

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: P209096

Luminaire Tested: **LDSQA6A75927D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209096
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: LDSQA6A75927D010TE 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: 5459.9 lumens
Efficiency: N/A
Efficacy: 68.7 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

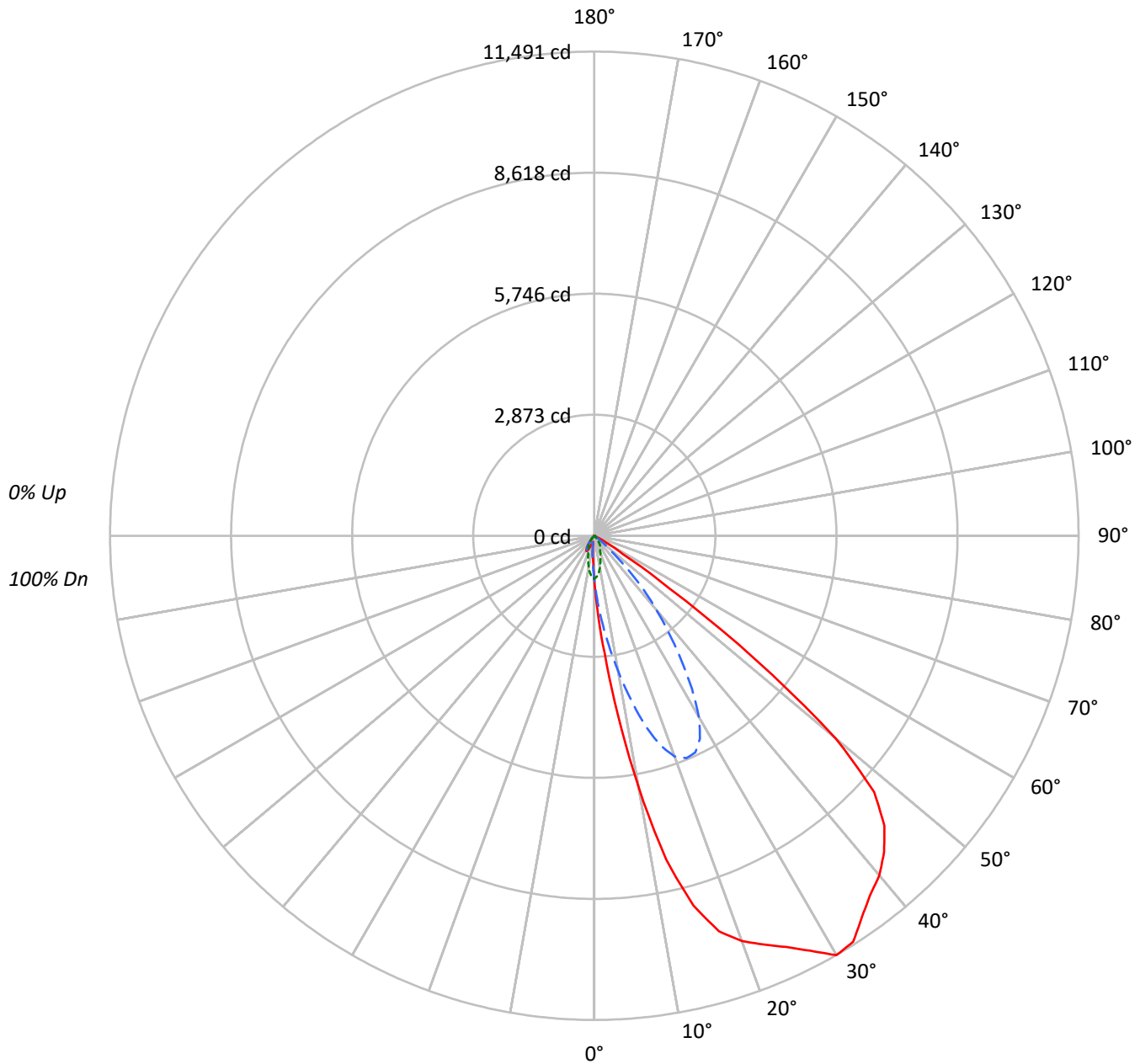
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					10
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°	44059	44059	44059
5°	120930	40597	16566
10°	264999	33223	6313
15°	404785	25287	7404
20°	468984	18813	11505
25°	511599	15473	18566
30°	571296	14035	18962
35°	581264	9624	12998
40°	591475	4564	6582
45°	592434	1900	2874
50°	500850	824	884
55°	161278	570	143
60°	32025	654	0
65°	3270	774	0
70°	352	1070	0
75°	0	1414	0
80°	0	2331	223
85°	0	4644	445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.9	2.5
10°-20°	718.4	13.2
20°-30°	1375.5	25.2
30°-40°	1620.6	29.7
40°-50°	1272.9	23.3
50°-60°	310.2	5.7
60°-70°	13.3	0.2
70°-80°	5.0	0.1
80°-90°	5.0	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°	2232.8	40.9
0°-40°	3853.5	70.6
0°-60°	5436.6	99.6
0°-90°	5459.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5459.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1023	1023	1023	1023	1023	
5°	2798	2025	939	492	383	370
15°	9081	4664	567	162	166	2535
25°	10769	5672	326	341	391	5019
35°	11059	3585	183	236	247	6934
45°	9730	1108	31	43	47	7310
55°	2148	41	8	5	2	2557
65°	32	5	8	5	0	85
75°	0	5	8	6	0	0
85°	0	6	9	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°	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3
2.5°	1753.9	1750.1	1724.7	1748.3	1676.5	1673.7	1641.6	1627.4	1585.9	1546.2	1489.6
5°	2798.0	2736.6	2686.6	2688.5	2550.6	2525.2	2453.4	2380.7	2269.3	2165.5	2024.8
7.5°	4264.9	4192.2	4086.5	4042.1	3778.8	3701.4	3553.2	3359.6	3117.0	2875.4	2614.8
10°	6061.3	6072.6	5935.8	5809.3	5410.9	5254.2	5014.4	4633.1	4173.4	3719.3	3257.7
12.5°	7869.0	7861.5	7698.2	7506.6	7015.7	6794.8	6475.7	6000.0	5391.1	4686.9	3964.7
15°	9081.1	9134.9	9066.0	8913.1	8494.0	8241.0	7881.3	7235.6	6493.7	5638.4	4664.2
17.5°	9842.0	9893.0	9868.4	9748.5	9378.5	9108.5	8808.3	8279.7	7421.6	6346.4	5215.5
20°	10235.6	10315.9	10304.5	10174.3	9894.8	9671.1	9339.8	8849.8	8106.9	6838.2	5572.3
22.5°	10498.0	10559.4	10576.4	10429.1	10140.3	9927.9	9685.3	9188.7	8490.2	7138.4	5713.9
25°	10769.0	10877.5	10770.9	10589.6	10324.4	10120.5	9861.8	9386.0	8673.3	7261.1	5671.5
27.5°	11101.3	11153.2	10911.5	10746.3	10451.8	10230.9	9956.2	9500.3	8705.4	7162.9	5428.9
30°	11491.1	11275.9	11106.9	10779.4	10445.2	10230.0	9950.5	9428.5	8536.4	6837.3	4958.7
32.5°	11426.9	11229.6	11038.0	10691.6	10361.2	10147.8	9836.3	9189.7	8137.1	6292.6	4310.2
35°	11058.8	11101.3	10894.5	10607.5	10233.7	10013.8	9673.9	8849.8	7459.4	5541.2	3585.3
37.5°	10748.2	10841.7	10706.7	10441.4	10061.9	9764.6	9305.8	8304.2	6574.8	4587.8	2898.0
40°	10523.5	10553.7	10481.1	10183.7	9727.8	9298.2	8767.7	7324.4	5500.6	3601.3	2287.3
42.5°	10175.2	10255.4	10127.1	9802.3	9111.3	8625.2	7856.8	6192.5	4272.5	2750.8	1721.8
45°	9729.6	9806.1	9647.5	9107.6	8146.6	7433.9	6496.5	4828.5	3160.5	2027.7	1108.2
47.5°	9002.8	9050.0	8743.2	7996.5	6599.4	5928.2	4967.2	3366.2	2036.2	1133.7	539.0
50°	7477.3	7454.6	6822.2	5903.7	4414.1	3709.9	2956.6	1824.7	914.7	537.1	337.0
52.5°	4819.0	4767.1	4141.3	3305.8	2235.4	1705.8	1281.9	787.3	476.7	300.2	133.1
55°	2148.5	2128.7	1742.6	1353.7	914.7	787.3	601.3	386.1	253.9	104.8	40.6
57.5°	796.7	778.8	686.3	575.8	441.8	367.2	291.7	185.0	65.1	34.9	21.7
60°	371.9	371.0	326.6	269.0	186.9	141.6	82.1	43.4	27.4	18.9	12.3
62.5°	118.9	116.1	81.2	59.5	42.5	36.8	29.3	21.7	14.2	10.4	7.6
65°	32.1	32.1	29.3	24.5	19.8	17.0	14.2	10.4	6.6	5.7	4.7
67.5°	12.3	12.3	11.3	10.4	7.6	6.6	5.7	4.7	3.8	4.7	4.7
70°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.8	3.8	4.7
72.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	4.7
75°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	4.7
77.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	4.7
80°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	4.7
82.5°	0.0	0.0	0.9	1.9	1.9	1.9	2.8	3.8	3.8	4.7	5.7
85°	0.0	0.0	0.9	1.9	1.9	2.8	2.8	3.8	3.8	4.7	5.7
87.5°	0.0	0.0	0.9	1.9	1.9	2.8	2.8	3.8	3.8	4.7	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3
2.5°	1448.1	1385.8	1299.9	1249.8	1237.6	1211.1	1164.9	1096.0	1039.3	984.6	952.5
5°	1905.9	1758.6	1593.4	1477.3	1430.1	1366.9	1254.6	1138.4	1031.8	939.3	866.6
7.5°	2391.1	2148.5	1881.4	1666.1	1588.7	1488.7	1305.5	1132.8	986.5	858.1	760.9
10°	2873.5	2482.7	2120.2	1808.7	1682.2	1546.2	1304.6	1080.9	909.1	759.9	652.3
12.5°	3355.9	2794.2	2295.8	1894.6	1730.3	1558.5	1265.9	1001.6	810.9	658.9	556.0
15°	3801.4	3042.5	2414.7	1923.8	1725.6	1522.6	1187.5	905.3	708.0	567.3	472.0
17.5°	4133.7	3172.7	2442.1	1879.5	1651.0	1426.4	1067.6	792.0	609.8	486.2	388.9
20°	4297.0	3193.5	2377.0	1753.0	1522.6	1289.5	936.4	683.4	525.8	410.6	328.5
22.5°	4297.0	3095.3	2235.4	1594.4	1362.2	1131.8	809.9	593.8	459.7	357.8	288.9
25°	4133.7	2899.9	2045.6	1411.3	1185.6	976.1	700.4	526.7	408.7	325.7	268.1
27.5°	3816.5	2629.9	1802.1	1207.4	1012.0	837.3	613.6	465.4	370.0	293.6	294.5
30°	3380.4	2298.6	1522.6	992.1	833.5	688.2	516.4	389.9	296.4	282.3	290.7
32.5°	2876.3	1902.1	1206.4	769.3	645.7	541.8	392.7	275.6	236.0	237.9	247.3
35°	2359.0	1497.2	908.1	570.2	480.5	392.7	257.7	181.2	179.4	183.1	189.7
37.5°	1862.5	1120.5	657.0	417.2	322.8	241.7	138.8	124.6	124.6	128.4	132.2
40°	1395.2	794.8	452.2	247.3	156.7	110.4	87.8	81.2	80.2	81.2	85.9
42.5°	958.1	503.1	269.0	99.1	75.5	64.2	55.7	51.0	50.0	51.0	53.8
45°	538.1	309.6	104.8	52.9	45.3	40.6	34.9	32.1	31.2	31.2	33.0
47.5°	337.0	122.7	47.2	33.0	28.3	26.4	22.7	20.8	19.8	19.8	20.8
50°	129.3	48.1	29.3	21.7	18.9	17.0	15.1	13.2	12.3	12.3	13.2
52.5°	44.4	28.3	18.9	14.2	12.3	11.3	9.4	8.5	8.5	8.5	8.5
55°	24.5	17.0	11.3	8.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6
57.5°	15.1	10.4	7.6	6.6	6.6	6.6	6.6	6.6	6.6	7.6	7.6
60°	8.5	6.6	5.7	5.7	5.7	5.7	6.6	6.6	6.6	7.6	7.6
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	6.6	6.6	7.6	7.6	7.6
65°	4.7	4.7	4.7	5.7	5.7	5.7	6.6	6.6	7.6	7.6	7.6
67.5°	4.7	4.7	5.7	5.7	5.7	6.6	6.6	7.6	7.6	7.6	7.6
70°	4.7	5.7	5.7	6.6	6.6	6.6	7.6	7.6	7.6	8.5	8.5
72.5°	4.7	5.7	5.7	6.6	6.6	6.6	7.6	7.6	8.5	8.5	8.5
75°	5.7	5.7	5.7	6.6	6.6	6.6	7.6	8.5	8.5	8.5	8.5
77.5°	5.7	5.7	6.6	6.6	6.6	7.6	7.6	8.5	8.5	8.5	8.5
80°	5.7	5.7	6.6	6.6	7.6	7.6	8.5	8.5	8.5	9.4	9.4
82.5°	5.7	5.7	6.6	7.6	7.6	7.6	8.5	8.5	9.4	9.4	9.4
85°	5.7	6.6	6.6	7.6	7.6	7.6	8.5	8.5	9.4	9.4	9.4
87.5°	5.7	6.6	6.6	7.6	7.6	7.6	8.5	8.5	9.4	9.4	9.4
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°	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3
2.5°	910.0	870.4	830.7	801.4	787.3	773.1	742.0	701.4	684.4	659.8	645.7
5°	792.9	725.9	673.1	638.1	617.4	590.0	554.1	514.5	491.8	466.3	449.3
7.5°	672.1	593.8	542.8	510.7	489.9	455.9	410.6	363.4	336.1	307.7	287.9
10°	566.4	491.8	434.2	397.4	371.0	331.3	286.0	253.0	229.4	204.8	185.0
12.5°	472.9	392.7	331.3	300.2	282.3	244.5	206.7	169.9	155.8	151.0	151.0
15°	383.3	310.6	258.7	232.2	213.3	172.7	165.2	163.3	162.4	161.4	163.3
17.5°	312.5	251.1	196.3	183.1	181.2	180.3	181.2	181.2	182.2	185.0	189.7
20°	262.4	205.8	202.0	203.0	203.0	206.7	211.5	215.2	219.0	223.7	232.2
22.5°	233.2	232.2	238.8	239.8	244.5	250.2	258.7	264.3	273.8	278.5	290.7
25°	269.0	275.6	287.9	291.7	299.2	308.7	321.9	329.5	340.8	346.4	360.6
27.5°	304.9	315.3	330.4	335.1	341.7	356.8	366.3	372.9	378.5	382.3	390.8
30°	302.1	311.5	326.6	327.6	337.0	347.4	353.0	358.7	362.5	361.5	366.3
32.5°	255.8	264.3	278.5	278.5	288.9	297.4	300.2	304.9	304.9	304.9	306.8
35°	196.3	202.0	211.5	214.3	222.8	228.4	230.3	236.0	236.0	234.1	234.1
37.5°	135.9	143.5	150.1	152.0	157.6	161.4	166.1	167.1	165.2	166.1	166.1
40°	88.7	93.5	98.2	99.1	103.8	106.7	111.4	111.4	112.3	111.4	113.3
42.5°	54.8	58.5	61.4	63.2	65.1	67.0	69.9	70.8	71.7	70.8	72.7
45°	34.0	35.9	37.8	38.7	39.6	40.6	43.4	43.4	43.4	43.4	44.4
47.5°	20.8	21.7	22.7	22.7	23.6	24.5	25.5	25.5	25.5	25.5	26.4
50°	12.3	13.2	13.2	13.2	14.2	14.2	15.1	15.1	15.1	14.2	15.1
52.5°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.6	8.5
55°	7.6	7.6	6.6	6.6	6.6	6.6	6.6	5.7	4.7	4.7	3.8
57.5°	6.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	4.7	3.8	2.8
60°	6.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	3.8	2.8
62.5°	7.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	3.8	2.8
65°	7.6	7.6	6.6	6.6	6.6	5.7	5.7	4.7	4.7	3.8	2.8
67.5°	7.6	7.6	7.6	6.6	7.6	6.6	5.7	5.7	4.7	3.8	3.8
70°	8.5	7.6	7.6	7.6	7.6	6.6	6.6	5.7	4.7	3.8	3.8
72.5°	8.5	8.5	7.6	7.6	7.6	6.6	6.6	5.7	4.7	4.7	3.8
75°	8.5	8.5	7.6	7.6	7.6	6.6	6.6	5.7	5.7	4.7	3.8
77.5°	8.5	8.5	8.5	7.6	7.6	7.6	6.6	6.6	5.7	4.7	3.8
80°	8.5	8.5	8.5	8.5	8.5	7.6	7.6	6.6	5.7	4.7	3.8
82.5°	9.4	8.5	8.5	8.5	8.5	7.6	7.6	6.6	5.7	4.7	4.7
85°	9.4	9.4	8.5	8.5	8.5	7.6	7.6	6.6	5.7	5.7	4.7
87.5°	9.4	8.5	8.5	8.5	8.5	7.6	7.6	6.6	5.7	4.7	4.7
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: P209096

CATALOG NUMBER: LDSQA6A75927D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3	1023.3
2.5°	631.5	624.0	624.0	610.8	608.9	598.5	607.0	601.3
5°	430.5	418.2	414.4	401.2	396.5	384.2	388.0	383.3
7.5°	270.9	258.7	254.9	245.4	239.8	230.3	231.3	228.4
10°	165.2	153.9	151.0	148.2	145.4	144.4	145.4	144.4
12.5°	150.1	149.1	147.3	148.2	146.3	147.3	148.2	147.3
15°	163.3	165.2	163.3	164.3	163.3	165.2	166.1	166.1
17.5°	191.6	195.4	193.5	196.3	195.4	200.1	200.1	200.1
20°	235.1	241.7	239.8	243.5	243.5	249.2	249.2	251.1
22.5°	295.5	304.0	303.0	311.5	309.6	316.2	316.2	318.1
25°	368.2	376.6	377.6	383.3	382.3	388.9	388.9	390.8
27.5°	398.4	403.1	402.1	405.0	405.9	409.7	412.5	410.6
30°	373.8	377.6	376.6	378.5	378.5	381.4	384.2	381.4
32.5°	314.3	317.2	317.2	321.0	318.1	319.1	323.8	321.0
35°	240.7	242.6	240.7	242.6	243.5	243.5	248.3	247.3
37.5°	171.8	172.7	172.7	175.6	172.7	172.7	177.5	178.4
40°	115.2	116.1	115.2	118.9	117.1	117.1	119.9	117.1
42.5°	73.6	74.6	73.6	76.5	74.6	76.5	77.4	78.4
45°	45.3	45.3	44.4	46.3	45.3	46.3	47.2	47.2
47.5°	26.4	26.4	25.5	27.4	26.4	26.4	26.4	27.4
50°	14.2	14.2	14.2	15.1	14.2	14.2	14.2	13.2
52.5°	7.6	7.6	6.6	7.6	6.6	6.6	6.6	6.6
55°	3.8	2.8	2.8	2.8	1.9	1.9	1.9	1.9
57.5°	2.8	1.9	1.9	0.9	0.9	0.9	0.0	0.0
60°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.8	1.9	1.9	0.9	0.9	0.0	0.0	0.0
70°	2.8	1.9	1.9	0.9	0.9	0.0	0.0	0.0
72.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.0	0.0
75°	2.8	2.8	1.9	1.9	0.9	0.9	0.0	0.0
77.5°	3.8	2.8	1.9	1.9	0.9	0.9	0.0	0.0
80°	3.8	2.8	1.9	1.9	1.9	0.9	0.9	0.9
82.5°	3.8	2.8	2.8	1.9	1.9	0.9	0.9	0.9
85°	3.8	2.8	2.8	1.9	1.9	0.9	0.9	0.9
87.5°	3.8	2.8	2.8	1.9	1.9	0.9	0.9	0.9
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)