

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: P209084

Luminaire Tested: **LDSQA6A65827D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209084
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26688)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A65827D010TE LARH40FL 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 40° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5960.2 lumens
Efficiency: N/A
Efficacy: 75.8 lumens/watt
Spacing Criteria (0/90/45): 2.63 / 0.54 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

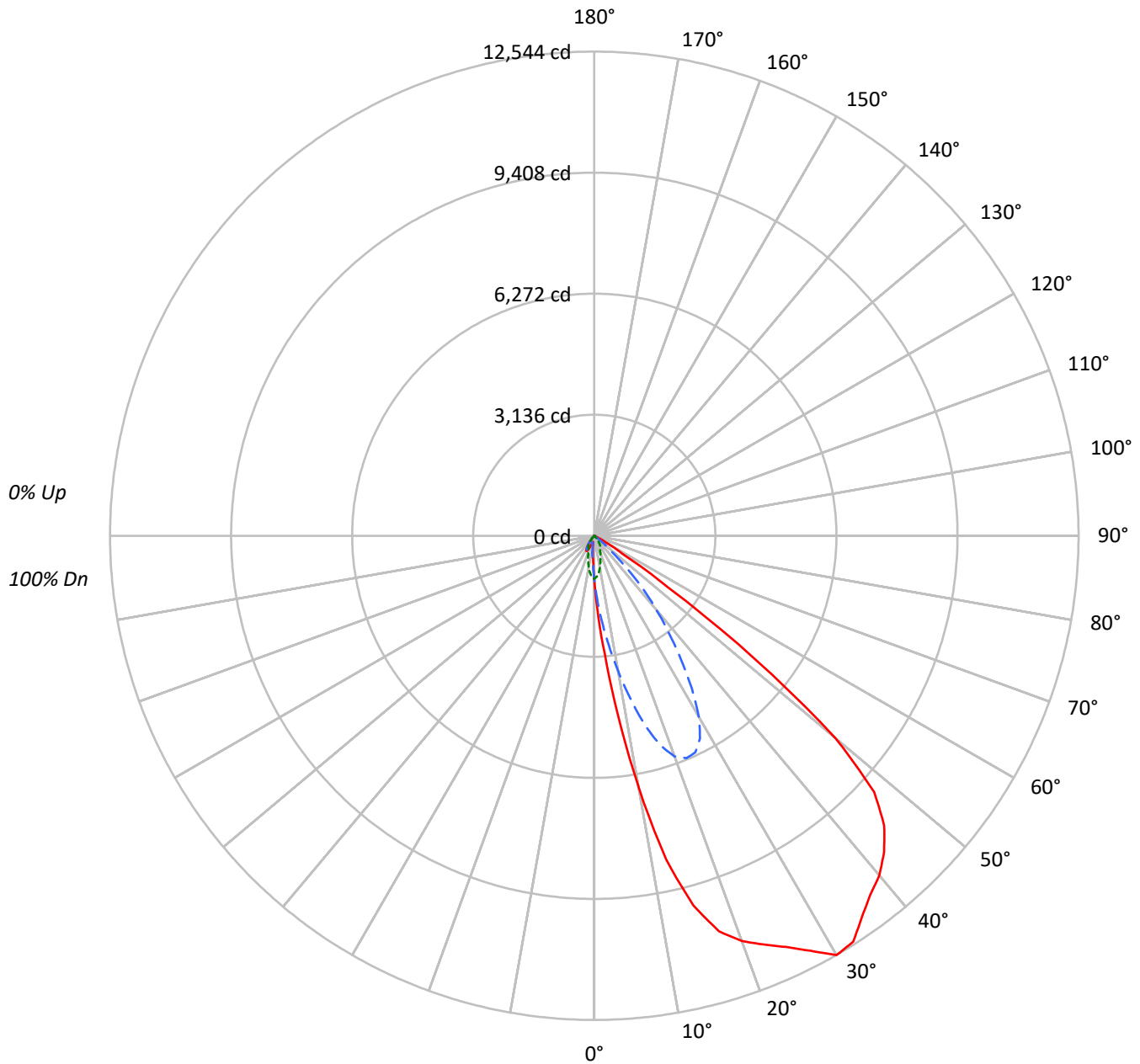
Input Watts (W): 78.67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209084

CATALOG NUMBER: LDSQA6A65827D010TE LARH40FL 6LSQA1H 30°

Luminous Intensity Polar Plot





TEST NUMBER: P209084

CATALOG NUMBER: LDSQA6A65827D010TE LARH40FL 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	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91		
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81		
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73		
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65		
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58		
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52		
7	74	62	55	49	72	61	54	49	60	53	49	59	53	49	57	52	48	46		
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	47	44	42		
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38		
10	60	48	41	36	59	48	41	36	47	41	36	46	40	36	45	40	36	34		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	48093	48093	48093
5°	132007	44314	18083
10°	289281	36266	6895
15°	441871	27605	8086
20°	511953	20541	12559
25°	558469	16889	20266
30°	623637	15318	20697
35°	634519	10507	14192
40°	645668	4980	7183
45°	646718	2070	3136
50°	546740	898	965
55°	176058	616	158
60°	34961	706	0
65°	3566	835	0
70°	390	1171	0
75°	0	1547	0
80°	0	2554	248
85°	0	5088	494



TEST NUMBER: P209084

CATALOG NUMBER: LDSQA6A65827D010TE LARH40FL 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.6	2.5
10°-20°	784.2	13.2
20°-30°	1501.6	25.2
30°-40°	1769.1	29.7
40°-50°	1389.6	23.3
50°-60°	338.6	5.7
60°-70°	14.5	0.2
70°-80°	5.5	0.1
80°-90°	5.5	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°	2437.4	40.9
0°-40°	4206.5	70.6
0°-60°	5934.7	99.6
0°-90°	5960.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5960.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1117	1117	1117	1117	1117	
5°	3054	2210	1025	537	418	404
15°	9913	5092	619	177	181	2767
25°	11756	6191	356	372	427	5479
35°	12072	3914	200	258	270	7570
45°	10621	1210	34	47	52	7980
55°	2345	44	8	5	2	2792
65°	35	5	8	5	0	93
75°	0	5	9	6	0	0
85°	0	6	10	6	1	0
90°	0	0	0	0	0	



TEST NUMBER: P209084

CATALOG NUMBER: LDSQA6A65827D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0
2.5°	1914.6	1910.5	1882.7	1908.4	1830.1	1827.0	1792.0	1776.5	1731.2	1687.9	1626.1
5°	3054.3	2987.3	2932.7	2934.8	2784.3	2756.5	2678.2	2598.8	2477.3	2363.9	2210.4
7.5°	4655.7	4576.3	4460.9	4412.5	4125.0	4040.5	3878.7	3667.4	3402.6	3138.8	2854.4
10°	6616.7	6629.0	6479.6	6341.5	5906.7	5735.6	5473.9	5057.6	4555.7	4060.1	3556.2
12.5°	8590.0	8581.8	8403.5	8194.3	7658.5	7417.3	7069.0	6549.7	5885.0	5116.3	4328.0
15°	9913.1	9971.9	9896.6	9729.7	9272.2	8996.0	8603.4	7898.6	7088.6	6155.0	5091.6
17.5°	10743.7	10799.3	10772.5	10641.7	10237.7	9943.0	9615.3	9038.3	8101.6	6927.9	5693.4
20°	11173.4	11261.0	11248.6	11106.4	10801.4	10557.2	10195.5	9660.7	8849.7	7464.7	6082.9
22.5°	11459.9	11526.8	11545.4	11384.6	11069.3	10837.5	10572.6	10030.6	9268.1	7792.4	6237.4
25°	11755.6	11874.1	11757.7	11559.8	11270.3	11047.7	10765.3	10246.0	9468.0	7926.4	6191.1
27.5°	12118.3	12175.0	11911.2	11730.9	11409.4	11168.2	10868.4	10370.7	9503.0	7819.2	5926.2
30°	12543.9	12309.0	12124.5	11766.9	11402.2	11167.2	10862.2	10292.3	9318.5	7463.7	5413.1
32.5°	12473.8	12258.5	12049.3	11671.1	11310.4	11077.6	10737.5	10031.6	8882.7	6869.1	4705.1
35°	12072.0	12118.3	11892.7	11579.4	11171.3	10931.2	10560.3	9660.7	8142.8	6048.9	3913.7
37.5°	11732.9	11835.0	11687.6	11398.0	10983.8	10659.2	10158.4	9065.1	7177.2	5008.1	3163.5
40°	11487.7	11520.7	11441.3	11116.7	10619.0	10150.1	9571.0	7995.4	6004.6	3931.2	2496.8
42.5°	11107.4	11195.0	11054.9	10700.4	9946.1	9415.4	8576.6	6759.9	4663.9	3002.8	1879.6
45°	10621.1	10704.5	10531.4	9942.0	8893.0	8115.0	7091.7	5270.9	3450.0	2213.5	1209.8
47.5°	9827.6	9879.1	9544.2	8729.1	7204.0	6471.4	5422.3	3674.7	2222.7	1237.6	588.4
50°	8162.4	8137.6	7447.2	6444.6	4818.5	4049.7	3227.4	1991.9	998.5	586.3	367.9
52.5°	5260.6	5203.9	4520.7	3608.7	2440.2	1862.1	1399.4	859.4	520.4	327.7	145.3
55°	2345.4	2323.7	1902.2	1477.7	998.5	859.4	656.4	421.5	277.2	114.4	44.3
57.5°	869.7	850.1	749.2	628.6	482.3	400.9	318.4	202.0	71.1	38.1	23.7
60°	406.0	405.0	356.5	293.7	204.0	154.6	89.7	47.4	29.9	20.6	13.4
62.5°	129.8	126.7	88.6	64.9	46.4	40.2	31.9	23.7	15.5	11.3	8.2
65°	35.0	35.0	31.9	26.8	21.6	18.5	15.5	11.3	7.2	6.2	5.2
67.5°	13.4	13.4	12.4	11.3	8.2	7.2	6.2	5.2	4.1	5.2	5.2
70°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.1	4.1	5.2
72.5°	0.0	0.0	1.0	1.0	2.1	2.1	3.1	3.1	4.1	5.2	5.2
75°	0.0	0.0	1.0	1.0	2.1	2.1	3.1	3.1	4.1	5.2	5.2
77.5°	0.0	0.0	1.0	1.0	2.1	2.1	3.1	3.1	4.1	5.2	5.2
80°	0.0	0.0	1.0	1.0	2.1	2.1	3.1	3.1	4.1	5.2	5.2
82.5°	0.0	0.0	1.0	2.1	2.1	2.1	3.1	4.1	4.1	5.2	6.2
85°	0.0	0.0	1.0	2.1	2.1	3.1	3.1	4.1	4.1	5.2	6.2
87.5°	0.0	0.0	1.0	2.1	2.1	3.1	3.1	4.1	4.1	5.2	6.2
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: P209084

CATALOG NUMBER: LDSQA6A65827D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0
2.5°	1580.7	1512.7	1419.0	1364.3	1350.9	1322.1	1271.6	1196.4	1134.5	1074.8	1039.7
5°	2080.5	1919.8	1739.4	1612.7	1561.2	1492.1	1369.5	1242.7	1126.3	1025.3	946.0
7.5°	2610.2	2345.4	2053.7	1818.8	1734.3	1625.1	1425.1	1236.6	1076.8	936.7	830.6
10°	3136.8	2710.1	2314.4	1974.4	1836.3	1687.9	1424.1	1179.9	992.3	829.5	712.1
12.5°	3663.3	3050.2	2506.1	2068.2	1888.9	1701.3	1381.9	1093.3	885.2	719.3	606.9
15°	4149.7	3321.2	2635.9	2100.1	1883.7	1662.1	1296.3	988.2	772.9	619.3	515.2
17.5°	4512.4	3463.4	2665.8	2051.7	1802.3	1557.0	1165.5	864.6	665.7	530.7	424.6
20°	4690.7	3486.1	2594.7	1913.6	1662.1	1407.6	1022.2	746.1	574.0	448.3	358.6
22.5°	4690.7	3378.9	2440.2	1740.5	1487.0	1235.5	884.1	648.2	501.8	390.5	315.3
25°	4512.4	3165.6	2233.0	1540.6	1294.3	1065.5	764.6	575.0	446.2	355.5	292.7
27.5°	4166.2	2870.9	1967.2	1318.0	1104.7	914.0	669.8	508.0	403.9	320.5	321.5
30°	3690.1	2509.2	1662.1	1083.0	909.9	751.2	563.7	425.6	323.6	308.1	317.4
32.5°	3139.8	2076.4	1316.9	839.8	704.8	591.5	428.7	300.9	257.6	259.7	270.0
35°	2575.1	1634.3	991.3	622.4	524.5	428.7	281.3	197.9	195.8	199.9	207.1
37.5°	2033.1	1223.2	717.2	455.5	352.4	263.8	151.5	136.0	136.0	140.1	144.3
40°	1523.0	867.7	493.6	270.0	171.1	120.6	95.8	88.6	87.6	88.6	93.8
42.5°	1045.9	549.2	293.7	108.2	82.4	70.1	60.8	55.6	54.6	55.6	58.7
45°	587.4	338.0	114.4	57.7	49.5	44.3	38.1	35.0	34.0	34.0	36.1
47.5°	367.9	134.0	51.5	36.1	30.9	28.9	24.7	22.7	21.6	21.6	22.7
50°	141.2	52.6	31.9	23.7	20.6	18.5	16.5	14.4	13.4	13.4	14.4
52.5°	48.4	30.9	20.6	15.5	13.4	12.4	10.3	9.3	9.3	9.3	9.3
55°	26.8	18.5	12.4	9.3	8.2	8.2	8.2	8.2	8.2	8.2	8.2
57.5°	16.5	11.3	8.2	7.2	7.2	7.2	7.2	7.2	7.2	8.2	8.2
60°	9.3	7.2	6.2	6.2	6.2	6.2	7.2	7.2	7.2	8.2	8.2
62.5°	6.2	6.2	6.2	6.2	6.2	6.2	7.2	7.2	8.2	8.2	8.2
65°	5.2	5.2	5.2	6.2	6.2	6.2	7.2	7.2	8.2	8.2	8.2
67.5°	5.2	5.2	6.2	6.2	6.2	7.2	7.2	8.2	8.2	8.2	8.2
70°	5.2	6.2	6.2	7.2	7.2	7.2	8.2	8.2	8.2	9.3	9.3
72.5°	5.2	6.2	6.2	7.2	7.2	7.2	8.2	8.2	9.3	9.3	9.3
75°	6.2	6.2	6.2	7.2	7.2	7.2	8.2	9.3	9.3	9.3	9.3
77.5°	6.2	6.2	7.2	7.2	7.2	8.2	8.2	9.3	9.3	9.3	9.3
80°	6.2	6.2	7.2	7.2	8.2	8.2	9.3	9.3	9.3	10.3	10.3
82.5°	6.2	6.2	7.2	8.2	8.2	8.2	9.3	9.3	10.3	10.3	10.3
85°	6.2	7.2	7.2	8.2	8.2	8.2	9.3	9.3	10.3	10.3	10.3
87.5°	6.2	7.2	7.2	8.2	8.2	8.2	9.3	9.3	10.3	10.3	10.3
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: P209084

CATALOG NUMBER: LDSQA6A65827D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0
2.5°	993.4	950.1	906.8	874.9	859.4	844.0	809.9	765.6	747.1	720.3	704.8
5°	865.6	792.4	734.7	696.6	673.9	644.0	604.9	561.6	536.9	509.1	490.5
7.5°	733.7	648.2	592.5	557.5	534.8	497.7	448.3	396.7	366.8	335.9	314.3
10°	618.3	536.9	474.0	433.8	405.0	361.7	312.2	276.2	250.4	223.6	202.0
12.5°	516.3	428.7	361.7	327.7	308.1	266.9	225.7	185.5	170.0	164.9	164.9
15°	418.4	339.0	282.3	253.5	232.9	188.6	180.3	178.3	177.2	176.2	178.3
17.5°	341.1	274.1	214.3	199.9	197.9	196.8	197.9	197.9	198.9	202.0	207.1
20°	286.5	224.6	220.5	221.6	221.6	225.7	230.8	234.9	239.1	244.2	253.5
22.5°	254.5	253.5	260.7	261.7	266.9	273.1	282.3	288.5	298.8	304.0	317.4
25°	293.7	300.9	314.3	318.4	326.7	337.0	351.4	359.6	372.0	378.2	393.6
27.5°	332.8	344.2	360.7	365.8	373.0	389.5	399.8	407.0	413.2	417.3	426.6
30°	329.8	340.1	356.5	357.6	367.9	379.2	385.4	391.6	395.7	394.7	399.8
32.5°	279.3	288.5	304.0	304.0	315.3	324.6	327.7	332.8	332.8	332.8	334.9
35°	214.3	220.5	230.8	233.9	243.2	249.4	251.4	257.6	257.6	255.6	255.6
37.5°	148.4	156.6	163.8	165.9	172.1	176.2	181.4	182.4	180.3	181.4	181.4
40°	96.9	102.0	107.2	108.2	113.4	116.4	121.6	121.6	122.6	121.6	123.7
42.5°	59.8	63.9	67.0	69.0	71.1	73.2	76.3	77.3	78.3	77.3	79.3
45°	37.1	39.2	41.2	42.2	43.3	44.3	47.4	47.4	47.4	47.4	48.4
47.5°	22.7	23.7	24.7	24.7	25.8	26.8	27.8	27.8	27.8	27.8	28.9
50°	13.4	14.4	14.4	14.4	15.5	15.5	16.5	16.5	16.5	15.5	16.5
52.5°	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	8.2	9.3
55°	8.2	8.2	7.2	7.2	7.2	7.2	7.2	6.2	5.2	5.2	4.1
57.5°	7.2	7.2	7.2	7.2	7.2	6.2	6.2	5.2	5.2	4.1	3.1
60°	7.2	7.2	7.2	7.2	7.2	6.2	6.2	5.2	4.1	4.1	3.1
62.5°	8.2	7.2	7.2	7.2	7.2	6.2	6.2	5.2	4.1	4.1	3.1
65°	8.2	8.2	7.2	7.2	7.2	6.2	6.2	5.2	5.2	4.1	3.1
67.5°	8.2	8.2	8.2	7.2	8.2	7.2	6.2	6.2	5.2	4.1	4.1
70°	9.3	8.2	8.2	8.2	8.2	7.2	7.2	6.2	5.2	4.1	4.1
72.5°	9.3	9.3	8.2	8.2	8.2	7.2	7.2	6.2	5.2	5.2	4.1
75°	9.3	9.3	8.2	8.2	8.2	7.2	7.2	6.2	6.2	5.2	4.1
77.5°	9.3	9.3	9.3	8.2	8.2	8.2	7.2	7.2	6.2	5.2	4.1
80°	9.3	9.3	9.3	9.3	9.3	8.2	8.2	7.2	6.2	5.2	4.1
82.5°	10.3	9.3	9.3	9.3	9.3	8.2	8.2	7.2	6.2	5.2	5.2
85°	10.3	10.3	9.3	9.3	9.3	8.2	8.2	7.2	6.2	6.2	5.2
87.5°	10.3	9.3	9.3	9.3	9.3	8.2	8.2	7.2	6.2	5.2	5.2
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: P209084

CATALOG NUMBER: LDSQA6A65827D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0	1117.0
2.5°	689.4	681.1	681.1	666.7	664.7	653.3	662.6	656.4
5°	469.9	456.5	452.4	438.0	432.8	419.4	423.5	418.4
7.5°	295.7	282.3	278.2	267.9	261.7	251.4	252.5	249.4
10°	180.3	168.0	164.9	161.8	158.7	157.7	158.7	157.7
12.5°	163.8	162.8	160.8	161.8	159.7	160.8	161.8	160.8
15°	178.3	180.3	178.3	179.3	178.3	180.3	181.4	181.4
17.5°	209.2	213.3	211.2	214.3	213.3	218.5	218.5	218.5
20°	256.6	263.8	261.7	265.9	265.9	272.0	272.0	274.1
22.5°	322.5	331.8	330.8	340.1	338.0	345.2	345.2	347.3
25°	401.9	411.2	412.2	418.4	417.3	424.6	424.6	426.6
27.5°	434.9	440.0	439.0	442.1	443.1	447.2	450.3	448.3
30°	408.1	412.2	411.2	413.2	413.2	416.3	419.4	416.3
32.5°	343.1	346.2	346.2	350.4	347.3	348.3	353.5	350.4
35°	262.8	264.8	262.8	264.8	265.9	265.9	271.0	270.0
37.5°	187.5	188.6	188.6	191.7	188.6	188.6	193.7	194.8
40°	125.7	126.7	125.7	129.8	127.8	127.8	130.9	127.8
42.5°	80.4	81.4	80.4	83.5	81.4	83.5	84.5	85.5
45°	49.5	49.5	48.4	50.5	49.5	50.5	51.5	51.5
47.5°	28.9	28.9	27.8	29.9	28.9	28.9	28.9	29.9
50°	15.5	15.5	15.5	16.5	15.5	15.5	15.5	14.4
52.5°	8.2	8.2	7.2	8.2	7.2	7.2	7.2	7.2
55°	4.1	3.1	3.1	3.1	2.1	2.1	2.1	2.1
57.5°	3.1	2.1	2.1	1.0	1.0	1.0	0.0	0.0
60°	2.1	2.1	1.0	1.0	0.0	0.0	0.0	0.0
62.5°	2.1	2.1	1.0	1.0	0.0	0.0	0.0	0.0
65°	2.1	2.1	1.0	1.0	0.0	0.0	0.0	0.0
67.5°	3.1	2.1	2.1	1.0	1.0	0.0	0.0	0.0
70°	3.1	2.1	2.1	1.0	1.0	0.0	0.0	0.0
72.5°	3.1	2.1	2.1	2.1	1.0	1.0	0.0	0.0
75°	3.1	3.1	2.1	2.1	1.0	1.0	0.0	0.0
77.5°	4.1	3.1	2.1	2.1	1.0	1.0	0.0	0.0
80°	4.1	3.1	2.1	2.1	2.1	1.0	1.0	1.0
82.5°	4.1	3.1	3.1	2.1	2.1	1.0	1.0	1.0
85°	4.1	3.1	3.1	2.1	2.1	1.0	1.0	1.0
87.5°	4.1	3.1	3.1	2.1	2.1	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)