

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: P209076

Luminaire Tested: **LDSQA6A55827D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209076
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: LDSQA6A55827D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5055.4 lumens
Efficiency: N/A
Efficacy: 83.1 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

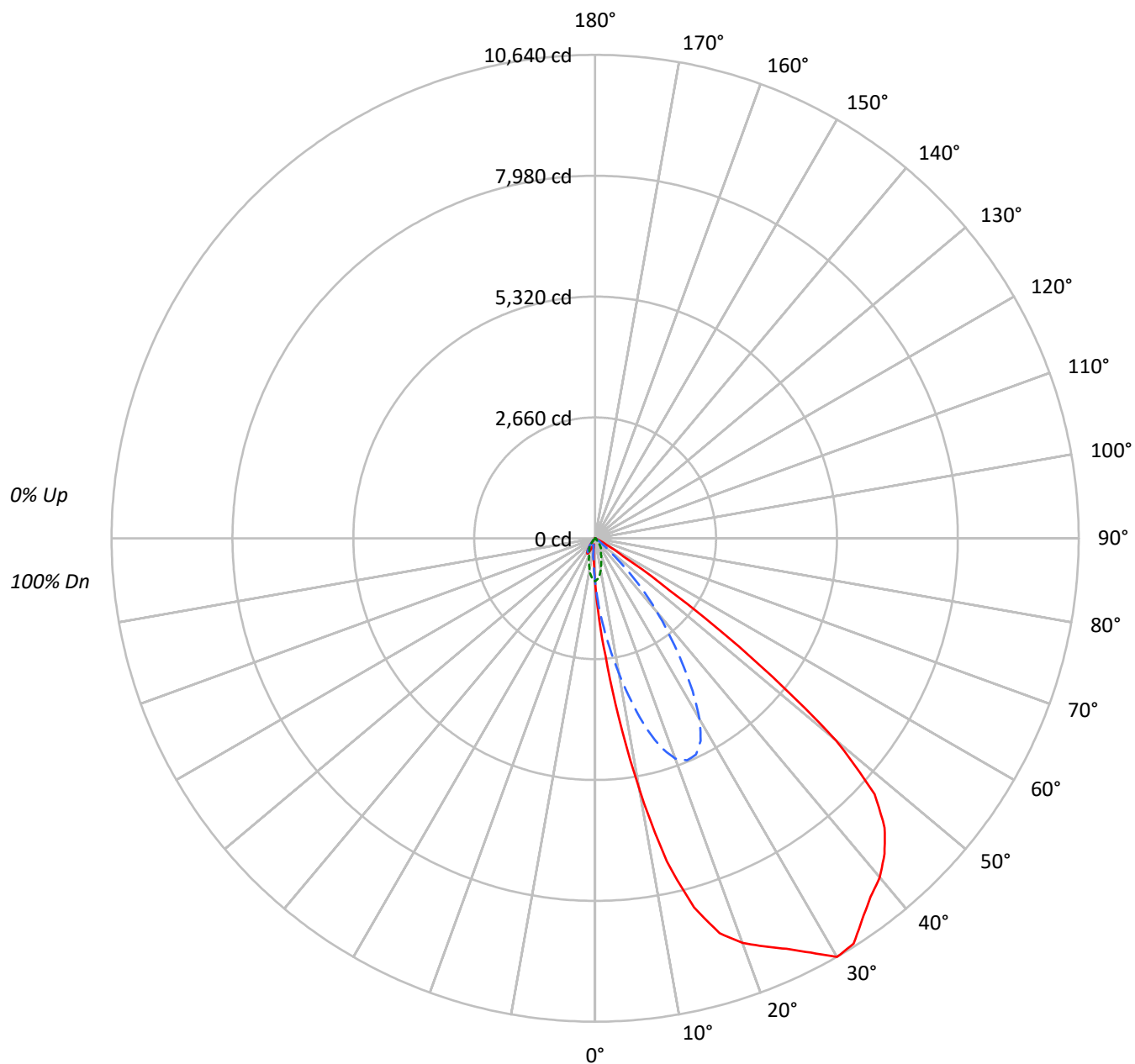
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				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°	40795	40795	40795
5°	111970	37589	15339
10°	245365	30761	5845
15°	374796	23415	6856
20°	434235	17420	10653
25°	473694	14323	17193
30°	528968	12991	17555
35°	538196	8914	12037
40°	547652	4227	6093
45°	548539	1754	2661
50°	463741	764	817
55°	149327	525	128
60°	29657	603	0
65°	3026	713	0
70°	327	995	0
75°	0	1314	0
80°	0	2157	223
85°	0	4298	445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.6	2.5
10°-20°	665.2	13.2
20°-30°	1273.6	25.2
30°-40°	1500.5	29.7
40°-50°	1178.6	23.3
50°-60°	287.2	5.7
60°-70°	12.3	0.2
70°-80°	4.6	0.1
80°-90°	4.6	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°	2067.4	40.9
0°-40°	3567.9	70.6
0°-60°	5033.8	99.6
0°-90°	5055.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5055.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	948	948	948	948	948	
5°	2591	1875	870	455	355	342
15°	8408	4319	525	150	154	2347
25°	9971	5251	302	316	362	4647
35°	10239	3320	170	218	229	6421
45°	9009	1026	29	40	44	6769
55°	1989	38	7	4	2	2368
65°	30	4	7	4	0	79
75°	0	4	8	5	0	0
85°	0	5	9	5	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°	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5
2.5°	1624.0	1620.5	1596.9	1618.7	1552.3	1549.7	1520.0	1506.8	1468.4	1431.7	1379.2
5°	2590.7	2533.8	2487.5	2489.3	2361.7	2338.1	2271.6	2204.3	2101.2	2005.1	1874.8
7.5°	3948.9	3881.6	3783.7	3742.6	3498.8	3427.1	3289.9	3110.7	2886.1	2662.3	2421.1
10°	5612.2	5622.7	5496.0	5378.9	5010.0	4864.9	4642.9	4289.8	3864.1	3443.7	3016.3
12.5°	7286.0	7279.0	7127.8	6950.4	6495.9	6291.4	5995.9	5555.4	4991.7	4339.6	3671.0
15°	8408.3	8458.1	8394.3	8252.7	7864.6	7630.4	7297.4	6699.5	6012.5	5220.7	4318.6
17.5°	9112.8	9160.0	9137.2	9026.2	8683.6	8433.6	8155.7	7666.2	6871.7	5876.2	4829.1
20°	9477.2	9551.5	9541.0	9420.4	9161.7	8954.6	8647.8	8194.1	7506.3	6331.6	5159.5
22.5°	9720.2	9777.0	9792.8	9656.4	9389.0	9192.3	8967.7	8507.9	7861.1	6609.5	5290.6
25°	9971.1	10071.6	9972.8	9805.0	9559.4	9370.6	9131.1	8690.6	8030.7	6723.1	5251.2
27.5°	10278.7	10326.8	10103.0	9950.1	9677.4	9472.9	9218.5	8796.4	8060.4	6632.2	5026.6
30°	10639.7	10440.4	10284.0	9980.7	9671.3	9472.0	9213.3	8729.9	7904.0	6330.7	4591.3
32.5°	10580.3	10397.6	10220.2	9899.4	9593.5	9395.9	9107.5	8508.8	7534.2	5826.4	3990.9
35°	10239.4	10278.7	10087.3	9821.6	9475.5	9271.8	8957.2	8194.1	6906.7	5130.6	3319.6
37.5°	9951.8	10038.4	9913.4	9667.8	9316.4	9041.1	8616.3	7688.9	6087.7	4247.8	2683.3
40°	9743.8	9771.8	9704.5	9429.2	9007.0	8609.3	8118.1	6781.7	5093.0	3334.5	2117.8
42.5°	9421.3	9495.6	9376.7	9076.0	8436.2	7986.1	7274.6	5733.7	3955.9	2547.0	1594.3
45°	9008.7	9079.5	8932.7	8432.8	7543.0	6883.1	6015.2	4470.7	2926.3	1877.4	1026.1
47.5°	8335.7	8379.4	8095.4	7404.0	6110.4	5489.0	4599.2	3116.8	1885.3	1049.7	499.1
50°	6923.3	6902.3	6316.7	5466.3	4087.0	3435.0	2737.5	1689.5	846.9	497.3	312.0
52.5°	4462.0	4413.9	3834.4	3060.9	2069.7	1579.4	1186.9	729.0	441.4	277.9	123.2
55°	1989.3	1971.0	1613.5	1253.4	846.9	729.0	556.8	357.5	235.1	97.0	37.6
57.5°	737.7	721.1	635.4	533.2	409.1	340.0	270.1	171.3	60.3	32.3	20.1
60°	344.4	343.5	302.4	249.1	173.1	131.1	76.0	40.2	25.3	17.5	11.4
62.5°	110.1	107.5	75.2	55.1	39.3	34.1	27.1	20.1	13.1	9.6	7.0
65°	29.7	29.7	27.1	22.7	18.4	15.7	13.1	9.6	6.1	5.2	4.4
67.5°	11.4	11.4	10.5	9.6	7.0	6.1	5.2	4.4	3.5	4.4	4.4
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	4.4
72.5°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	4.4
75°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	4.4
77.5°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	4.4
80°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.5	4.4	4.4
82.5°	0.0	0.0	0.9	1.7	1.7	1.7	2.6	3.5	3.5	4.4	5.2
85°	0.0	0.0	0.9	1.7	1.7	2.6	2.6	3.5	3.5	4.4	5.2
87.5°	0.0	0.0	0.9	1.7	1.7	2.6	2.6	3.5	3.5	4.4	5.2
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°	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5
2.5°	1340.8	1283.1	1203.6	1157.2	1145.9	1121.4	1078.6	1014.8	962.3	911.6	881.9
5°	1764.7	1628.3	1475.4	1367.9	1324.2	1265.6	1161.6	1054.1	955.3	869.7	802.4
7.5°	2213.9	1989.3	1742.0	1542.7	1471.0	1378.4	1208.8	1048.8	913.4	794.5	704.5
10°	2660.6	2298.7	1963.1	1674.7	1557.5	1431.7	1207.9	1000.8	841.7	703.6	604.0
12.5°	3107.2	2587.2	2125.7	1754.2	1602.1	1443.0	1172.1	927.4	750.8	610.1	514.8
15°	3519.8	2817.0	2235.8	1781.3	1597.7	1409.8	1099.5	838.2	655.5	525.3	437.0
17.5°	3827.4	2937.7	2261.1	1740.2	1528.7	1320.7	988.5	733.3	564.6	450.1	360.1
20°	3978.6	2956.9	2200.8	1623.1	1409.8	1193.9	867.0	632.8	486.8	380.2	304.2
22.5°	3978.6	2866.0	2069.7	1476.3	1261.2	1048.0	749.9	549.8	425.7	331.3	267.5
25°	3827.4	2685.1	1894.0	1306.7	1097.8	903.8	648.5	487.7	378.5	301.5	248.2
27.5°	3533.8	2435.1	1668.5	1117.9	937.0	775.3	568.1	430.9	342.6	271.8	272.7
30°	3129.9	2128.3	1409.8	918.6	771.8	637.2	478.1	361.0	274.4	261.3	269.2
32.5°	2663.2	1761.2	1117.0	712.3	597.8	501.7	363.6	255.2	218.5	220.3	229.0
35°	2184.2	1386.2	840.8	527.9	444.9	363.6	238.6	167.8	166.1	169.6	175.7
37.5°	1724.5	1037.5	608.3	386.3	298.9	223.8	128.5	115.4	115.4	118.9	122.4
40°	1291.8	735.9	418.7	229.0	145.1	102.3	81.3	75.2	74.3	75.2	79.5
42.5°	887.2	465.9	249.1	91.8	69.9	59.4	51.6	47.2	46.3	47.2	49.8
45°	498.2	286.7	97.0	48.9	42.0	37.6	32.3	29.7	28.8	28.8	30.6
47.5°	312.0	113.6	43.7	30.6	26.2	24.5	21.0	19.2	18.4	18.4	19.2
50°	119.7	44.6	27.1	20.1	17.5	15.7	14.0	12.2	11.4	11.4	12.2
52.5°	41.1	26.2	17.5	13.1	11.4	10.5	8.7	7.9	7.9	7.9	7.9
55°	22.7	15.7	10.5	7.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0
57.5°	14.0	9.6	7.0	6.1	6.1	6.1	6.1	6.1	6.1	7.0	7.0
60°	7.9	6.1	5.2	5.2	5.2	5.2	6.1	6.1	6.1	7.0	7.0
62.5°	5.2	5.2	5.2	5.2	5.2	5.2	6.1	6.1	7.0	7.0	7.0
65°	4.4	4.4	4.4	5.2	5.2	5.2	6.1	6.1	7.0	7.0	7.0
67.5°	4.4	4.4	5.2	5.2	5.2	6.1	6.1	7.0	7.0	7.0	7.0
70°	4.4	5.2	5.2	6.1	6.1	6.1	7.0	7.0	7.0	7.9	7.9
72.5°	4.4	5.2	5.2	6.1	6.1	6.1	7.0	7.0	7.9	7.9	7.9
75°	5.2	5.2	5.2	6.1	6.1	6.1	7.0	7.9	7.9	7.9	7.9
77.5°	5.2	5.2	6.1	6.1	6.1	7.0	7.0	7.9	7.9	7.9	7.9
80°	5.2	5.2	6.1	6.1	7.0	7.0	7.9	7.9	7.9	8.7	8.7
82.5°	5.2	5.2	6.1	7.0	7.0	7.0	7.9	7.9	8.7	8.7	8.7
85°	5.2	6.1	6.1	7.0	7.0	7.0	7.9	7.9	8.7	8.7	8.7
87.5°	5.2	6.1	6.1	7.0	7.0	7.0	7.9	7.9	8.7	8.7	8.7
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°	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5
2.5°	842.6	805.9	769.2	742.1	729.0	715.8	687.0	649.4	633.7	611.0	597.8
5°	734.2	672.1	623.2	590.9	571.6	546.3	513.1	476.4	455.4	431.8	416.0
7.5°	622.3	549.8	502.6	472.9	453.6	422.2	380.2	336.5	311.2	284.9	266.6
10°	524.4	455.4	402.1	368.0	343.5	306.8	264.8	234.2	212.4	189.7	171.3
12.5°	437.9	363.6	306.8	277.9	261.3	226.4	191.4	157.3	144.2	139.8	139.8
15°	354.9	287.6	239.5	215.0	197.5	159.9	153.0	151.2	150.3	149.5	151.2
17.5°	289.3	232.5	181.8	169.6	167.8	166.9	167.8	167.8	168.7	171.3	175.7
20°	243.0	190.5	187.0	187.9	187.9	191.4	195.8	199.3	202.8	207.1	215.0
22.5°	215.9	215.0	221.1	222.0	226.4	231.6	239.5	244.7	253.5	257.8	269.2
25°	249.1	255.2	266.6	270.1	277.1	285.8	298.0	305.0	315.5	320.8	333.9
27.5°	282.3	291.9	305.9	310.3	316.4	330.4	339.1	345.2	350.5	354.0	361.9
30°	279.7	288.4	302.4	303.3	312.0	321.6	326.9	332.1	335.6	334.8	339.1
32.5°	236.9	244.7	257.8	257.8	267.5	275.3	277.9	282.3	282.3	282.3	284.1
35°	181.8	187.0	195.8	198.4	206.3	211.5	213.3	218.5	218.5	216.8	216.8
37.5°	125.9	132.9	139.0	140.7	146.0	149.5	153.8	154.7	153.0	153.8	153.8
40°	82.2	86.5	90.9	91.8	96.1	98.8	103.1	103.1	104.0	103.1	104.9
42.5°	50.7	54.2	56.8	58.6	60.3	62.1	64.7	65.6	66.4	65.6	67.3
45°	31.5	33.2	35.0	35.8	36.7	37.6	40.2	40.2	40.2	40.2	41.1
47.5°	19.2	20.1	21.0	21.0	21.9	22.7	23.6	23.6	23.6	23.6	24.5
50°	11.4	12.2	12.2	12.2	13.1	13.1	14.0	14.0	14.0	13.1	14.0
52.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.0	7.9
55°	7.0	7.0	6.1	6.1	6.1	6.1	6.1	5.2	4.4	4.4	3.5
57.5°	6.1	6.1	6.1	6.1	6.1	5.2	5.2	4.4	4.4	3.5	2.6
60°	6.1	6.1	6.1	6.1	6.1	5.2	5.2	4.4	3.5	3.5	2.6
62.5°	7.0	6.1	6.1	6.1	6.1	5.2	5.2	4.4	3.5	3.5	2.6
65°	7.0	7.0	6.1	6.1	6.1	5.2	5.2	4.4	4.4	3.5	2.6
67.5°	7.0	7.0	7.0	6.1	7.0	6.1	5.2	5.2	4.4	3.5	3.5
70°	7.9	7.0	7.0	7.0	7.0	6.1	6.1	5.2	4.4	3.5	3.5
72.5°	7.9	7.9	7.0	7.0	7.0	6.1	6.1	5.2	4.4	4.4	3.5
75°	7.9	7.9	7.0	7.0	7.0	6.1	6.1	5.2	5.2	4.4	3.5
77.5°	7.9	7.9	7.9	7.0	7.0	7.0	6.1	6.1	5.2	4.4	3.5
80°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	6.1	5.2	4.4	3.5
82.5°	8.7	7.9	7.9	7.9	7.9	7.0	7.0	6.1	5.2	4.4	4.4
85°	8.7	8.7	7.9	7.9	7.9	7.0	7.0	6.1	5.2	5.2	4.4
87.5°	8.7	7.9	7.9	7.9	7.9	7.0	7.0	6.1	5.2	4.4	4.4
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: P209076

CATALOG NUMBER: LDSQA6A55827D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	947.5	947.5	947.5	947.5	947.5	947.5	947.5	947.5
2.5°	584.7	577.7	577.7	565.5	563.8	554.1	562.0	556.8
5°	398.6	387.2	383.7	371.5	367.1	355.7	359.2	354.9
7.5°	250.8	239.5	236.0	227.3	222.0	213.3	214.1	211.5
10°	153.0	142.5	139.8	137.2	134.6	133.7	134.6	133.7
12.5°	139.0	138.1	136.4	137.2	135.5	136.4	137.2	136.4
15°	151.2	153.0	151.2	152.1	151.2	153.0	153.8	153.8
17.5°	177.4	180.9	179.2	181.8	180.9	185.3	185.3	185.3
20°	217.6	223.8	222.0	225.5	225.5	230.7	230.7	232.5
22.5°	273.6	281.4	280.6	288.4	286.7	292.8	292.8	294.6
25°	340.9	348.7	349.6	354.9	354.0	360.1	360.1	361.9
27.5°	368.8	373.2	372.3	375.0	375.8	379.3	382.0	380.2
30°	346.1	349.6	348.7	350.5	350.5	353.1	355.7	353.1
32.5°	291.1	293.7	293.7	297.2	294.6	295.4	299.8	297.2
35°	222.9	224.6	222.9	224.6	225.5	225.5	229.9	229.0
37.5°	159.1	159.9	159.9	162.6	159.9	159.9	164.3	165.2
40°	106.6	107.5	106.6	110.1	108.4	108.4	111.0	108.4
42.5°	68.2	69.0	68.2	70.8	69.0	70.8	71.7	72.5
45°	42.0	42.0	41.1	42.8	42.0	42.8	43.7	43.7
47.5°	24.5	24.5	23.6	25.3	24.5	24.5	24.5	25.3
50°	13.1	13.1	13.1	14.0	13.1	13.1	13.1	12.2
52.5°	7.0	7.0	6.1	7.0	6.1	6.1	6.1	6.1
55°	3.5	2.6	2.6	2.6	1.7	1.7	1.7	1.7
57.5°	2.6	1.7	1.7	0.9	0.9	0.9	0.0	0.0
60°	1.7	1.7	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.7	1.7	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.7	1.7	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.6	1.7	1.7	0.9	0.9	0.0	0.0	0.0
70°	2.6	1.7	1.7	0.9	0.9	0.0	0.0	0.0
72.5°	2.6	1.7	1.7	1.7	0.9	0.9	0.0	0.0
75°	2.6	2.6	1.7	1.7	0.9	0.9	0.0	0.0
77.5°	3.5	2.6	1.7	1.7	0.9	0.9	0.0	0.0
80°	3.5	2.6	1.7	1.7	1.7	0.9	0.9	0.9
82.5°	3.5	2.6	2.6	1.7	1.7	0.9	0.9	0.9
85°	3.5	2.6	2.6	1.7	1.7	0.9	0.9	0.9
87.5°	3.5	2.6	2.6	1.7	1.7	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)