

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: P209099

Luminaire Tested: **LDSQA6A75940D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209099
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: LDSQA6A75940D010TE 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: 6379.3 lumens
Efficiency: N/A
Efficacy: 80.3 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

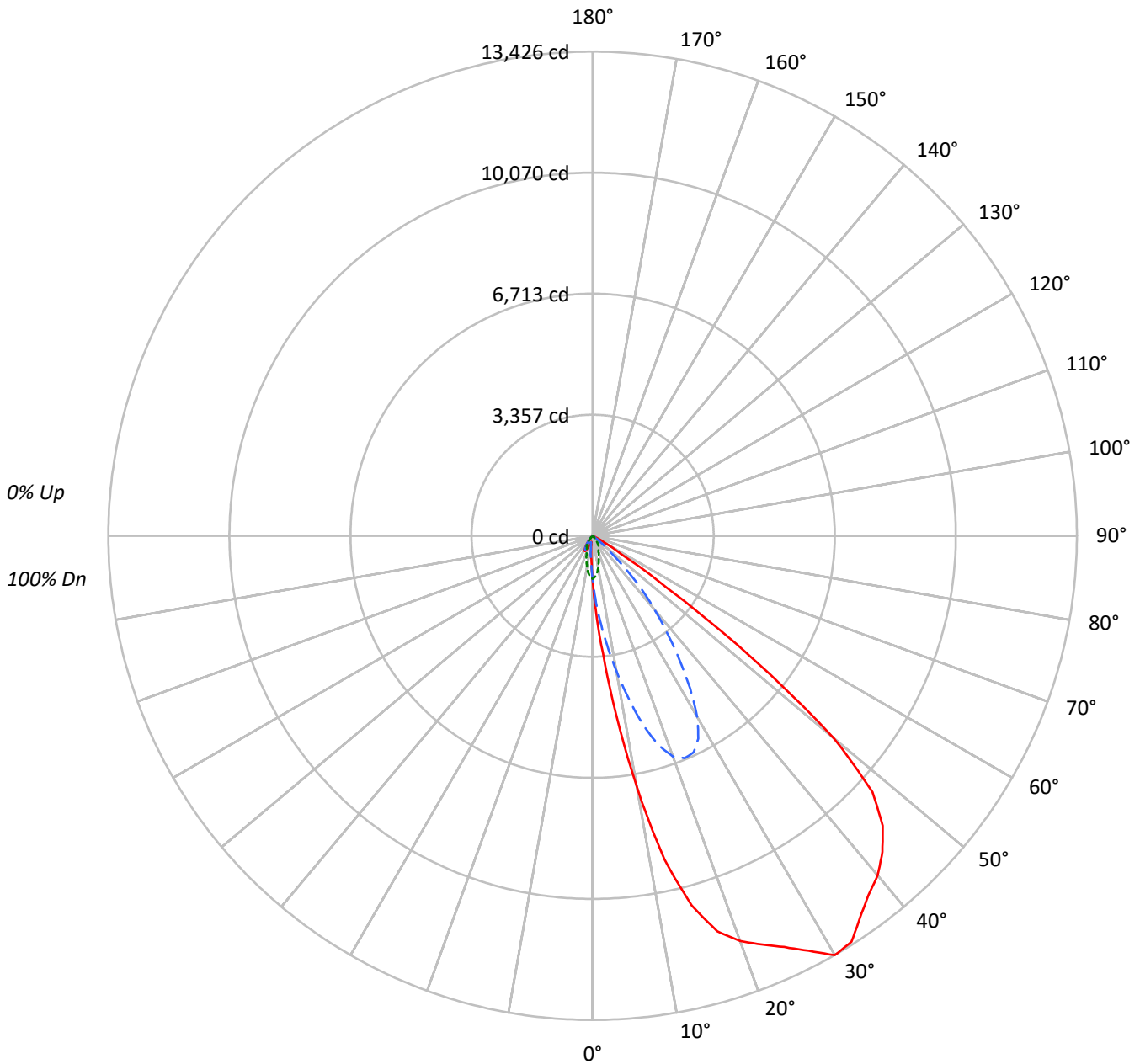
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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°	51477	51477	51477
5°	141295	47430	19354
10°	309628	38819	7380
15°	472953	29548	8652
20°	547962	21984	13443
25°	597753	18076	21692
30°	667507	16396	22154
35°	679149	11248	15190
40°	691082	5334	7689
45°	692202	2216	3355
50°	585195	958	1032
55°	188436	661	165
60°	37424	758	0
65°	3820	897	0
70°	415	1246	0
75°	0	1647	0
80°	0	2727	273
85°	0	5434	543



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.3	2.5
10°-20°	839.4	13.2
20°-30°	1607.2	25.2
30°-40°	1893.5	29.7
40°-50°	1487.3	23.3
50°-60°	362.4	5.7
60°-70°	15.5	0.2
70°-80°	5.8	0.1
80°-90°	5.8	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°	2608.9	40.9
0°-40°	4502.4	70.6
0°-60°	6352.1	99.6
0°-90°	6379.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6379.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1196	1196	1196	1196	1196	
5°	3269	2366	1097	575	448	432
15°	10610	5450	663	190	194	2962
25°	12582	6626	380	398	457	5865
35°	12921	4189	214	276	289	8102
45°	11368	1295	36	51	55	8541
55°	2510	47	9	6	2	2988
65°	38	6	9	6	0	99
75°	0	6	10	7	0	0
85°	0	7	11	7	1	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6
2.5°	2049.3	2044.9	2015.1	2042.7	1958.8	1955.5	1918.0	1901.5	1853.0	1806.6	1740.5
5°	3269.2	3197.5	3139.0	3141.2	2980.2	2950.4	2866.6	2781.6	2651.5	2530.2	2365.8
7.5°	4983.1	4898.2	4774.7	4722.8	4415.1	4324.7	4151.5	3925.4	3642.0	3359.6	3055.2
10°	7082.1	7095.3	6935.4	6787.6	6322.1	6139.0	5858.9	5413.3	4876.2	4345.6	3806.3
12.5°	9194.2	9185.4	8994.6	8770.7	8197.2	7939.1	7566.3	7010.4	6299.0	5476.2	4632.4
15°	10610.4	10673.3	10592.8	10414.1	9924.4	9628.8	9208.6	8454.1	7587.2	6587.9	5449.7
17.5°	11499.4	11559.0	11530.3	11390.2	10957.8	10642.4	10291.7	9674.0	8671.4	7415.2	6093.8
20°	11959.3	12053.1	12039.8	11887.6	11561.2	11299.8	10912.6	10340.2	9472.2	7989.8	6510.7
22.5°	12265.9	12337.6	12357.5	12185.4	11847.9	11599.8	11316.3	10736.2	9920.0	8340.5	6676.2
25°	12582.5	12709.3	12584.7	12372.9	12063.0	11824.8	11522.6	10966.7	10133.9	8483.9	6626.5
27.5°	12970.7	13031.4	12749.0	12556.0	12211.9	11953.8	11632.9	11100.1	10171.4	8369.2	6343.1
30°	13426.3	13174.8	12977.4	12594.6	12204.2	11952.7	11626.2	11016.3	9974.0	7988.7	5793.8
32.5°	13351.3	13120.7	12896.8	12492.1	12106.0	11856.8	11492.8	10737.3	9507.5	7352.3	5036.1
35°	12921.1	12970.7	12729.2	12393.9	11957.1	11700.1	11303.1	10340.2	8715.5	6474.3	4189.0
37.5°	12558.2	12667.4	12509.7	12199.8	11756.4	11409.0	10872.9	9702.7	7682.1	5360.4	3386.1
40°	12295.7	12331.0	12246.1	11898.7	11365.9	10864.1	10244.2	8557.8	6426.9	4207.8	2672.5
42.5°	11888.7	11982.5	11832.5	11453.1	10645.7	10077.7	9179.9	7235.4	4992.0	3214.0	2011.8
45°	11368.1	11457.5	11272.2	10641.3	9518.5	8685.8	7590.5	5641.6	3692.7	2369.1	1294.9
47.5°	10518.9	10574.0	10215.6	9343.1	7710.7	6926.5	5803.7	3933.1	2379.1	1324.6	629.8
50°	8736.5	8710.0	7971.0	6897.9	5157.4	4334.6	3454.5	2132.0	1068.8	627.6	393.8
52.5°	5630.6	5569.9	4838.7	3862.5	2611.8	1993.0	1497.8	919.9	557.0	350.7	155.5
55°	2510.3	2487.2	2036.1	1581.6	1068.8	919.9	702.6	451.1	296.7	122.4	47.4
57.5°	930.9	909.9	801.8	672.8	516.2	429.0	340.8	216.2	76.1	40.8	25.4
60°	434.6	433.5	381.6	314.3	218.4	165.4	96.0	50.7	32.0	22.1	14.3
62.5°	139.0	135.7	94.9	69.5	49.6	43.0	34.2	25.4	16.5	12.1	8.8
65°	37.5	37.5	34.2	28.7	23.2	19.9	16.5	12.1	7.7	6.6	5.5
67.5°	14.3	14.3	13.2	12.1	8.8	7.7	6.6	5.5	4.4	5.5	5.5
70°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	5.5
72.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.3	3.3	4.4	5.5	5.5
75°	0.0	0.0	1.1	1.1	2.2	2.2	3.3	3.3	4.4	5.5	5.5
77.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.3	3.3	4.4	5.5	5.5
80°	0.0	0.0	1.1	1.1	2.2	2.2	3.3	3.3	4.4	5.5	5.5
82.5°	0.0	0.0	1.1	2.2	2.2	2.2	3.3	4.4	4.4	5.5	6.6
85°	0.0	0.0	1.1	2.2	2.2	3.3	3.3	4.4	4.4	5.5	6.6
87.5°	0.0	0.0	1.1	2.2	2.2	3.3	3.3	4.4	4.4	5.5	6.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6
2.5°	1691.9	1619.1	1518.8	1460.3	1446.0	1415.1	1361.0	1280.5	1214.4	1150.4	1112.9
5°	2226.9	2054.8	1861.8	1726.1	1671.0	1597.1	1465.8	1330.2	1205.5	1097.4	1012.5
7.5°	2793.8	2510.3	2198.2	1946.7	1856.3	1739.4	1525.4	1323.5	1152.6	1002.6	889.0
10°	3357.4	2900.8	2477.2	2113.3	1965.5	1806.6	1524.3	1262.9	1062.1	887.9	762.1
12.5°	3921.0	3264.7	2682.4	2213.6	2021.7	1821.0	1479.1	1170.2	947.4	769.9	649.6
15°	4441.6	3554.8	2821.4	2247.8	2016.2	1779.1	1387.5	1057.7	827.2	662.9	551.5
17.5°	4829.8	3707.0	2853.3	2196.0	1929.1	1666.6	1247.4	925.4	712.5	568.0	454.4
20°	5020.6	3731.3	2777.2	2048.2	1779.1	1506.6	1094.1	798.5	614.3	479.8	383.8
22.5°	5020.6	3616.6	2611.8	1862.9	1591.6	1322.4	946.3	693.8	537.1	418.0	337.5
25°	4829.8	3388.3	2390.1	1648.9	1385.3	1140.5	818.4	615.4	477.6	380.5	313.2
27.5°	4459.2	3072.8	2105.5	1410.7	1182.4	978.3	716.9	543.8	432.4	343.0	344.1
30°	3949.7	2685.7	1779.1	1159.2	973.9	804.1	603.3	455.5	346.3	329.8	339.7
32.5°	3360.7	2222.5	1409.6	898.9	754.4	633.1	458.8	322.1	275.7	277.9	289.0
35°	2756.3	1749.3	1061.0	666.2	561.4	458.8	301.1	211.8	209.6	214.0	221.7
37.5°	2176.1	1309.2	767.7	487.5	377.2	282.4	162.1	145.6	145.6	150.0	154.4
40°	1630.2	928.7	528.3	289.0	183.1	129.0	102.6	94.9	93.8	94.9	100.4
42.5°	1119.5	587.9	314.3	115.8	88.2	75.0	65.1	59.6	58.5	59.6	62.9
45°	628.7	361.8	122.4	61.8	52.9	47.4	40.8	37.5	36.4	36.4	38.6
47.5°	393.8	143.4	55.1	38.6	33.1	30.9	26.5	24.3	23.2	23.2	24.3
50°	151.1	56.3	34.2	25.4	22.1	19.9	17.6	15.4	14.3	14.3	15.4
52.5°	51.8	33.1	22.1	16.5	14.3	13.2	11.0	9.9	9.9	9.9	9.9
55°	28.7	19.9	13.2	9.9	8.8	8.8	8.8	8.8	8.8	8.8	8.8
57.5°	17.6	12.1	8.8	7.7	7.7	7.7	7.7	7.7	7.7	8.8	8.8
60°	9.9	7.7	6.6	6.6	6.6	6.6	7.7	7.7	7.7	8.8	8.8
62.5°	6.6	6.6	6.6	6.6	6.6	6.6	7.7	7.7	8.8	8.8	8.8
65°	5.5	5.5	5.5	6.6	6.6	6.6	7.7	7.7	8.8	8.8	8.8
67.5°	5.5	5.5	6.6	6.6	6.6	7.7	7.7	8.8	8.8	8.8	8.8
70°	5.5	6.6	6.6	7.7	7.7	7.7	8.8	8.8	8.8	9.9	9.9
72.5°	5.5	6.6	6.6	7.7	7.7	7.7	8.8	8.8	9.9	9.9	9.9
75°	6.6	6.6	6.6	7.7	7.7	7.7	8.8	9.9	9.9	9.9	9.9
77.5°	6.6	6.6	7.7	7.7	7.7	8.8	8.8	9.9	9.9	9.9	9.9
80°	6.6	6.6	7.7	7.7	8.8	8.8	9.9	9.9	9.9	11.0	11.0
82.5°	6.6	6.6	7.7	8.8	8.8	8.8	9.9	9.9	11.0	11.0	11.0
85°	6.6	7.7	7.7	8.8	8.8	8.8	9.9	9.9	11.0	11.0	11.0
87.5°	6.6	7.7	7.7	8.8	8.8	8.8	9.9	9.9	11.0	11.0	11.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6
2.5°	1063.2	1016.9	970.6	936.4	919.9	903.3	866.9	819.5	799.6	771.0	754.4
5°	926.5	848.2	786.4	745.6	721.3	689.3	647.4	601.1	574.6	544.9	525.0
7.5°	785.3	693.8	634.2	596.7	572.4	532.7	479.8	424.6	392.7	359.6	336.4
10°	661.8	574.6	507.4	464.3	433.5	387.1	334.2	295.6	268.0	239.3	216.2
12.5°	552.6	458.8	387.1	350.7	329.8	285.7	241.5	198.5	182.0	176.5	176.5
15°	447.8	362.9	302.2	271.3	249.3	201.8	193.0	190.8	189.7	188.6	190.8
17.5°	365.1	293.4	229.4	214.0	211.8	210.7	211.8	211.8	212.9	216.2	221.7
20°	306.6	240.4	236.0	237.1	237.1	241.5	247.1	251.5	255.9	261.4	271.3
22.5°	272.4	271.3	279.0	280.2	285.7	292.3	302.2	308.8	319.9	325.4	339.7
25°	314.3	322.1	336.4	340.8	349.6	360.7	376.1	384.9	398.2	404.8	421.3
27.5°	356.3	368.4	386.0	391.5	399.3	416.9	427.9	435.7	442.3	446.7	456.6
30°	352.9	364.0	381.6	382.7	393.8	405.9	412.5	419.1	423.5	422.4	427.9
32.5°	298.9	308.8	325.4	325.4	337.5	347.4	350.7	356.3	356.3	356.3	358.5
35°	229.4	236.0	247.1	250.4	260.3	266.9	269.1	275.7	275.7	273.5	273.5
37.5°	158.8	167.6	175.4	177.6	184.2	188.6	194.1	195.2	193.0	194.1	194.1
40°	103.7	109.2	114.7	115.8	121.3	124.6	130.1	130.1	131.3	130.1	132.4
42.5°	64.0	68.4	71.7	73.9	76.1	78.3	81.6	82.7	83.8	82.7	84.9
45°	39.7	41.9	44.1	45.2	46.3	47.4	50.7	50.7	50.7	50.7	51.8
47.5°	24.3	25.4	26.5	26.5	27.6	28.7	29.8	29.8	29.8	29.8	30.9
50°	14.3	15.4	15.4	15.4	16.5	16.5	17.6	17.6	17.6	16.5	17.6
52.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	8.8	9.9
55°	8.8	8.8	7.7	7.7	7.7	7.7	7.7	6.6	5.5	5.5	4.4
57.5°	7.7	7.7	7.7	7.7	7.7	6.6	6.6	5.5	5.5	4.4	3.3
60°	7.7	7.7	7.7	7.7	7.7	6.6	6.6	5.5	4.4	4.4	3.3
62.5°	8.8	7.7	7.7	7.7	7.7	6.6	6.6	5.5	4.4	4.4	3.3
65°	8.8	8.8	7.7	7.7	7.7	6.6	6.6	5.5	5.5	4.4	3.3
67.5°	8.8	8.8	8.8	7.7	8.8	7.7	6.6	6.6	5.5	4.4	4.4
70°	9.9	8.8	8.8	8.8	8.8	7.7	7.7	6.6	5.5	4.4	4.4
72.5°	9.9	9.9	8.8	8.8	8.8	7.7	7.7	6.6	5.5	5.5	4.4
75°	9.9	9.9	8.8	8.8	8.8	7.7	7.7	6.6	6.6	5.5	4.4
77.5°	9.9	9.9	9.9	8.8	8.8	8.8	7.7	7.7	6.6	5.5	4.4
80°	9.9	9.9	9.9	9.9	9.9	8.8	8.8	7.7	6.6	5.5	4.4
82.5°	11.0	9.9	9.9	9.9	9.9	8.8	8.8	7.7	6.6	5.5	5.5
85°	11.0	11.0	9.9	9.9	9.9	8.8	8.8	7.7	6.6	6.6	5.5
87.5°	11.0	9.9	9.9	9.9	9.9	8.8	8.8	7.7	6.6	5.5	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: P209099

CATALOG NUMBER: LDSQA6A75940D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6	1195.6
2.5°	737.9	729.1	729.1	713.6	711.4	699.3	709.2	702.6
5°	502.9	488.6	484.2	468.8	463.2	448.9	453.3	447.8
7.5°	316.5	302.2	297.8	286.8	280.2	269.1	270.2	266.9
10°	193.0	179.8	176.5	173.2	169.9	168.8	169.9	168.8
12.5°	175.4	174.3	172.1	173.2	171.0	172.1	173.2	172.1
15°	190.8	193.0	190.8	191.9	190.8	193.0	194.1	194.1
17.5°	223.9	228.3	226.1	229.4	228.3	233.8	233.8	233.8
20°	274.6	282.4	280.2	284.6	284.6	291.2	291.2	293.4
22.5°	345.2	355.2	354.0	364.0	361.8	369.5	369.5	371.7
25°	430.2	440.1	441.2	447.8	446.7	454.4	454.4	456.6
27.5°	465.4	471.0	469.9	473.2	474.3	478.7	482.0	479.8
30°	436.8	441.2	440.1	442.3	442.3	445.6	448.9	445.6
32.5°	367.3	370.6	370.6	375.0	371.7	372.8	378.3	375.0
35°	281.3	283.5	281.3	283.5	284.6	284.6	290.1	289.0
37.5°	200.7	201.8	201.8	205.1	201.8	201.8	207.4	208.5
40°	134.6	135.7	134.6	139.0	136.8	136.8	140.1	136.8
42.5°	86.0	87.1	86.0	89.3	87.1	89.3	90.4	91.5
45°	52.9	52.9	51.8	54.0	52.9	54.0	55.1	55.1
47.5°	30.9	30.9	29.8	32.0	30.9	30.9	30.9	32.0
50°	16.5	16.5	16.5	17.6	16.5	16.5	16.5	15.4
52.5°	8.8	8.8	7.7	8.8	7.7	7.7	7.7	7.7
55°	4.4	3.3	3.3	3.3	2.2	2.2	2.2	2.2
57.5°	3.3	2.2	2.2	1.1	1.1	1.1	0.0	0.0
60°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
62.5°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
65°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
67.5°	3.3	2.2	2.2	1.1	1.1	0.0	0.0	0.0
70°	3.3	2.2	2.2	1.1	1.1	0.0	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	3.3	2.2	2.2	1.1	1.1	0.0	0.0
77.5°	4.4	3.3	2.2	2.2	1.1	1.1	0.0	0.0
80°	4.4	3.3	2.2	2.2	2.2	1.1	1.1	1.1
82.5°	4.4	3.3	3.3	2.2	2.2	1.1	1.1	1.1
85°	4.4	3.3	3.3	2.2	2.2	1.1	1.1	1.1
87.5°	4.4	3.3	3.3	2.2	2.2	1.1	1.1	1.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)