

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: P209030

Luminaire Tested: **LDSQA6A75835D010TE LARH20SP 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209030
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26686)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A75835D010TE LARH20SP 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 20° SPOT, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6350.1 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Spacing Criteria (0/90/45): 2.35 / 0.6 / 1.31
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

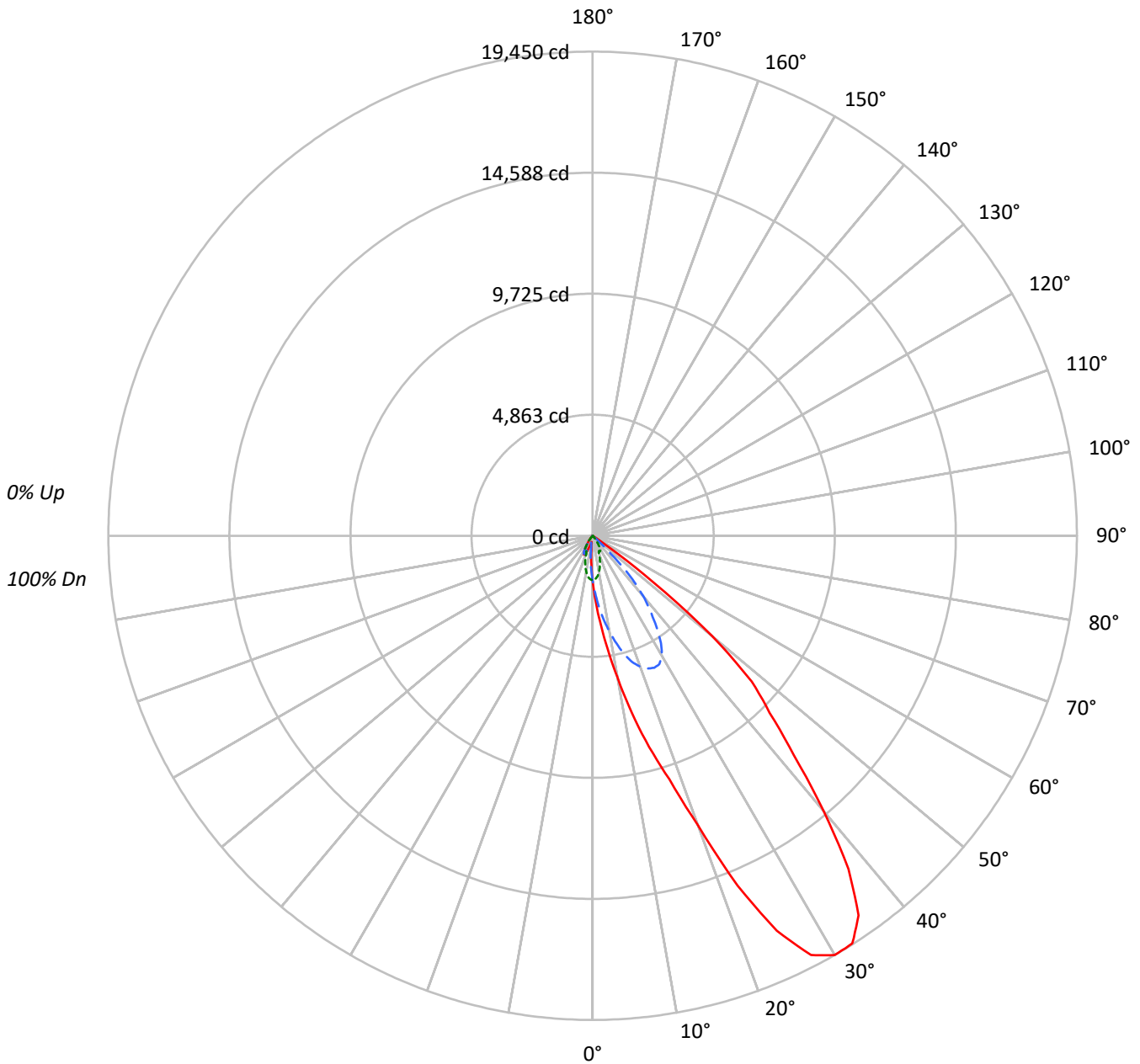
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	105	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82																			
3	99	91	85	80	96	89	84	80	87	82	78	84	80	77	82	79	76	74																			
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68	66																			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	60																			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54																			
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49																			
8	70	59	51	46	69	58	51	46	57	50	46	56	50	46	54	49	46	44																			
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40																			
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	77186	77186	77186
5°	149563	73556	24808
10°	254100	64364	11140
15°	391556	51341	17714
20°	566821	33411	30809
25°	831628	32243	39616
30°	966964	30546	30357
35°	978727	16178	16047
40°	810321	6098	6733
45°	611998	2076	2460
50°	418716	764	764
55°	58243	661	98
60°	1524	654	0
65°	387	897	0
70°	164	1108	0
75°	0	1464	0
80°	0	2504	322
85°	0	4989	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	188.1	3.0
10°-20°	795.0	12.5
20°-30°	1813.5	28.6
30°-40°	2098.7	33.0
40°-50°	1265.7	19.9
50°-60°	171.9	2.7
60°-70°	5.5	0.1
70°-80°	6.0	0.1
80°-90°	5.6	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°	2796.6	44.0
0°-40°	4895.3	77.1
0°-60°	6333.0	99.7
0°-90°	6350.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6350.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1793	1793	1793	1793	1793	
5°	3460	2834	1702	931	574	403
15°	8784	4938	1152	354	397	2601
25°	17506	5851	679	816	834	7922
35°	18621	4461	308	314	305	11222
45°	10051	1215	34	42	40	7859
55°	776	9	9	6	1	1521
65°	4	5	9	5	0	6
75°	0	6	9	6	0	0
85°	0	6	10	6	0	0
90°	0	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°	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7
2.5°	2592.5	2568.6	2578.6	2552.2	2485.3	2471.4	2470.1	2452.5	2395.7	2351.6	2298.6
5°	3460.5	3459.2	3465.5	3408.8	3291.4	3254.8	3237.2	3194.3	3056.8	2950.8	2833.5
7.5°	4544.2	4536.6	4529.0	4425.6	4241.4	4170.7	4125.3	3970.2	3780.9	3592.9	3383.5
10°	5812.0	5808.3	5779.2	5597.6	5302.4	5172.4	5084.1	4838.1	4534.1	4266.6	3910.9
12.5°	7284.3	7250.2	7198.5	6932.3	6527.3	6386.1	6191.8	5801.9	5335.2	4925.2	4428.1
15°	8784.3	8735.1	8643.0	8301.1	7799.0	7558.0	7317.1	6803.6	6170.3	5574.9	4937.8
17.5°	10251.5	10197.2	9981.5	9401.2	8910.4	8616.5	8349.1	7643.8	6899.5	6133.7	5326.3
20°	12370.9	12174.1	11798.2	10883.5	9971.4	9441.6	9128.7	8383.1	7462.2	6570.2	5602.6
22.5°	15201.9	14765.4	13964.3	12478.2	11175.0	10410.5	9898.3	8906.7	7867.1	6855.4	5772.9
25°	17505.5	17307.4	16396.6	14282.2	12248.6	11347.8	10635.0	9323.0	8162.3	7045.9	5851.1
27.5°	18990.4	18941.2	17900.4	15775.9	13125.3	11943.3	11147.2	9598.0	8304.9	7086.2	5813.3
30°	19449.6	19526.5	18527.4	16283.0	13378.9	12063.1	11192.6	9601.8	8195.1	6903.3	5571.1
32.5°	19415.5	19419.3	18194.3	15845.3	12966.4	11714.9	10814.2	9282.6	7790.2	6445.3	5110.6
35°	18620.7	18425.2	17040.0	14500.5	12006.3	10902.5	10064.8	8664.4	7122.8	5756.5	4460.9
37.5°	16876.0	16619.9	15005.1	12778.4	10869.7	9849.1	9172.9	7853.3	6328.0	5021.0	3789.7
40°	14417.2	14053.9	12721.6	11177.5	9625.8	8858.7	8291.0	6946.2	5477.7	4299.4	3160.2
42.5°	11955.9	11778.0	10897.4	9642.2	8579.9	7858.3	7265.4	5996.2	4660.2	3587.9	2364.2
45°	10050.9	9898.3	9306.6	8479.0	7436.9	6778.4	6206.9	5005.9	3620.7	2407.1	1214.9
47.5°	8663.2	8539.5	7973.1	7103.9	5960.9	5240.6	4651.4	3282.6	2051.3	1039.5	304.0
50°	6251.1	6124.9	5569.8	4563.1	3531.1	2928.1	2504.2	1465.9	581.6	210.7	31.5
52.5°	3064.3	2960.9	2583.7	1934.0	1298.2	933.6	682.5	275.0	66.9	22.7	15.1
55°	775.9	712.8	594.2	373.4	182.9	109.8	70.6	25.2	16.4	12.6	8.8
57.5°	44.2	42.9	39.1	29.0	21.4	18.9	16.4	12.6	8.8	7.6	6.3
60°	17.7	16.4	15.1	12.6	10.1	8.8	8.8	6.3	5.0	5.0	5.0
62.5°	7.6	7.6	7.6	6.3	5.0	5.0	5.0	3.8	5.0	5.0	5.0
65°	3.8	3.8	3.8	2.5	2.5	2.5	3.8	3.8	3.8	5.0	5.0
67.5°	2.5	1.3	1.3	1.3	2.5	2.5	2.5	3.8	3.8	5.0	5.0
70°	1.3	1.3	1.3	1.3	2.5	2.5	2.5	3.8	3.8	5.0	6.3
72.5°	0.0	1.3	1.3	1.3	2.5	2.5	2.5	3.8	3.8	5.0	6.3
75°	0.0	1.3	1.3	1.3	2.5	2.5	2.5	3.8	5.0	5.0	6.3
77.5°	0.0	1.3	1.3	1.3	2.5	2.5	2.5	3.8	5.0	5.0	6.3
80°	0.0	1.3	1.3	1.3	2.5	2.5	2.5	3.8	5.0	5.0	6.3
82.5°	0.0	0.0	1.3	1.3	2.5	2.5	2.5	3.8	5.0	5.0	6.3
85°	0.0	0.0	1.3	1.3	2.5	2.5	2.5	3.8	5.0	5.0	6.3
87.5°	0.0	0.0	1.3	1.3	2.5	2.5	2.5	3.8	3.8	5.0	6.3
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7
2.5°	2230.5	2185.0	2118.2	2074.0	2031.1	1990.8	1923.9	1886.0	1817.9	1754.8	1700.6
5°	2692.2	2578.6	2441.1	2323.8	2248.1	2173.7	2038.7	1939.0	1814.1	1701.9	1598.4
7.5°	3159.0	2958.4	2732.6	2539.5	2422.2	2307.4	2105.6	1944.1	1767.5	1607.2	1454.6
10°	3582.9	3281.3	2962.2	2685.9	2526.9	2378.1	2111.9	1897.4	1670.3	1472.2	1280.5
12.5°	3976.5	3563.9	3147.6	2786.8	2590.0	2410.9	2085.4	1823.0	1553.0	1318.3	1095.0
15°	4327.2	3797.3	3282.6	2844.8	2614.0	2402.0	2023.6	1718.3	1414.2	1151.8	869.2
17.5°	4593.4	3942.4	3341.9	2836.0	2571.1	2335.2	1917.6	1587.1	1266.6	948.7	629.5
20°	4754.8	4004.2	3329.3	2767.9	2479.0	2229.2	1791.4	1444.5	1088.7	729.2	555.1
22.5°	4823.0	3999.2	3270.0	2665.7	2365.4	2113.1	1670.3	1305.7	902.0	659.8	579.1
25°	4834.3	3947.4	3186.7	2553.4	2253.2	2002.1	1547.9	1148.0	783.4	678.7	648.4
27.5°	4747.3	3826.3	3030.3	2391.9	2095.5	1835.6	1365.0	912.1	735.5	676.2	696.4
30°	4489.9	3550.1	2754.0	2108.1	1821.7	1561.8	975.2	715.3	610.6	614.4	619.4
32.5°	4037.0	3090.8	2309.9	1693.0	1380.2	1029.4	606.8	478.1	464.3	464.3	461.7
35°	3432.7	2529.4	1812.9	1071.1	686.3	494.5	314.1	315.4	309.1	307.8	306.6
37.5°	2808.2	1995.8	1148.0	442.8	297.7	206.9	185.5	188.0	185.5	189.2	186.7
40°	2214.1	1232.6	418.8	141.3	104.7	100.9	103.4	106.0	106.0	108.5	108.5
42.5°	1286.8	408.7	109.8	56.8	56.8	54.2	55.5	58.0	59.3	60.6	59.3
45°	382.3	84.5	35.3	31.5	31.5	30.3	30.3	31.5	32.8	34.1	34.1
47.5°	60.6	24.0	20.2	17.7	17.7	17.7	17.7	17.7	18.9	18.9	20.2
50°	18.9	15.1	12.6	11.4	11.4	10.1	10.1	11.4	11.4	11.4	12.6
52.5°	11.4	8.8	8.8	7.6	8.8	8.8	7.6	8.8	8.8	8.8	10.1
55°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	8.8	8.8	8.8
57.5°	6.3	6.3	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
60°	6.3	6.3	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	8.8
62.5°	6.3	6.3	7.6	7.6	7.6	7.6	7.6	7.6	8.8	8.8	8.8
65°	6.3	6.3	7.6	7.6	7.6	7.6	7.6	8.8	8.8	8.8	8.8
67.5°	6.3	7.6	7.6	7.6	7.6	8.8	8.8	8.8	8.8	8.8	8.8
70°	6.3	7.6	7.6	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
72.5°	6.3	7.6	7.6	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
75°	7.6	7.6	7.6	8.8	8.8	8.8	8.8	8.8	8.8	8.8	10.1
77.5°	7.6	7.6	8.8	8.8	8.8	8.8	8.8	8.8	10.1	10.1	10.1
80°	7.6	7.6	8.8	8.8	8.8	8.8	8.8	10.1	10.1	10.1	10.1
82.5°	7.6	7.6	8.8	8.8	8.8	8.8	8.8	10.1	10.1	10.1	10.1
85°	7.6	7.6	8.8	8.8	8.8	8.8	8.8	10.1	10.1	10.1	10.1
87.5°	7.6	7.6	8.8	8.8	8.8	8.8	8.8	10.1	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°	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7
2.5°	1653.9	1595.9	1568.1	1529.0	1501.3	1439.4	1414.2	1371.3	1336.0	1278.0	1281.8
5°	1510.1	1400.3	1325.9	1267.9	1227.5	1129.1	1063.5	994.1	931.0	852.8	823.8
7.5°	1310.8	1175.8	1062.2	992.9	941.1	809.9	664.8	551.3	465.5	403.7	379.7
10°	1111.4	936.1	755.7	648.4	574.0	447.9	383.5	353.2	325.5	291.4	268.7
12.5°	879.3	629.5	465.5	422.6	392.3	350.7	309.1	276.3	282.6	283.9	292.7
15°	600.5	452.9	401.2	372.2	339.4	315.4	329.3	338.1	354.5	355.8	367.1
17.5°	488.2	425.1	383.5	382.3	384.8	398.7	420.1	431.5	452.9	457.9	474.3
20°	488.2	451.6	487.0	487.0	493.3	512.2	540.0	556.4	580.3	589.2	609.3
22.5°	556.4	581.6	625.7	630.8	633.3	653.5	688.8	705.2	733.0	738.0	759.5
25°	678.7	701.4	741.8	745.6	746.8	762.0	788.5	797.3	816.2	806.1	818.8
27.5°	717.8	727.9	753.2	755.7	749.4	755.7	765.8	765.8	772.1	751.9	755.7
30°	630.8	633.3	645.9	647.2	633.3	635.8	637.1	635.8	634.6	613.1	613.1
32.5°	468.0	468.0	484.4	480.7	465.5	469.3	469.3	469.3	468.0	450.4	447.9
35°	310.3	311.6	325.5	323.0	311.6	314.1	314.1	317.9	314.1	304.0	301.5
37.5°	189.2	190.5	196.8	198.1	194.3	195.5	196.8	195.5	198.1	193.0	190.5
40°	109.8	112.3	117.3	118.6	117.3	117.3	118.6	119.8	124.9	118.6	116.1
42.5°	64.3	65.6	68.1	68.1	68.1	68.1	69.4	70.6	71.9	70.6	69.4
45°	36.6	37.8	39.1	39.1	40.4	39.1	40.4	40.4	41.6	40.4	40.4
47.5°	21.4	21.4	22.7	22.7	24.0	22.7	24.0	24.0	24.0	22.7	22.7
50°	12.6	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	12.6	12.6
52.5°	10.1	10.1	10.1	10.1	10.1	8.8	8.8	8.8	8.8	7.6	7.6
55°	8.8	8.8	8.8	8.8	8.8	8.8	7.6	6.3	6.3	5.0	5.0
57.5°	7.6	8.8	8.8	8.8	8.8	7.6	7.6	6.3	5.0	3.8	3.8
60°	8.8	8.8	8.8	8.8	7.6	7.6	7.6	6.3	5.0	3.8	3.8
62.5°	8.8	8.8	8.8	8.8	8.8	7.6	7.6	6.3	5.0	3.8	3.8
65°	8.8	8.8	8.8	8.8	8.8	7.6	7.6	6.3	5.0	3.8	3.8
67.5°	8.8	8.8	8.8	8.8	8.8	7.6	7.6	6.3	5.0	5.0	3.8
70°	8.8	10.1	10.1	8.8	8.8	8.8	7.6	6.3	6.3	5.0	3.8
72.5°	8.8	10.1	10.1	8.8	8.8	8.8	7.6	6.3	6.3	5.0	3.8
75°	10.1	10.1	10.1	10.1	8.8	8.8	7.6	7.6	6.3	5.0	3.8
77.5°	10.1	10.1	10.1	10.1	8.8	8.8	7.6	7.6	6.3	5.0	3.8
80°	10.1	10.1	10.1	10.1	10.1	8.8	8.8	7.6	6.3	5.0	5.0
82.5°	10.1	10.1	10.1	10.1	10.1	8.8	8.8	7.6	6.3	5.0	5.0
85°	10.1	10.1	10.1	10.1	10.1	8.8	8.8	7.6	6.3	5.0	3.8
87.5°	10.1	10.1	10.1	10.1	8.8	8.8	7.6	7.6	6.3	5.0	3.8
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: P209030

CATALOG NUMBER: LDSQA6A75835D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7	1792.7
2.5°	1235.1	1206.1	1193.4	1213.6	1203.5	1173.3	1179.6	1160.6
5°	736.8	692.6	664.8	677.5	637.1	600.5	600.5	574.0
7.5°	355.8	341.9	334.3	336.8	328.0	316.7	310.3	310.3
10°	249.8	244.7	246.0	246.0	253.6	252.3	256.1	254.8
12.5°	296.5	299.0	300.3	305.3	311.6	311.6	315.4	312.9
15°	379.7	377.2	384.8	386.0	396.1	397.4	402.4	397.4
17.5°	483.2	488.2	495.8	494.5	514.7	516.0	516.0	514.7
20°	622.0	625.7	633.3	635.8	659.8	662.3	671.2	672.4
22.5°	773.3	773.3	777.1	782.2	804.9	806.1	809.9	809.9
25°	825.1	817.5	818.8	825.1	837.7	832.6	836.4	833.9
27.5°	758.2	746.8	744.3	753.2	762.0	748.1	753.2	753.2
30°	615.6	605.6	603.0	611.9	618.2	603.0	608.1	610.6
32.5°	450.4	444.1	442.8	449.1	454.2	441.5	446.6	450.4
35°	304.0	301.5	299.0	300.3	307.8	297.7	302.8	305.3
37.5°	193.0	188.0	189.2	191.8	196.8	190.5	195.5	195.5
40°	118.6	116.1	116.1	118.6	121.1	116.1	118.6	119.8
42.5°	69.4	69.4	69.4	70.6	71.9	69.4	69.4	70.6
45°	40.4	39.1	39.1	40.4	41.6	39.1	40.4	40.4
47.5°	22.7	21.4	21.4	22.7	22.7	21.4	22.7	22.7
50°	12.6	11.4	11.4	12.6	12.6	11.4	11.4	11.4
52.5°	6.3	6.3	6.3	6.3	6.3	6.3	5.0	5.0
55°	3.8	3.8	2.5	2.5	2.5	2.5	2.5	1.3
57.5°	2.5	2.5	1.3	1.3	1.3	1.3	0.0	0.0
60°	2.5	2.5	1.3	1.3	1.3	0.0	0.0	0.0
62.5°	2.5	2.5	1.3	1.3	1.3	0.0	0.0	0.0
65°	2.5	2.5	1.3	1.3	1.3	0.0	0.0	0.0
67.5°	2.5	2.5	1.3	1.3	1.3	0.0	0.0	0.0
70°	3.8	2.5	2.5	1.3	1.3	1.3	0.0	0.0
72.5°	3.8	2.5	2.5	2.5	1.3	1.3	0.0	0.0
75°	3.8	2.5	2.5	2.5	1.3	1.3	0.0	0.0
77.5°	3.8	2.5	2.5	2.5	1.3	1.3	1.3	0.0
80°	3.8	2.5	2.5	2.5	1.3	1.3	1.3	1.3
82.5°	3.8	2.5	2.5	2.5	1.3	1.3	1.3	1.3
85°	3.8	2.5	2.5	2.5	1.3	1.3	1.3	0.0
87.5°	3.8	2.5	2.5	2.5	1.3	1.3	1.3	0.0
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)