

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: P209029

Luminaire Tested: **LDSQA6A75830D010TE LARH20SP 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209029
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: LDSQA6A75830D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6119.8 lumens
Efficiency: N/A
Efficacy: 77.0 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

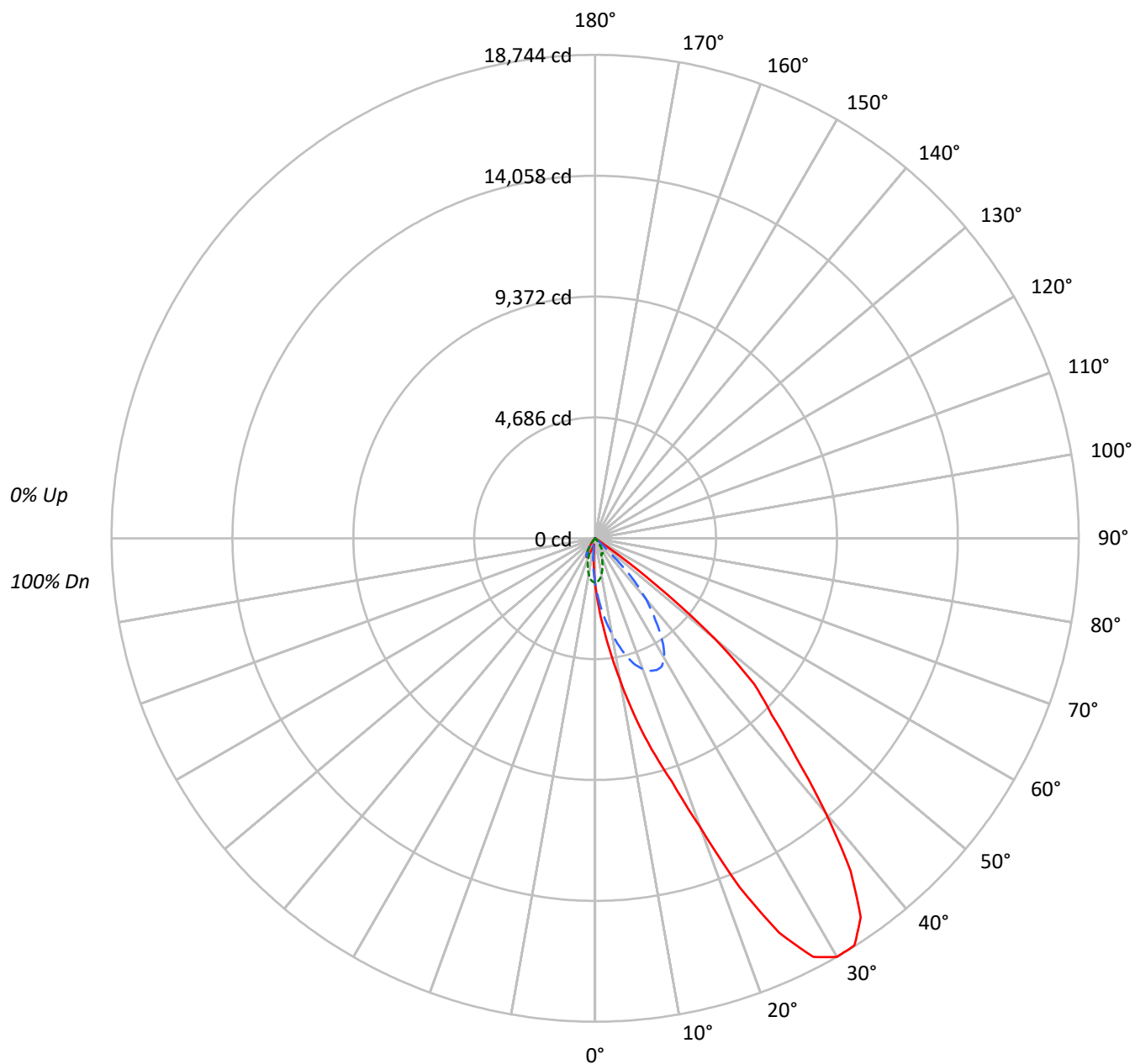
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	74387	74387	74387
5°	144139	70885	23909
10°	244888	62034	10738
15°	377354	49478	17072
20°	546266	32197	29691
25°	801471	31074	38181
30°	931894	29437	29258
35°	943238	15595	15464
40°	780937	5879	6492
45°	589804	1997	2369
50°	403531	730	730
55°	56126	638	90
60°	1464	629	0
65°	367	866	0
70°	151	1070	0
75°	0	1414	0
80°	0	2405	298
85°	0	4792	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	181.3	3.0
10°-20°	766.2	12.5
20°-30°	1747.8	28.6
30°-40°	2022.6	33.0
40°-50°	1219.8	19.9
50°-60°	165.7	2.7
60°-70°	5.3	0.1
70°-80°	5.8	0.1
80°-90°	5.4	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°	2695.2	44.0
0°-40°	4717.8	77.1
0°-60°	6103.3	99.7
0°-90°	6119.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6119.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1728	1728	1728	1728	1728	
5°	3335	2731	1640	897	553	388
15°	8466	4759	1110	342	383	2506
25°	16871	5639	654	787	804	7635
35°	17946	4299	297	303	294	10815
45°	9686	1171	33	40	39	7574
55°	748	8	8	6	1	1466
65°	4	5	8	5	0	5
75°	0	6	8	6	0	0
85°	0	6	10	6	0	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°	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7
2.5°	2498.5	2475.4	2485.1	2459.6	2395.2	2381.8	2380.6	2363.5	2308.8	2266.3	2215.2
5°	3335.0	3333.8	3339.8	3285.1	3172.1	3136.8	3119.8	3078.4	2945.9	2843.8	2730.7
7.5°	4379.4	4372.1	4364.8	4265.1	4087.6	4019.5	3975.7	3826.2	3643.8	3462.6	3260.8
10°	5601.3	5597.6	5569.7	5394.6	5110.1	4984.8	4899.7	4662.7	4369.6	4111.9	3769.0
12.5°	7020.1	6987.3	6937.5	6680.9	6290.6	6154.5	5967.2	5591.5	5141.7	4746.5	4267.5
15°	8465.7	8418.3	8329.6	8000.1	7516.2	7284.0	7051.7	6556.9	5946.6	5372.7	4758.7
17.5°	9879.7	9827.4	9619.5	9060.3	8587.3	8304.0	8046.3	7366.6	6649.3	5911.3	5133.2
20°	11922.3	11732.6	11370.3	10488.9	9609.8	9099.2	8797.7	8079.1	7191.6	6332.0	5399.4
22.5°	14650.6	14229.9	13457.9	12025.6	10769.7	10032.9	9539.3	8583.7	7581.8	6606.7	5563.6
25°	16870.7	16679.8	15802.0	13764.3	11804.4	10936.3	10249.3	8984.9	7866.3	6790.3	5639.0
27.5°	18301.7	18254.3	17251.2	15203.8	12649.4	11510.1	10743.0	9249.9	8003.7	6829.2	5602.5
30°	18744.2	18818.4	17855.5	15692.5	12893.7	11625.6	10786.7	9253.6	7897.9	6652.9	5369.0
32.5°	18711.4	18715.1	17534.5	15270.7	12496.2	11290.1	10422.0	8946.0	7507.7	6211.6	4925.3
35°	17945.5	17757.0	16422.0	13974.6	11570.9	10507.1	9699.8	8350.2	6864.5	5547.8	4299.1
37.5°	16264.0	16017.2	14460.9	12315.0	10475.5	9491.9	8840.2	7568.5	6098.5	4839.0	3652.3
40°	13894.4	13544.2	12260.3	10772.1	9276.7	8537.5	7990.3	6694.3	5279.1	4143.5	3045.6
42.5°	11522.3	11350.9	10502.2	9292.5	8268.8	7573.3	7001.9	5778.8	4491.2	3457.8	2278.4
45°	9686.4	9539.3	8969.1	8171.5	7167.2	6532.6	5981.8	4824.4	3489.4	2319.8	1170.8
47.5°	8349.0	8229.9	7684.0	6846.3	5744.7	5050.5	4482.7	3163.6	1976.9	1001.8	293.0
50°	6024.4	5902.8	5367.8	4397.6	3403.1	2821.9	2413.4	1412.8	560.5	203.0	30.4
52.5°	2953.2	2853.5	2490.0	1863.8	1251.1	899.7	657.8	265.0	64.4	21.9	14.6
55°	747.7	686.9	572.6	359.9	176.3	105.8	68.1	24.3	15.8	12.2	8.5
57.5°	42.6	41.3	37.7	28.0	20.7	18.2	15.8	12.2	8.5	7.3	6.1
60°	17.0	15.8	14.6	12.2	9.7	8.5	8.5	6.1	4.9	4.9	4.9
62.5°	7.3	7.3	7.3	6.1	4.9	4.9	4.9	3.6	4.9	4.9	4.9
65°	3.6	3.6	3.6	2.4	2.4	2.4	3.6	3.6	3.6	4.9	4.9
67.5°	2.4	1.2	1.2	1.2	2.4	2.4	2.4	3.6	3.6	4.9	4.9
70°	1.2	1.2	1.2	1.2	2.4	2.4	2.4	3.6	3.6	4.9	6.1
72.5°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.6	3.6	4.9	6.1
75°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.6	4.9	4.9	6.1
77.5°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.6	4.9	4.9	6.1
80°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.6	4.9	4.9	6.1
82.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.9	4.9	6.1
85°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.9	4.9	6.1
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	3.6	4.9	6.1
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7
2.5°	2149.6	2105.8	2041.4	1998.8	1957.5	1918.6	1854.1	1817.6	1752.0	1691.2	1638.9
5°	2594.6	2485.1	2352.6	2239.5	2166.6	2094.9	1964.8	1868.7	1748.3	1640.1	1540.4
7.5°	3044.4	2851.1	2633.5	2447.4	2334.4	2223.7	2029.2	1873.6	1703.4	1549.0	1401.8
10°	3452.9	3162.3	2854.7	2588.5	2435.3	2291.8	2035.3	1828.6	1609.7	1418.9	1234.1
12.5°	3832.3	3434.7	3033.5	2685.7	2496.1	2323.4	2009.7	1756.9	1496.7	1270.5	1055.3
15°	4170.3	3659.6	3163.6	2741.7	2519.2	2314.9	1950.2	1655.9	1362.9	1110.0	837.7
17.5°	4426.8	3799.4	3220.7	2733.2	2477.8	2250.5	1848.0	1529.5	1220.7	914.3	606.7
20°	4582.4	3859.0	3208.5	2667.5	2389.1	2148.3	1726.5	1392.1	1049.2	702.7	535.0
22.5°	4648.1	3854.1	3151.4	2569.0	2279.7	2036.5	1609.7	1258.4	869.3	635.9	558.1
25°	4659.0	3804.3	3071.2	2460.8	2171.4	1929.5	1491.8	1106.4	755.0	654.1	624.9
27.5°	4575.1	3687.6	2920.4	2305.2	2019.5	1769.0	1315.5	879.0	708.8	651.7	671.1
30°	4327.1	3421.3	2654.1	2031.6	1755.6	1505.2	939.8	689.4	588.5	592.1	597.0
32.5°	3890.6	2978.8	2226.2	1631.6	1330.1	992.1	584.8	460.8	447.4	447.4	445.0
35°	3308.2	2437.7	1747.1	1032.2	661.4	476.6	302.7	304.0	297.9	296.7	295.4
37.5°	2706.4	1923.4	1106.4	426.8	286.9	199.4	178.7	181.2	178.7	182.4	179.9
40°	2133.8	1187.9	403.7	136.2	100.9	97.3	99.7	102.1	102.1	104.6	104.6
42.5°	1240.1	393.9	105.8	54.7	54.7	52.3	53.5	55.9	57.1	58.4	57.1
45°	368.4	81.5	34.0	30.4	30.4	29.2	29.2	30.4	31.6	32.8	32.8
47.5°	58.4	23.1	19.5	17.0	17.0	17.0	17.0	17.0	18.2	18.2	19.5
50°	18.2	14.6	12.2	10.9	10.9	9.7	9.7	10.9	10.9	10.9	12.2
52.5°	10.9	8.5	8.5	7.3	8.5	8.5	7.3	8.5	8.5	8.5	9.7
55°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	8.5	8.5	8.5
57.5°	6.1	6.1	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
60°	6.1	6.1	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	8.5
62.5°	6.1	6.1	7.3	7.3	7.3	7.3	7.3	7.3	8.5	8.5	8.5
65°	6.1	6.1	7.3	7.3	7.3	7.3	7.3	8.5	8.5	8.5	8.5
67.5°	6.1	7.3	7.3	7.3	7.3	8.5	8.5	8.5	8.5	8.5	8.5
70°	6.1	7.3	7.3	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
72.5°	6.1	7.3	7.3	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
75°	7.3	7.3	7.3	8.5	8.5	8.5	8.5	8.5	8.5	8.5	9.7
77.5°	7.3	7.3	8.5	8.5	8.5	8.5	8.5	8.5	9.7	9.7	9.7
80°	7.3	7.3	8.5	8.5	8.5	8.5	8.5	9.7	9.7	9.7	9.7
82.5°	7.3	7.3	8.5	8.5	8.5	8.5	8.5	9.7	9.7	9.7	9.7
85°	7.3	7.3	8.5	8.5	8.5	8.5	8.5	9.7	9.7	9.7	9.7
87.5°	7.3	7.3	8.5	8.5	8.5	8.5	8.5	9.7	9.7	9.7	9.7
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°	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7
2.5°	1593.9	1538.0	1511.3	1473.6	1446.8	1387.2	1362.9	1321.6	1287.6	1231.6	1235.3
5°	1455.3	1349.6	1277.8	1221.9	1183.0	1088.2	1024.9	958.1	897.3	821.9	793.9
7.5°	1263.2	1133.1	1023.7	956.8	907.0	780.6	640.7	531.3	448.6	389.1	366.0
10°	1071.1	902.1	728.3	624.9	553.2	431.6	369.6	340.4	313.7	280.9	259.0
12.5°	847.4	606.7	448.6	407.3	378.1	338.0	297.9	266.3	272.3	273.6	282.1
15°	578.7	436.5	386.6	358.7	327.1	304.0	317.3	325.8	341.6	342.9	353.8
17.5°	470.5	409.7	369.6	368.4	370.8	384.2	404.9	415.8	436.5	441.3	457.1
20°	470.5	435.3	469.3	469.3	475.4	493.6	520.4	536.2	559.3	567.8	587.2
22.5°	536.2	560.5	603.0	607.9	610.3	629.8	663.8	679.6	706.4	711.3	731.9
25°	654.1	676.0	714.9	718.5	719.8	734.4	759.9	768.4	786.6	776.9	789.1
27.5°	691.8	701.5	725.8	728.3	722.2	728.3	738.0	738.0	744.1	724.6	728.3
30°	607.9	610.3	622.5	623.7	610.3	612.8	614.0	612.8	611.6	590.9	590.9
32.5°	451.1	451.1	466.9	463.2	448.6	452.3	452.3	452.3	451.1	434.0	431.6
35°	299.1	300.3	313.7	311.2	300.3	302.7	302.7	306.4	302.7	293.0	290.6
37.5°	182.4	183.6	189.7	190.9	187.2	188.5	189.7	188.5	190.9	186.0	183.6
40°	105.8	108.2	113.1	114.3	113.1	113.1	114.3	115.5	120.4	114.3	111.9
42.5°	62.0	63.2	65.7	65.7	65.7	65.7	66.9	68.1	69.3	68.1	66.9
45°	35.3	36.5	37.7	37.7	38.9	37.7	38.9	38.9	40.1	38.9	38.9
47.5°	20.7	20.7	21.9	21.9	23.1	21.9	23.1	23.1	23.1	21.9	21.9
50°	12.2	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	12.2	12.2
52.5°	9.7	9.7	9.7	9.7	9.7	8.5	8.5	8.5	8.5	7.3	7.3
55°	8.5	8.5	8.5	8.5	8.5	8.5	7.3	6.1	6.1	4.9	4.9
57.5°	7.3	8.5	8.5	8.5	8.5	7.3	7.3	6.1	4.9	3.6	3.6
60°	8.5	8.5	8.5	8.5	7.3	7.3	7.3	6.1	4.9	3.6	3.6
62.5°	8.5	8.5	8.5	8.5	8.5	7.3	7.3	6.1	4.9	3.6	3.6
65°	8.5	8.5	8.5	8.5	8.5	7.3	7.3	6.1	4.9	3.6	3.6
67.5°	8.5	8.5	8.5	8.5	8.5	7.3	7.3	6.1	4.9	4.9	3.6
70°	8.5	9.7	9.7	8.5	8.5	8.5	7.3	6.1	6.1	4.9	3.6
72.5°	8.5	9.7	9.7	8.5	8.5	8.5	7.3	6.1	6.1	4.9	3.6
75°	9.7	9.7	9.7	9.7	8.5	8.5	7.3	7.3	6.1	4.9	3.6
77.5°	9.7	9.7	9.7	9.7	8.5	8.5	7.3	7.3	6.1	4.9	3.6
80°	9.7	9.7	9.7	9.7	9.7	8.5	8.5	7.3	6.1	4.9	4.9
82.5°	9.7	9.7	9.7	9.7	9.7	8.5	8.5	7.3	6.1	4.9	4.9
85°	9.7	9.7	9.7	9.7	9.7	8.5	8.5	7.3	6.1	4.9	3.6
87.5°	9.7	9.7	9.7	9.7	8.5	8.5	7.3	7.3	6.1	4.9	3.6
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: P209029

CATALOG NUMBER: LDSQA6A75830D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7	1727.7
2.5°	1190.3	1162.3	1150.2	1169.6	1159.9	1130.7	1136.8	1118.6
5°	710.0	667.5	640.7	652.9	614.0	578.7	578.7	553.2
7.5°	342.9	329.5	322.2	324.6	316.1	305.2	299.1	299.1
10°	240.7	235.9	237.1	237.1	244.4	243.2	246.8	245.6
12.5°	285.7	288.1	289.4	294.2	300.3	300.3	304.0	301.5
15°	366.0	363.5	370.8	372.0	381.8	383.0	387.8	383.0
17.5°	465.7	470.5	477.8	476.6	496.1	497.3	497.3	496.1
20°	599.4	603.0	610.3	612.8	635.9	638.3	646.8	648.0
22.5°	745.3	745.3	748.9	753.8	775.7	776.9	780.6	780.6
25°	795.1	787.8	789.1	795.1	807.3	802.4	806.1	803.7
27.5°	730.7	719.8	717.3	725.8	734.4	721.0	725.8	725.8
30°	593.3	583.6	581.2	589.7	595.8	581.2	586.0	588.5
32.5°	434.0	428.0	426.8	432.8	437.7	425.5	430.4	434.0
35°	293.0	290.6	288.1	289.4	296.7	286.9	291.8	294.2
37.5°	186.0	181.2	182.4	184.8	189.7	183.6	188.5	188.5
40°	114.3	111.9	111.9	114.3	116.7	111.9	114.3	115.5
42.5°	66.9	66.9	66.9	68.1	69.3	66.9	66.9	68.1
45°	38.9	37.7	37.7	38.9	40.1	37.7	38.9	38.9
47.5°	21.9	20.7	20.7	21.9	21.9	20.7	21.9	21.9
50°	12.2	10.9	10.9	12.2	12.2	10.9	10.9	10.9
52.5°	6.1	6.1	6.1	6.1	6.1	6.1	4.9	4.9
55°	3.6	3.6	2.4	2.4	2.4	2.4	2.4	1.2
57.5°	2.4	2.4	1.2	1.2	1.2	1.2	0.0	0.0
60°	2.4	2.4	1.2	1.2	1.2	0.0	0.0	0.0
62.5°	2.4	2.4	1.2	1.2	1.2	0.0	0.0	0.0
65°	2.4	2.4	1.2	1.2	1.2	0.0	0.0	0.0
67.5°	2.4	2.4	1.2	1.2	1.2	0.0	0.0	0.0
70°	3.6	2.4	2.4	1.2	1.2	1.2	0.0	0.0
72.5°	3.6	2.4	2.4	2.4	1.2	1.2	0.0	0.0
75°	3.6	2.4	2.4	2.4	1.2	1.2	0.0	0.0
77.5°	3.6	2.4	2.4	2.4	1.2	1.2	1.2	0.0
80°	3.6	2.4	2.4	2.4	1.2	1.2	1.2	1.2
82.5°	3.6	2.4	2.4	2.4	1.2	1.2	1.2	1.2
85°	3.6	2.4	2.4	2.4	1.2	1.2	1.2	0.0
87.5°	3.6	2.4	2.4	2.4	1.2	1.2	1.2	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)