2	463.5	463.5
25°	470.3	467.7	468.6	468.6	467.7	463.5	463.5	461.8
27.5°	419.4	416.0	416.0	413.5	412.6	411.0	407.6	405.9
30°	333.0	331.3	330.5	327.9	332.2	326.2	322.8	321.1
32.5°	239.8	240.6	239.8	237.3	241.5	235.6	233.9	231.3
35°	161.0	161.8	161.0	159.3	159.3	159.3	157.6	155.9
37.5°	101.7	100.8	101.7	101.7	103.4	100.8	100.8	99.1
40°	61.9	61.9	62.7	62.7	63.5	61.9	61.0	61.0
42.5°	36.4	36.4	37.3	37.3	38.1	36.4	36.4	36.4
45°	21.2	21.2	21.2	21.2	22.0	21.2	20.3	20.3
47.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.0
50°	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9
52.5°	4.2	3.4	3.4	3.4	3.4	2.5	2.5	2.5
55°	1.7	1.7	1.7	1.7	1.7	0.8	0.8	0.8
57.5°	1.7	1.7	1.7	0.8	0.8	0.8	0.0	0.0
60°	1.7	1.7	0.8	0.8	0.8	0.0	0.0	0.0
62.5°	1.7	1.7	0.8	0.8	0.8	0.0	0.0	0.0
65°	1.7	1.7	0.8	0.8	0.8	0.0	0.0	0.0
67.5°	1.7	1.7	1.7	0.8	0.8	0.0	0.0	0.0
70°	1.7	1.7	1.7	0.8	0.8	0.8	0.0	0.0
72.5°	1.7	1.7	1.7	0.8	0.8	0.8	0.0	0.0
75°	2.5	1.7	1.7	1.7	0.8	0.8	0.0	0.0
77.5°	2.5	1.7	1.7	1.7	0.8	0.8	0.8	0.0
80°	2.5	1.7	1.7	1.7	0.8	0.8	0.8	0.8
82.5°	2.5	1.7	1.7	1.7	0.8	0.8	0.8	0.8
85°	2.5	1.7	1.7	1.7	0.8	0.8	0.8	0.8
87.5°	2.5	1.7	1.7	1.7	0.8	0.8	0.0	0.0
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)