

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: P209088

Luminaire Tested: **LDSQA6A65927D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209088
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: LDSQA6A65927D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4739.4 lumens
Efficiency: N/A
Efficacy: 60.2 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

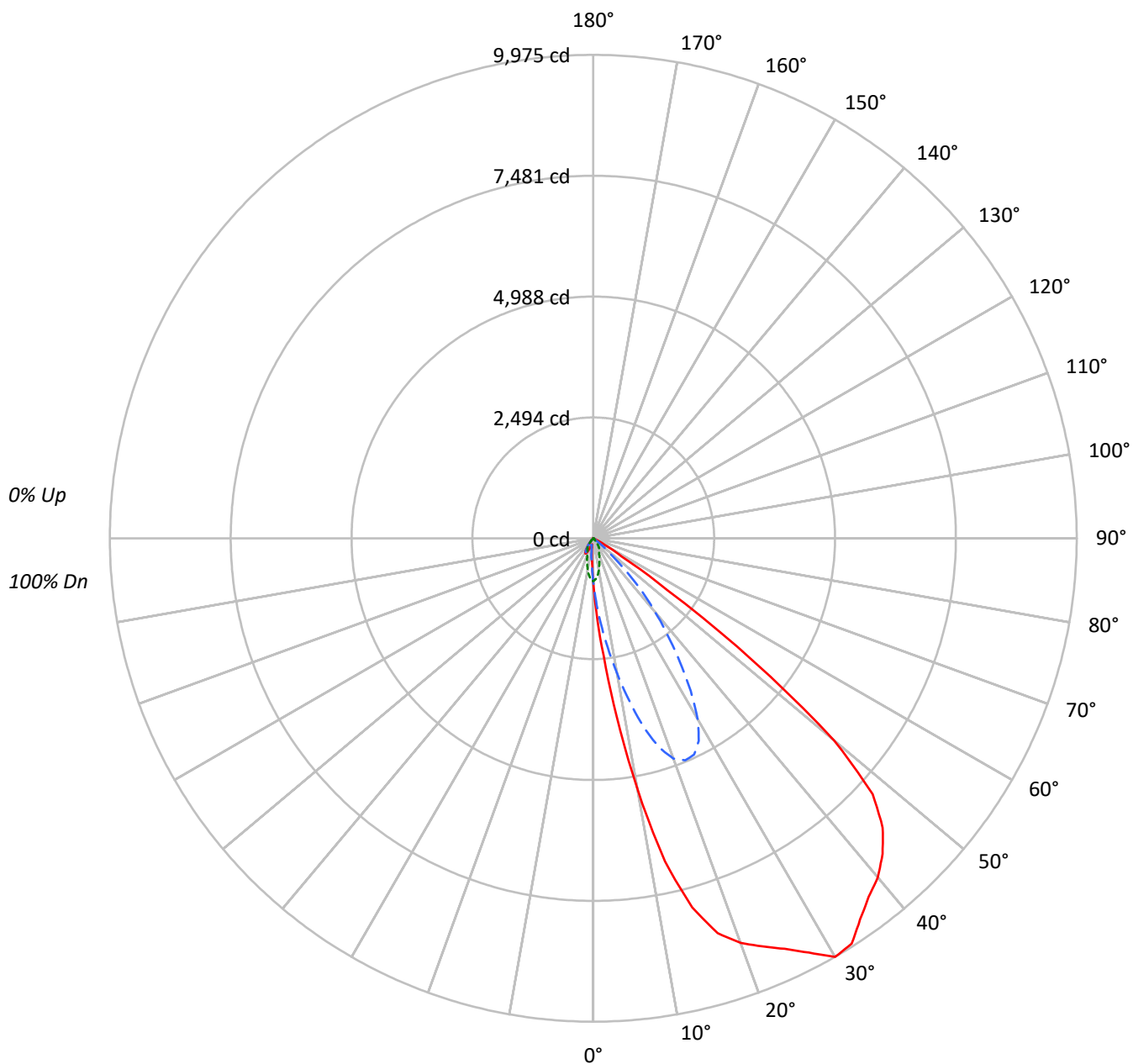
Input Watts (W): 78.67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209088

CATALOG NUMBER: LDSQA6A65927D010TE LARH40FL 6LSQA1H 30°

Luminous Intensity Polar Plot





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CATALOG NUMBER: LDSQA6A65927D010TE 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
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°	38242	38242	38242
5°	104969	35237	14379
10°	230028	28838	5482
15°	351372	21953	6428
20°	407096	16330	9989
25°	444088	13430	16114
30°	495906	12181	16456
35°	504557	8357	11285
40°	513423	3962	5710
45°	514258	1644	2496
50°	434758	717	770
55°	139997	495	120
60°	27797	568	0
65°	2842	672	0
70°	315	932	0
75°	0	1231	0
80°	0	2033	198
85°	0	4051	395



TEST NUMBER: P209088

CATALOG NUMBER: LDSQA6A65927D010TE LARH40FL 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.6	2.5
10°-20°	623.6	13.2
20°-30°	1194.0	25.2
30°-40°	1406.8	29.7
40°-50°	1104.9	23.3
50°-60°	269.3	5.7
60°-70°	11.6	0.2
70°-80°	4.4	0.1
80°-90°	4.3	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°	1938.2	40.9
0°-40°	3344.9	70.6
0°-60°	4719.2	99.6
0°-90°	4739.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4739.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	888	888	888	888	888	
5°	2429	1758	815	427	333	321
15°	7883	4049	492	141	144	2201
25°	9348	4923	283	296	339	4357
35°	9599	3112	159	205	215	6019
45°	8446	962	27	38	41	6346
55°	1865	35	7	4	2	2220
65°	28	4	7	4	0	74
75°	0	4	7	5	0	0
85°	0	5	8	5	1	0
90°	0	0	0	0	0	



TEST NUMBER: P209088

CATALOG NUMBER: LDSQA6A65927D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2
2.5°	1522.5	1519.2	1497.1	1517.6	1455.3	1452.8	1425.0	1412.7	1376.6	1342.2	1293.0
5°	2428.7	2375.5	2332.0	2333.7	2214.1	2191.9	2129.7	2066.6	1969.9	1879.7	1757.6
7.5°	3702.1	3639.0	3547.2	3508.7	3280.1	3212.9	3084.3	2916.3	2705.7	2495.9	2269.8
10°	5261.4	5271.3	5152.5	5042.7	4696.9	4560.9	4352.7	4021.7	3622.6	3228.5	2827.8
12.5°	6830.6	6824.1	6682.3	6516.0	6089.9	5898.1	5621.2	5208.2	4679.7	4068.4	3441.5
15°	7882.8	7929.5	7869.6	7736.9	7373.1	7153.5	6841.3	6280.8	5636.7	4894.4	4048.7
17.5°	8543.2	8587.4	8566.1	8462.1	8140.9	7906.5	7645.9	7187.1	6442.2	5508.9	4527.3
20°	8884.9	8954.5	8944.7	8831.6	8589.1	8394.9	8107.3	7682.0	7037.1	5935.8	4837.0
22.5°	9112.7	9166.0	9180.7	9052.9	8802.1	8617.8	8407.2	7976.2	7369.8	6196.4	4959.9
25°	9347.9	9442.1	9349.5	9192.2	8961.9	8784.9	8560.4	8147.4	7528.8	6302.9	4923.0
27.5°	9636.3	9681.4	9471.6	9328.2	9072.5	8880.8	8642.3	8246.6	7556.6	6217.7	4712.4
30°	9974.7	9787.9	9641.2	9356.9	9066.8	8880.0	8637.4	8184.3	7410.0	5935.0	4304.4
32.5°	9919.0	9747.7	9581.4	9280.7	8993.9	8808.7	8538.3	7977.0	7063.3	5462.2	3741.4
35°	9599.4	9636.3	9456.8	9207.7	8883.3	8692.3	8397.3	7682.0	6475.0	4810.0	3112.1
37.5°	9329.8	9411.0	9293.8	9063.5	8734.1	8476.0	8077.8	7208.4	5707.2	3982.3	2515.6
40°	9134.8	9161.0	9097.9	8839.8	8444.0	8071.2	7610.7	6357.8	4774.7	3126.1	1985.4
42.5°	8832.5	8902.1	8790.7	8508.8	7909.0	7487.0	6820.0	5375.3	3708.7	2387.8	1494.6
45°	8445.7	8512.1	8374.4	7905.7	7071.5	6452.9	5639.2	4191.3	2743.4	1760.1	962.0
47.5°	7814.7	7855.7	7589.4	6941.2	5728.5	5145.9	4311.8	2922.0	1767.5	984.1	467.9
50°	6490.6	6470.9	5921.9	5124.6	3831.6	3220.3	2566.4	1583.9	794.0	466.2	292.5
52.5°	4183.1	4138.0	3594.8	2869.6	1940.4	1480.7	1112.8	683.4	413.8	260.6	115.5
55°	1865.0	1847.8	1512.6	1175.0	794.0	683.4	522.0	335.1	220.4	91.0	35.2
57.5°	691.6	676.0	595.7	499.8	383.5	318.8	253.2	160.6	56.5	30.3	18.8
60°	322.8	322.0	283.5	233.5	162.2	122.9	71.3	37.7	23.8	16.4	10.7
62.5°	103.2	100.8	70.5	51.6	36.9	32.0	25.4	18.8	12.3	9.0	6.6
65°	27.9	27.9	25.4	21.3	17.2	14.7	12.3	9.0	5.7	4.9	4.1
67.5°	10.7	10.7	9.8	9.0	6.6	5.7	4.9	4.1	3.3	4.1	4.1
70°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.3	3.3	4.1
72.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.1
75°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.1
77.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.1
80°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.1
82.5°	0.0	0.0	0.8	1.6	1.6	1.6	2.5	3.3	3.3	4.1	4.9
85°	0.0	0.0	0.8	1.6	1.6	2.5	2.5	3.3	3.3	4.1	4.9
87.5°	0.0	0.0	0.8	1.6	1.6	2.5	2.5	3.3	3.3	4.1	4.9
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: P209088

CATALOG NUMBER: LDSQA6A65927D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2
2.5°	1257.0	1202.9	1128.3	1084.9	1074.3	1051.3	1011.2	951.3	902.2	854.6	826.8
5°	1654.4	1526.6	1383.2	1282.4	1241.4	1186.5	1089.0	988.2	895.6	815.3	752.2
7.5°	2075.6	1865.0	1633.1	1446.3	1379.1	1292.2	1133.2	983.3	856.3	744.8	660.4
10°	2494.3	2155.1	1840.4	1570.0	1460.2	1342.2	1132.4	938.2	789.1	659.6	566.2
12.5°	2913.0	2425.5	1992.8	1644.6	1502.0	1352.9	1098.8	869.4	703.9	572.0	482.6
15°	3299.8	2641.0	2096.1	1670.0	1497.9	1321.7	1030.8	785.8	614.6	492.5	409.7
17.5°	3588.2	2754.0	2119.8	1631.5	1433.2	1238.1	926.8	687.5	529.3	422.0	337.6
20°	3730.0	2772.1	2063.3	1521.6	1321.7	1119.3	812.9	593.3	456.4	356.4	285.2
22.5°	3730.0	2686.9	1940.4	1384.0	1182.4	982.5	703.1	515.4	399.1	310.6	250.7
25°	3588.2	2517.2	1775.7	1225.0	1029.2	847.3	608.0	457.2	354.8	282.7	232.7
27.5°	3312.9	2282.9	1564.3	1048.0	878.4	726.8	532.6	404.0	321.2	254.8	255.7
30°	2934.3	1995.3	1321.7	861.2	723.5	597.4	448.2	338.4	257.3	245.0	252.4
32.5°	2496.8	1651.1	1047.2	667.8	560.5	470.3	340.9	239.3	204.9	206.5	214.7
35°	2047.7	1299.6	788.3	494.9	417.1	340.9	223.7	157.3	155.7	159.0	164.7
37.5°	1616.7	972.6	570.3	362.2	280.2	209.8	120.5	108.2	108.2	111.4	114.7
40°	1211.1	689.9	392.5	214.7	136.0	95.9	76.2	70.5	69.7	70.5	74.6
42.5°	831.7	436.7	233.5	86.0	65.6	55.7	48.3	44.2	43.4	44.2	46.7
45°	467.1	268.8	91.0	45.9	39.3	35.2	30.3	27.9	27.0	27.0	28.7
47.5°	292.5	106.5	41.0	28.7	24.6	22.9	19.7	18.0	17.2	17.2	18.0
50°	112.3	41.8	25.4	18.8	16.4	14.7	13.1	11.5	10.7	10.7	11.5
52.5°	38.5	24.6	16.4	12.3	10.7	9.8	8.2	7.4	7.4	7.4	7.4
55°	21.3	14.7	9.8	7.4	6.6	6.6	6.6	6.6	6.6	6.6	6.6
57.5°	13.1	9.0	6.6	5.7	5.7	5.7	5.7	5.7	5.7	6.6	6.6
60°	7.4	5.7	4.9	4.9	4.9	4.9	5.7	5.7	5.7	6.6	6.6
62.5°	4.9	4.9	4.9	4.9	4.9	4.9	5.7	5.7	6.6	6.6	6.6
65°	4.1	4.1	4.1	4.9	4.9	4.9	5.7	5.7	6.6	6.6	6.6
67.5°	4.1	4.1	4.9	4.9	4.9	5.7	5.7	6.6	6.6	6.6	6.6
70°	4.1	4.9	4.9	5.7	5.7	5.7	6.6	6.6	6.6	7.4	7.4
72.5°	4.1	4.9	4.9	5.7	5.7	5.7	6.6	6.6	7.4	7.4	7.4
75°	4.9	4.9	4.9	5.7	5.7	5.7	6.6	7.4	7.4	7.4	7.4
77.5°	4.9	4.9	5.7	5.7	5.7	6.6	6.6	7.4	7.4	7.4	7.4
80°	4.9	4.9	5.7	5.7	6.6	6.6	7.4	7.4	7.4	8.2	8.2
82.5°	4.9	4.9	5.7	6.6	6.6	6.6	7.4	7.4	8.2	8.2	8.2
85°	4.9	5.7	5.7	6.6	6.6	6.6	7.4	7.4	8.2	8.2	8.2
87.5°	4.9	5.7	5.7	6.6	6.6	6.6	7.4	7.4	8.2	8.2	8.2
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: P209088

CATALOG NUMBER: LDSQA6A65927D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2
2.5°	789.9	755.5	721.1	695.7	683.4	671.1	644.1	608.8	594.1	572.8	560.5
5°	688.3	630.1	584.2	553.9	535.9	512.1	481.0	446.6	426.9	404.8	390.0
7.5°	583.4	515.4	471.2	443.3	425.3	395.8	356.4	315.5	291.7	267.1	249.9
10°	491.6	426.9	376.9	345.0	322.0	287.6	248.3	219.6	199.1	177.8	160.6
12.5°	410.5	340.9	287.6	260.6	245.0	212.2	179.5	147.5	135.2	131.1	131.1
15°	332.7	269.6	224.5	201.6	185.2	150.0	143.4	141.8	140.9	140.1	141.8
17.5°	271.2	218.0	170.4	159.0	157.3	156.5	157.3	157.3	158.1	160.6	164.7
20°	227.8	178.6	175.4	176.2	176.2	179.5	183.5	186.8	190.1	194.2	201.6
22.5°	202.4	201.6	207.3	208.1	212.2	217.1	224.5	229.4	237.6	241.7	252.4
25°	233.5	239.3	249.9	253.2	259.8	267.9	279.4	286.0	295.8	300.7	313.0
27.5°	264.7	273.7	286.8	290.9	296.6	309.7	317.9	323.7	328.6	331.9	339.2
30°	262.2	270.4	283.5	284.3	292.5	301.5	306.5	311.4	314.7	313.8	317.9
32.5°	222.1	229.4	241.7	241.7	250.7	258.1	260.6	264.7	264.7	264.7	266.3
35°	170.4	175.4	183.5	186.0	193.4	198.3	199.9	204.9	204.9	203.2	203.2
37.5°	118.0	124.6	130.3	131.9	136.8	140.1	144.2	145.0	143.4	144.2	144.2
40°	77.0	81.1	85.2	86.0	90.1	92.6	96.7	96.7	97.5	96.7	98.3
42.5°	47.5	50.8	53.3	54.9	56.5	58.2	60.6	61.5	62.3	61.5	63.1
45°	29.5	31.1	32.8	33.6	34.4	35.2	37.7	37.7	37.7	37.7	38.5
47.5°	18.0	18.8	19.7	19.7	20.5	21.3	22.1	22.1	22.1	22.1	22.9
50°	10.7	11.5	11.5	11.5	12.3	12.3	13.1	13.1	13.1	12.3	13.1
52.5°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	6.6	7.4
55°	6.6	6.6	5.7	5.7	5.7	5.7	5.7	4.9	4.1	4.1	3.3
57.5°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	4.1	3.3	2.5
60°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.5
62.5°	6.6	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.5
65°	6.6	6.6	5.7	5.7	5.7	4.9	4.9	4.1	4.1	3.3	2.5
67.5°	6.6	6.6	6.6	5.7	6.6	5.7	4.9	4.9	4.1	3.3	3.3
70°	7.4	6.6	6.6	6.6	6.6	5.7	5.7	4.9	4.1	3.3	3.3
72.5°	7.4	7.4	6.6	6.6	6.6	5.7	5.7	4.9	4.1	4.1	3.3
75°	7.4	7.4	6.6	6.6	6.6	5.7	5.7	4.9	4.9	4.1	3.3
77.5°	7.4	7.4	7.4	6.6	6.6	6.6	5.7	5.7	4.9	4.1	3.3
80°	7.4	7.4	7.4	7.4	7.4	6.6	6.6	5.7	4.9	4.1	3.3
82.5°	8.2	7.4	7.4	7.4	7.4	6.6	6.6	5.7	4.9	4.1	4.1
85°	8.2	8.2	7.4	7.4	7.4	6.6	6.6	5.7	4.9	4.9	4.1
87.5°	8.2	7.4	7.4	7.4	7.4	6.6	6.6	5.7	4.9	4.1	4.1
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: P209088

CATALOG NUMBER: LDSQA6A65927D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	888.2	888.2	888.2	888.2	888.2	888.2	888.2	888.2
2.5°	548.2	541.6	541.6	530.2	528.5	519.5	526.9	522.0
5°	373.7	363.0	359.7	348.3	344.2	333.5	336.8	332.7
7.5°	235.2	224.5	221.2	213.0	208.1	199.9	200.8	198.3
10°	143.4	133.6	131.1	128.6	126.2	125.4	126.2	125.4
12.5°	130.3	129.5	127.8	128.6	127.0	127.8	128.6	127.8
15°	141.8	143.4	141.8	142.6	141.8	143.4	144.2	144.2
17.5°	166.3	169.6	168.0	170.4	169.6	173.7	173.7	173.7
20°	204.0	209.8	208.1	211.4	211.4	216.3	216.3	218.0
22.5°	256.5	263.9	263.0	270.4	268.8	274.5	274.5	276.1
25°	319.6	326.9	327.8	332.7	331.9	337.6	337.6	339.2
27.5°	345.8	349.9	349.1	351.5	352.3	355.6	358.1	356.4
30°	324.5	327.8	326.9	328.6	328.6	331.0	333.5	331.0
32.5°	272.9	275.3	275.3	278.6	276.1	277.0	281.1	278.6
35°	209.0	210.6	209.0	210.6	211.4	211.4	215.5	214.7
37.5°	149.1	150.0	150.0	152.4	150.0	150.0	154.0	154.9
40°	100.0	100.8	100.0	103.2	101.6	101.6	104.1	101.6
42.5°	63.9	64.7	63.9	66.4	64.7	66.4	67.2	68.0
45°	39.3	39.3	38.5	40.2	39.3	40.2	41.0	41.0
47.5°	22.9	22.9	22.1	23.8	22.9	22.9	22.9	23.8
50°	12.3	12.3	12.3	13.1	12.3	12.3	12.3	11.5
52.5°	6.6	6.6	5.7	6.6	5.7	5.7	5.7	5.7
55°	3.3	2.5	2.5	2.5	1.6	1.6	1.6	1.6
57.5°	2.5	1.6	1.6	0.8	0.8	0.8	0.0	0.0
60°	1.6	1.6	0.8	0.8	0.0	0.0	0.0	0.0
62.5°	1.6	1.6	0.8	0.8	0.0	0.0	0.0	0.0
65°	1.6	1.6	0.8	0.8	0.0	0.0	0.0	0.0
67.5°	2.5	1.6	1.6	0.8	0.8	0.0	0.0	0.0
70°	2.5	1.6	1.6	0.8	0.8	0.0	0.0	0.0
72.5°	2.5	1.6	1.6	1.6	0.8	0.8	0.0	0.0
75°	2.5	2.5	1.6	1.6	0.8	0.8	0.0	0.0
77.5°	3.3	2.5	1.6	1.6	0.8	0.8	0.0	0.0
80°	3.3	2.5	1.6	1.6	1.6	0.8	0.8	0.8
82.5°	3.3	2.5	2.5	1.6	1.6	0.8	0.8	0.8
85°	3.3	2.5	2.5	1.6	1.6	0.8	0.8	0.8
87.5°	3.3	2.5	2.5	1.6	1.6	0.8	0.8	0.8
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)