

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: P209035

Luminaire Tested: **LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209035
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26686)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 20° SPOT, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5552.1 lumens
Efficiency: N/A
Efficacy: 69.9 lumens/watt
Spacing Criteria (0/90/45): 2.35 / 0.6 / 1.31
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

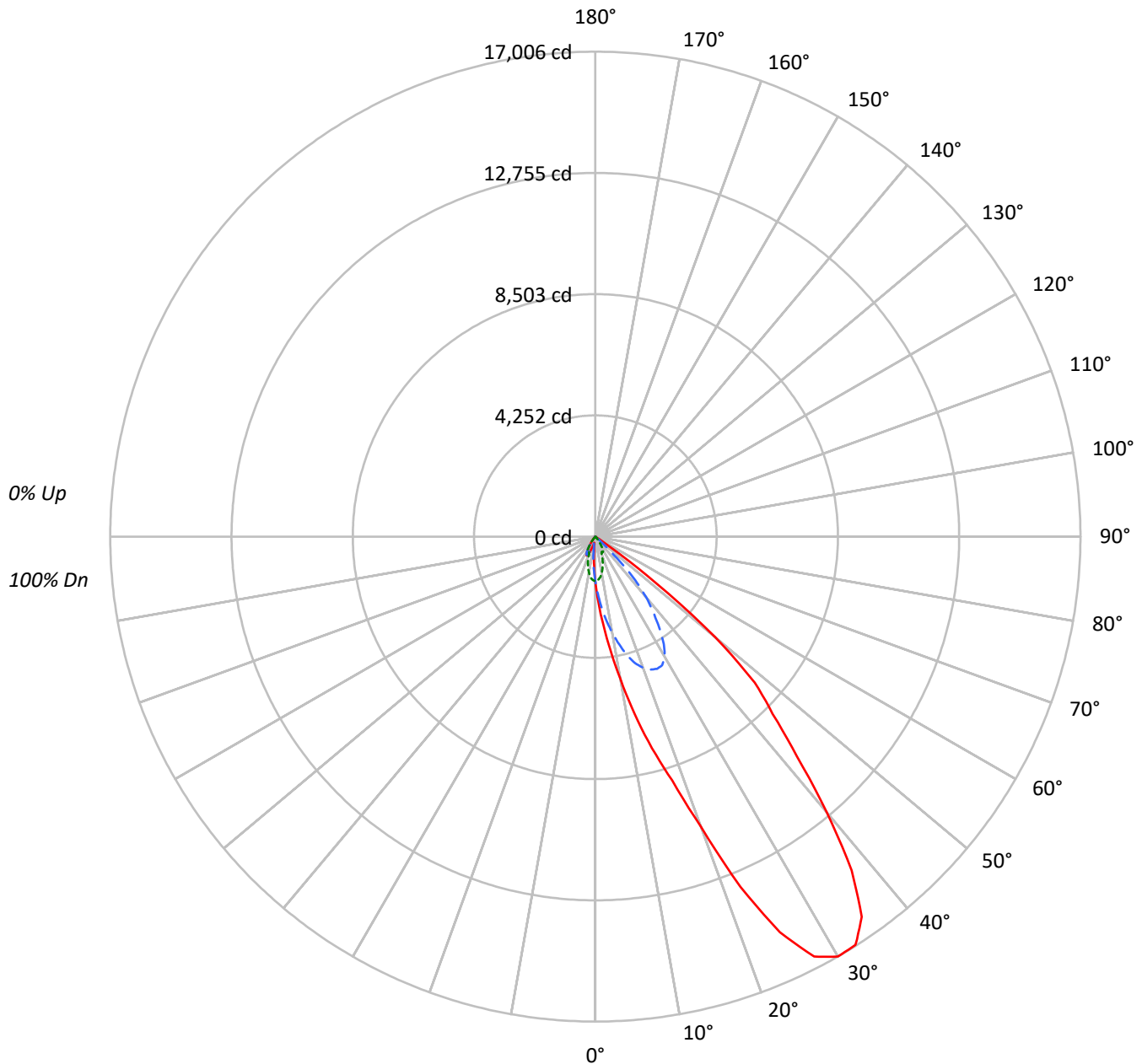
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209035

CATALOG NUMBER: LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°

Luminous Intensity Polar Plot





TEST NUMBER: P209035

CATALOG NUMBER: LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°

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	97	96		96
2	105	100	95	91	103	98	94	90	95	91	88		92	89	86		89
3	99	91	85	80	96	89	84	80	87	82	78		84	80	77		82
4	92	83	76	71	90	82	76	71	79	74	70		77	73	69		75
5	86	76	69	64	84	75	68	63	73	67	63		71	66	62		69
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	59	51	46	69	58	51	46	57	50	46		56	50	46		54
9	66	54	47	42	64	53	47	42	52	46	42		51	46	42		50
10	61	50	43	38	60	49	43	38	48	42	38		48	42	38		47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	67485	67485	67485
5°	130767	64312	21692
10°	222171	56281	9741
15°	342354	44891	15490
20°	495595	29214	26937
25°	727128	28190	34637
30°	845457	26708	26544
35°	855745	14144	14029
40°	708500	5334	5890
45°	535094	1815	2149
50°	366101	663	663
55°	50924	578	83
60°	1326	568	0
65°	336	784	0
70°	138	969	0
75°	0	1281	0
80°	0	2182	273
85°	0	4347	0



TEST NUMBER: P209035

CATALOG NUMBER: LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.4	3.0
10°-20°	695.1	12.5
20°-30°	1585.7	28.6
30°-40°	1835.0	33.1
40°-50°	1106.6	19.9
50°-60°	150.3	2.7
60°-70°	4.8	0.1
70°-80°	5.2	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°	2445.2	44.0
0°-40°	4280.2	77.1
0°-60°	5537.2	99.7
0°-90°	5552.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5552.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1567	1567	1567	1567	1567	
5°	3026	2477	1488	814	502	352
15°	7680	4317	1007	310	348	2274
25°	15306	5116	593	714	729	6927
35°	16281	3900	269	275	267	9812
45°	8788	1062	30	36	35	6872
55°	678	8	8	6	1	1330
65°	3	4	8	4	0	5
75°	0	6	8	6	0	0
85°	0	6	9	6	0	0
90°	0	0	0	0	0	



TEST NUMBER: P209035

CATALOG NUMBER: LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4
2.5°	2266.8	2245.8	2254.6	2231.5	2173.0	2160.9	2159.8	2144.3	2094.7	2056.1	2009.7
5°	3025.6	3024.5	3030.1	2980.4	2877.8	2845.8	2830.4	2792.9	2672.7	2580.0	2477.4
7.5°	3973.2	3966.5	3959.9	3869.5	3708.4	3646.7	3606.9	3471.3	3305.8	3141.5	2958.4
10°	5081.7	5078.4	5053.0	4894.2	4636.1	4522.5	4445.3	4230.2	3964.3	3730.5	3419.4
12.5°	6369.0	6339.2	6294.0	6061.2	5707.1	5583.6	5413.7	5072.9	4664.8	4306.3	3871.7
15°	7680.5	7637.5	7556.9	7258.0	6819.0	6608.3	6397.6	5948.7	5395.0	4874.3	4317.3
17.5°	8963.3	8915.9	8727.3	8219.9	7790.8	7533.8	7299.9	6683.3	6032.5	5363.0	4657.0
20°	10816.4	10644.4	10315.7	9515.9	8718.4	8255.2	7981.6	7329.7	6524.5	5744.6	4898.6
22.5°	13291.7	12910.0	12209.6	10910.2	9770.7	9102.3	8654.5	7787.5	6878.6	5993.9	5047.5
25°	15305.8	15132.6	14336.2	12487.5	10709.4	9921.9	9298.6	8151.5	7136.7	6160.5	5115.9
27.5°	16604.1	16561.1	15651.1	13793.5	11476.1	10442.5	9746.5	8391.9	7261.3	6195.8	5082.8
30°	17005.6	17072.9	16199.3	14237.0	11697.8	10547.3	9786.2	8395.3	7165.4	6035.8	4871.0
32.5°	16975.8	16979.1	15908.1	13854.2	11337.1	10242.8	9455.3	8116.2	6811.3	5635.4	4468.4
35°	16280.9	16109.9	14898.8	12678.4	10497.7	9532.5	8800.1	7575.7	6227.8	5033.2	3900.4
37.5°	14755.4	14531.5	13119.6	11172.7	9503.8	8611.4	8020.2	6866.4	5532.9	4390.1	3313.5
40°	12605.6	12287.9	11123.1	9773.0	8416.2	7745.6	7249.2	6073.3	4789.4	3759.2	2763.1
42.5°	10453.5	10298.0	9528.1	8430.6	7501.8	6870.8	6352.4	5242.8	4074.6	3137.1	2067.1
45°	8787.9	8654.5	8137.1	7413.5	6502.4	5926.6	5427.0	4376.9	3165.7	2104.6	1062.2
47.5°	7574.6	7466.5	6971.2	6211.2	5211.9	4582.0	4066.9	2870.1	1793.5	908.9	265.8
50°	5465.6	5355.3	4869.9	3989.7	3087.4	2560.2	2189.5	1281.7	508.5	184.2	27.6
52.5°	2679.3	2588.8	2259.0	1691.0	1135.0	816.3	596.7	240.5	58.5	19.9	13.2
55°	678.4	623.2	519.5	326.5	159.9	96.0	61.8	22.1	14.3	11.0	7.7
57.5°	38.6	37.5	34.2	25.4	18.8	16.5	14.3	11.0	7.7	6.6	5.5
60°	15.4	14.3	13.2	11.0	8.8	7.7	7.7	5.5	4.4	4.4	4.4
62.5°	6.6	6.6	6.6	5.5	4.4	4.4	4.4	3.3	4.4	4.4	4.4
65°	3.3	3.3	3.3	2.2	2.2	2.2	3.3	3.3	3.3	4.4	4.4
67.5°	2.2	1.1	1.1	1.1	2.2	2.2	2.2	3.3	3.3	4.4	4.4
70°	1.1	1.1	1.1	1.1	2.2	2.2	2.2	3.3	3.3	4.4	5.5
72.5°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.3	3.3	4.4	5.5
75°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.3	4.4	4.4	5.5
77.5°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.3	4.4	4.4	5.5
80°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.3	4.4	4.4	5.5
82.5°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.3	4.4	4.4	5.5
85°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.3	4.4	4.4	5.5
87.5°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.3	3.3	4.4	5.5
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: P209035

CATALOG NUMBER: LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4
2.5°	1950.2	1910.5	1852.0	1813.4	1775.9	1740.6	1682.1	1649.0	1589.5	1534.3	1486.9
5°	2353.9	2254.6	2134.4	2031.8	1965.6	1900.5	1782.5	1695.4	1586.2	1488.0	1397.6
7.5°	2762.0	2586.6	2389.2	2220.4	2117.8	2017.5	1841.0	1699.8	1545.4	1405.3	1271.8
10°	3132.6	2869.0	2589.9	2348.4	2209.4	2079.2	1846.5	1659.0	1460.4	1287.3	1119.6
12.5°	3476.8	3116.1	2752.1	2436.6	2264.5	2107.9	1823.3	1593.9	1357.8	1152.7	957.4
15°	3783.4	3320.2	2870.1	2487.4	2285.5	2100.2	1769.3	1502.3	1236.5	1007.1	760.0
17.5°	4016.2	3447.0	2922.0	2479.6	2248.0	2041.7	1676.6	1387.6	1107.5	829.5	550.4
20°	4157.4	3501.1	2910.9	2420.1	2167.5	1949.1	1566.3	1263.0	951.9	637.6	485.3
22.5°	4216.9	3496.6	2859.1	2330.7	2068.2	1847.6	1460.4	1141.6	788.7	576.9	506.3
25°	4226.9	3451.4	2786.3	2232.6	1970.0	1750.5	1353.4	1003.8	685.0	593.4	567.0
27.5°	4150.7	3345.5	2649.5	2091.4	1832.2	1604.9	1193.5	797.5	643.1	591.2	608.9
30°	3925.7	3104.0	2407.9	1843.2	1592.8	1365.6	852.7	625.4	533.9	537.2	541.6
32.5°	3529.7	2702.5	2019.7	1480.3	1206.7	900.1	530.6	418.1	405.9	405.9	403.7
35°	3001.4	2211.6	1585.1	936.5	600.1	432.4	274.7	275.8	270.2	269.1	268.0
37.5°	2455.4	1745.0	1003.8	387.2	260.3	180.9	162.1	164.4	162.1	165.5	163.3
40°	1935.8	1077.7	366.2	123.5	91.6	88.2	90.4	92.7	92.7	94.9	94.9
42.5°	1125.1	357.4	96.0	49.6	49.6	47.4	48.5	50.7	51.8	52.9	51.8
45°	334.2	73.9	30.9	27.6	27.6	26.5	26.5	27.6	28.7	29.8	29.8
47.5°	52.9	21.0	17.6	15.4	15.4	15.4	15.4	15.4	16.5	16.5	17.6
50°	16.5	13.2	11.0	9.9	9.9	8.8	8.8	9.9	9.9	9.9	11.0
52.5°	9.9	7.7	7.7	6.6	7.7	7.7	6.6	7.7	7.7	7.7	8.8
55°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	7.7	7.7	7.7
57.5°	5.5	5.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
60°	5.5	5.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	7.7
62.5°	5.5	5.5	6.6	6.6	6.6	6.6	6.6	6.6	7.7	7.7	7.7
65°	5.5	5.5	6.6	6.6	6.6	6.6	6.6	7.7	7.7	7.7	7.7
67.5°	5.5	6.6	6.6	6.6	6.6	7.7	7.7	7.7	7.7	7.7	7.7
70°	5.5	6.6	6.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
72.5°	5.5	6.6	6.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
75°	6.6	6.6	6.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	8.8
77.5°	6.6	6.6	7.7	7.7	7.7	7.7	7.7	7.7	8.8	8.8	8.8
80°	6.6	6.6	7.7	7.7	7.7	7.7	7.7	8.8	8.8	8.8	8.8
82.5°	6.6	6.6	7.7	7.7	7.7	7.7	7.7	8.8	8.8	8.8	8.8
85°	6.6	6.6	7.7	7.7	7.7	7.7	7.7	8.8	8.8	8.8	8.8
87.5°	6.6	6.6	7.7	7.7	7.7	7.7	7.7	8.8	8.8	8.8	8.8
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: P209035

CATALOG NUMBER: LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4
2.5°	1446.1	1395.3	1371.1	1336.9	1312.6	1258.6	1236.5	1199.0	1168.1	1117.4	1120.7
5°	1320.3	1224.4	1159.3	1108.6	1073.3	987.2	929.9	869.2	814.0	745.7	720.3
7.5°	1146.1	1028.0	928.8	868.1	822.9	708.2	581.3	482.0	407.0	353.0	332.0
10°	971.8	818.5	660.7	567.0	501.9	391.6	335.3	308.9	284.6	254.8	234.9
12.5°	768.8	550.4	407.0	369.5	343.0	306.6	270.2	241.6	247.1	248.2	255.9
15°	525.0	396.0	350.8	325.4	296.7	275.8	287.9	295.6	310.0	311.1	321.0
17.5°	426.9	371.7	335.3	334.2	336.4	348.6	367.3	377.2	396.0	400.4	414.7
20°	426.9	394.9	425.8	425.8	431.3	447.8	472.1	486.4	507.4	515.1	532.8
22.5°	486.4	508.5	547.1	551.5	553.7	571.4	602.3	616.6	640.9	645.3	664.0
25°	593.4	613.3	648.6	651.9	653.0	666.2	689.4	697.1	713.7	704.8	715.9
27.5°	627.6	636.5	658.5	660.7	655.2	660.7	669.5	669.5	675.1	657.4	660.7
30°	551.5	553.7	564.8	565.9	553.7	555.9	557.0	555.9	554.8	536.1	536.1
32.5°	409.2	409.2	423.6	420.3	407.0	410.3	410.3	410.3	409.2	393.8	391.6
35°	271.3	272.5	284.6	282.4	272.5	274.7	274.7	278.0	274.7	265.8	263.6
37.5°	165.5	166.6	172.1	173.2	169.9	171.0	172.1	171.0	173.2	168.8	166.6
40°	96.0	98.2	102.6	103.7	102.6	102.6	103.7	104.8	109.2	103.7	101.5
42.5°	56.3	57.4	59.6	59.6	59.6	59.6	60.7	61.8	62.9	61.8	60.7
45°	32.0	33.1	34.2	34.2	35.3	34.2	35.3	35.3	36.4	35.3	35.3
47.5°	18.8	18.8	19.9	19.9	21.0	19.9	21.0	21.0	21.0	19.9	19.9
50°	11.0	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	11.0	11.0
52.5°	8.8	8.8	8.8	8.8	8.8	7.7	7.7	7.7	7.7	6.6	6.6
55°	7.7	7.7	7.7	7.7	7.7	7.7	6.6	5.5	5.5	4.4	4.4
57.5°	6.6	7.7	7.7	7.7	7.7	6.6	6.6	5.5	4.4	3.3	3.3
60°	7.7	7.7	7.7	7.7	6.6	6.6	6.6	5.5	4.4	3.3	3.3
62.5°	7.7	7.7	7.7	7.7	7.7	6.6	6.6	5.5	4.4	3.3	3.3
65°	7.7	7.7	7.7	7.7	7.7	6.6	6.6	5.5	4.4	3.3	3.3
67.5°	7.7	7.7	7.7	7.7	7.7	6.6	6.6	5.5	4.4	4.4	3.3
70°	7.7	8.8	8.8	7.7	7.7	7.7	6.6	5.5	5.5	4.4	3.3
72.5°	7.7	8.8	8.8	7.7	7.7	7.7	6.6	5.5	5.5	4.4	3.3
75°	8.8	8.8	8.8	8.8	7.7	7.7	6.6	6.6	5.5	4.4	3.3
77.5°	8.8	8.8	8.8	8.8	7.7	7.7	6.6	6.6	5.5	4.4	3.3
80°	8.8	8.8	8.8	8.8	8.8	7.7	7.7	6.6	5.5	4.4	4.4
82.5°	8.8	8.8	8.8	8.8	8.8	7.7	7.7	6.6	5.5	4.4	4.4
85°	8.8	8.8	8.8	8.8	8.8	7.7	7.7	6.6	5.5	4.4	3.3
87.5°	8.8	8.8	8.8	8.8	7.7	7.7	6.6	6.6	5.5	4.4	3.3
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: P209035

CATALOG NUMBER: LDSQA6A75940D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4	1567.4
2.5°	1079.9	1054.5	1043.5	1061.1	1052.3	1025.8	1031.3	1014.8
5°	644.2	605.6	581.3	592.3	557.0	525.0	525.0	501.9
7.5°	311.1	298.9	292.3	294.5	286.8	276.9	271.3	271.3
10°	218.4	214.0	215.1	215.1	221.7	220.6	223.9	222.8
12.5°	259.2	261.4	262.5	266.9	272.5	272.5	275.8	273.6
15°	332.0	329.8	336.4	337.5	346.4	347.5	351.9	347.5
17.5°	422.5	426.9	433.5	432.4	450.0	451.1	451.1	450.0
20°	543.8	547.1	553.7	555.9	576.9	579.1	586.8	587.9
22.5°	676.2	676.2	679.5	683.9	703.7	704.8	708.2	708.2
25°	721.4	714.8	715.9	721.4	732.4	728.0	731.3	729.1
27.5°	662.9	653.0	650.8	658.5	666.2	654.1	658.5	658.5
30°	538.3	529.5	527.3	535.0	540.5	527.3	531.7	533.9
32.5°	393.8	388.3	387.2	392.7	397.1	386.1	390.5	393.8
35°	265.8	263.6	261.4	262.5	269.1	260.3	264.7	266.9
37.5°	168.8	164.4	165.5	167.7	172.1	166.6	171.0	171.0
40°	103.7	101.5	101.5	103.7	105.9	101.5	103.7	104.8
42.5°	60.7	60.7	60.7	61.8	62.9	60.7	60.7	61.8
45°	35.3	34.2	34.2	35.3	36.4	34.2	35.3	35.3
47.5°	19.9	18.8	18.8	19.9	19.9	18.8	19.9	19.9
50°	11.0	9.9	9.9	11.0	11.0	9.9	9.9	9.9
52.5°	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4
55°	3.3	3.3	2.2	2.2	2.2	2.2	2.2	1.1
57.5°	2.2	2.2	1.1	1.1	1.1	1.1	0.0	0.0
60°	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
62.5°	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
65°	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
67.5°	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
70°	3.3	2.2	2.2	1.1	1.1	1.1	0.0	0.0
72.5°	3.3	2.2	2.2	2.2	1.1	1.1	0.0	0.0
75°	3.3	2.2	2.2	2.2	1.1	1.1	0.0	0.0
77.5°	3.3	2.2	2.2	2.2	1.1	1.1	1.1	0.0
80°	3.3	2.2	2.2	2.2	1.1	1.1	1.1	1.1
82.5°	3.3	2.2	2.2	2.2	1.1	1.1	1.1	1.1
85°	3.3	2.2	2.2	2.2	1.1	1.1	1.1	0.0
87.5°	3.3	2.2	2.2	2.2	1.1	1.1	1.1	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)