

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: P209044

Luminaire Tested: **LDSQA6A55827D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209044
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: LDSQA6A55827D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4807.1 lumens
Efficiency: N/A
Efficacy: 79.1 lumens/watt
Spacing Criteria (0/90/45): 2.58 / 0.46 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

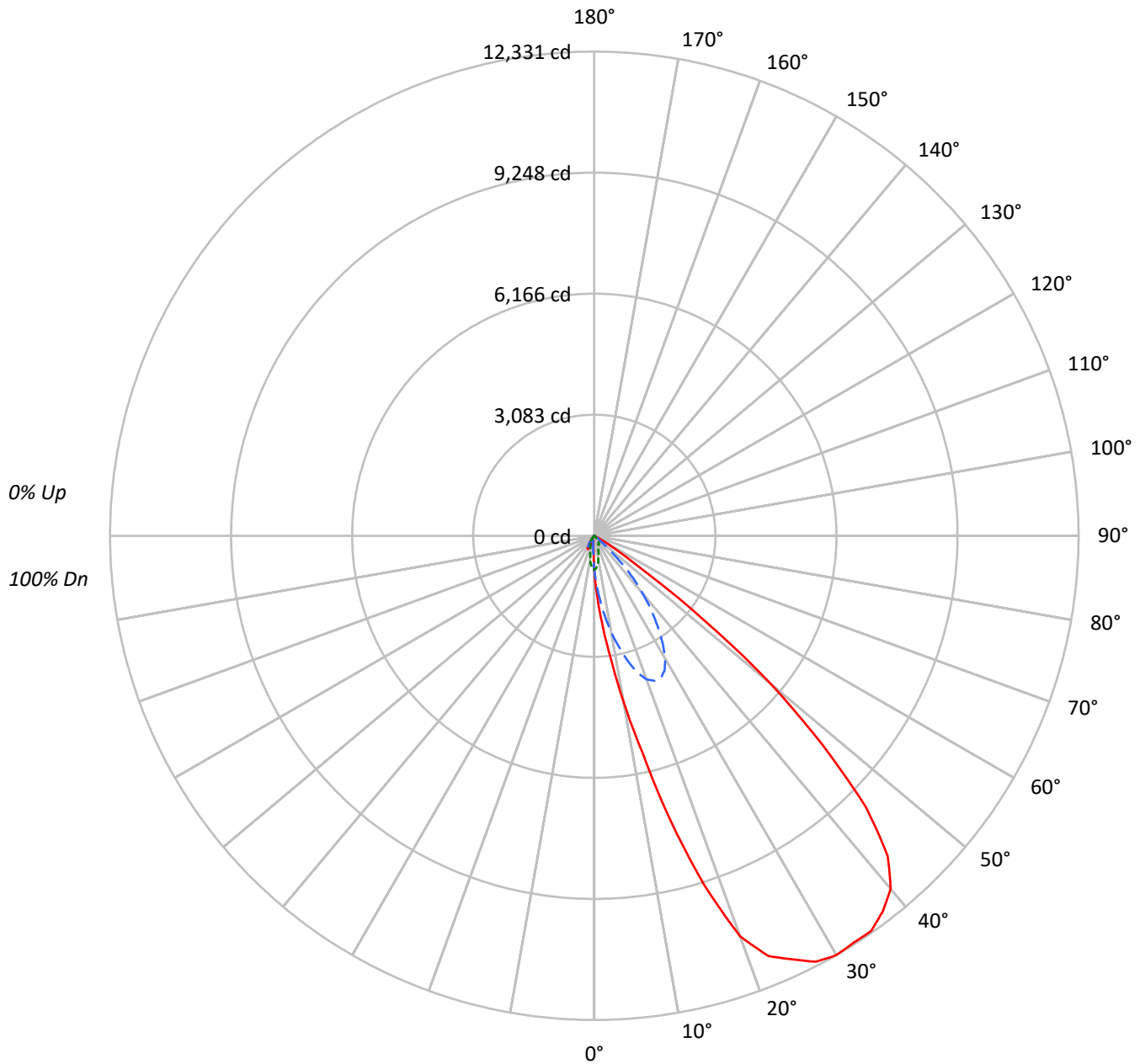
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10
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°	37334	37334	37334
5°	95767	33962	10576
10°	186684	26101	5085
15°	335116	17727	6820
20°	497543	13457	11253
25°	565538	11088	17649
30°	613048	12126	16600
35°	645741	7858	10291
40°	659703	3490	5014
45°	595838	1333	1863
50°	392224	529	529
55°	107411	458	0
60°	21450	525	0
65°	1518	713	0
70°	214	881	0
75°	0	1314	0
80°	0	1959	223
85°	0	3903	445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.2	2.2
10°-20°	564.3	11.7
20°-30°	1279.0	26.6
30°-40°	1535.2	31.9
40°-50°	1082.0	22.5
50°-60°	223.2	4.6
60°-70°	7.9	0.2
70°-80°	4.7	0.1
80°-90°	4.6	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°	1949.5	40.6
0°-40°	3484.7	72.5
0°-60°	4789.9	99.6
0°-90°	4807.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4807.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	867	867	867	867	867	
5°	2216	1614	786	327	245	273
15°	7518	3308	398	142	153	2231
25°	11904	4001	233	327	372	5494
35°	12286	2802	150	196	196	7637
45°	9786	961	22	30	31	7197
55°	1431	19	6	4	0	1886
65°	15	4	7	4	0	44
75°	0	4	8	5	0	0
85°	0	5	8	5	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°	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1
2.5°	1478.1	1433.5	1451.0	1399.4	1388.1	1378.5	1388.1	1332.1	1300.7	1260.5	1228.1
5°	2215.8	2162.5	2174.8	2084.7	2043.6	2015.7	2010.4	1895.0	1808.5	1713.2	1614.5
7.5°	3084.7	3034.0	3027.0	2887.2	2802.4	2754.3	2734.2	2569.0	2419.5	2249.9	2064.6
10°	4270.0	4154.6	4118.8	3916.0	3754.3	3652.0	3526.1	3262.1	2999.9	2743.8	2507.8
12.5°	5649.3	5586.4	5497.2	5139.7	4856.5	4711.4	4523.5	4110.9	3714.1	3291.0	2895.9
15°	7518.1	7294.4	7142.3	6625.7	6169.4	5945.6	5671.2	5040.1	4440.4	3904.6	3307.6
17.5°	9344.1	9227.0	8989.2	8318.8	7616.0	7262.9	6853.8	5996.3	5149.3	4387.1	3658.1
20°	10858.9	10748.8	10477.8	9845.9	9066.2	8545.2	8030.4	6853.8	5747.2	4771.7	3892.4
22.5°	11584.4	11514.5	11293.4	10752.3	10088.0	9592.4	9039.1	7583.7	6189.5	5023.5	3999.0
25°	11904.4	11872.0	11729.5	11303.0	10677.1	10256.7	9734.0	8100.3	6464.8	5140.6	4000.8
27.5°	12228.7	12234.8	11920.1	11582.7	10989.2	10585.3	10081.9	8329.3	6514.7	5075.0	3869.6
30°	12330.9	12266.2	12127.3	11643.0	11079.2	10650.0	10109.8	8223.5	6310.1	4805.8	3608.3
32.5°	12289.0	12263.6	12110.7	11598.4	10926.2	10453.4	9839.7	7804.0	5906.3	4421.2	3237.7
35°	12285.5	12238.3	11887.8	11448.1	10620.3	10036.4	9227.9	7125.7	5334.6	3914.2	2801.5
37.5°	12063.5	11946.3	11683.2	11090.6	9999.7	9259.3	8352.9	6297.0	4635.4	3345.2	2368.8
40°	11737.4	11580.1	11233.9	10337.1	8924.6	8071.4	7186.8	5355.6	3895.0	2784.0	1909.0
42.5°	11056.5	10818.7	10329.2	9095.9	7491.9	6722.7	5986.7	4402.0	3176.5	2268.3	1457.1
45°	9785.5	9460.4	8798.7	7444.7	6052.3	5424.7	4832.9	3541.9	2542.8	1682.6	960.6
47.5°	7865.2	7563.6	6961.3	5926.4	4746.4	4215.8	3743.8	2634.5	1723.7	974.6	458.9
50°	5855.6	5596.9	5126.6	4118.8	3186.1	2769.1	2365.3	1496.5	807.7	463.3	190.6
52.5°	3493.8	3365.3	2948.3	2284.0	1573.4	1355.7	1088.3	633.7	407.3	167.8	51.6
55°	1430.9	1320.8	1164.3	934.4	684.4	580.4	496.5	312.9	126.7	35.0	19.2
57.5°	646.8	622.4	551.6	433.6	314.7	264.0	178.3	59.4	28.0	17.5	11.4
60°	249.1	224.6	192.3	104.0	44.6	37.6	30.6	20.1	14.0	9.6	7.0
62.5°	35.8	34.1	30.6	24.5	19.2	17.5	14.9	10.5	7.9	6.1	5.2
65°	14.9	14.9	13.1	10.5	8.7	7.9	7.0	5.2	4.4	4.4	4.4
67.5°	6.1	6.1	5.2	4.4	3.5	3.5	3.5	2.6	3.5	3.5	4.4
70°	1.7	1.7	1.7	1.7	1.7	1.7	2.6	2.6	3.5	3.5	4.4
72.5°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.5	4.4	4.4
75°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.5	4.4	4.4
77.5°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	4.4
80°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	5.2
82.5°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	5.2
85°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	5.2
87.5°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	5.2
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°	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1
2.5°	1200.1	1144.2	1128.5	1079.5	1038.4	1018.3	993.0	936.2	893.3	836.5	802.4
5°	1545.4	1439.6	1355.7	1253.5	1186.2	1142.4	1074.3	970.3	886.3	785.8	714.1
7.5°	1918.6	1725.5	1574.3	1405.6	1308.5	1232.5	1116.2	966.8	843.5	709.8	598.8
10°	2278.8	1990.3	1752.6	1510.4	1382.8	1277.1	1117.1	929.2	765.7	597.0	479.9
12.5°	2596.1	2223.7	1888.9	1577.8	1419.5	1287.5	1087.4	861.9	664.3	491.2	388.1
15°	2860.9	2404.6	1985.1	1603.1	1422.2	1264.8	1025.3	765.7	551.6	397.7	325.2
17.5°	3062.0	2499.9	2014.8	1572.5	1371.5	1200.1	930.0	644.2	447.5	337.4	273.6
20°	3166.0	2518.3	1972.0	1489.5	1277.9	1102.2	805.0	522.7	379.4	293.7	229.0
22.5°	3179.1	2466.7	1869.7	1370.6	1159.9	983.4	666.9	436.2	338.3	259.6	201.9
25°	3101.3	2354.8	1723.7	1236.0	1030.6	847.0	542.8	390.7	307.7	233.4	232.5
27.5°	2935.2	2162.5	1548.9	1079.5	874.1	688.8	460.7	353.1	274.5	247.4	263.1
30°	2701.0	1916.0	1333.9	882.0	682.7	529.7	388.1	291.1	241.3	243.9	257.0
32.5°	2383.7	1610.1	1081.3	646.0	488.6	398.6	291.1	198.4	200.2	201.0	212.4
35°	1985.1	1291.0	807.7	434.4	343.5	280.6	164.3	146.0	148.6	149.5	157.3
37.5°	1590.9	992.1	536.7	289.3	215.9	147.7	102.3	97.9	99.6	98.8	107.5
40°	1218.5	691.4	321.7	143.4	83.0	69.1	62.9	60.3	61.2	62.1	67.3
42.5°	862.7	375.0	159.1	54.2	43.7	40.2	37.6	35.8	36.7	36.7	40.2
45°	437.9	177.4	54.2	29.7	27.1	24.5	22.7	21.9	21.9	21.9	23.6
47.5°	189.7	58.6	25.3	18.4	16.6	15.7	14.0	13.1	13.1	13.1	14.0
50°	59.4	23.6	15.7	12.2	10.5	9.6	8.7	8.7	8.7	7.9	8.7
52.5°	21.9	14.9	10.5	7.9	7.0	7.0	7.0	6.1	7.0	6.1	7.0
55°	13.1	9.6	7.0	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
57.5°	8.7	7.0	6.1	6.1	5.2	5.2	6.1	6.1	6.1	6.1	6.1
60°	6.1	6.1	5.2	5.2	5.2	5.2	6.1	6.1	6.1	6.1	6.1
62.5°	5.2	5.2	5.2	5.2	5.2	5.2	6.1	6.1	6.1	6.1	7.0
65°	4.4	5.2	5.2	5.2	5.2	5.2	6.1	6.1	7.0	7.0	7.0
67.5°	4.4	5.2	5.2	6.1	6.1	6.1	6.1	7.0	7.0	7.0	7.0
70°	5.2	5.2	6.1	6.1	6.1	6.1	7.0	7.0	7.0	7.0	7.9
72.5°	5.2	5.2	6.1	6.1	6.1	6.1	7.0	7.0	7.9	7.9	7.9
75°	5.2	6.1	6.1	6.1	6.1	7.0	7.0	7.0	7.9	7.9	7.9
77.5°	5.2	6.1	6.1	7.0	7.0	7.0	7.0	7.9	7.9	7.9	7.9
80°	5.2	6.1	6.1	7.0	7.0	7.0	7.9	7.9	7.9	7.9	8.7
82.5°	5.2	6.1	6.1	7.0	7.0	7.0	7.9	7.9	7.9	7.9	8.7
85°	6.1	6.1	7.0	7.0	7.0	7.0	7.9	7.9	7.9	7.9	8.7
87.5°	6.1	6.1	7.0	7.0	7.0	7.0	7.9	7.9	8.7	7.9	8.7
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1
2.5°	757.0	706.3	671.3	658.2	632.8	592.6	569.0	547.2	506.1	497.4	474.6
5°	632.0	550.7	493.0	471.1	442.3	408.2	375.0	353.1	326.9	316.4	300.7
7.5°	498.2	416.9	367.1	349.6	329.5	301.6	271.8	250.0	222.9	208.9	195.8
10°	391.6	331.3	289.3	271.8	250.9	221.1	190.6	161.7	138.1	123.2	120.6
12.5°	318.2	268.3	223.8	205.4	180.9	151.2	129.4	128.5	126.7	125.9	127.6
15°	260.5	212.4	165.2	145.1	138.1	137.2	139.9	142.5	141.6	144.2	146.0
17.5°	214.2	162.6	152.1	153.0	153.8	156.5	160.8	167.8	168.7	173.1	176.6
20°	174.8	172.2	176.6	180.1	182.7	187.9	197.5	206.3	208.9	215.0	222.0
22.5°	198.4	206.3	215.9	220.3	223.8	233.4	243.9	257.9	263.1	271.0	280.6
25°	239.5	252.6	267.5	272.7	278.0	293.7	305.9	322.5	326.9	336.5	346.1
27.5°	273.6	287.6	303.3	310.3	314.7	330.4	340.9	351.4	351.4	356.6	363.6
30°	268.3	279.7	292.8	298.1	299.8	311.2	321.7	325.2	323.4	326.0	331.3
32.5°	222.9	231.6	242.1	246.5	248.2	256.1	264.9	264.9	264.0	264.0	267.5
35°	165.2	171.3	176.6	180.9	183.6	188.8	196.7	195.8	195.8	194.1	196.7
37.5°	111.0	114.5	120.6	122.4	123.2	126.7	132.9	132.9	131.1	132.0	133.7
40°	67.3	71.7	75.2	76.0	77.8	80.4	84.8	84.8	84.8	84.8	85.7
42.5°	40.2	42.8	45.5	45.5	46.3	49.8	51.6	51.6	51.6	51.6	52.4
45°	23.6	24.5	26.2	27.1	27.1	28.8	29.7	29.7	29.7	29.7	30.6
47.5°	14.0	14.9	14.9	15.7	15.7	16.6	17.5	17.5	16.6	16.6	16.6
50°	8.7	8.7	8.7	8.7	9.6	9.6	9.6	9.6	9.6	9.6	8.7
52.5°	7.0	7.0	7.0	7.0	6.1	6.1	6.1	6.1	5.2	5.2	4.4
55°	6.1	6.1	6.1	6.1	6.1	5.2	5.2	5.2	4.4	3.5	2.6
57.5°	6.1	6.1	6.1	6.1	6.1	5.2	5.2	4.4	3.5	3.5	2.6
60°	6.1	6.1	6.1	6.1	6.1	5.2	5.2	4.4	3.5	3.5	2.6
62.5°	7.0	7.0	6.1	6.1	6.1	5.2	5.2	4.4	4.4	3.5	2.6
65°	7.0	7.0	6.1	6.1	6.1	6.1	5.2	5.2	4.4	3.5	2.6
67.5°	7.0	7.0	7.0	7.0	6.1	6.1	6.1	5.2	4.4	3.5	2.6
70°	7.9	7.9	7.0	7.0	7.0	6.1	6.1	5.2	4.4	4.4	3.5
72.5°	7.9	7.9	7.0	7.0	7.0	7.0	6.1	5.2	5.2	4.4	3.5
75°	7.9	7.9	7.9	7.9	7.0	7.0	6.1	6.1	5.2	4.4	3.5
77.5°	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.1	5.2	4.4	3.5
80°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	6.1	5.2	4.4	3.5
82.5°	8.7	8.7	7.9	7.9	7.9	7.0	7.0	6.1	5.2	4.4	4.4
85°	8.7	8.7	7.9	7.9	7.9	7.0	7.0	6.1	5.2	5.2	4.4
87.5°	8.7	8.7	7.9	7.9	7.9	7.0	7.0	6.1	5.2	5.2	4.4
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: P209044

CATALOG NUMBER: LDSQA6A55827D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	867.1	867.1	867.1	867.1	867.1	867.1	867.1	867.1
2.5°	460.7	434.4	425.7	431.8	424.8	419.6	412.6	409.1
5°	288.5	269.2	263.1	264.9	258.7	253.5	246.5	244.7
7.5°	177.4	159.1	152.1	152.1	145.1	139.0	134.6	132.0
10°	118.9	115.4	116.3	117.1	116.3	117.1	114.5	116.3
12.5°	127.6	125.9	127.6	128.5	128.5	130.2	126.7	129.4
15°	148.6	146.8	149.5	151.2	151.2	153.8	150.3	153.0
17.5°	181.8	180.9	185.3	187.1	187.9	192.3	187.9	191.4
20°	229.9	229.0	235.1	237.8	236.9	245.6	239.5	245.6
22.5°	291.9	290.2	298.9	301.6	302.4	313.8	308.6	312.9
25°	354.0	355.8	360.1	364.5	365.4	375.0	367.1	371.5
27.5°	367.1	364.5	367.1	372.4	373.2	377.6	370.6	374.1
30°	332.2	327.8	328.7	334.8	336.5	338.3	332.2	333.9
32.5°	270.1	263.1	263.1	269.2	271.0	273.6	263.1	267.5
35°	199.3	193.2	193.2	197.5	198.4	200.2	192.3	195.8
37.5°	136.4	131.1	132.9	134.6	135.5	137.2	136.4	135.5
40°	87.4	83.9	86.5	86.5	87.4	88.3	88.3	89.2
42.5°	53.3	50.7	52.4	52.4	53.3	53.3	53.3	54.2
45°	30.6	29.7	29.7	30.6	30.6	30.6	29.7	30.6
47.5°	16.6	15.7	16.6	16.6	16.6	16.6	16.6	16.6
50°	8.7	7.9	7.9	7.9	7.9	7.9	7.9	7.9
52.5°	4.4	3.5	3.5	3.5	2.6	3.5	2.6	2.6
55°	2.6	1.7	1.7	1.7	0.9	0.9	0.0	0.0
57.5°	1.7	0.9	0.9	0.9	0.0	0.0	0.0	0.0
60°	1.7	0.9	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.7	0.9	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.7	0.9	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.6	1.7	0.9	0.9	0.9	0.0	0.0	0.0
70°	2.6	1.7	1.7	0.9	0.9	0.0	0.0	0.0
72.5°	2.6	1.7	1.7	1.7	0.9	0.9	0.0	0.0
75°	2.6	1.7	1.7	1.7	0.9	0.9	0.0	0.0
77.5°	2.6	2.6	1.7	1.7	0.9	0.9	0.9	0.0
80°	3.5	2.6	1.7	1.7	1.7	0.9	0.9	0.9
82.5°	3.5	2.6	1.7	1.7	1.7	0.9	0.9	0.9
85°	3.5	2.6	2.6	1.7	1.7	0.9	0.9	0.9
87.5°	3.5	2.6	2.6	1.7	1.7	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)