

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: P209079

Luminaire Tested: **LDSQA6A55840D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209079  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26688)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQA6A55840D010TE LARH40FL 6LSQA1H 30°  
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,  
SELF-FLANGED, 40° FLOOD, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5513.2 lumens  
Efficiency: N/A  
Efficacy: 90.7 lumens/watt  
Spacing Criteria (0/90/45): 2.63 / 0.54 / 1.37  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
CIE Type: Direct

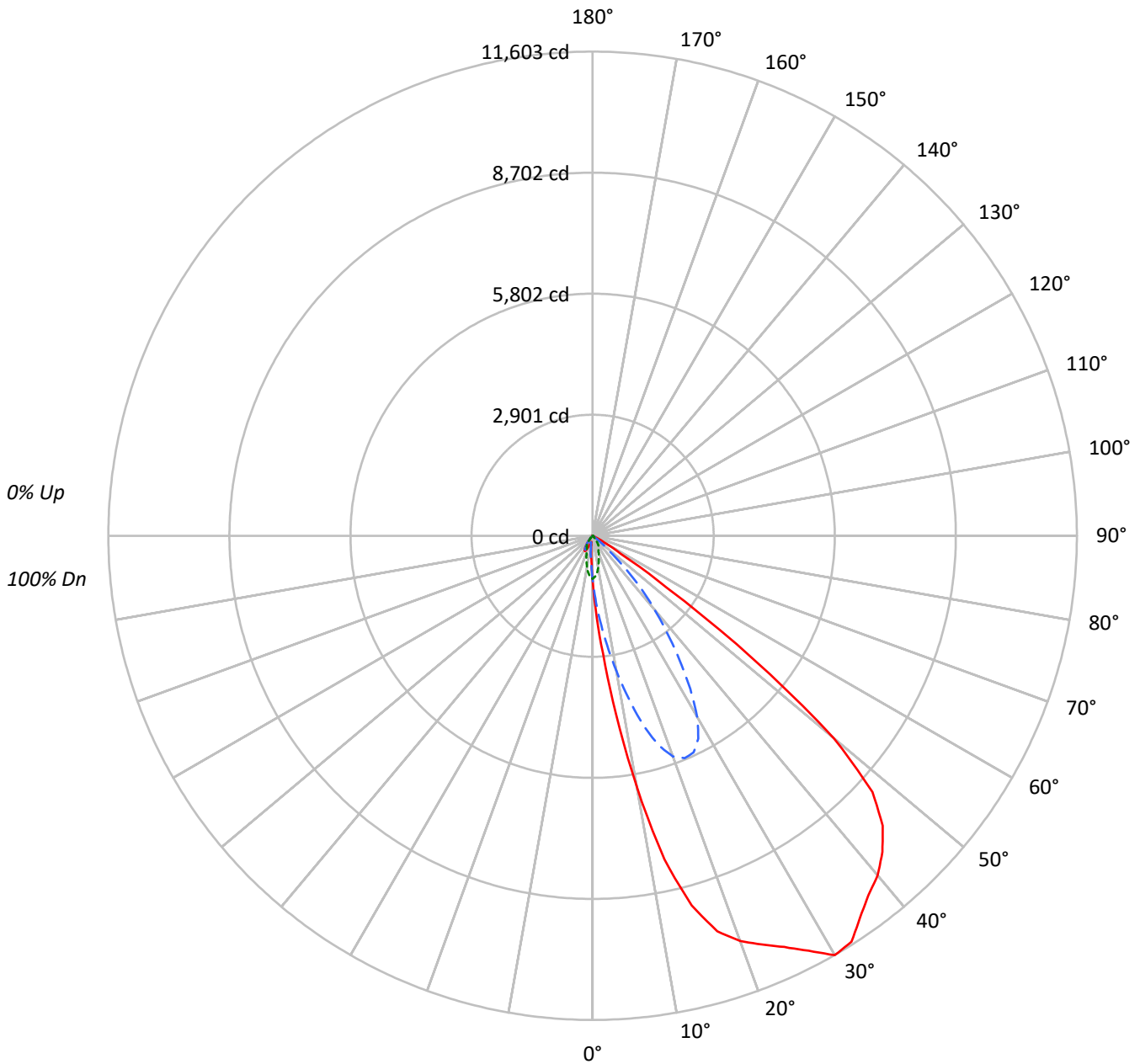
Input Watts (W): 60.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	88	83	78	86	81	77	83	79	76	81	77	74	73																			
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65																			
5	85	74	67	62	83	73	66	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	44	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	41	36	46	40	36	45	40	36	34																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	44489	44489	44489
5°	122110	40990	16726
10°	267587	33546	6374
15°	408735	25537	7480
20°	473561	18997	11615
25°	516587	15625	18746
30°	576869	14169	19146
35°	586936	9719	13125
40°	597247	4609	6643
45°	598219	1918	2904
50°	505733	831	891
55°	162854	570	143
60°	32343	654	0
65°	3301	774	0
70°	365	1083	0
75°	0	1431	0
80°	0	2356	248
85°	0	4693	494



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	140.3	2.5
10°-20°	725.4	13.2
20°-30°	1389.0	25.2
30°-40°	1636.4	29.7
40°-50°	1285.4	23.3
50°-60°	313.2	5.7
60°-70°	13.4	0.2
70°-80°	5.1	0.1
80°-90°	5.1	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°	2254.6	40.9
0°-40°	3891.1	70.6
0°-60°	5489.7	99.6
0°-90°	5513.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5513.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1033	1033	1033	1033	1033	
5°	2825	2045	948	497	387	373
15°	9170	4710	573	164	168	2560
25°	10874	5727	329	344	395	5068
35°	11167	3620	185	238	250	7002
45°	9825	1119	32	44	48	7382
55°	2170	41	8	5	2	2582
65°	32	5	8	5	0	86
75°	0	5	9	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°	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3
2.5°	1771.0	1767.2	1741.5	1765.3	1692.9	1690.0	1657.6	1643.3	1601.4	1561.3	1504.1
5°	2825.3	2763.3	2712.8	2714.7	2575.5	2549.8	2477.4	2404.0	2291.5	2186.6	2044.6
7.5°	4306.5	4233.1	4126.4	4081.6	3815.6	3737.5	3587.8	3392.4	3147.4	2903.4	2640.3
10°	6120.5	6131.9	5993.7	5866.0	5463.7	5305.5	5063.4	4678.3	4214.1	3755.6	3289.5
12.5°	7945.8	7938.2	7773.3	7579.8	7084.1	6861.1	6538.9	6058.5	5443.7	4732.6	4003.4
15°	9169.7	9224.1	9154.5	9000.1	8576.8	8321.4	7958.2	7306.2	6557.0	5693.4	4709.7
17.5°	9938.0	9989.5	9964.7	9843.6	9470.0	9197.4	8894.3	8360.5	7494.0	6408.3	5266.4
20°	10335.5	10416.5	10405.1	10273.5	9991.4	9765.5	9430.9	8936.2	8186.0	6904.9	5626.7
22.5°	10600.5	10662.4	10679.6	10530.9	10239.2	10024.7	9779.8	9278.4	8573.0	7208.1	5769.7
25°	10874.0	10983.7	10875.9	10692.9	10425.1	10219.2	9958.0	9477.6	8757.9	7332.0	5726.8
27.5°	11209.6	11262.0	11018.0	10851.2	10553.8	10330.7	10053.3	9592.9	8790.4	7232.8	5481.8
30°	11603.2	11385.9	11215.3	10884.5	10547.1	10329.8	10047.6	9520.5	8619.7	6904.0	5007.1
32.5°	11538.4	11339.2	11145.7	10795.9	10462.3	10246.8	9932.3	9279.3	8216.5	6354.0	4352.3
35°	11166.7	11209.6	11000.8	10711.0	10333.6	10111.5	9768.3	8936.2	7532.1	5595.2	3620.2
37.5°	10853.1	10947.4	10811.1	10543.3	10160.1	9859.8	9396.6	8385.2	6639.0	4632.5	2926.3
40°	10626.2	10656.7	10583.3	10283.1	9822.7	9389.0	8853.3	7395.8	5554.3	3636.4	2309.6
42.5°	10274.5	10355.5	10225.9	9898.0	9200.2	8709.3	7933.4	6253.0	4314.2	2777.6	1738.6
45°	9824.6	9901.8	9741.6	9196.4	8226.1	7506.4	6559.9	4875.6	3191.3	2047.5	1119.0
47.5°	9090.6	9138.3	8828.5	8074.5	6663.8	5986.1	5015.7	3399.1	2056.0	1144.8	544.3
50°	7550.2	7527.4	6888.7	5961.3	4457.1	3746.1	2985.4	1842.5	923.6	542.4	340.3
52.5°	4866.1	4813.6	4181.7	3338.1	2257.2	1722.4	1294.4	795.0	481.4	303.1	134.4
55°	2169.5	2149.5	1759.6	1366.9	923.6	795.0	607.2	389.9	256.4	105.8	41.0
57.5°	804.5	786.4	693.0	581.4	446.1	370.8	294.5	186.8	65.8	35.3	21.9
60°	375.6	374.6	329.8	271.7	188.7	143.0	82.9	43.8	27.6	19.1	12.4
62.5°	120.1	117.2	82.0	60.1	42.9	37.2	29.5	21.9	14.3	10.5	7.6
65°	32.4	32.4	29.5	24.8	20.0	17.2	14.3	10.5	6.7	5.7	4.8
67.5°	12.4	12.4	11.4	10.5	7.6	6.7	5.7	4.8	3.8	4.8	4.8
70°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.8	3.8	4.8
72.5°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
75°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
77.5°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
80°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
82.5°	0.0	0.0	1.0	1.9	1.9	1.9	2.9	3.8	3.8	4.8	5.7
85°	0.0	0.0	1.0	1.9	1.9	2.9	2.9	3.8	3.8	4.8	5.7
87.5°	0.0	0.0	1.0	1.9	1.9	2.9	2.9	3.8	3.8	4.8	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3
2.5°	1462.2	1399.3	1312.5	1262.0	1249.6	1222.9	1176.2	1106.7	1049.5	994.2	961.8
5°	1924.5	1775.8	1609.0	1491.7	1444.1	1380.2	1266.8	1149.6	1041.8	948.4	875.0
7.5°	2414.4	2169.5	1899.7	1682.4	1604.2	1503.2	1318.3	1143.8	996.1	866.5	768.3
10°	2901.5	2506.9	2140.9	1826.3	1698.6	1561.3	1317.3	1091.4	917.9	767.3	658.7
12.5°	3388.6	2821.5	2318.2	1913.1	1747.2	1573.7	1278.2	1011.3	818.8	665.3	561.4
15°	3838.5	3072.1	2438.3	1942.6	1742.4	1537.5	1199.1	914.1	714.9	572.9	476.6
17.5°	4174.0	3203.7	2465.9	1897.8	1667.1	1440.3	1078.1	799.7	615.8	490.9	392.7
20°	4338.9	3224.7	2400.1	1770.1	1537.5	1302.1	945.6	690.1	530.9	414.6	331.7
22.5°	4338.9	3125.5	2257.2	1609.9	1375.5	1142.9	817.8	599.6	464.2	361.3	291.7
25°	4174.0	2928.2	2065.6	1425.0	1197.2	985.6	707.3	531.9	412.7	328.9	270.7
27.5°	3853.8	2655.6	1819.6	1219.1	1021.8	845.5	619.6	469.9	373.7	296.4	297.4
30°	3413.4	2321.0	1537.5	1001.8	841.7	694.9	521.4	393.7	299.3	285.0	293.6
32.5°	2904.4	1920.7	1218.2	776.9	652.0	547.1	396.5	278.3	238.3	240.2	249.7
35°	2382.0	1511.8	917.0	575.7	485.2	396.5	260.2	183.0	181.1	184.9	191.6
37.5°	1880.7	1131.4	663.4	421.3	326.0	244.0	140.1	125.8	125.8	129.6	133.4
40°	1408.8	802.6	456.6	249.7	158.2	111.5	88.6	82.0	81.0	82.0	86.7
42.5°	967.5	508.1	271.7	100.1	76.3	64.8	56.2	51.5	50.5	51.5	54.3
45°	543.3	312.6	105.8	53.4	45.8	41.0	35.3	32.4	31.5	31.5	33.4
47.5°	340.3	123.9	47.7	33.4	28.6	26.7	22.9	21.0	20.0	20.0	21.0
50°	130.6	48.6	29.5	21.9	19.1	17.2	15.3	13.3	12.4	12.4	13.3
52.5°	44.8	28.6	19.1	14.3	12.4	11.4	9.5	8.6	8.6	8.6	8.6
55°	24.8	17.2	11.4	8.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
57.5°	15.3	10.5	7.6	6.7	6.7	6.7	6.7	6.7	6.7	7.6	7.6
60°	8.6	6.7	5.7	5.7	5.7	5.7	6.7	6.7	6.7	7.6	7.6
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	6.7	6.7	7.6	7.6	7.6
65°	4.8	4.8	4.8	5.7	5.7	5.7	6.7	6.7	7.6	7.6	7.6
67.5°	4.8	4.8	5.7	5.7	5.7	6.7	6.7	7.6	7.6	7.6	7.6
70°	4.8	5.7	5.7	6.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6
72.5°	4.8	5.7	5.7	6.7	6.7	6.7	7.6	7.6	8.6	8.6	8.6
75°	5.7	5.7	5.7	6.7	6.7	6.7	7.6	8.6	8.6	8.6	8.6
77.5°	5.7	5.7	6.7	6.7	6.7	7.6	7.6	8.6	8.6	8.6	8.6
80°	5.7	5.7	6.7	6.7	7.6	7.6	8.6	8.6	8.6	9.5	9.5
82.5°	5.7	5.7	6.7	7.6	7.6	7.6	8.6	8.6	9.5	9.5	9.5
85°	5.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6	9.5	9.5	9.5
87.5°	5.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6	9.5	9.5	9.5
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3
2.5°	918.9	878.8	838.8	809.3	795.0	780.7	749.2	708.2	691.1	666.3	652.0
5°	800.7	733.0	679.6	644.4	623.4	595.7	559.5	519.5	496.6	470.9	453.7
7.5°	678.7	599.6	548.1	515.7	494.7	460.4	414.6	367.0	339.3	310.7	290.7
10°	571.9	496.6	438.5	401.3	374.6	334.6	288.8	255.5	231.6	206.8	186.8
12.5°	477.6	396.5	334.6	303.1	285.0	246.9	208.7	171.6	157.3	152.5	152.5
15°	387.0	313.6	261.2	234.5	215.4	174.4	166.8	164.9	163.9	163.0	164.9
17.5°	315.5	253.5	198.3	184.9	183.0	182.1	183.0	183.0	184.0	186.8	191.6
20°	265.0	207.8	204.0	204.9	204.9	208.7	213.5	217.3	221.1	225.9	234.5
22.5°	235.4	234.5	241.2	242.1	246.9	252.6	261.2	266.9	276.4	281.2	293.6
25°	271.7	278.3	290.7	294.5	302.2	311.7	325.0	332.7	344.1	349.8	364.1
27.5°	307.9	318.4	333.6	338.4	345.1	360.3	369.8	376.5	382.2	386.0	394.6
30°	305.0	314.6	329.8	330.8	340.3	350.8	356.5	362.2	366.0	365.1	369.8
32.5°	258.3	266.9	281.2	281.2	291.7	300.3	303.1	307.9	307.9	307.9	309.8
35°	198.3	204.0	213.5	216.4	225.0	230.7	232.6	238.3	238.3	236.4	236.4
37.5°	137.3	144.9	151.6	153.5	159.2	163.0	167.8	168.7	166.8	167.8	167.8
40°	89.6	94.4	99.1	100.1	104.9	107.7	112.5	112.5	113.4	112.5	114.4
42.5°	55.3	59.1	62.0	63.9	65.8	67.7	70.5	71.5	72.4	71.5	73.4
45°	34.3	36.2	38.1	39.1	40.0	41.0	43.8	43.8	43.8	43.8	44.8
47.5°	21.0	21.9	22.9	22.9	23.8	24.8	25.7	25.7	25.7	25.7	26.7
50°	12.4	13.3	13.3	13.3	14.3	14.3	15.3	15.3	15.3	14.3	15.3
52.5°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	7.6	8.6
55°	7.6	7.6	6.7	6.7	6.7	6.7	6.7	5.7	4.8	4.8	3.8
57.5°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	4.8	3.8	2.9
60°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	3.8	2.9
62.5°	7.6	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	3.8	2.9
65°	7.6	7.6	6.7	6.7	6.7	5.7	5.7	4.8	4.8	3.8	2.9
67.5°	7.6	7.6	7.6	6.7	7.6	6.7	5.7	5.7	4.8	3.8	3.8
70°	8.6	7.6	7.6	7.6	7.6	6.7	6.7	5.7	4.8	3.8	3.8
72.5°	8.6	8.6	7.6	7.6	7.6	6.7	6.7	5.7	4.8	4.8	3.8
75°	8.6	8.6	7.6	7.6	7.6	6.7	6.7	5.7	5.7	4.8	3.8
77.5°	8.6	8.6	8.6	7.6	7.6	7.6	6.7	6.7	5.7	4.8	3.8
80°	8.6	8.6	8.6	8.6	8.6	7.6	7.6	6.7	5.7	4.8	3.8
82.5°	9.5	8.6	8.6	8.6	8.6	7.6	7.6	6.7	5.7	4.8	4.8
85°	9.5	9.5	8.6	8.6	8.6	7.6	7.6	6.7	5.7	5.7	4.8
87.5°	9.5	8.6	8.6	8.6	8.6	7.6	7.6	6.7	5.7	4.8	4.8
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: P209079

CATALOG NUMBER: LDSQA6A55840D010TE LARH40FL 6LSQA1H 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3	1033.3
2.5°	637.7	630.1	630.1	616.7	614.8	604.3	612.9	607.2
5°	434.7	422.3	418.5	405.1	400.3	387.9	391.8	387.0
7.5°	273.6	261.2	257.4	247.8	242.1	232.6	233.5	230.7
10°	166.8	155.4	152.5	149.7	146.8	145.8	146.8	145.8
12.5°	151.6	150.6	148.7	149.7	147.7	148.7	149.7	148.7
15°	164.9	166.8	164.9	165.9	164.9	166.8	167.8	167.8
17.5°	193.5	197.3	195.4	198.3	197.3	202.1	202.1	202.1
20°	237.3	244.0	242.1	245.9	245.9	251.6	251.6	253.5
22.5°	298.3	306.9	306.0	314.6	312.6	319.3	319.3	321.2
25°	371.7	380.3	381.3	387.0	386.0	392.7	392.7	394.6
27.5°	402.2	407.0	406.1	408.9	409.9	413.7	416.5	414.6
30°	377.5	381.3	380.3	382.2	382.2	385.1	387.9	385.1
32.5°	317.4	320.3	320.3	324.1	321.2	322.2	326.9	324.1
35°	243.1	245.0	243.1	245.0	245.9	245.9	250.7	249.7
37.5°	173.5	174.4	174.4	177.3	174.4	174.4	179.2	180.2
40°	116.3	117.2	116.3	120.1	118.2	118.2	121.1	118.2
42.5°	74.3	75.3	74.3	77.2	75.3	77.2	78.2	79.1
45°	45.8	45.8	44.8	46.7	45.8	46.7	47.7	47.7
47.5°	26.7	26.7	25.7	27.6	26.7	26.7	26.7	27.6
50°	14.3	14.3	14.3	15.3	14.3	14.3	14.3	13.3
52.5°	7.6	7.6	6.7	7.6	6.7	6.7	6.7	6.7
55°	3.8	2.9	2.9	2.9	1.9	1.9	1.9	1.9
57.5°	2.9	1.9	1.9	1.0	1.0	1.0	0.0	0.0
60°	1.9	1.9	1.0	1.0	0.0	0.0	0.0	0.0
62.5°	1.9	1.9	1.0	1.0	0.0	0.0	0.0	0.0
65°	1.9	1.9	1.0	1.0	0.0	0.0	0.0	0.0
67.5°	2.9	1.9	1.9	1.0	1.0	0.0	0.0	0.0
70°	2.9	1.9	1.9	1.0	1.0	0.0	0.0	0.0
72.5°	2.9	1.9	1.9	1.9	1.0	1.0	0.0	0.0
75°	2.9	2.9	1.9	1.9	1.0	1.0	0.0	0.0
77.5°	3.8	2.9	1.9	1.9	1.0	1.0	0.0	0.0
80°	3.8	2.9	1.9	1.9	1.9	1.0	1.0	1.0
82.5°	3.8	2.9	2.9	1.9	1.9	1.0	1.0	1.0
85°	3.8	2.9	2.9	1.9	1.9	1.0	1.0	1.0
87.5°	3.8	2.9	2.9	1.9	1.9	1.0	1.0	1.0
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)