

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: P209064

Luminaire Tested: **LDSQA6A75927D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209064
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: LDSQA6A75927D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5191.8 lumens
Efficiency: N/A
Efficacy: 65.3 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

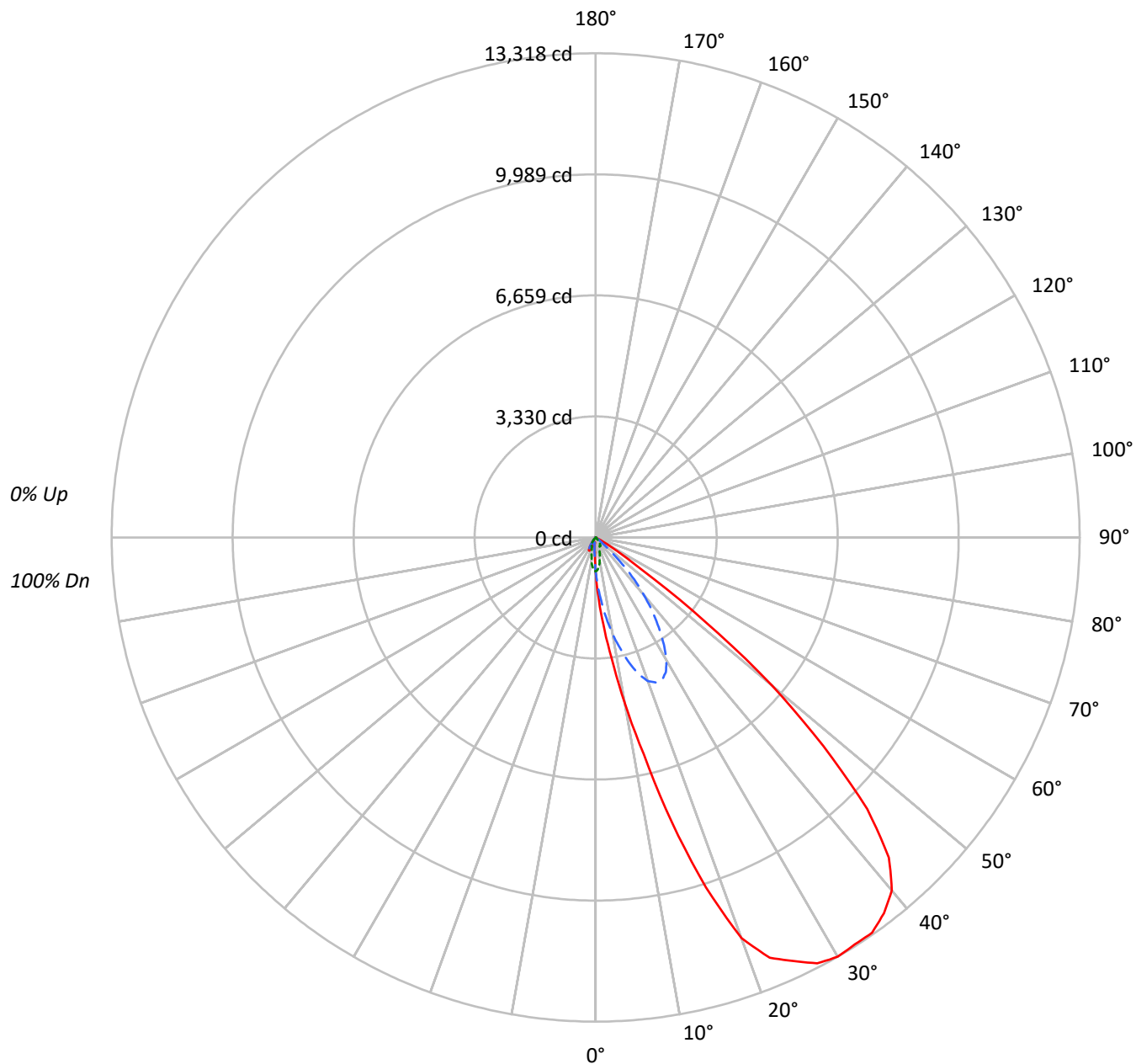
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209064

CATALOG NUMBER: LDSQA6A75927D010TE LARH30NF 6LSQA1H 30°

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	40322	40322	40322
5°	103434	36681	11423
10°	201623	28191	5491
15°	361932	19145	7364
20°	537359	14534	12156
25°	610793	11976	19060
30°	662108	13095	17928
35°	697414	8483	11117
40°	712496	3766	5413
45°	643521	1437	2009
50°	423612	569	569
55°	116006	495	0
60°	23173	568	0
65°	1630	774	0
70°	239	957	0
75°	0	1414	0
80°	0	2108	223
85°	0	4199	445



TEST NUMBER: P209064

CATALOG NUMBER: LDSQA6A75927D010TE LARH30NF 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	114.7	2.2
10°-20°	609.4	11.7
20°-30°	1381.3	26.6
30°-40°	1658.1	31.9
40°-50°	1168.6	22.5
50°-60°	241.1	4.6
60°-70°	8.5	0.2
70°-80°	5.1	0.1
80°-90°	5.0	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°	2105.5	40.6
0°-40°	3763.6	72.5
0°-60°	5173.2	99.6
0°-90°	5191.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5191.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	936	936	936	936	936	
5°	2393	1744	849	353	264	294
15°	8120	3572	430	153	165	2410
25°	12857	4321	252	353	401	5933
35°	13269	3026	161	212	212	8249
45°	10569	1038	24	32	33	7773
55°	1545	21	7	5	0	2036
65°	16	5	8	5	0	48
75°	0	5	8	6	0	0
85°	0	6	8	6	1	0
90°	0	0	0	0	0	



TEST NUMBER: P209064

CATALOG NUMBER: LDSQA6A75927D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5
2.5°	1596.4	1548.2	1567.1	1511.4	1499.1	1488.8	1499.1	1438.7	1404.7	1361.3	1326.4
5°	2393.2	2335.6	2348.8	2251.6	2207.2	2177.0	2171.3	2046.7	1953.2	1850.3	1743.7
7.5°	3331.5	3276.8	3269.2	3118.2	3026.6	2974.7	2953.0	2774.6	2613.1	2430.0	2229.8
10°	4611.7	4487.1	4448.3	4229.3	4054.7	3944.2	3808.3	3523.2	3240.0	2963.4	2708.5
12.5°	6101.4	6033.4	5937.1	5551.0	5245.1	5088.4	4885.4	4439.9	4011.3	3554.3	3127.6
15°	8119.7	7878.1	7713.8	7155.9	6663.1	6421.4	6125.0	5443.4	4795.8	4217.1	3572.3
17.5°	10091.9	9965.4	9708.6	8984.5	8225.5	7844.1	7402.3	6476.2	5561.4	4738.2	3950.8
20°	11727.9	11608.9	11316.3	10633.7	9791.7	9229.0	8673.0	7402.3	6207.1	5153.6	4203.8
22.5°	12511.5	12435.9	12197.1	11612.7	10895.2	10360.0	9762.4	8190.5	6684.8	5425.4	4319.0
25°	12857.0	12822.0	12668.2	12207.5	11531.5	11077.4	10512.9	8748.5	6982.2	5551.9	4320.9
27.5°	13207.2	13213.8	12874.0	12509.6	11868.6	11432.4	10888.6	8995.8	7036.0	5481.1	4179.3
30°	13317.7	13247.8	13097.7	12574.7	11965.8	11502.3	10918.8	8881.6	6815.1	5190.4	3897.0
32.5°	13272.4	13245.0	13079.8	12526.6	11800.6	11289.9	10627.1	8428.4	6378.9	4775.0	3496.7
35°	13268.6	13217.6	12839.0	12364.2	11470.2	10839.5	9966.3	7695.9	5761.5	4227.4	3025.7
37.5°	13028.8	12902.3	12618.1	11978.1	10799.9	10000.3	9021.3	6800.9	5006.3	3612.9	2558.4
40°	12676.7	12506.7	12132.9	11164.3	9638.7	8717.3	7762.0	5784.2	4206.7	3006.8	2061.8
42.5°	11941.2	11684.5	11155.8	9823.8	8091.4	7260.7	6465.8	4754.2	3430.7	2449.8	1573.7
45°	10568.6	10217.4	9502.8	8040.4	6536.6	5858.8	5219.6	3825.3	2746.2	1817.3	1037.5
47.5°	8494.5	8168.8	7518.4	6400.6	5126.2	4553.1	4043.4	2845.4	1861.7	1052.6	495.6
50°	6324.2	6044.7	5536.8	4448.3	3441.1	2990.7	2554.6	1616.2	872.3	500.3	205.8
52.5°	3773.4	3634.6	3184.3	2466.8	1699.3	1464.2	1175.3	684.4	439.9	181.3	55.7
55°	1545.4	1426.5	1257.5	1009.2	739.2	626.8	536.2	338.0	136.9	37.8	20.8
57.5°	698.6	672.2	595.7	468.2	339.9	285.1	192.6	64.2	30.2	18.9	12.3
60°	269.1	242.6	207.7	112.3	48.1	40.6	33.0	21.7	15.1	10.4	7.6
62.5°	38.7	36.8	33.0	26.4	20.8	18.9	16.0	11.3	8.5	6.6	5.7
65°	16.0	16.0	14.2	11.3	9.4	8.5	7.6	5.7	4.7	4.7	4.7
67.5°	6.6	6.6	5.7	4.7	3.8	3.8	3.8	2.8	3.8	3.8	4.7
70°	1.9	1.9	1.9	1.9	1.9	1.9	2.8	2.8	3.8	3.8	4.7
72.5°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.8	4.7	4.7
75°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.8	4.7	4.7
77.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	4.7
80°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	5.7
82.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	5.7
85°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	5.7
87.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.8	4.7	5.7
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: P209064

CATALOG NUMBER: LDSQA6A75927D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5
2.5°	1296.2	1235.8	1218.8	1165.9	1121.5	1099.8	1072.4	1011.1	964.8	903.5	866.6
5°	1669.1	1554.8	1464.2	1353.8	1281.1	1233.9	1160.2	1047.9	957.3	848.7	771.3
7.5°	2072.2	1863.5	1700.2	1518.0	1413.2	1331.1	1205.5	1044.1	911.0	766.6	646.7
10°	2461.1	2149.6	1892.8	1631.3	1493.5	1379.3	1206.5	1003.5	827.0	644.8	518.3
12.5°	2803.8	2401.7	2040.1	1704.0	1533.1	1390.6	1174.4	930.8	717.5	530.6	419.2
15°	3089.9	2597.1	2143.9	1731.4	1536.0	1366.0	1107.4	827.0	595.7	429.5	351.2
17.5°	3307.0	2700.0	2176.0	1698.3	1481.2	1296.2	1004.5	695.8	483.4	364.4	295.5
20°	3419.3	2719.8	2129.8	1608.7	1380.2	1190.4	869.5	564.5	409.7	317.2	247.3
22.5°	3433.5	2664.1	2019.3	1480.3	1252.7	1062.1	720.3	471.1	365.3	280.4	218.1
25°	3349.5	2543.3	1861.7	1334.9	1113.0	914.8	586.3	422.0	332.3	252.1	251.1
27.5°	3170.1	2335.6	1672.9	1165.9	944.0	743.9	497.5	381.4	296.4	267.2	284.2
30°	2917.1	2069.4	1440.6	952.5	737.3	572.1	419.2	314.4	260.6	263.4	277.5
32.5°	2574.4	1738.9	1167.8	697.7	527.7	430.5	314.4	214.3	216.2	217.1	229.4
35°	2143.9	1394.4	872.3	469.2	371.0	303.0	177.5	157.7	160.5	161.4	169.9
37.5°	1718.2	1071.5	579.6	312.5	233.2	159.5	110.5	105.7	107.6	106.7	116.1
40°	1316.0	746.7	347.4	154.8	89.7	74.6	68.0	65.1	66.1	67.0	72.7
42.5°	931.8	405.0	171.8	58.5	47.2	43.4	40.6	38.7	39.6	39.6	43.4
45°	473.0	191.6	58.5	32.1	29.3	26.4	24.5	23.6	23.6	23.6	25.5
47.5°	204.9	63.3	27.4	19.8	17.9	17.0	15.1	14.2	14.2	14.2	15.1
50°	64.2	25.5	17.0	13.2	11.3	10.4	9.4	9.4	9.4	8.5	9.4
52.5°	23.6	16.0	11.3	8.5	7.6	7.6	7.6	6.6	7.6	6.6	7.6
55°	14.2	10.4	7.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
57.5°	9.4	7.6	6.6	6.6	5.7	5.7	6.6	6.6	6.6	6.6	6.6
60°	6.6	6.6	5.7	5.7	5.7	5.7	6.6	6.6	6.6	6.6	6.6
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	6.6	6.6	6.6	6.6	7.6
65°	4.7	5.7	5.7	5.7	5.7	5.7	6.6	6.6	7.6	7.6	7.6
67.5°	4.7	5.7	5.7	6.6	6.6	6.6	6.6	7.6	7.6	7.6	7.6
70°	5.7	5.7	6.6	6.6	6.6	6.6	7.6	7.6	7.6	7.6	8.5
72.5°	5.7	5.7	6.6	6.6	6.6	6.6	7.6	7.6	8.5	8.5	8.5
75°	5.7	6.6	6.6	6.6	6.6	7.6	7.6	7.6	8.5	8.5	8.5
77.5°	5.7	6.6	6.6	7.6	7.6	7.6	7.6	8.5	8.5	8.5	8.5
80°	5.7	6.6	6.6	7.6	7.6	7.6	8.5	8.5	8.5	8.5	9.4
82.5°	5.7	6.6	6.6	7.6	7.6	7.6	8.5	8.5	8.5	8.5	9.4
85°	6.6	6.6	7.6	7.6	7.6	7.6	8.5	8.5	8.5	8.5	9.4
87.5°	6.6	6.6	7.6	7.6	7.6	7.6	8.5	8.5	9.4	8.5	9.4
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: P209064

CATALOG NUMBER: LDSQA6A75927D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5
2.5°	817.5	762.8	725.0	710.9	683.5	640.1	614.6	591.0	546.6	537.2	512.6
5°	682.5	594.7	532.4	508.8	477.7	440.9	405.0	381.4	353.1	341.7	324.8
7.5°	538.1	450.3	396.5	377.6	355.9	325.7	293.6	270.0	240.7	225.6	211.5
10°	422.9	357.8	312.5	293.6	270.9	238.8	205.8	174.6	149.2	133.1	130.3
12.5°	343.6	289.8	241.7	221.9	195.4	163.3	139.7	138.8	136.9	135.9	137.8
15°	281.3	229.4	178.4	156.7	149.2	148.2	151.0	153.9	152.9	155.8	157.7
17.5°	231.3	175.6	164.3	165.2	166.2	169.0	173.7	181.3	182.2	186.9	190.7
20°	188.8	186.0	190.7	194.5	197.3	203.0	213.4	222.8	225.6	232.2	239.8
22.5°	214.3	222.8	233.2	237.9	241.7	252.1	263.4	278.5	284.2	292.7	303.0
25°	258.7	272.8	288.9	294.5	300.2	317.2	330.4	348.4	353.1	363.5	373.8
27.5°	295.5	310.6	327.6	335.1	339.9	356.8	368.2	379.5	379.5	385.2	392.7
30°	289.8	302.1	316.3	321.9	323.8	336.1	347.4	351.2	349.3	352.1	357.8
32.5°	240.7	250.2	261.5	266.2	268.1	276.6	286.0	286.0	285.1	285.1	288.9
35°	178.4	185.0	190.7	195.4	198.2	203.9	212.4	211.5	211.5	209.6	212.4
37.5°	119.9	123.7	130.3	132.2	133.1	136.9	143.5	143.5	141.6	142.6	144.4
40°	72.7	77.4	81.2	82.1	84.0	86.9	91.6	91.6	91.6	91.6	92.5
42.5°	43.4	46.3	49.1	49.1	50.0	53.8	55.7	55.7	55.7	55.7	56.6
45°	25.5	26.4	28.3	29.3	29.3	31.2	32.1	32.1	32.1	32.1	33.0
47.5°	15.1	16.0	16.0	17.0	17.0	17.9	18.9	18.9	17.9	17.9	17.9
50°	9.4	9.4	9.4	9.4	10.4	10.4	10.4	10.4	10.4	10.4	9.4
52.5°	7.6	7.6	7.6	7.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7
55°	6.6	6.6	6.6	6.6	6.6	5.7	5.7	5.7	4.7	3.8	2.8
57.5°	6.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	3.8	2.8
60°	6.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	3.8	2.8
62.5°	7.6	7.6	6.6	6.6	6.6	5.7	5.7	4.7	4.7	3.8	2.8
65°	7.6	7.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	2.8
67.5°	7.6	7.6	7.6	7.6	6.6	6.6	6.6	5.7	4.7	3.8	2.8
70°	8.5	8.5	7.6	7.6	7.6	6.6	6.6	5.7	4.7	4.7	3.8
72.5°	8.5	8.5	7.6	7.6	7.6	7.6	6.6	5.7	5.7	4.7	3.8
75°	8.5	8.5	8.5	8.5	7.6	7.6	6.6	6.6	5.7	4.7	3.8
77.5°	8.5	8.5	8.5	8.5	7.6	7.6	7.6	6.6	5.7	4.7	3.8
80°	8.5	8.5	8.5	8.5	8.5	7.6	7.6	6.6	5.7	4.7	3.8
82.5°	9.4	9.4	8.5	8.5	8.5	7.6	7.6	6.6	5.7	4.7	4.7
85°	9.4	9.4	8.5	8.5	8.5	7.6	7.6	6.6	5.7	5.7	4.7
87.5°	9.4	9.4	8.5	8.5	8.5	7.6	7.6	6.6	5.7	5.7	4.7
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: P209064

CATALOG NUMBER: LDSQA6A75927D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	936.5	936.5	936.5	936.5	936.5	936.5	936.5	936.5
2.5°	497.5	469.2	459.8	466.4	458.8	453.1	445.6	441.8
5°	311.5	290.8	284.2	286.0	279.4	273.8	266.2	264.3
7.5°	191.6	171.8	164.3	164.3	156.7	150.1	145.4	142.6
10°	128.4	124.6	125.6	126.5	125.6	126.5	123.7	125.6
12.5°	137.8	135.9	137.8	138.8	138.8	140.7	136.9	139.7
15°	160.5	158.6	161.4	163.3	163.3	166.2	162.4	165.2
17.5°	196.4	195.4	200.1	202.0	203.0	207.7	203.0	206.7
20°	248.3	247.3	253.9	256.8	255.8	265.3	258.7	265.3
22.5°	315.3	313.4	322.9	325.7	326.6	338.9	333.2	338.0
25°	382.3	384.2	388.9	393.7	394.6	405.0	396.5	401.2
27.5°	396.5	393.7	396.5	402.2	403.1	407.8	400.3	404.1
30°	358.7	354.0	355.0	361.6	363.5	365.3	358.7	360.6
32.5°	291.7	284.2	284.2	290.8	292.7	295.5	284.2	288.9
35°	215.2	208.6	208.6	213.4	214.3	216.2	207.7	211.5
37.5°	147.3	141.6	143.5	145.4	146.3	148.2	147.3	146.3
40°	94.4	90.6	93.5	93.5	94.4	95.3	95.3	96.3
42.5°	57.6	54.8	56.6	56.6	57.6	57.6	57.6	58.5
45°	33.0	32.1	32.1	33.0	33.0	33.0	32.1	33.0
47.5°	17.9	17.0	17.9	17.9	17.9	17.9	17.9	17.9
50°	9.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5
52.5°	4.7	3.8	3.8	3.8	2.8	3.8	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°	3.8	2.8	1.9	1.9	1.9	0.9	0.9	0.9
82.5°	3.8	2.8	1.9	1.9	1.9	0.9	0.9	0.9
85°	3.8	2.8	2.8	1.9	1.9	0.9	0.9	0.9
87.5°	3.8	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)