

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: P209033

Luminaire Tested: **LDSQA6A75930D010TE LARH20SP 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209033
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: LDSQA6A75930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5085.9 lumens
Efficiency: N/A
Efficacy: 64.0 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

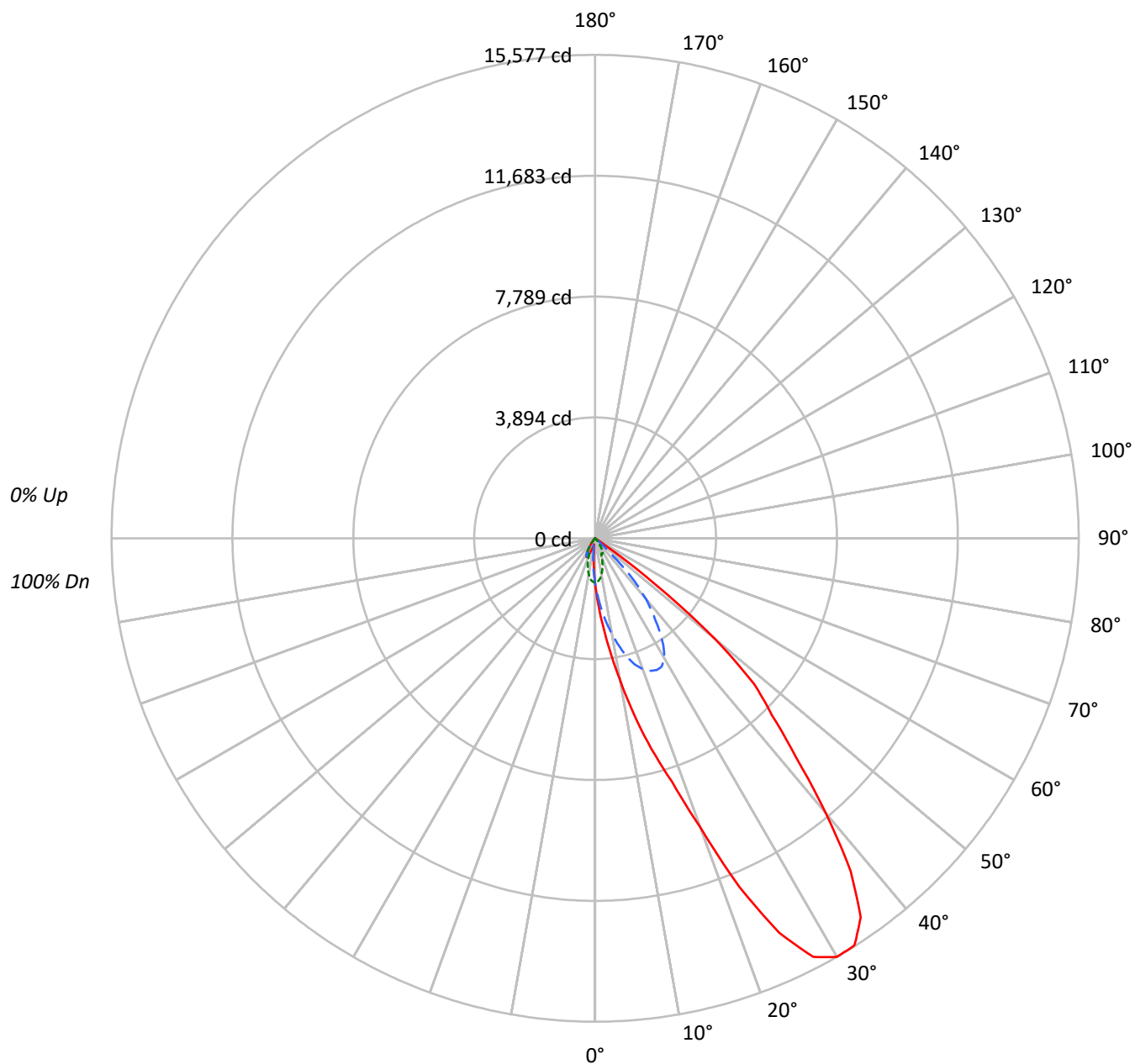
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209033

CATALOG NUMBER: LDSQA6A75930D010TE LARH20SP 6LSQA1H 30°

Luminous Intensity Polar Plot





TEST NUMBER: P209033

CATALOG NUMBER: LDSQA6A75930D010TE LARH20SP 6LSQA1H 30°

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
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	96	89	84	80	87	82	78	84	80	77	82	79	76	74		
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68	66		
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	60		
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54		
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49		
8	70	59	51	46	69	58	51	46	57	50	46	56	50	46	54	49	45	44		
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40		
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	61819	61819	61819
5°	119785	58909	19868
10°	203512	51550	8923
15°	313599	41120	14188
20°	453973	26758	24673
25°	666058	25825	31730
30°	774447	24465	24311
35°	783872	12956	12851
40°	648990	4884	5396
45°	490152	1662	1967
50°	335349	610	610
55°	46646	533	75
60°	1214	525	0
65°	306	723	0
70°	126	894	0
75°	0	1181	0
80°	0	2008	248
85°	0	4001	0



TEST NUMBER: P209033

CATALOG NUMBER: LDSQA6A75930D010TE LARH20SP 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.6	3.0
10°-20°	636.7	12.5
20°-30°	1452.5	28.6
30°-40°	1680.9	33.0
40°-50°	1013.7	19.9
50°-60°	137.7	2.7
60°-70°	4.4	0.1
70°-80°	4.8	0.1
80°-90°	4.5	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°	2239.8	44.0
0°-40°	3920.7	77.1
0°-60°	5072.1	99.7
0°-90°	5085.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5085.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1436	1436	1436	1436	1436	
5°	2772	2269	1363	746	460	323
15°	7035	3955	922	284	318	2083
25°	14020	4686	544	654	668	6345
35°	14914	3573	246	252	244	8988
45°	8050	973	27	33	32	6294
55°	621	7	7	5	1	1218
65°	3	4	7	4	0	5
75°	0	5	7	5	0	0
85°	0	5	8	5	0	0
90°	0	0	0	0	0	



TEST NUMBER: P209033

CATALOG NUMBER: LDSQA6A75930D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8
2.5°	2076.4	2057.2	2065.3	2044.0	1990.5	1979.4	1978.4	1964.2	1918.7	1883.4	1840.9
5°	2771.5	2770.5	2775.6	2730.1	2636.1	2606.8	2592.7	2558.3	2448.2	2363.3	2269.4
7.5°	3639.5	3633.4	3627.3	3544.5	3397.0	3340.4	3304.0	3179.7	3028.2	2877.6	2709.9
10°	4654.9	4651.9	4628.6	4483.1	4246.7	4142.6	4071.9	3874.9	3631.4	3417.2	3132.2
12.5°	5834.0	5806.8	5765.3	5552.1	5227.8	5114.6	4959.0	4646.8	4273.0	3944.6	3546.5
15°	7035.4	6996.0	6922.2	6648.4	6246.3	6053.3	5860.3	5449.1	4941.9	4464.9	3954.7
17.5°	8210.5	8167.0	7994.3	7529.5	7136.4	6901.0	6686.8	6122.0	5525.9	4912.6	4265.9
20°	9908.0	9750.3	9449.2	8716.7	7986.2	7561.8	7311.2	6714.1	5976.5	5262.2	4487.2
22.5°	12175.3	11825.7	11184.1	9993.8	8950.1	8337.8	7927.6	7133.4	6300.8	5490.5	4623.6
25°	14020.3	13861.6	13132.1	11438.7	9810.0	9088.5	8517.7	7466.8	6537.3	5643.1	4686.2
27.5°	15209.5	15170.1	14336.5	12635.0	10512.2	9565.4	8927.9	7687.1	6651.4	5675.4	4655.9
30°	15577.3	15638.9	14838.7	13041.2	10715.3	9661.4	8964.2	7690.1	6563.5	5528.9	4461.9
32.5°	15550.0	15553.0	14572.0	12690.6	10384.9	9382.6	8661.1	7434.5	6239.2	5162.1	4093.1
35°	14913.5	14756.9	13647.4	11613.5	9616.0	8731.9	8061.0	6939.4	5704.7	4610.4	3572.8
37.5°	13516.1	13311.0	12017.7	10234.3	8705.6	7888.2	7346.6	6289.7	5068.2	4021.4	3035.2
40°	11546.8	11255.8	10188.8	8952.1	7709.3	7095.0	6640.3	5563.2	4387.1	3443.4	2531.0
42.5°	9575.5	9433.1	8727.8	7722.5	6871.7	6293.8	5818.9	4802.4	3732.4	2873.6	1893.5
45°	8049.8	7927.6	7453.7	6790.9	5956.3	5428.9	4971.2	4009.3	2899.8	1927.8	973.0
47.5°	6938.4	6839.4	6385.7	5689.5	4774.1	4197.2	3725.3	2629.1	1642.9	832.6	243.5
50°	5006.5	4905.5	4460.9	3654.6	2828.1	2345.1	2005.6	1174.1	465.8	168.7	25.3
52.5°	2454.3	2371.4	2069.3	1548.9	1039.7	747.7	546.6	220.3	53.6	18.2	12.1
55°	621.4	570.9	475.9	299.1	146.5	87.9	56.6	20.2	13.1	10.1	7.1
57.5°	35.4	34.4	31.3	23.2	17.2	15.2	13.1	10.1	7.1	6.1	5.1
60°	14.1	13.1	12.1	10.1	8.1	7.1	7.1	5.1	4.0	4.0	4.0
62.5°	6.1	6.1	6.1	5.1	4.0	4.0	4.0	3.0	4.0	4.0	4.0
65°	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	3.0	4.0	4.0
67.5°	2.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0
70°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	5.1
72.5°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	5.1
75°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.1
77.5°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.1
80°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.1
82.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.1
85°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.1
87.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	5.1
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: P209033

CATALOG NUMBER: LDSQA6A75930D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8
2.5°	1786.4	1750.0	1696.5	1661.1	1626.7	1594.4	1540.9	1510.5	1456.0	1405.5	1362.0
5°	2156.2	2065.3	1955.1	1861.2	1800.5	1740.9	1632.8	1553.0	1453.0	1363.0	1280.2
7.5°	2530.0	2369.4	2188.5	2033.9	1940.0	1848.0	1686.4	1557.0	1415.6	1287.2	1165.0
10°	2869.5	2628.0	2372.4	2151.1	2023.8	1904.6	1691.4	1519.6	1337.8	1179.1	1025.6
12.5°	3184.8	2854.4	2520.9	2232.0	2074.3	1930.9	1670.2	1460.0	1243.8	1055.9	877.0
15°	3465.7	3041.3	2629.1	2278.4	2093.5	1923.8	1620.7	1376.2	1132.7	922.5	696.2
17.5°	3678.9	3157.5	2676.5	2271.4	2059.2	1870.2	1535.8	1271.1	1014.4	759.8	504.2
20°	3808.2	3207.0	2666.4	2216.8	1985.4	1785.4	1434.8	1156.9	872.0	584.0	444.6
22.5°	3862.7	3203.0	2619.0	2135.0	1894.5	1692.4	1337.8	1045.8	722.4	528.4	463.8
25°	3871.8	3161.5	2552.3	2045.0	1804.6	1603.5	1239.8	919.5	627.5	543.6	519.3
27.5°	3802.1	3064.5	2427.0	1915.7	1678.3	1470.1	1093.3	730.5	589.1	541.6	557.7
30°	3596.0	2843.3	2205.7	1688.4	1459.0	1250.9	781.0	572.9	489.0	492.1	496.1
32.5°	3233.3	2475.5	1850.0	1356.0	1105.4	824.5	486.0	382.9	371.8	371.8	369.8
35°	2749.3	2025.8	1451.9	857.8	549.7	396.1	251.6	252.6	247.5	246.5	245.5
37.5°	2249.1	1598.4	919.5	354.6	238.5	165.7	148.5	150.5	148.5	151.6	149.5
40°	1773.2	987.2	335.5	113.2	83.9	80.8	82.9	84.9	84.9	86.9	86.9
42.5°	1030.6	327.4	87.9	45.5	45.5	43.4	44.5	46.5	47.5	48.5	47.5
45°	306.2	67.7	28.3	25.3	25.3	24.2	24.2	25.3	26.3	27.3	27.3
47.5°	48.5	19.2	16.2	14.1	14.1	14.1	14.1	14.1	15.2	15.2	16.2
50°	15.2	12.1	10.1	9.1	9.1	8.1	8.1	9.1	9.1	9.1	10.1
52.5°	9.1	7.1	7.1	6.1	7.1	7.1	6.1	7.1	7.1	7.1	8.1
55°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1
57.5°	5.1	5.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
60°	5.1	5.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	7.1
62.5°	5.1	5.1	6.1	6.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1
65°	5.1	5.1	6.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1	7.1
67.5°	5.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1	7.1	7.1	7.1
70°	5.1	6.1	6.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
72.5°	5.1	6.1	6.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
75°	6.1	6.1	6.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	8.1
77.5°	6.1	6.1	7.1	7.1	7.1	7.1	7.1	7.1	8.1	8.1	8.1
80°	6.1	6.1	7.1	7.1	7.1	7.1	7.1	8.1	8.1	8.1	8.1
82.5°	6.1	6.1	7.1	7.1	7.1	7.1	7.1	8.1	8.1	8.1	8.1
85°	6.1	6.1	7.1	7.1	7.1	7.1	7.1	8.1	8.1	8.1	8.1
87.5°	6.1	6.1	7.1	7.1	7.1	7.1	7.1	8.1	8.1	8.1	8.1
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: P209033

CATALOG NUMBER: LDSQA6A75930D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8
2.5°	1324.6	1278.2	1255.9	1224.6	1202.4	1152.9	1132.7	1098.3	1070.0	1023.5	1026.6
5°	1209.4	1121.5	1061.9	1015.4	983.1	904.3	851.8	796.2	745.7	683.0	659.8
7.5°	1049.8	941.7	850.8	795.2	753.8	648.7	532.5	441.5	372.8	323.3	304.1
10°	890.2	749.7	605.2	519.3	459.7	358.7	307.2	282.9	260.7	233.4	215.2
12.5°	704.2	504.2	372.8	338.5	314.2	280.9	247.5	221.3	226.3	227.3	234.4
15°	480.9	362.7	321.3	298.1	271.8	252.6	263.7	270.8	283.9	284.9	294.0
17.5°	391.0	340.5	307.2	306.2	308.2	319.3	336.5	345.6	362.7	366.8	379.9
20°	391.0	361.7	390.0	390.0	395.1	410.2	432.5	445.6	464.8	471.9	488.0
22.5°	445.6	465.8	501.2	505.2	507.2	523.4	551.7	564.8	587.0	591.1	608.3
25°	543.6	561.8	594.1	597.1	598.2	610.3	631.5	638.6	653.7	645.6	655.7
27.5°	574.9	583.0	603.2	605.2	600.2	605.2	613.3	613.3	618.4	602.2	605.2
30°	505.2	507.2	517.3	518.3	507.2	509.2	510.3	509.2	508.2	491.1	491.1
32.5°	374.9	374.9	388.0	385.0	372.8	375.9	375.9	375.9	374.9	360.7	358.7
35°	248.6	249.6	260.7	258.7	249.6	251.6	251.6	254.6	251.6	243.5	241.5
37.5°	151.6	152.6	157.6	158.6	155.6	156.6	157.6	156.6	158.6	154.6	152.6
40°	87.9	89.9	94.0	95.0	94.0	94.0	95.0	96.0	100.0	95.0	93.0
42.5°	51.5	52.5	54.6	54.6	54.6	54.6	55.6	56.6	57.6	56.6	55.6
45°	29.3	30.3	31.3	31.3	32.3	31.3	32.3	32.3	33.3	32.3	32.3
47.5°	17.2	17.2	18.2	18.2	19.2	18.2	19.2	19.2	19.2	18.2	18.2
50°	10.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	10.1	10.1
52.5°	8.1	8.1	8.1	8.1	8.1	7.1	7.1	7.1	7.1	6.1	6.1
55°	7.1	7.1	7.1	7.1	7.1	7.1	6.1	5.1	5.1	4.0	4.0
57.5°	6.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	3.0	3.0
60°	7.1	7.1	7.1	7.1	6.1	6.1	6.1	5.1	4.0	3.0	3.0
62.5°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	3.0	3.0
65°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	3.0	3.0
67.5°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	4.0	3.0
70°	7.1	8.1	8.1	7.1	7.1	7.1	6.1	5.1	5.1	4.0	3.0
72.5°	7.1	8.1	8.1	7.1	7.1	7.1	6.1	5.1	5.1	4.0	3.0
75°	8.1	8.1	8.1	8.1	7.1	7.1	6.1	6.1	5.1	4.0	3.0
77.5°	8.1	8.1	8.1	8.1	7.1	7.1	6.1	6.1	5.1	4.0	3.0
80°	8.1	8.1	8.1	8.1	8.1	7.1	7.1	6.1	5.1	4.0	4.0
82.5°	8.1	8.1	8.1	8.1	8.1	7.1	7.1	6.1	5.1	4.0	4.0
85°	8.1	8.1	8.1	8.1	8.1	7.1	7.1	6.1	5.1	4.0	3.0
87.5°	8.1	8.1	8.1	8.1	7.1	7.1	6.1	6.1	5.1	4.0	3.0
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: P209033

CATALOG NUMBER: LDSQA6A75930D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8	1435.8
2.5°	989.2	965.9	955.8	972.0	963.9	939.7	944.7	929.6
5°	590.1	554.7	532.5	542.6	510.3	480.9	480.9	459.7
7.5°	284.9	273.8	267.8	269.8	262.7	253.6	248.6	248.6
10°	200.1	196.0	197.0	197.0	203.1	202.1	205.1	204.1
12.5°	237.4	239.5	240.5	244.5	249.6	249.6	252.6	250.6
15°	304.1	302.1	308.2	309.2	317.3	318.3	322.3	318.3
17.5°	387.0	391.0	397.1	396.1	412.2	413.3	413.3	412.2
20°	498.1	501.2	507.2	509.2	528.4	530.5	537.5	538.5
22.5°	619.4	619.4	622.4	626.4	644.6	645.6	648.7	648.7
25°	660.8	654.7	655.7	660.8	670.9	666.9	669.9	667.9
27.5°	607.2	598.2	596.1	603.2	610.3	599.2	603.2	603.2
30°	493.1	485.0	483.0	490.0	495.1	483.0	487.0	489.0
32.5°	360.7	355.7	354.6	359.7	363.7	353.6	357.7	360.7
35°	243.5	241.5	239.5	240.5	246.5	238.5	242.5	244.5
37.5°	154.6	150.5	151.6	153.6	157.6	152.6	156.6	156.6
40°	95.0	93.0	93.0	95.0	97.0	93.0	95.0	96.0
42.5°	55.6	55.6	55.6	56.6	57.6	55.6	55.6	56.6
45°	32.3	31.3	31.3	32.3	33.3	31.3	32.3	32.3
47.5°	18.2	17.2	17.2	18.2	18.2	17.2	18.2	18.2
50°	10.1	9.1	9.1	10.1	10.1	9.1	9.1	9.1
52.5°	5.1	5.1	5.1	5.1	5.1	5.1	4.0	4.0
55°	3.0	3.0	2.0	2.0	2.0	2.0	2.0	1.0
57.5°	2.0	2.0	1.0	1.0	1.0	1.0	0.0	0.0
60°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
62.5°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
65°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
67.5°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
70°	3.0	2.0	2.0	1.0	1.0	1.0	0.0	0.0
72.5°	3.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0
75°	3.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0
77.5°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0
80°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
82.5°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
85°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0
87.5°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	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)