

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: P209046

Luminaire Tested: **LDSQA6A55835D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209046
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26687)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A55835D010TE LARH30NF 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 30° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5108.2 lumens
Efficiency: N/A
Efficacy: 84.0 lumens/watt
Spacing Criteria (0/90/45): 2.58 / 0.47 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

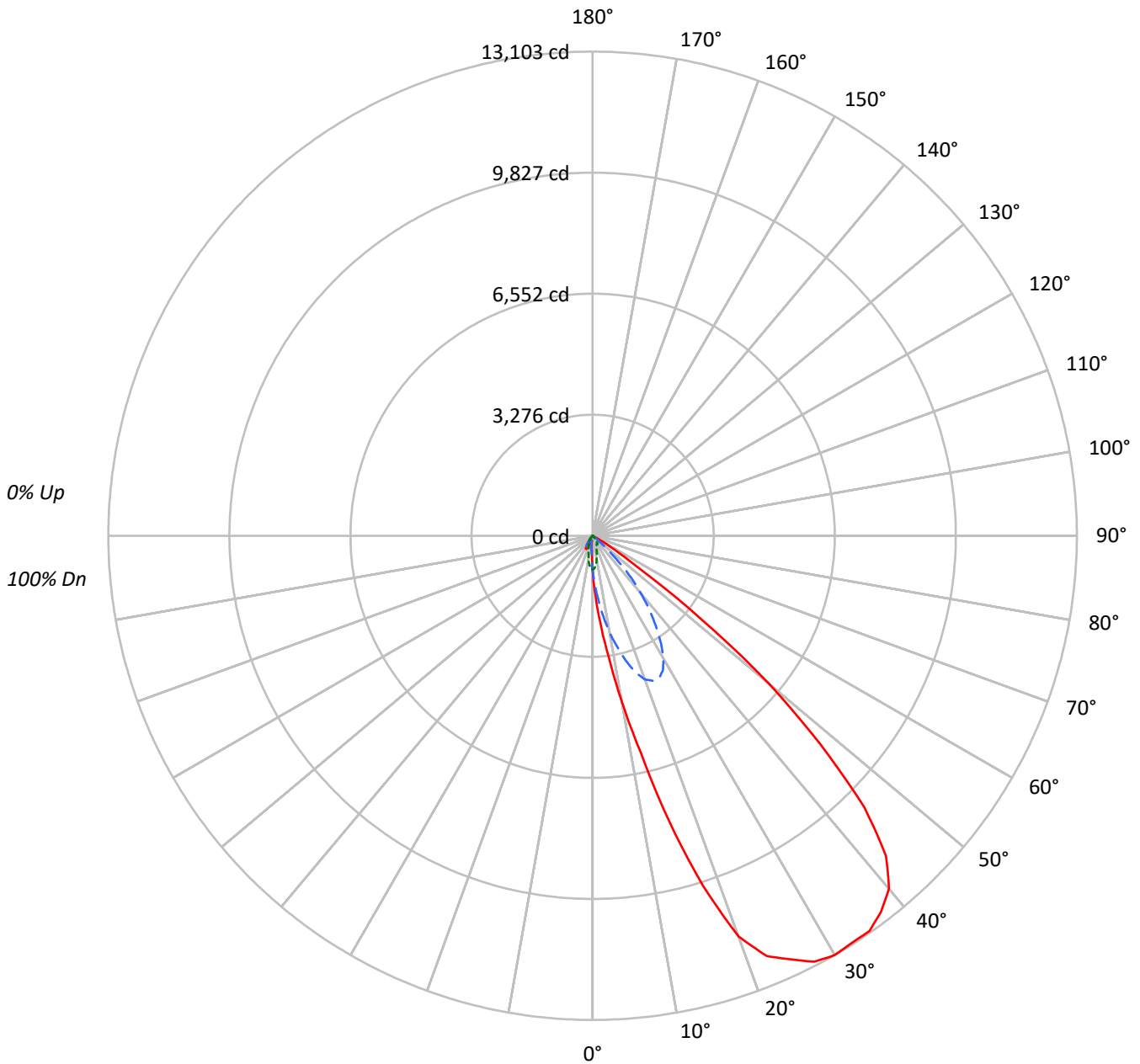
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	89	83	78	86	81	77	83	79	76	81	77	74	73																			
4	91	82	75	70	89	81	74	69	78	73	68	76	71	67	74	70	67	65																			
5	85	74	67	62	83	73	67	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	43	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	40	36	46	40	36	45	40	36	34																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	39671	39671	39671
5°	101766	36089	11242
10°	198375	27736	5399
15°	356101	18837	7243
20°	528699	14300	11959
25°	600950	11782	18756
30°	651439	12882	17639
35°	686177	8347	10938
40°	701013	3704	5323
45°	633151	1413	1979
50°	416787	563	563
55°	114137	488	0
60°	22794	560	0
65°	1610	754	0
70°	239	932	0
75°	0	1397	0
80°	0	2083	223
85°	0	4150	445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	112.9	2.2
10°-20°	599.6	11.7
20°-30°	1359.1	26.6
30°-40°	1631.4	31.9
40°-50°	1149.7	22.5
50°-60°	237.2	4.6
60°-70°	8.4	0.2
70°-80°	5.0	0.1
80°-90°	4.9	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°	2071.6	40.6
0°-40°	3702.9	72.5
0°-60°	5089.9	99.6
0°-90°	5108.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5108.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	921	921	921	921	921	
5°	2355	1716	835	347	260	290
15°	7989	3515	423	150	162	2371
25°	12650	4251	248	347	395	5838
35°	13055	2977	159	208	208	8116
45°	10398	1021	23	32	32	7648
55°	1520	20	6	5	0	2004
65°	16	5	7	5	0	47
75°	0	5	8	6	0	0
85°	0	6	8	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°	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4
2.5°	1570.7	1523.3	1541.9	1487.1	1475.0	1464.8	1475.0	1415.5	1382.1	1339.4	1305.0
5°	2354.6	2297.9	2310.9	2215.3	2171.6	2141.9	2136.3	2013.7	1921.8	1820.5	1715.6
7.5°	3277.9	3224.0	3216.6	3067.9	2977.8	2926.8	2905.4	2729.8	2571.0	2390.8	2193.9
10°	4537.4	4414.8	4376.7	4161.2	3989.4	3880.7	3746.9	3466.4	3187.8	2915.6	2664.8
12.5°	6003.1	5936.2	5841.5	5461.6	5160.6	5006.4	4806.7	4368.3	3946.6	3497.1	3077.2
15°	7988.9	7751.1	7589.5	7040.6	6555.7	6317.9	6026.3	5355.7	4718.5	4149.1	3514.7
17.5°	9929.3	9804.8	9552.2	8839.7	8093.0	7717.7	7283.0	6371.8	5471.8	4661.8	3887.2
20°	11538.9	11421.9	11134.0	10462.4	9633.9	9080.3	8533.2	7283.0	6107.1	5070.5	4136.1
22.5°	12309.9	12235.6	12000.6	11425.6	10719.7	10193.0	9605.1	8058.6	6577.1	5338.0	4249.4
25°	12649.8	12615.5	12464.1	12010.8	11345.7	10899.0	10343.5	8607.5	6869.7	5462.5	4251.3
27.5°	12994.4	13000.9	12666.5	12308.0	11677.3	11248.2	10713.2	8850.9	6922.6	5392.8	4112.0
30°	13103.1	13034.4	12886.7	12372.1	11773.0	11316.9	10742.9	8738.5	6705.3	5106.7	3834.2
32.5°	13058.5	13031.6	12869.0	12324.7	11610.5	11108.0	10455.9	8292.7	6276.1	4698.1	3440.4
35°	13054.8	13004.6	12632.2	12165.0	11285.4	10664.9	9805.7	7571.9	5668.7	4159.3	2976.9
37.5°	12818.9	12694.4	12414.8	11785.1	10625.9	9839.2	8876.0	6691.3	4925.6	3554.7	2517.1
40°	12472.4	12305.2	11937.4	10984.4	9483.4	8576.9	7636.9	5691.0	4138.9	2958.3	2028.6
42.5°	11748.9	11496.2	10976.1	9665.5	7961.1	7143.7	6361.6	4677.6	3375.4	2410.3	1548.4
45°	10398.3	10052.8	9349.7	7910.9	6431.3	5764.4	5135.5	3763.6	2702.0	1788.0	1020.8
47.5°	8357.7	8037.2	7397.3	6297.5	5043.6	4479.8	3978.2	2799.5	1831.7	1035.7	487.6
50°	6222.3	5947.3	5447.6	4376.7	3385.6	2942.6	2513.4	1590.2	858.2	492.3	202.5
52.5°	3712.6	3576.0	3133.0	2427.0	1671.9	1440.6	1156.4	673.4	432.8	178.3	54.8
55°	1520.5	1403.5	1237.2	992.9	727.3	616.7	527.6	332.5	134.7	37.2	20.4
57.5°	687.3	661.3	586.1	460.7	334.4	280.5	189.5	63.2	29.7	18.6	12.1
60°	264.7	238.7	204.3	110.5	47.4	39.9	32.5	21.4	14.9	10.2	7.4
62.5°	38.1	36.2	32.5	26.0	20.4	18.6	15.8	11.1	8.4	6.5	5.6
65°	15.8	15.8	13.9	11.1	9.3	8.4	7.4	5.6	4.6	4.6	4.6
67.5°	6.5	6.5	5.6	4.6	3.7	3.7	3.7	2.8	3.7	3.7	4.6
70°	1.9	1.9	1.9	1.9	1.9	1.9	2.8	2.8	3.7	3.7	4.6
72.5°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.7	4.6	4.6
75°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.7	4.6	4.6
77.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	4.6
80°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	5.6
82.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	5.6
85°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	5.6
87.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	5.6
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°	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4
2.5°	1275.3	1215.8	1199.1	1147.1	1103.5	1082.1	1055.2	994.8	949.3	888.9	852.7
5°	1642.2	1529.8	1440.6	1332.0	1260.4	1214.0	1141.5	1031.0	941.8	835.0	758.9
7.5°	2038.8	1833.5	1672.8	1493.6	1390.5	1309.7	1186.1	1027.3	896.3	754.2	636.3
10°	2421.5	2115.0	1862.3	1605.0	1469.4	1357.0	1187.1	987.4	813.7	634.4	509.9
12.5°	2758.6	2363.0	2007.2	1676.5	1508.4	1368.2	1155.5	915.8	705.9	522.0	412.4
15°	3040.1	2555.2	2109.4	1703.5	1511.2	1344.0	1089.5	813.7	586.1	422.6	345.5
17.5°	3253.7	2656.5	2141.0	1671.0	1457.3	1275.3	988.3	684.6	475.6	358.5	290.7
20°	3364.2	2676.0	2095.5	1582.7	1358.0	1171.3	855.5	555.4	403.1	312.1	243.4
22.5°	3378.2	2621.2	1986.8	1456.4	1232.6	1044.9	708.7	463.5	359.5	275.9	214.6
25°	3295.5	2502.3	1831.7	1313.4	1095.1	900.0	576.8	415.2	327.0	248.0	247.1
27.5°	3119.0	2297.9	1645.9	1147.1	928.8	731.9	489.5	375.2	291.7	262.9	279.6
30°	2870.1	2036.0	1417.4	937.2	725.4	562.9	412.4	309.3	256.4	259.1	273.1
32.5°	2532.9	1710.9	1149.0	686.4	519.2	423.5	309.3	210.8	212.7	213.6	225.7
35°	2109.4	1371.9	858.2	461.6	365.0	298.2	174.6	155.1	157.9	158.8	167.2
37.5°	1690.5	1054.2	570.3	307.4	229.4	157.0	108.7	104.0	105.9	105.0	114.2
40°	1294.8	734.7	341.8	152.3	88.2	73.4	66.9	64.1	65.0	65.9	71.5
42.5°	916.8	398.5	169.0	57.6	46.4	42.7	39.9	38.1	39.0	39.0	42.7
45°	465.3	188.6	57.6	31.6	28.8	26.0	24.1	23.2	23.2	23.2	25.1
47.5°	201.6	62.2	26.9	19.5	17.6	16.7	14.9	13.9	13.9	13.9	14.9
50°	63.2	25.1	16.7	13.0	11.1	10.2	9.3	9.3	9.3	8.4	9.3
52.5°	23.2	15.8	11.1	8.4	7.4	7.4	7.4	6.5	7.4	6.5	7.4
55°	13.9	10.2	7.4	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
57.5°	9.3	7.4	6.5	6.5	5.6	5.6	6.5	6.5	6.5	6.5	6.5
60°	6.5	6.5	5.6	5.6	5.6	5.6	6.5	6.5	6.5	6.5	6.5
62.5°	5.6	5.6	5.6	5.6	5.6	5.6	6.5	6.5	6.5	6.5	7.4
65°	4.6	5.6	5.6	5.6	5.6	5.6	6.5	6.5	7.4	7.4	7.4
67.5°	4.6	5.6	5.6	6.5	6.5	6.5	6.5	7.4	7.4	7.4	7.4
70°	5.6	5.6	6.5	6.5	6.5	6.5	7.4	7.4	7.4	7.4	8.4
72.5°	5.6	5.6	6.5	6.5	6.5	6.5	7.4	7.4	8.4	8.4	8.4
75°	5.6	6.5	6.5	6.5	6.5	7.4	7.4	7.4	8.4	8.4	8.4
77.5°	5.6	6.5	6.5	7.4	7.4	7.4	7.4	8.4	8.4	8.4	8.4
80°	5.6	6.5	6.5	7.4	7.4	7.4	8.4	8.4	8.4	8.4	9.3
82.5°	5.6	6.5	6.5	7.4	7.4	7.4	8.4	8.4	8.4	8.4	9.3
85°	6.5	6.5	7.4	7.4	7.4	7.4	8.4	8.4	8.4	8.4	9.3
87.5°	6.5	6.5	7.4	7.4	7.4	7.4	8.4	8.4	9.3	8.4	9.3
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°	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4
2.5°	804.4	750.5	713.3	699.4	672.5	629.8	604.7	581.5	537.8	528.5	504.4
5°	671.5	585.2	523.9	500.6	470.0	433.8	398.5	375.2	347.4	336.2	319.5
7.5°	529.4	443.1	390.1	371.5	350.2	320.4	288.9	265.6	236.9	222.0	208.1
10°	416.1	352.0	307.4	288.9	266.6	235.0	202.5	171.8	146.8	131.0	128.2
12.5°	338.1	285.2	237.8	218.3	192.3	160.7	137.5	136.5	134.7	133.8	135.6
15°	276.8	225.7	175.6	154.2	146.8	145.8	148.6	151.4	150.5	153.3	155.1
17.5°	227.6	172.8	161.6	162.5	163.5	166.3	170.9	178.3	179.3	183.9	187.6
20°	185.8	183.0	187.6	191.3	194.1	199.7	209.9	219.2	222.0	228.5	235.9
22.5°	210.8	219.2	229.4	234.1	237.8	248.0	259.1	274.0	279.6	287.9	298.2
25°	254.5	268.4	284.2	289.8	295.4	312.1	325.1	342.7	347.4	357.6	367.8
27.5°	290.7	305.6	322.3	329.7	334.4	351.1	362.2	373.4	373.4	379.0	386.4
30°	285.2	297.2	311.2	316.7	318.6	330.7	341.8	345.5	343.7	346.5	352.0
32.5°	236.9	246.1	257.3	261.9	263.8	272.1	281.4	281.4	280.5	280.5	284.2
35°	175.6	182.1	187.6	192.3	195.1	200.6	209.0	208.1	208.1	206.2	209.0
37.5°	118.0	121.7	128.2	130.0	131.0	134.7	141.2	141.2	139.3	140.3	142.1
40°	71.5	76.2	79.9	80.8	82.7	85.5	90.1	90.1	90.1	90.1	91.0
42.5°	42.7	45.5	48.3	48.3	49.2	52.9	54.8	54.8	54.8	54.8	55.7
45°	25.1	26.0	27.9	28.8	28.8	30.7	31.6	31.6	31.6	31.6	32.5
47.5°	14.9	15.8	15.8	16.7	16.7	17.6	18.6	18.6	17.6	17.6	17.6
50°	9.3	9.3	9.3	9.3	10.2	10.2	10.2	10.2	10.2	10.2	9.3
52.5°	7.4	7.4	7.4	7.4	6.5	6.5	6.5	6.5	5.6	5.6	4.6
55°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	5.6	4.6	3.7	2.8
57.5°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	3.7	2.8
60°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	3.7	2.8
62.5°	7.4	7.4	6.5	6.5	6.5	5.6	5.6	4.6	4.6	3.7	2.8
65°	7.4	7.4	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	2.8
67.5°	7.4	7.4	7.4	7.4	6.5	6.5	6.5	5.6	4.6	3.7	2.8
70°	8.4	8.4	7.4	7.4	7.4	6.5	6.5	5.6	4.6	4.6	3.7
72.5°	8.4	8.4	7.4	7.4	7.4	7.4	6.5	5.6	5.6	4.6	3.7
75°	8.4	8.4	8.4	8.4	7.4	7.4	6.5	6.5	5.6	4.6	3.7
77.5°	8.4	8.4	8.4	8.4	7.4	7.4	7.4	6.5	5.6	4.6	3.7
80°	8.4	8.4	8.4	8.4	8.4	7.4	7.4	6.5	5.6	4.6	3.7
82.5°	9.3	9.3	8.4	8.4	8.4	7.4	7.4	6.5	5.6	4.6	4.6
85°	9.3	9.3	8.4	8.4	8.4	7.4	7.4	6.5	5.6	5.6	4.6
87.5°	9.3	9.3	8.4	8.4	8.4	7.4	7.4	6.5	5.6	5.6	4.6
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: P209046

CATALOG NUMBER: LDSQA6A55835D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	921.4	921.4	921.4	921.4	921.4	921.4	921.4	921.4
2.5°	489.5	461.6	452.3	458.8	451.4	445.8	438.4	434.7
5°	306.5	286.1	279.6	281.4	274.9	269.4	261.9	260.1
7.5°	188.6	169.0	161.6	161.6	154.2	147.7	143.0	140.3
10°	126.3	122.6	123.5	124.5	123.5	124.5	121.7	123.5
12.5°	135.6	133.8	135.6	136.5	136.5	138.4	134.7	137.5
15°	157.9	156.0	158.8	160.7	160.7	163.5	159.8	162.5
17.5°	193.2	192.3	196.9	198.8	199.7	204.3	199.7	203.4
20°	244.3	243.4	249.9	252.6	251.7	261.0	254.5	261.0
22.5°	310.2	308.4	317.7	320.4	321.4	333.5	327.9	332.5
25°	376.2	378.0	382.7	387.3	388.3	398.5	390.1	394.8
27.5°	390.1	387.3	390.1	395.7	396.6	401.3	393.8	397.5
30°	353.0	348.3	349.2	355.7	357.6	359.5	353.0	354.8
32.5°	287.0	279.6	279.6	286.1	287.9	290.7	279.6	284.2
35°	211.8	205.3	205.3	209.9	210.8	212.7	204.3	208.1
37.5°	144.9	139.3	141.2	143.0	144.0	145.8	144.9	144.0
40°	92.9	89.2	92.0	92.0	92.9	93.8	93.8	94.7
42.5°	56.7	53.9	55.7	55.7	56.7	56.7	56.7	57.6
45°	32.5	31.6	31.6	32.5	32.5	32.5	31.6	32.5
47.5°	17.6	16.7	17.6	17.6	17.6	17.6	17.6	17.6
50°	9.3	8.4	8.4	8.4	8.4	8.4	8.4	8.4
52.5°	4.6	3.7	3.7	3.7	2.8	3.7	2.8	2.8
55°	2.8	1.9	1.9	1.9	0.9	0.9	0.0	0.0
57.5°	1.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
60°	1.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.8	1.9	0.9	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	1.9	1.9	1.9	0.9	0.9	0.0	0.0
77.5°	2.8	2.8	1.9	1.9	0.9	0.9	0.9	0.0
80°	3.7	2.8	1.9	1.9	1.9	0.9	0.9	0.9
82.5°	3.7	2.8	1.9	1.9	1.9	0.9	0.9	0.9
85°	3.7	2.8	2.8	1.9	1.9	0.9	0.9	0.9
87.5°	3.7	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)