

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: P209091

Luminaire Tested: **LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209091
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: LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 40° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5537.6 lumens
Efficiency: N/A
Efficacy: 70.4 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

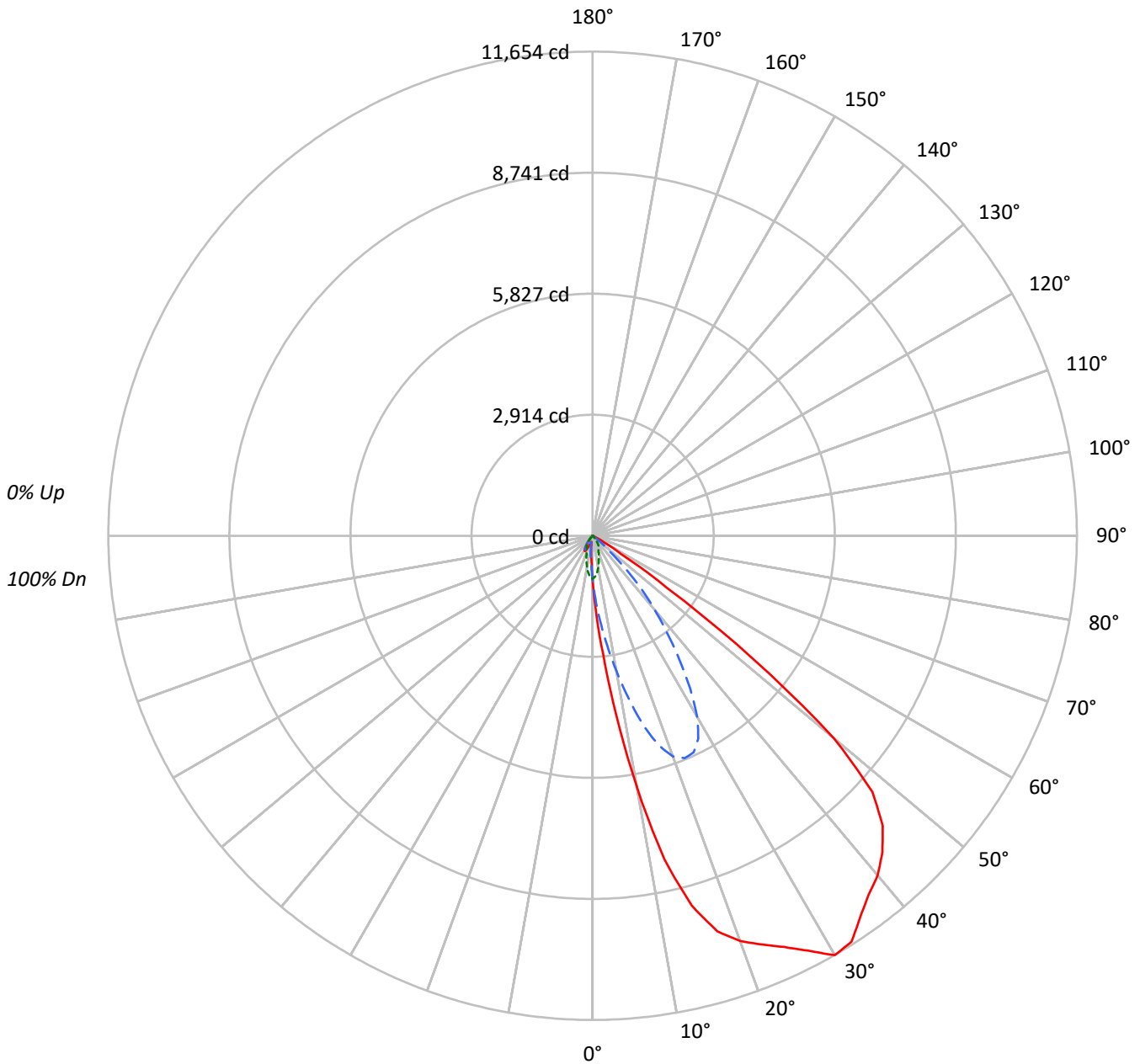
Input Watts (W): 78.67
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209091

CATALOG NUMBER: LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°

Luminous Intensity Polar Plot





TEST NUMBER: P209091

CATALOG NUMBER: LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°

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	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°	44683	44683	44683
5°	122646	41171	16800
10°	268768	33695	6405
15°	410540	25648	7511
20°	475650	19084	11670
25°	518873	15691	18832
30°	579420	14234	19230
35°	589527	9761	13182
40°	599883	4626	6672
45°	600862	1924	2917
50°	507970	831	898
55°	163575	578	143
60°	32481	663	0
65°	3321	784	0
70°	365	1083	0
75°	0	1431	0
80°	0	2380	248
85°	0	4742	494



TEST NUMBER: P209091

CATALOG NUMBER: LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.9	2.5
10°-20°	728.6	13.2
20°-30°	1395.1	25.2
30°-40°	1643.7	29.7
40°-50°	1291.0	23.3
50°-60°	314.6	5.7
60°-70°	13.5	0.2
70°-80°	5.1	0.1
80°-90°	5.1	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°	2264.6	40.9
0°-40°	3908.3	70.6
0°-60°	5513.9	99.6
0°-90°	5537.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5537.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1038	1038	1038	1038	1038	
5°	2838	2054	953	499	389	375
15°	9210	4730	575	165	168	2571
25°	10922	5752	330	346	396	5091
35°	11216	3636	186	239	251	7033
45°	9868	1124	32	44	48	7414
55°	2179	41	8	5	2	2594
65°	33	5	8	5	0	86
75°	0	5	9	6	0	0
85°	0	6	10	6	1	0
90°	0	0	0	0	0	



TEST NUMBER: P209091

CATALOG NUMBER: LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8
2.5°	1778.9	1775.0	1749.2	1773.1	1700.4	1697.5	1664.9	1650.6	1608.4	1568.2	1510.8
5°	2837.7	2775.5	2724.8	2726.7	2586.9	2561.1	2488.3	2414.6	2301.6	2196.3	2053.6
7.5°	4325.6	4251.8	4144.6	4099.6	3832.5	3754.0	3603.7	3407.4	3161.3	2916.3	2652.0
10°	6147.5	6159.0	6020.2	5891.9	5487.8	5328.9	5085.7	4698.9	4232.7	3772.2	3304.0
12.5°	7980.9	7973.3	7807.6	7613.3	7115.4	6891.4	6567.8	6085.3	5467.7	4753.5	4021.1
15°	9210.2	9264.8	9194.9	9039.8	8614.7	8358.1	7993.4	7338.5	6586.0	5718.6	4730.5
17.5°	9981.9	10033.6	10008.7	9887.1	9511.8	9238.0	8933.5	8397.4	7527.1	6436.6	5289.7
20°	10381.1	10462.5	10451.0	10318.9	10035.5	9808.6	9472.6	8975.7	8222.2	6935.4	5651.6
22.5°	10647.3	10709.5	10726.8	10577.4	10284.4	10069.0	9823.0	9319.4	8610.9	7239.9	5795.2
25°	10922.1	11032.2	10924.0	10740.2	10471.1	10264.3	10002.0	9519.5	8796.6	7364.4	5752.1
27.5°	11259.1	11311.7	11066.6	10899.1	10600.4	10376.4	10097.7	9635.3	8829.2	7264.8	5506.0
30°	11654.5	11436.2	11264.8	10932.6	10593.7	10375.4	10092.0	9562.6	8657.8	6934.5	5029.2
32.5°	11589.4	11389.3	11194.9	10843.6	10508.5	10292.1	9976.2	9320.3	8252.8	6382.1	4371.5
35°	11216.0	11259.1	11049.4	10758.4	10379.2	10156.1	9811.5	8975.7	7565.4	5620.0	3636.2
37.5°	10901.0	10995.8	10858.9	10589.9	10205.0	9903.4	9438.1	8422.3	6668.3	4653.0	2939.2
40°	10673.1	10703.8	10630.1	10328.5	9866.1	9430.4	8892.4	7428.5	5578.8	3652.5	2319.8
42.5°	10319.9	10401.2	10271.0	9941.7	9240.9	8747.8	7968.5	6280.6	4333.2	2789.9	1746.3
45°	9868.0	9945.5	9784.7	9237.0	8262.4	7539.6	6588.9	4897.1	3205.4	2056.5	1124.0
47.5°	9130.8	9178.6	8867.5	8110.2	6693.2	6012.5	5037.9	3414.1	2065.1	1149.8	546.7
50°	7583.6	7560.6	6919.2	5987.6	4476.8	3762.6	2998.6	1850.7	927.7	544.8	341.8
52.5°	4887.6	4834.9	4200.1	3352.8	2267.1	1730.0	1300.2	798.5	483.5	304.5	135.0
55°	2179.1	2158.9	1767.4	1372.9	927.7	798.5	609.9	391.6	257.5	106.3	41.2
57.5°	808.0	789.9	696.0	584.0	448.1	372.4	295.8	187.7	66.1	35.4	22.0
60°	377.2	376.3	331.3	272.9	189.6	143.6	83.3	44.0	27.8	19.1	12.4
62.5°	120.6	117.8	82.3	60.3	43.1	37.3	29.7	22.0	14.4	10.5	7.7
65°	32.6	32.6	29.7	24.9	20.1	17.2	14.4	10.5	6.7	5.7	4.8
67.5°	12.4	12.4	11.5	10.5	7.7	6.7	5.7	4.8	3.8	4.8	4.8
70°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.8	3.8	4.8
72.5°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
75°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
77.5°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
80°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
82.5°	0.0	0.0	1.0	1.9	1.9	1.9	2.9	3.8	3.8	4.8	5.7
85°	0.0	0.0	1.0	1.9	1.9	2.9	2.9	3.8	3.8	4.8	5.7
87.5°	0.0	0.0	1.0	1.9	1.9	2.9	2.9	3.8	3.8	4.8	5.7
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: P209091

CATALOG NUMBER: LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8
2.5°	1468.7	1405.5	1318.3	1267.6	1255.2	1228.4	1181.4	1111.5	1054.1	998.6	966.0
5°	1933.0	1783.6	1616.1	1498.3	1450.5	1386.3	1272.4	1154.6	1046.4	952.6	878.9
7.5°	2425.1	2179.1	1908.1	1689.8	1611.3	1509.8	1324.1	1148.9	1000.5	870.3	771.7
10°	2914.3	2518.0	2150.3	1834.4	1706.1	1568.2	1323.1	1096.2	922.0	770.7	661.6
12.5°	3403.6	2833.9	2328.4	1921.5	1754.9	1580.7	1283.9	1015.8	822.4	668.3	563.9
15°	3855.5	3085.7	2449.0	1951.2	1750.1	1544.3	1204.4	918.2	718.1	575.4	478.7
17.5°	4192.5	3217.8	2476.8	1906.2	1674.5	1446.6	1082.8	803.3	618.5	493.1	394.5
20°	4358.1	3238.9	2410.7	1777.9	1544.3	1307.8	949.7	693.2	533.3	416.5	333.2
22.5°	4358.1	3139.3	2267.1	1617.1	1381.5	1147.9	821.5	602.2	466.3	362.9	293.0
25°	4192.5	2941.1	2074.7	1431.3	1202.5	990.0	710.4	534.2	414.6	330.3	271.9
27.5°	3870.8	2667.3	1827.7	1224.5	1026.3	849.2	622.3	472.0	375.3	297.8	298.7
30°	3428.5	2331.3	1544.3	1006.2	845.4	697.9	523.7	395.4	300.6	286.3	294.9
32.5°	2917.2	1929.2	1223.6	780.3	654.9	549.6	398.3	279.6	239.4	241.3	250.8
35°	2392.6	1518.4	921.0	578.3	487.3	398.3	261.4	183.8	181.9	185.7	192.4
37.5°	1889.0	1136.4	666.4	423.2	327.4	245.1	140.7	126.4	126.4	130.2	134.0
40°	1415.0	806.1	458.6	250.8	158.9	112.0	89.0	82.3	81.4	82.3	87.1
42.5°	971.8	510.3	272.9	100.5	76.6	65.1	56.5	51.7	50.7	51.7	54.6
45°	545.7	314.0	106.3	53.6	46.0	41.2	35.4	32.6	31.6	31.6	33.5
47.5°	341.8	124.5	47.9	33.5	28.7	26.8	23.0	21.1	20.1	20.1	21.1
50°	131.2	48.8	29.7	22.0	19.1	17.2	15.3	13.4	12.4	12.4	13.4
52.5°	45.0	28.7	19.1	14.4	12.4	11.5	9.6	8.6	8.6	8.6	8.6
55°	24.9	17.2	11.5	8.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7
57.5°	15.3	10.5	7.7	6.7	6.7	6.7	6.7	6.7	6.7	7.7	7.7
60°	8.6	6.7	5.7	5.7	5.7	5.7	6.7	6.7	6.7	7.7	7.7
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	6.7	6.7	7.7	7.7	7.7
65°	4.8	4.8	4.8	5.7	5.7	5.7	6.7	6.7	7.7	7.7	7.7
67.5°	4.8	4.8	5.7	5.7	5.7	6.7	6.7	7.7	7.7	7.7	7.7
70°	4.8	5.7	5.7	6.7	6.7	6.7	7.7	7.7	7.7	8.6	8.6
72.5°	4.8	5.7	5.7	6.7	6.7	6.7	7.7	7.7	8.6	8.6	8.6
75°	5.7	5.7	5.7	6.7	6.7	6.7	7.7	8.6	8.6	8.6	8.6
77.5°	5.7	5.7	6.7	6.7	6.7	7.7	7.7	8.6	8.6	8.6	8.6
80°	5.7	5.7	6.7	6.7	7.7	7.7	8.6	8.6	8.6	9.6	9.6
82.5°	5.7	5.7	6.7	7.7	7.7	7.7	8.6	8.6	9.6	9.6	9.6
85°	5.7	6.7	6.7	7.7	7.7	7.7	8.6	8.6	9.6	9.6	9.6
87.5°	5.7	6.7	6.7	7.7	7.7	7.7	8.6	8.6	9.6	9.6	9.6
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: P209091

CATALOG NUMBER: LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8
2.5°	922.9	882.7	842.5	812.8	798.5	784.1	752.5	711.4	694.1	669.2	654.9
5°	804.2	736.2	682.6	647.2	626.1	598.4	562.0	521.8	498.8	473.0	455.7
7.5°	681.7	602.2	550.5	518.0	496.9	462.4	416.5	368.6	340.8	312.1	292.0
10°	574.4	498.8	440.4	403.1	376.3	336.0	290.1	256.6	232.6	207.8	187.7
12.5°	479.7	398.3	336.0	304.5	286.3	248.0	209.7	172.3	158.0	153.2	153.2
15°	388.7	315.0	262.3	235.5	216.4	175.2	167.5	165.6	164.7	163.7	165.6
17.5°	316.9	254.7	199.1	185.7	183.8	182.9	183.8	183.8	184.8	187.7	192.4
20°	266.2	208.7	204.9	205.8	205.8	209.7	214.5	218.3	222.1	226.9	235.5
22.5°	236.5	235.5	242.2	243.2	248.0	253.7	262.3	268.1	277.6	282.4	294.9
25°	272.9	279.6	292.0	295.8	303.5	313.1	326.5	334.1	345.6	351.4	365.7
27.5°	309.2	319.8	335.1	339.9	346.6	361.9	371.5	378.2	383.9	387.7	396.4
30°	306.4	315.9	331.3	332.2	341.8	352.3	358.1	363.8	367.6	366.7	371.5
32.5°	259.5	268.1	282.4	282.4	293.0	301.6	304.5	309.2	309.2	309.2	311.2
35°	199.1	204.9	214.5	217.3	225.9	231.7	233.6	239.4	239.4	237.4	237.4
37.5°	137.9	145.5	152.2	154.1	159.9	163.7	168.5	169.5	167.5	168.5	168.5
40°	90.0	94.8	99.6	100.5	105.3	108.2	113.0	113.0	113.9	113.0	114.9
42.5°	55.5	59.4	62.2	64.1	66.1	68.0	70.8	71.8	72.8	71.8	73.7
45°	34.5	36.4	38.3	39.3	40.2	41.2	44.0	44.0	44.0	44.0	45.0
47.5°	21.1	22.0	23.0	23.0	23.9	24.9	25.8	25.8	25.8	25.8	26.8
50°	12.4	13.4	13.4	13.4	14.4	14.4	15.3	15.3	15.3	14.4	15.3
52.5°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	7.7	8.6
55°	7.7	7.7	6.7	6.7	6.7	6.7	6.7	5.7	4.8	4.8	3.8
57.5°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	4.8	3.8	2.9
60°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	3.8	2.9
62.5°	7.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	3.8	2.9
65°	7.7	7.7	6.7	6.7	6.7	5.7	5.7	4.8	4.8	3.8	2.9
67.5°	7.7	7.7	7.7	6.7	7.7	6.7	5.7	5.7	4.8	3.8	3.8
70°	8.6	7.7	7.7	7.7	7.7	6.7	6.7	5.7	4.8	3.8	3.8
72.5°	8.6	8.6	7.7	7.7	7.7	6.7	6.7	5.7	4.8	4.8	3.8
75°	8.6	8.6	7.7	7.7	7.7	6.7	6.7	5.7	5.7	4.8	3.8
77.5°	8.6	8.6	8.6	7.7	7.7	7.7	6.7	6.7	5.7	4.8	3.8
80°	8.6	8.6	8.6	8.6	8.6	7.7	7.7	6.7	5.7	4.8	3.8
82.5°	9.6	8.6	8.6	8.6	8.6	7.7	7.7	6.7	5.7	4.8	4.8
85°	9.6	9.6	8.6	8.6	8.6	7.7	7.7	6.7	5.7	5.7	4.8
87.5°	9.6	8.6	8.6	8.6	8.6	7.7	7.7	6.7	5.7	4.8	4.8
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: P209091

CATALOG NUMBER: LDSQA6A65940D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8	1037.8
2.5°	640.5	632.8	632.8	619.4	617.5	607.0	615.6	609.9
5°	436.6	424.1	420.3	406.9	402.1	389.7	393.5	388.7
7.5°	274.8	262.3	258.5	248.9	243.2	233.6	234.6	231.7
10°	167.5	156.1	153.2	150.3	147.4	146.5	147.4	146.5
12.5°	152.2	151.3	149.4	150.3	148.4	149.4	150.3	149.4
15°	165.6	167.5	165.6	166.6	165.6	167.5	168.5	168.5
17.5°	194.4	198.2	196.3	199.1	198.2	203.0	203.0	203.0
20°	238.4	245.1	243.2	247.0	247.0	252.8	252.8	254.7
22.5°	299.7	308.3	307.3	315.9	314.0	320.7	320.7	322.6
25°	373.4	382.0	383.0	388.7	387.7	394.5	394.5	396.4
27.5°	404.0	408.8	407.9	410.7	411.7	415.5	418.4	416.5
30°	379.1	383.0	382.0	383.9	383.9	386.8	389.7	386.8
32.5°	318.8	321.7	321.7	325.5	322.6	323.6	328.4	325.5
35°	244.1	246.1	244.1	246.1	247.0	247.0	251.8	250.8
37.5°	174.2	175.2	175.2	178.1	175.2	175.2	180.0	180.9
40°	116.8	117.8	116.8	120.6	118.7	118.7	121.6	118.7
42.5°	74.7	75.6	74.7	77.5	75.6	77.5	78.5	79.5
45°	46.0	46.0	45.0	46.9	46.0	46.9	47.9	47.9
47.5°	26.8	26.8	25.8	27.8	26.8	26.8	26.8	27.8
50°	14.4	14.4	14.4	15.3	14.4	14.4	14.4	13.4
52.5°	7.7	7.7	6.7	7.7	6.7	6.7	6.7	6.7
55°	3.8	2.9	2.9	2.9	1.9	1.9	1.9	1.9
57.5°	2.9	1.9	1.9	1.0	1.0	1.0	0.0	0.0
60°	1.9	1.9	1.0	1.0	0.0	0.0	0.0	0.0
62.5°	1.9	1.9	1.0	1.0	0.0	0.0	0.0	0.0
65°	1.9	1.9	1.0	1.0	0.0	0.0	0.0	0.0
67.5°	2.9	1.9	1.9	1.0	1.0	0.0	0.0	0.0
70°	2.9	1.9	1.9	1.0	1.0	0.0	0.0	0.0
72.5°	2.9	1.9	1.9	1.9	1.0	1.0	0.0	0.0
75°	2.9	2.9	1.9	1.9	1.0	1.0	0.0	0.0
77.5°	3.8	2.9	1.9	1.9	1.0	1.0	0.0	0.0
80°	3.8	2.9	1.9	1.9	1.9	1.0	1.0	1.0
82.5°	3.8	2.9	2.9	1.9	1.9	1.0	1.0	1.0
85°	3.8	2.9	2.9	1.9	1.9	1.0	1.0	1.0
87.5°	3.8	2.9	2.9	1.9	1.9	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)