

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: P209097

Luminaire Tested: **LDSQA6A75930D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209097
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: LDSQA6A75930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5843.6 lumens
Efficiency: N/A
Efficacy: 73.6 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

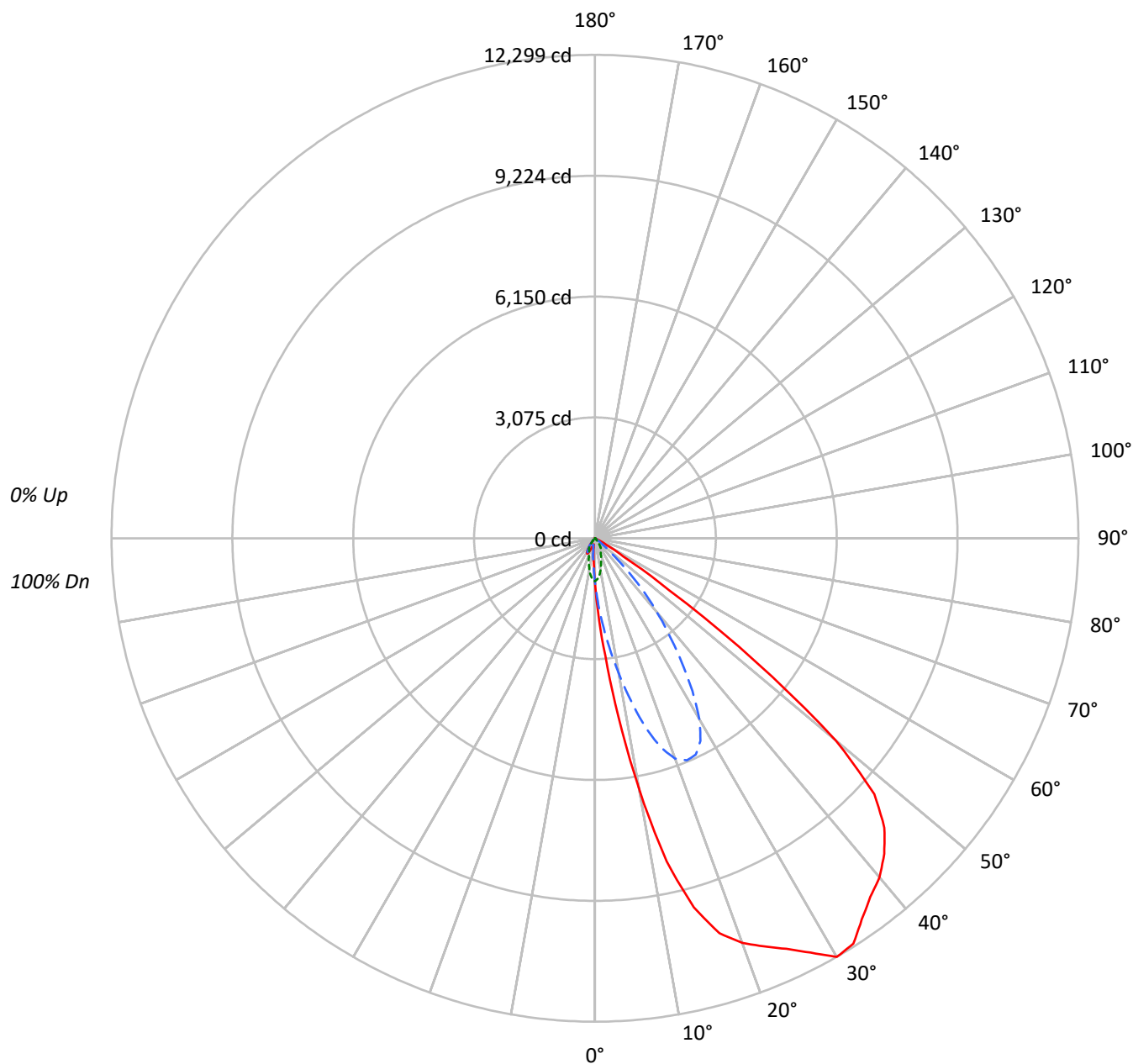
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	112	109	106	103	110	107	104	102		103	100	98		99	97	95		95	94	93
2	105	99	94	90	103	97	93	89		94	90	87		91	88	85		88	85	83
3	98	90	84	79	96	88	83	78		86	81	77		83	79	76		81	77	74
4	91	82	75	70	89	80	74	69		78	73	68		76	71	67		74	70	67
5	85	74	67	62	83	73	66	61		71	65	61		70	64	60		68	63	60
6	79	68	60	55	77	67	60	55		65	59	54		64	58	54		62	57	54
7	74	62	55	49	72	61	54	49		60	53	49		59	53	49		57	52	48
8	69	57	49	44	67	56	49	44		55	49	44		54	48	44		53	47	44
9	64	52	45	40	63	52	45	40		51	44	40		50	44	40		49	43	39
10	60	48	41	36	59	48	41	36		47	41	36		46	40	36		45	40	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	47155	47155	47155
5°	129427	43449	17729
10°	283619	35557	6759
15°	433228	27066	7925
20°	501941	20137	12312
25°	547548	16561	19872
30°	611442	15019	20294
35°	622110	10302	13913
40°	633039	4884	7043
45°	634065	2028	3075
50°	536043	877	944
55°	172613	608	150
60°	34281	698	0
65°	3505	825	0
70°	378	1146	0
75°	0	1514	0
80°	0	2504	248
85°	0	4989	494



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	148.7	2.5
10°-20°	768.9	13.2
20°-30°	1472.2	25.2
30°-40°	1734.5	29.7
40°-50°	1362.4	23.3
50°-60°	332.0	5.7
60°-70°	14.3	0.2
70°-80°	5.4	0.1
80°-90°	5.4	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°	2389.8	40.9
0°-40°	4124.2	70.6
0°-60°	5818.6	99.6
0°-90°	5843.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5843.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1095	1095	1095	1095	1095	
5°	2995	2167	1005	526	410	396
15°	9719	4992	607	174	178	2713
25°	11526	6070	349	365	418	5372
35°	11836	3837	196	253	265	7422
45°	10413	1186	33	46	50	7824
55°	2300	43	8	5	2	2737
65°	34	5	8	5	0	91
75°	0	5	9	6	0	0
85°	0	6	10	6	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°	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2
2.5°	1877.2	1873.1	1845.8	1871.1	1794.3	1791.3	1756.9	1741.8	1697.3	1654.9	1594.3
5°	2994.6	2928.9	2875.4	2877.4	2729.9	2702.6	2625.8	2548.0	2428.8	2317.7	2167.1
7.5°	4564.6	4486.8	4373.7	4326.2	4044.3	3961.5	3802.8	3595.7	3336.1	3077.4	2798.6
10°	6487.2	6499.4	6352.9	6217.5	5791.1	5623.4	5366.8	4958.6	4466.6	3980.6	3486.6
12.5°	8422.0	8413.9	8239.1	8034.0	7508.7	7272.3	6930.8	6421.6	5769.9	5016.2	4243.3
15°	9719.2	9776.8	9703.1	9539.4	9090.8	8820.1	8435.1	7744.1	6950.0	6034.6	4992.0
17.5°	10533.6	10588.1	10561.9	10433.5	10037.5	9748.5	9427.3	8861.5	7943.1	6792.4	5582.0
20°	10954.9	11040.7	11028.6	10889.2	10590.1	10350.7	9996.1	9471.7	8676.6	7318.7	5963.9
22.5°	11235.7	11301.4	11319.6	11162.0	10852.8	10625.5	10365.8	9834.4	9086.8	7640.0	6115.4
25°	11525.7	11641.9	11527.7	11333.7	11049.8	10831.6	10554.8	10045.6	9282.8	7771.4	6070.0
27.5°	11881.3	11936.9	11678.3	11501.4	11186.2	10949.8	10655.8	10167.8	9317.1	7666.3	5810.3
30°	12298.6	12068.2	11887.4	11536.8	11179.2	10948.8	10649.7	10091.0	9136.3	7317.7	5307.2
32.5°	12229.9	12018.7	11813.6	11442.8	11089.2	10860.9	10527.5	9835.4	8708.9	6734.8	4613.1
35°	11835.9	11881.3	11660.1	11352.9	10952.8	10717.4	10353.7	9471.7	7983.5	5930.6	3837.2
37.5°	11503.5	11603.5	11459.0	11175.1	10769.0	10450.7	9959.7	8887.8	7036.9	4910.1	3101.7
40°	11263.0	11295.3	11217.5	10899.3	10411.3	9951.6	9383.8	7839.0	5887.1	3854.4	2448.0
42.5°	10890.2	10976.1	10838.7	10491.1	9751.6	9231.3	8408.9	6627.7	4572.7	2944.1	1842.8
45°	10413.3	10495.2	10325.4	9747.5	8719.0	7956.2	6953.0	5167.8	3382.5	2170.2	1186.1
47.5°	9635.4	9685.9	9357.6	8558.4	7063.1	6344.8	5316.3	3602.8	2179.3	1213.4	576.9
50°	8002.7	7978.5	7301.6	6318.5	4724.2	3970.5	3164.3	1952.9	979.0	574.9	360.7
52.5°	5157.7	5102.1	4432.3	3538.1	2392.4	1825.6	1372.0	842.6	510.2	321.3	142.5
55°	2299.5	2278.3	1865.0	1448.8	979.0	842.6	643.6	413.2	271.8	112.1	43.4
57.5°	852.7	833.5	734.5	616.3	472.8	393.0	312.2	198.0	69.7	37.4	23.2
60°	398.1	397.1	349.6	287.9	200.0	151.5	87.9	46.5	29.3	20.2	13.1
62.5°	127.3	124.3	86.9	63.6	45.5	39.4	31.3	23.2	15.2	11.1	8.1
65°	34.4	34.4	31.3	26.3	21.2	18.2	15.2	11.1	7.1	6.1	5.1
67.5°	13.1	13.1	12.1	11.1	8.1	7.1	6.1	5.1	4.0	5.1	5.1
70°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	5.1
72.5°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	5.1
75°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	5.1
77.5°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	5.1
80°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	5.1
82.5°	0.0	0.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.1	6.1
85°	0.0	0.0	1.0	2.0	2.0	3.0	3.0	4.0	4.0	5.1	6.1
87.5°	0.0	0.0	1.0	2.0	2.0	3.0	3.0	4.0	4.0	5.1	6.1
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°	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2
2.5°	1549.8	1483.1	1391.2	1337.7	1324.5	1296.2	1246.7	1173.0	1112.4	1053.8	1019.4
5°	2039.8	1882.2	1705.4	1581.1	1530.6	1462.9	1342.7	1218.4	1104.3	1005.3	927.5
7.5°	2559.1	2299.5	2013.6	1783.2	1700.4	1593.3	1397.3	1212.4	1055.8	918.4	814.3
10°	3075.4	2657.1	2269.2	1935.8	1800.4	1654.9	1396.3	1156.8	972.9	813.3	698.1
12.5°	3591.7	2990.5	2457.1	2027.7	1851.9	1668.0	1354.8	1071.9	867.9	705.2	595.1
15°	4068.5	3256.3	2584.4	2059.0	1846.9	1629.6	1271.0	968.9	757.7	607.2	505.2
17.5°	4424.2	3395.7	2613.7	2011.5	1767.0	1526.6	1142.7	847.7	652.7	520.3	416.3
20°	4599.0	3417.9	2544.0	1876.2	1629.6	1380.1	1002.2	731.5	562.7	439.5	351.6
22.5°	4599.0	3312.8	2392.4	1706.4	1457.9	1211.4	866.9	635.5	492.0	382.9	309.2
25°	4424.2	3103.7	2189.4	1510.4	1269.0	1044.7	749.7	563.8	437.5	348.6	286.9
27.5°	4084.7	2814.7	1928.7	1292.2	1083.1	896.2	656.7	498.1	396.0	314.2	315.2
30°	3617.9	2460.1	1629.6	1061.8	892.1	736.5	552.6	417.3	317.2	302.1	311.2
32.5°	3078.4	2035.8	1291.2	823.4	691.1	579.9	420.3	295.0	252.6	254.6	264.7
35°	2524.8	1602.4	971.9	610.2	514.3	420.3	275.8	194.0	192.0	196.0	203.1
37.5°	1993.4	1199.2	703.2	446.6	345.5	258.6	148.5	133.4	133.4	137.4	141.4
40°	1493.2	850.7	483.9	264.7	167.7	118.2	94.0	86.9	85.9	86.9	91.9
42.5°	1025.5	538.5	287.9	106.1	80.8	68.7	59.6	54.6	53.5	54.6	57.6
45°	575.9	331.4	112.1	56.6	48.5	43.4	37.4	34.4	33.3	33.3	35.4
47.5°	360.7	131.3	50.5	35.4	30.3	28.3	24.2	22.2	21.2	21.2	22.2
50°	138.4	51.5	31.3	23.2	20.2	18.2	16.2	14.1	13.1	13.1	14.1
52.5°	47.5	30.3	20.2	15.2	13.1	12.1	10.1	9.1	9.1	9.1	9.1
55°	26.3	18.2	12.1	9.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
57.5°	16.2	11.1	8.1	7.1	7.1	7.1	7.1	7.1	7.1	8.1	8.1
60°	9.1	7.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1	8.1	8.1
62.5°	6.1	6.1	6.1	6.1	6.1	6.1	7.1	7.1	8.1	8.1	8.1
65°	5.1	5.1	5.1	6.1	6.1	6.1	7.1	7.1	8.1	8.1	8.1
67.5°	5.1	5.1	6.1	6.1	6.1	7.1	7.1	8.1	8.1	8.1	8.1
70°	5.1	6.1	6.1	7.1	7.1	7.1	8.1	8.1	8.1	9.1	9.1
72.5°	5.1	6.1	6.1	7.1	7.1	7.1	8.1	8.1	9.1	9.1	9.1
75°	6.1	6.1	6.1	7.1	7.1	7.1	8.1	9.1	9.1	9.1	9.1
77.5°	6.1	6.1	7.1	7.1	7.1	8.1	8.1	9.1	9.1	9.1	9.1
80°	6.1	6.1	7.1	7.1	8.1	8.1	9.1	9.1	9.1	10.1	10.1
82.5°	6.1	6.1	7.1	8.1	8.1	8.1	9.1	9.1	10.1	10.1	10.1
85°	6.1	7.1	7.1	8.1	8.1	8.1	9.1	9.1	10.1	10.1	10.1
87.5°	6.1	7.1	7.1	8.1	8.1	8.1	9.1	9.1	10.1	10.1	10.1
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°	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2
2.5°	973.9	931.5	889.1	857.8	842.6	827.4	794.1	750.7	732.5	706.2	691.1
5°	848.7	776.9	720.4	683.0	660.7	631.4	593.1	550.6	526.4	499.1	480.9
7.5°	719.3	635.5	580.9	546.6	524.4	488.0	439.5	389.0	359.7	329.4	308.1
10°	606.2	526.4	464.7	425.3	397.1	354.6	306.1	270.8	245.5	219.2	198.0
12.5°	506.2	420.3	354.6	321.3	302.1	261.7	221.3	181.9	166.7	161.7	161.7
15°	410.2	332.4	276.8	248.5	228.3	184.9	176.8	174.8	173.8	172.8	174.8
17.5°	334.4	268.7	210.1	196.0	194.0	193.0	194.0	194.0	195.0	198.0	203.1
20°	280.9	220.2	216.2	217.2	217.2	221.3	226.3	230.4	234.4	239.4	248.5
22.5°	249.5	248.5	255.6	256.6	261.7	267.7	276.8	282.9	293.0	298.0	311.2
25°	287.9	295.0	308.1	312.2	320.3	330.4	344.5	352.6	364.7	370.8	385.9
27.5°	326.3	337.4	353.6	358.7	365.7	381.9	392.0	399.1	405.1	409.2	418.3
30°	323.3	333.4	349.6	350.6	360.7	371.8	377.9	383.9	388.0	387.0	392.0
32.5°	273.8	282.9	298.0	298.0	309.2	318.2	321.3	326.3	326.3	326.3	328.4
35°	210.1	216.2	226.3	229.3	238.4	244.5	246.5	252.6	252.6	250.6	250.6
37.5°	145.5	153.6	160.6	162.7	168.7	172.8	177.8	178.8	176.8	177.8	177.8
40°	95.0	100.0	105.1	106.1	111.1	114.2	119.2	119.2	120.2	119.2	121.2
42.5°	58.6	62.6	65.7	67.7	69.7	71.7	74.8	75.8	76.8	75.8	77.8
45°	36.4	38.4	40.4	41.4	42.4	43.4	46.5	46.5	46.5	46.5	47.5
47.5°	22.2	23.2	24.2	24.2	25.3	26.3	27.3	27.3	27.3	27.3	28.3
50°	13.1	14.1	14.1	14.1	15.2	15.2	16.2	16.2	16.2	15.2	16.2
52.5°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	8.1	9.1
55°	8.1	8.1	7.1	7.1	7.1	7.1	7.1	6.1	5.1	5.1	4.0
57.5°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	5.1	4.0	3.0
60°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	4.0	3.0
62.5°	8.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	4.0	3.0
65°	8.1	8.1	7.1	7.1	7.1	6.1	6.1	5.1	5.1	4.0	3.0
67.5°	8.1	8.1	8.1	7.1	8.1	7.1	6.1	6.1	5.1	4.0	4.0
70°	9.1	8.1	8.1	8.1	8.1	7.1	7.1	6.1	5.1	4.0	4.0
72.5°	9.1	9.1	8.1	8.1	8.1	7.1	7.1	6.1	5.1	5.1	4.0
75°	9.1	9.1	8.1	8.1	8.1	7.1	7.1	6.1	6.1	5.1	4.0
77.5°	9.1	9.1	9.1	8.1	8.1	8.1	7.1	7.1	6.1	5.1	4.0
80°	9.1	9.1	9.1	9.1	9.1	8.1	8.1	7.1	6.1	5.1	4.0
82.5°	10.1	9.1	9.1	9.1	9.1	8.1	8.1	7.1	6.1	5.1	5.1
85°	10.1	10.1	9.1	9.1	9.1	8.1	8.1	7.1	6.1	6.1	5.1
87.5°	10.1	9.1	9.1	9.1	9.1	8.1	8.1	7.1	6.1	5.1	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: P209097

CATALOG NUMBER: LDSQA6A75930D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2	1095.2
2.5°	675.9	667.8	667.8	653.7	651.7	640.5	649.6	643.6
5°	460.7	447.6	443.5	429.4	424.3	411.2	415.2	410.2
7.5°	290.0	276.8	272.8	262.7	256.6	246.5	247.5	244.5
10°	176.8	164.7	161.7	158.6	155.6	154.6	155.6	154.6
12.5°	160.6	159.6	157.6	158.6	156.6	157.6	158.6	157.6
15°	174.8	176.8	174.8	175.8	174.8	176.8	177.8	177.8
17.5°	205.1	209.1	207.1	210.1	209.1	214.2	214.2	214.2
20°	251.6	258.6	256.6	260.7	260.7	266.7	266.7	268.7
22.5°	316.2	325.3	324.3	333.4	331.4	338.5	338.5	340.5
25°	394.0	403.1	404.1	410.2	409.2	416.3	416.3	418.3
27.5°	426.4	431.4	430.4	433.4	434.4	438.5	441.5	439.5
30°	400.1	404.1	403.1	405.1	405.1	408.2	411.2	408.2
32.5°	336.4	339.5	339.5	343.5	340.5	341.5	346.5	343.5
35°	257.6	259.7	257.6	259.7	260.7	260.7	265.7	264.7
37.5°	183.9	184.9	184.9	187.9	184.9	184.9	189.9	190.9
40°	123.3	124.3	123.3	127.3	125.3	125.3	128.3	125.3
42.5°	78.8	79.8	78.8	81.8	79.8	81.8	82.8	83.9
45°	48.5	48.5	47.5	49.5	48.5	49.5	50.5	50.5
47.5°	28.3	28.3	27.3	29.3	28.3	28.3	28.3	29.3
50°	15.2	15.2	15.2	16.2	15.2	15.2	15.2	14.1
52.5°	8.1	8.1	7.1	8.1	7.1	7.1	7.1	7.1
55°	4.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
57.5°	3.0	2.0	2.0	1.0	1.0	1.0	0.0	0.0
60°	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0
62.5°	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0
65°	2.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0
67.5°	3.0	2.0	2.0	1.0	1.0	0.0	0.0	0.0
70°	3.0	2.0	2.0	1.0	1.0	0.0	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	3.0	2.0	2.0	1.0	1.0	0.0	0.0
77.5°	4.0	3.0	2.0	2.0	1.0	1.0	0.0	0.0
80°	4.0	3.0	2.0	2.0	2.0	1.0	1.0	1.0
82.5°	4.0	3.0	3.0	2.0	2.0	1.0	1.0	1.0
85°	4.0	3.0	3.0	2.0	2.0	1.0	1.0	1.0
87.5°	4.0	3.0	3.0	2.0	2.0	1.0	1.0	1.0
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)