

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: P209066

Luminaire Tested: **LDSQA6A75935D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209066
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: LDSQA6A75935D010TE 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 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5931.5 lumens
Efficiency: N/A
Efficacy: 74.7 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

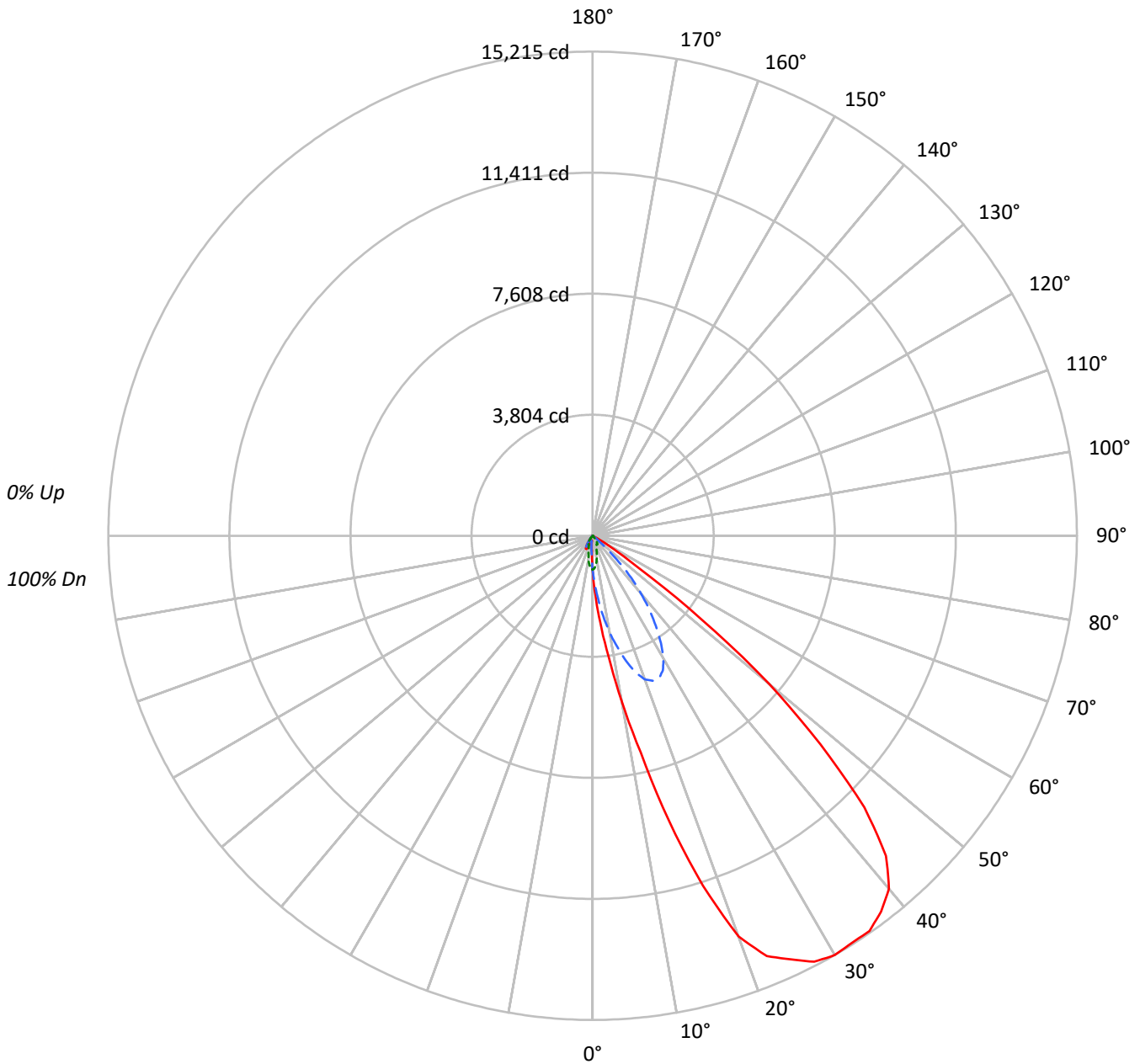
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81					81			
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	74	73					73			
4	91	82	75	70	89	81	74	69	78	73	68	76	71	67	74	70	67	65					65			
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58					58			
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52					52			
7	74	62	55	49	72	61	54	49	60	53	49	59	53	49	57	52	48	46					46			
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	47	43	42					42			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38					38			
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34					34			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	46065	46065	46065
5°	118168	41906	13052
10°	230347	32208	6269
15°	413500	21873	8411
20°	613918	16605	13888
25°	697816	13682	21777
30°	756440	14960	20483
35°	796776	9692	12699
40°	814008	4305	6183
45°	735209	1644	2296
50°	483964	650	650
55°	132535	563	0
60°	26471	646	0
65°	1864	876	0
70°	277	1083	0
75°	0	1614	0
80°	0	2405	273
85°	0	4792	543



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.1	2.2
10°-20°	696.3	11.7
20°-30°	1578.1	26.6
30°-40°	1894.3	31.9
40°-50°	1335.1	22.5
50°-60°	275.5	4.6
60°-70°	9.7	0.2
70°-80°	5.8	0.1
80°-90°	5.7	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°	2405.5	40.6
0°-40°	4299.8	72.5
0°-60°	5910.3	99.6
0°-90°	5931.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5931.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1070	1070	1070	1070	1070	
5°	2734	1992	970	403	302	336
15°	9277	4081	491	175	189	2753
25°	14689	4936	288	403	458	6779
35°	15159	3457	184	242	242	9424
45°	12074	1185	27	37	38	8880
55°	1766	24	8	5	0	2327
65°	18	5	9	5	0	54
75°	0	5	10	6	0	0
85°	0	6	10	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°	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9
2.5°	1823.8	1768.8	1790.4	1726.8	1712.7	1700.9	1712.7	1643.7	1604.9	1555.3	1515.4
5°	2734.1	2668.3	2683.4	2572.3	2521.7	2487.1	2480.7	2338.3	2231.5	2114.0	1992.1
7.5°	3806.2	3743.7	3735.0	3562.5	3457.8	3398.5	3373.7	3169.9	2985.4	2776.2	2547.5
10°	5268.7	5126.4	5082.1	4831.9	4632.4	4506.2	4350.9	4025.2	3701.6	3385.6	3094.4
12.5°	6970.7	6893.0	6783.0	6341.9	5992.4	5813.4	5581.5	5072.4	4582.8	4060.7	3573.2
15°	9276.6	9000.5	8812.8	8175.4	7612.4	7336.3	6997.6	6218.9	5479.0	4817.9	4081.2
17.5°	11529.7	11385.2	11091.8	10264.6	9397.4	8961.7	8456.9	7398.9	6353.7	5413.2	4513.7
20°	13398.8	13262.9	12928.6	12148.8	11186.7	10543.9	9908.6	8456.9	7091.5	5887.8	4802.8
22.5°	14294.0	14207.8	13934.9	13267.3	12447.6	11836.0	11153.3	9357.5	7637.2	6198.4	4934.4
25°	14688.8	14648.9	14473.1	13946.7	13174.5	12655.7	12010.7	9994.9	7977.0	6343.0	4936.5
27.5°	15088.9	15096.5	14708.2	14291.9	13559.5	13061.3	12440.0	10277.5	8038.4	6262.1	4774.7
30°	15215.1	15135.3	14963.8	14366.3	13670.6	13141.1	12474.5	10147.0	7786.1	5929.9	4452.3
32.5°	15163.3	15132.1	14943.3	14311.3	13481.9	12898.4	12141.2	9629.3	7287.8	5455.3	3995.0
35°	15159.0	15100.8	14668.3	14125.8	13104.4	12383.9	11386.3	8792.3	6582.4	4829.8	3456.8
37.5°	14885.1	14740.6	14415.9	13684.7	12338.6	11425.1	10306.6	7769.9	5719.6	4127.6	2922.9
40°	14482.8	14288.6	13861.5	12754.9	11012.0	9959.3	8867.8	6608.3	4806.0	3435.2	2355.6
42.5°	13642.6	13349.2	12745.2	11223.4	9244.3	8295.1	7387.0	5431.6	3919.5	2798.8	1797.9
45°	12074.4	11673.2	10856.7	9186.0	7467.9	6693.5	5963.3	4370.3	3137.5	2076.2	1185.3
47.5°	9704.8	9332.7	8589.6	7312.6	5856.5	5201.9	4619.4	3250.8	2126.9	1202.6	566.2
50°	7225.2	6906.0	6325.7	5082.1	3931.3	3416.8	2918.6	1846.5	996.6	571.6	235.1
52.5°	4311.0	4152.4	3638.0	2818.3	1941.4	1672.8	1342.8	781.9	502.6	207.1	63.6
55°	1765.6	1629.7	1436.6	1153.0	844.5	716.2	612.6	386.1	156.4	43.1	23.7
57.5°	798.1	767.9	680.6	535.0	388.3	325.7	220.0	73.3	34.5	21.6	14.0
60°	307.4	277.2	237.3	128.3	55.0	46.4	37.7	24.8	17.3	11.9	8.6
62.5°	44.2	42.1	37.7	30.2	23.7	21.6	18.3	12.9	9.7	7.5	6.5
65°	18.3	18.3	16.2	12.9	10.8	9.7	8.6	6.5	5.4	5.4	5.4
67.5°	7.5	7.5	6.5	5.4	4.3	4.3	4.3	3.2	4.3	4.3	5.4
70°	2.2	2.2	2.2	2.2	2.2	2.2	3.2	3.2	4.3	4.3	5.4
72.5°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.2	4.3	5.4	5.4
75°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.2	4.3	5.4	5.4
77.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	5.4
80°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	6.5
82.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	6.5
85°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	6.5
87.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	6.5
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°	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9
2.5°	1480.9	1411.8	1392.4	1332.0	1281.3	1256.5	1225.2	1155.1	1102.3	1032.2	990.1
5°	1906.9	1776.4	1672.8	1546.6	1463.6	1409.7	1325.5	1197.2	1093.7	969.6	881.2
7.5°	2367.4	2129.1	1942.5	1734.3	1614.6	1520.8	1377.3	1192.9	1040.8	875.8	738.8
10°	2811.8	2455.9	2162.5	1863.7	1706.3	1575.8	1378.4	1146.5	944.8	736.7	592.1
12.5°	3203.3	2743.8	2330.7	1946.8	1751.6	1588.7	1341.7	1063.5	819.7	606.1	478.9
15°	3530.1	2967.1	2449.4	1978.1	1754.8	1560.7	1265.1	944.8	680.6	490.7	401.2
17.5°	3778.2	3084.7	2486.1	1940.3	1692.2	1480.9	1147.6	794.9	552.2	416.3	337.6
20°	3906.5	3107.3	2433.2	1837.9	1576.8	1360.1	993.3	645.0	468.1	362.4	282.6
22.5°	3922.7	3043.7	2307.0	1691.2	1431.2	1213.4	822.9	538.2	417.4	320.3	249.1
25°	3826.7	2905.6	2126.9	1525.1	1271.6	1045.1	669.8	482.1	379.6	288.0	286.9
27.5°	3621.8	2668.3	1911.2	1332.0	1078.6	849.9	568.4	435.7	338.7	305.2	324.6
30°	3332.7	2364.2	1645.9	1088.3	842.3	653.6	478.9	359.2	297.7	300.9	317.1
32.5°	2941.2	1986.7	1334.2	797.0	602.9	491.8	359.2	244.8	247.0	248.1	262.1
35°	2449.4	1593.0	996.6	536.0	423.9	346.2	202.8	180.1	183.4	184.4	194.1
37.5°	1963.0	1224.2	662.2	357.0	266.4	182.3	126.2	120.8	123.0	121.9	132.7
40°	1503.5	853.1	396.9	176.9	102.5	85.2	77.7	74.4	75.5	76.6	83.0
42.5°	1064.5	462.7	196.3	66.9	53.9	49.6	46.4	44.2	45.3	45.3	49.6
45°	540.4	218.9	66.9	36.7	33.4	30.2	28.0	27.0	27.0	27.0	29.1
47.5°	234.0	72.3	31.3	22.6	20.5	19.4	17.3	16.2	16.2	16.2	17.3
50°	73.3	29.1	19.4	15.1	12.9	11.9	10.8	10.8	10.8	9.7	10.8
52.5°	27.0	18.3	12.9	9.7	8.6	8.6	8.6	7.5	8.6	7.5	8.6
55°	16.2	11.9	8.6	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
57.5°	10.8	8.6	7.5	7.5	6.5	6.5	7.5	7.5	7.5	7.5	7.5
60°	7.5	7.5	6.5	6.5	6.5	6.5	7.5	7.5	7.5	7.5	7.5
62.5°	6.5	6.5	6.5	6.5	6.5	6.5	7.5	7.5	7.5	7.5	8.6
65°	5.4	6.5	6.5	6.5	6.5	6.5	7.5	7.5	8.6	8.6	8.6
67.5°	5.4	6.5	6.5	7.5	7.5	7.5	7.5	8.6	8.6	8.6	8.6
70°	6.5	6.5	7.5	7.5	7.5	7.5	8.6	8.6	8.6	8.6	9.7
72.5°	6.5	6.5	7.5	7.5	7.5	7.5	8.6	8.6	9.7	9.7	9.7
75°	6.5	7.5	7.5	7.5	7.5	8.6	8.6	8.6	9.7	9.7	9.7
77.5°	6.5	7.5	7.5	8.6	8.6	8.6	8.6	9.7	9.7	9.7	9.7
80°	6.5	7.5	7.5	8.6	8.6	8.6	9.7	9.7	9.7	9.7	10.8
82.5°	6.5	7.5	7.5	8.6	8.6	8.6	9.7	9.7	9.7	9.7	10.8
85°	7.5	7.5	8.6	8.6	8.6	8.6	9.7	9.7	9.7	9.7	10.8
87.5°	7.5	7.5	8.6	8.6	8.6	8.6	9.7	9.7	10.8	9.7	10.8
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°	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9
2.5°	934.0	871.5	828.3	812.1	780.9	731.3	702.1	675.2	624.5	613.7	585.7
5°	779.8	679.5	608.3	581.3	545.7	503.7	462.7	435.7	403.4	390.4	371.0
7.5°	614.8	514.5	453.0	431.4	406.6	372.1	335.4	308.5	275.0	257.8	241.6
10°	483.2	408.8	357.0	335.4	309.5	272.9	235.1	199.5	170.4	152.1	148.8
12.5°	392.6	331.1	276.1	253.5	223.3	186.6	159.6	158.5	156.4	155.3	157.5
15°	321.4	262.1	203.8	179.0	170.4	169.3	172.6	175.8	174.7	178.0	180.1
17.5°	264.2	200.6	187.7	188.7	189.8	193.1	198.5	207.1	208.2	213.6	217.9
20°	215.7	212.5	217.9	222.2	225.4	231.9	243.8	254.5	257.8	265.3	274.0
22.5°	244.8	254.5	266.4	271.8	276.1	288.0	300.9	318.2	324.6	334.4	346.2
25°	295.5	311.7	330.0	336.5	343.0	362.4	377.5	398.0	403.4	415.2	427.1
27.5°	337.6	354.8	374.3	382.9	388.3	407.7	420.6	433.6	433.6	440.0	448.7
30°	331.1	345.1	361.3	367.8	369.9	384.0	396.9	401.2	399.1	402.3	408.8
32.5°	275.0	285.8	298.8	304.2	306.3	316.0	326.8	326.8	325.7	325.7	330.0
35°	203.8	211.4	217.9	223.3	226.5	233.0	242.7	241.6	241.6	239.4	242.7
37.5°	137.0	141.3	148.8	151.0	152.1	156.4	163.9	163.9	161.8	162.9	165.0
40°	83.0	88.4	92.8	93.8	96.0	99.2	104.6	104.6	104.6	104.6	105.7
42.5°	49.6	52.8	56.1	56.1	57.2	61.5	63.6	63.6	63.6	63.6	64.7
45°	29.1	30.2	32.4	33.4	33.4	35.6	36.7	36.7	36.7	36.7	37.7
47.5°	17.3	18.3	18.3	19.4	19.4	20.5	21.6	21.6	20.5	20.5	20.5
50°	10.8	10.8	10.8	10.8	11.9	11.9	11.9	11.9	11.9	11.9	10.8
52.5°	8.6	8.6	8.6	8.6	7.5	7.5	7.5	7.5	6.5	6.5	5.4
55°	7.5	7.5	7.5	7.5	7.5	6.5	6.5	6.5	5.4	4.3	3.2
57.5°	7.5	7.5	7.5	7.5	7.5	6.5	6.5	5.4	4.3	4.3	3.2
60°	7.5	7.5	7.5	7.5	7.5	6.5	6.5	5.4	4.3	4.3	3.2
62.5°	8.6	8.6	7.5	7.5	7.5	6.5	6.5	5.4	5.4	4.3	3.2
65°	8.6	8.6	7.5	7.5	7.5	7.5	6.5	6.5	5.4	4.3	3.2
67.5°	8.6	8.6	8.6	8.6	7.5	7.5	7.5	6.5	5.4	4.3	3.2
70°	9.7	9.7	8.6	8.6	8.6	7.5	7.5	6.5	5.4	5.4	4.3
72.5°	9.7	9.7	8.6	8.6	8.6	8.6	7.5	6.5	6.5	5.4	4.3
75°	9.7	9.7	9.7	9.7	8.6	8.6	7.5	7.5	6.5	5.4	4.3
77.5°	9.7	9.7	9.7	9.7	8.6	8.6	8.6	7.5	6.5	5.4	4.3
80°	9.7	9.7	9.7	9.7	9.7	8.6	8.6	7.5	6.5	5.4	4.3
82.5°	10.8	10.8	9.7	9.7	9.7	8.6	8.6	7.5	6.5	5.4	5.4
85°	10.8	10.8	9.7	9.7	9.7	8.6	8.6	7.5	6.5	6.5	5.4
87.5°	10.8	10.8	9.7	9.7	9.7	8.6	8.6	7.5	6.5	6.5	5.4
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: P209066

CATALOG NUMBER: LDSQA6A75935D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9	1069.9
2.5°	568.4	536.0	525.3	532.8	524.2	517.7	509.1	504.8
5°	355.9	332.2	324.6	326.8	319.3	312.8	304.2	302.0
7.5°	218.9	196.3	187.7	187.7	179.0	171.5	166.1	162.9
10°	146.7	142.4	143.4	144.5	143.4	144.5	141.3	143.4
12.5°	157.5	155.3	157.5	158.5	158.5	160.7	156.4	159.6
15°	183.4	181.2	184.4	186.6	186.6	189.8	185.5	188.7
17.5°	224.3	223.3	228.7	230.8	231.9	237.3	231.9	236.2
20°	283.7	282.6	290.1	293.4	292.3	303.1	295.5	303.1
22.5°	360.2	358.1	368.9	372.1	373.2	387.2	380.7	386.1
25°	436.8	439.0	444.4	449.8	450.8	462.7	453.0	458.4
27.5°	453.0	449.8	453.0	459.5	460.5	465.9	457.3	461.6
30°	409.8	404.5	405.5	413.1	415.2	417.4	409.8	412.0
32.5°	333.3	324.6	324.6	332.2	334.4	337.6	324.6	330.0
35°	245.9	238.4	238.4	243.8	244.8	247.0	237.3	241.6
37.5°	168.3	161.8	163.9	166.1	167.2	169.3	168.3	167.2
40°	107.9	103.5	106.8	106.8	107.9	108.9	108.9	110.0
42.5°	65.8	62.6	64.7	64.7	65.8	65.8	65.8	66.9
45°	37.7	36.7	36.7	37.7	37.7	37.7	36.7	37.7
47.5°	20.5	19.4	20.5	20.5	20.5	20.5	20.5	20.5
50°	10.8	9.7	9.7	9.7	9.7	9.7	9.7	9.7
52.5°	5.4	4.3	4.3	4.3	3.2	4.3	3.2	3.2
55°	3.2	2.2	2.2	2.2	1.1	1.1	0.0	0.0
57.5°	2.2	1.1	1.1	1.1	0.0	0.0	0.0	0.0
60°	2.2	1.1	1.1	1.1	0.0	0.0	0.0	0.0
62.5°	2.2	1.1	1.1	1.1	0.0	0.0	0.0	0.0
65°	2.2	1.1	1.1	1.1	0.0	0.0	0.0	0.0
67.5°	3.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
70°	3.2	2.2	2.2	1.1	1.1	0.0	0.0	0.0
72.5°	3.2	2.2	2.2	2.2	1.1	1.1	0.0	0.0
75°	3.2	2.2	2.2	2.2	1.1	1.1	0.0	0.0
77.5°	3.2	3.2	2.2	2.2	1.1	1.1	1.1	0.0
80°	4.3	3.2	2.2	2.2	2.2	1.1	1.1	1.1
82.5°	4.3	3.2	2.2	2.2	2.2	1.1	1.1	1.1
85°	4.3	3.2	3.2	2.2	2.2	1.1	1.1	1.1
87.5°	4.3	3.2	3.2	2.2	2.2	1.1	1.1	1.1
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)