

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: P209083

Luminaire Tested: **LDSQA6A55940D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209083
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: LDSQA6A55940D010TE LARH40FL 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 40° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4696.9 lumens
Efficiency: N/A
Efficacy: 77.3 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

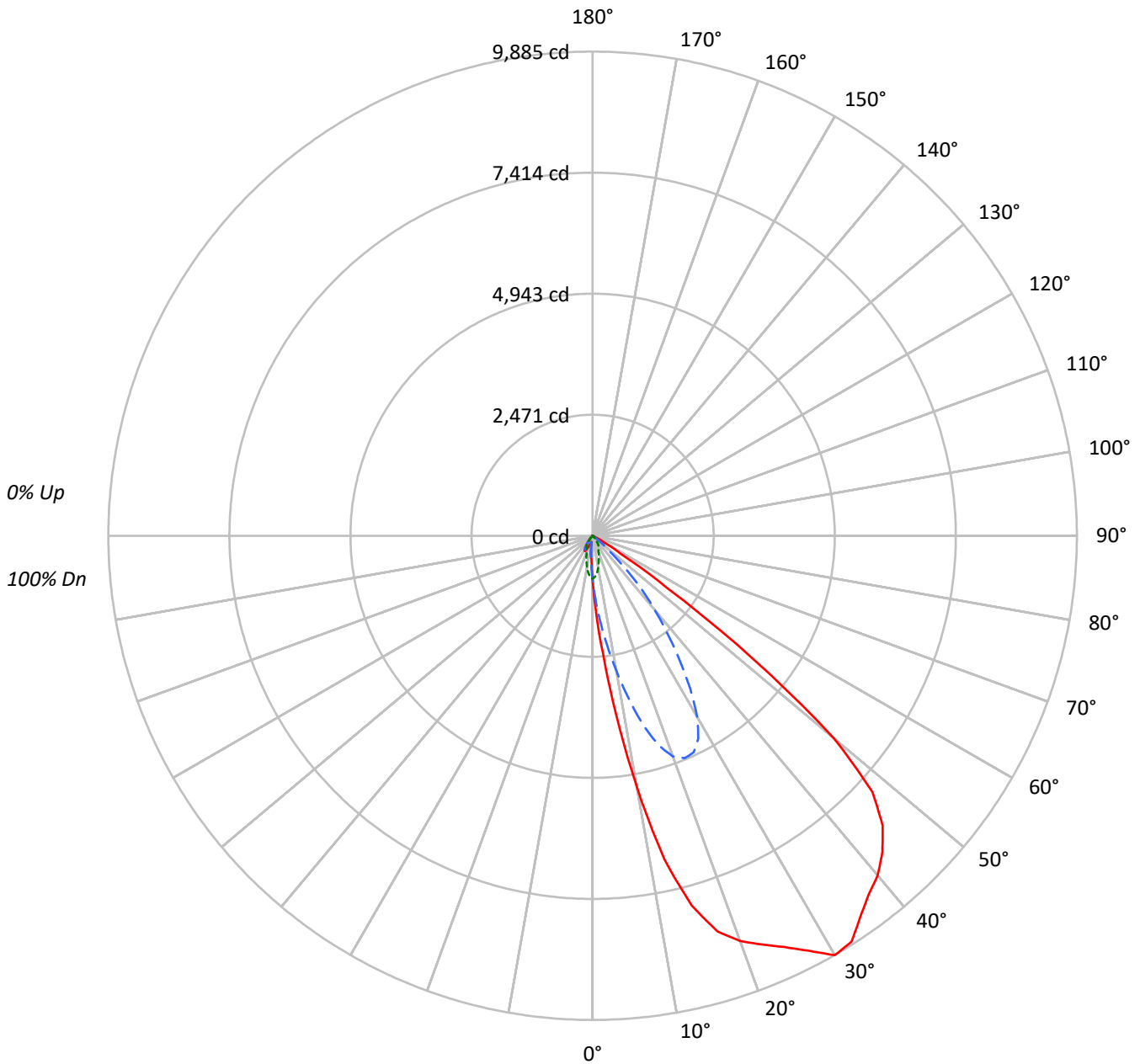
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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°	37902	37902	37902
5°	104031	34922	14250
10°	227968	28580	5430
15°	348220	21757	6370
20°	403444	16183	9897
25°	440106	13311	15972
30°	491461	12071	16312
35°	500036	8278	11185
40°	508820	3923	5660
45°	509648	1632	2472
50°	430860	710	764
55°	138743	488	120
60°	27556	560	0
65°	2812	662	0
70°	302	919	0
75°	0	1214	0
80°	0	2008	198
85°	0	4001	395



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.5	2.5
10°-20°	618.0	13.2
20°-30°	1183.3	25.2
30°-40°	1394.1	29.7
40°-50°	1095.0	23.3
50°-60°	266.9	5.7
60°-70°	11.5	0.2
70°-80°	4.3	0.1
80°-90°	4.3	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°	1920.8	40.9
0°-40°	3315.0	70.6
0°-60°	4676.9	99.6
0°-90°	4696.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4696.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	880	880	880	880	880	
5°	2407	1742	808	423	330	318
15°	7812	4012	488	140	143	2181
25°	9264	4879	280	293	336	4318
35°	9513	3084	158	203	213	5965
45°	8370	953	27	37	41	6289
55°	1848	35	6	4	2	2200
65°	28	4	6	4	0	73
75°	0	4	7	5	0	0
85°	0	5	8	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°	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3
2.5°	1508.8	1505.6	1483.6	1503.9	1442.2	1439.8	1412.2	1400.0	1364.3	1330.2	1281.4
5°	2407.0	2354.2	2311.1	2312.8	2194.2	2172.3	2110.6	2048.0	1952.2	1862.9	1741.9
7.5°	3668.9	3606.4	3515.4	3477.3	3250.7	3184.1	3056.6	2890.1	2681.4	2473.6	2249.4
10°	5214.3	5224.0	5106.3	4997.5	4654.8	4520.0	4313.7	3985.6	3590.1	3199.5	2802.4
12.5°	6769.4	6762.9	6622.4	6457.6	6035.3	5845.3	5570.8	5161.5	4637.7	4031.9	3410.7
15°	7812.1	7858.4	7799.1	7667.5	7307.0	7089.3	6779.9	6224.5	5586.2	4850.5	4012.4
17.5°	8466.6	8510.5	8489.4	8386.2	8067.9	7835.6	7577.4	7122.6	6384.5	5459.5	4486.7
20°	8805.2	8874.3	8864.5	8752.5	8512.1	8319.6	8034.6	7613.1	6974.0	5882.6	4793.6
22.5°	9031.0	9083.8	9098.4	8971.7	8723.2	8540.5	8331.8	7904.7	7303.7	6140.9	4915.4
25°	9264.1	9357.5	9265.7	9109.8	8881.6	8706.2	8483.7	8074.4	7461.3	6246.4	4878.9
27.5°	9549.9	9594.6	9386.7	9244.6	8991.2	8801.2	8564.9	8172.6	7488.9	6162.0	4670.2
30°	9885.3	9700.1	9554.8	9273.0	8985.5	8800.4	8560.0	8110.9	7343.5	5881.8	4265.8
32.5°	9830.1	9660.4	9495.5	9197.5	8913.2	8729.7	8461.7	7905.5	7000.0	5413.2	3707.9
35°	9513.4	9549.9	9372.1	9125.2	8803.6	8614.4	8322.1	7613.1	6417.0	4766.8	3084.2
37.5°	9246.2	9326.6	9210.5	8982.3	8655.8	8400.0	8005.4	7143.8	5656.0	3946.6	2493.0
40°	9052.9	9078.9	9016.4	8760.6	8368.4	7998.9	7542.5	6300.8	4731.9	3098.0	1967.6
42.5°	8753.3	8822.3	8711.9	8432.5	7838.1	7419.9	6758.8	5327.2	3675.4	2366.4	1481.2
45°	8370.0	8435.8	8299.3	7834.8	7008.1	6395.0	5588.6	4153.7	2718.8	1744.3	953.4
47.5°	7744.7	7785.3	7521.4	6879.0	5677.2	5099.8	4273.1	2895.8	1751.6	975.3	463.7
50°	6432.4	6412.9	5868.8	5078.7	3797.2	3191.4	2543.4	1569.7	786.9	462.1	289.9
52.5°	4145.6	4100.9	3562.5	2843.9	1923.0	1467.4	1102.8	677.3	410.1	258.2	114.5
55°	1848.3	1831.2	1499.1	1164.5	786.9	677.3	517.3	332.1	218.4	90.1	34.9
57.5°	685.4	670.0	590.4	495.4	380.0	315.9	250.9	159.2	56.0	30.0	18.7
60°	320.0	319.1	281.0	231.4	160.8	121.8	70.6	37.4	23.5	16.2	10.6
62.5°	102.3	99.9	69.8	51.2	36.5	31.7	25.2	18.7	12.2	8.9	6.5
65°	27.6	27.6	25.2	21.1	17.1	14.6	12.2	8.9	5.7	4.9	4.1
67.5°	10.6	10.6	9.7	8.9	6.5	5.7	4.9	4.1	3.2	4.1	4.1
70°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.1
72.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.1
75°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.1
77.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.1
80°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.1
82.5°	0.0	0.0	0.8	1.6	1.6	1.6	2.4	3.2	3.2	4.1	4.9
85°	0.0	0.0	0.8	1.6	1.6	2.4	2.4	3.2	3.2	4.1	4.9
87.5°	0.0	0.0	0.8	1.6	1.6	2.4	2.4	3.2	3.2	4.1	4.9
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°	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3
2.5°	1245.7	1192.1	1118.2	1075.2	1064.6	1041.9	1002.1	942.8	894.1	847.0	819.4
5°	1639.6	1512.9	1370.8	1270.9	1230.3	1175.9	1079.2	979.4	887.6	808.0	745.5
7.5°	2057.0	1848.3	1618.4	1433.3	1366.7	1280.6	1123.1	974.5	848.6	738.2	654.5
10°	2471.9	2135.7	1823.9	1555.9	1447.1	1330.2	1122.3	929.8	782.0	653.7	561.1
12.5°	2886.9	2403.7	1974.9	1629.8	1488.5	1340.7	1089.0	861.6	697.6	566.8	478.3
15°	3270.2	2617.3	2077.3	1655.0	1484.5	1309.9	1021.6	778.8	609.1	488.1	406.0
17.5°	3556.0	2729.4	2100.8	1616.8	1420.3	1227.0	918.4	681.3	524.6	418.2	334.6
20°	3696.5	2747.2	2044.8	1508.0	1309.9	1109.3	805.6	587.9	452.3	353.2	282.6
22.5°	3696.5	2662.8	1923.0	1371.6	1171.8	973.7	696.8	510.8	395.5	307.8	248.5
25°	3556.0	2494.7	1759.7	1214.0	1020.0	839.7	602.6	453.1	351.6	280.2	230.6
27.5°	3283.2	2262.4	1550.2	1038.6	870.5	720.3	527.8	400.3	318.3	252.6	253.4
30°	2908.0	1977.4	1309.9	853.5	717.1	592.0	444.2	335.4	255.0	242.8	250.1
32.5°	2474.4	1636.3	1037.8	661.8	555.5	466.1	337.8	237.1	203.0	204.6	212.8
35°	2029.4	1287.9	781.2	490.5	413.3	337.8	221.7	155.9	154.3	157.5	163.2
37.5°	1602.2	963.9	565.2	358.9	277.7	207.9	119.4	107.2	107.2	110.4	113.7
40°	1200.2	683.8	389.0	212.8	134.8	95.0	75.5	69.8	69.0	69.8	73.9
42.5°	824.2	432.8	231.4	85.3	65.0	55.2	47.9	43.9	43.0	43.9	46.3
45°	462.9	266.4	90.1	45.5	39.0	34.9	30.0	27.6	26.8	26.8	28.4
47.5°	289.9	105.6	40.6	28.4	24.4	22.7	19.5	17.9	17.1	17.1	17.9
50°	111.3	41.4	25.2	18.7	16.2	14.6	13.0	11.4	10.6	10.6	11.4
52.5°	38.2	24.4	16.2	12.2	10.6	9.7	8.1	7.3	7.3	7.3	7.3
55°	21.1	14.6	9.7	7.3	6.5	6.5	6.5	6.5	6.5	6.5	6.5
57.5°	13.0	8.9	6.5	5.7	5.7	5.7	5.7	5.7	5.7	6.5	6.5
60°	7.3	5.7	4.9	4.9	4.9	4.9	5.7	5.7	5.7	6.5	6.5
62.5°	4.9	4.9	4.9	4.9	4.9	4.9	5.7	5.7	6.5	6.5	6.5
65°	4.1	4.1	4.1	4.9	4.9	4.9	5.7	5.7	6.5	6.5	6.5
67.5°	4.1	4.1	4.9	4.9	4.9	5.7	5.7	6.5	6.5	6.5	6.5
70°	4.1	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5	7.3	7.3
72.5°	4.1	4.9	4.9	5.7	5.7	5.7	6.5	6.5	7.3	7.3	7.3
75°	4.9	4.9	4.9	5.7	5.7	5.7	6.5	7.3	7.3	7.3	7.3
77.5°	4.9	4.9	5.7	5.7	5.7	6.5	6.5	7.3	7.3	7.3	7.3
80°	4.9	4.9	5.7	5.7	6.5	6.5	7.3	7.3	7.3	8.1	8.1
82.5°	4.9	4.9	5.7	6.5	6.5	6.5	7.3	7.3	8.1	8.1	8.1
85°	4.9	5.7	5.7	6.5	6.5	6.5	7.3	7.3	8.1	8.1	8.1
87.5°	4.9	5.7	5.7	6.5	6.5	6.5	7.3	7.3	8.1	8.1	8.1
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3
2.5°	782.8	748.7	714.6	689.4	677.3	665.1	638.3	603.4	588.7	567.6	555.5
5°	682.1	624.5	579.0	549.0	531.1	507.5	476.7	442.6	423.1	401.2	386.5
7.5°	578.2	510.8	466.9	439.3	421.5	392.2	353.2	312.6	289.1	264.7	247.7
10°	487.2	423.1	373.6	341.9	319.1	285.0	246.1	217.6	197.3	176.2	159.2
12.5°	406.8	337.8	285.0	258.2	242.8	210.3	177.8	146.2	134.0	129.9	129.9
15°	329.7	267.2	222.5	199.8	183.5	148.6	142.1	140.5	139.7	138.9	140.5
17.5°	268.8	216.0	168.9	157.5	155.9	155.1	155.9	155.9	156.7	159.2	163.2
20°	225.8	177.0	173.8	174.6	174.6	177.8	181.9	185.2	188.4	192.5	199.8
22.5°	200.6	199.8	205.5	206.3	210.3	215.2	222.5	227.4	235.5	239.6	250.1
25°	231.4	237.1	247.7	250.9	257.4	265.5	276.9	283.4	293.2	298.0	310.2
27.5°	262.3	271.2	284.2	288.3	294.0	307.0	315.1	320.8	325.6	328.9	336.2
30°	259.9	268.0	281.0	281.8	289.9	298.8	303.7	308.6	311.8	311.0	315.1
32.5°	220.1	227.4	239.6	239.6	248.5	255.8	258.2	262.3	262.3	262.3	263.9
35°	168.9	173.8	181.9	184.3	191.6	196.5	198.1	203.0	203.0	201.4	201.4
37.5°	116.9	123.4	129.1	130.7	135.6	138.9	142.9	143.7	142.1	142.9	142.9
40°	76.3	80.4	84.5	85.3	89.3	91.8	95.8	95.8	96.6	95.8	97.4
42.5°	47.1	50.3	52.8	54.4	56.0	57.7	60.1	60.9	61.7	60.9	62.5
45°	29.2	30.9	32.5	33.3	34.1	34.9	37.4	37.4	37.4	37.4	38.2
47.5°	17.9	18.7	19.5	19.5	20.3	21.1	21.9	21.9	21.9	21.9	22.7
50°	10.6	11.4	11.4	11.4	12.2	12.2	13.0	13.0	13.0	12.2	13.0
52.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.5	7.3
55°	6.5	6.5	5.7	5.7	5.7	5.7	5.7	4.9	4.1	4.1	3.2
57.5°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	4.1	3.2	2.4
60°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.2	3.2	2.4
62.5°	6.5	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.2	3.2	2.4
65°	6.5	6.5	5.7	5.7	5.7	4.9	4.9	4.1	4.1	3.2	2.4
67.5°	6.5	6.5	6.5	5.7	6.5	5.7	4.9	4.9	4.1	3.2	3.2
70°	7.3	6.5	6.5	6.5	6.5	5.7	5.7	4.9	4.1	3.2	3.2
72.5°	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9	4.1	4.1	3.2
75°	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9	4.9	4.1	3.2
77.5°	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9	4.1	3.2
80°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	5.7	4.9	4.1	3.2
82.5°	8.1	7.3	7.3	7.3	7.3	6.5	6.5	5.7	4.9	4.1	4.1
85°	8.1	8.1	7.3	7.3	7.3	6.5	6.5	5.7	4.9	4.9	4.1
87.5°	8.1	7.3	7.3	7.3	7.3	6.5	6.5	5.7	4.9	4.1	4.1
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: P209083

CATALOG NUMBER: LDSQA6A55940D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	880.3	880.3	880.3	880.3	880.3	880.3	880.3	880.3
2.5°	543.3	536.8	536.8	525.4	523.8	514.9	522.2	517.3
5°	370.3	359.7	356.5	345.1	341.1	330.5	333.8	329.7
7.5°	233.1	222.5	219.3	211.1	206.3	198.1	199.0	196.5
10°	142.1	132.4	129.9	127.5	125.1	124.2	125.1	124.2
12.5°	129.1	128.3	126.7	127.5	125.9	126.7	127.5	126.7
15°	140.5	142.1	140.5	141.3	140.5	142.1	142.9	142.9
17.5°	164.8	168.1	166.5	168.9	168.1	172.2	172.2	172.2
20°	202.2	207.9	206.3	209.5	209.5	214.4	214.4	216.0
22.5°	254.2	261.5	260.7	268.0	266.4	272.0	272.0	273.7
25°	316.7	324.0	324.8	329.7	328.9	334.6	334.6	336.2
27.5°	342.7	346.8	345.9	348.4	349.2	352.4	354.9	353.2
30°	321.6	324.8	324.0	325.6	325.6	328.1	330.5	328.1
32.5°	270.4	272.9	272.9	276.1	273.7	274.5	278.5	276.1
35°	207.1	208.7	207.1	208.7	209.5	209.5	213.6	212.8
37.5°	147.8	148.6	148.6	151.0	148.6	148.6	152.7	153.5
40°	99.1	99.9	99.1	102.3	100.7	100.7	103.1	100.7
42.5°	63.3	64.2	63.3	65.8	64.2	65.8	66.6	67.4
45°	39.0	39.0	38.2	39.8	39.0	39.8	40.6	40.6
47.5°	22.7	22.7	21.9	23.5	22.7	22.7	22.7	23.5
50°	12.2	12.2	12.2	13.0	12.2	12.2	12.2	11.4
52.5°	6.5	6.5	5.7	6.5	5.7	5.7	5.7	5.7
55°	3.2	2.4	2.4	2.4	1.6	1.6	1.6	1.6
57.5°	2.4	1.6	1.6	0.8	0.8	0.8	0.0	0.0
60°	1.6	1.6	0.8	0.8	0.0	0.0	0.0	0.0
62.5°	1.6	1.6	0.8	0.8	0.0	0.0	0.0	0.0
65°	1.6	1.6	0.8	0.8	0.0	0.0	0.0	0.0
67.5°	2.4	1.6	1.6	0.8	0.8	0.0	0.0	0.0
70°	2.4	1.6	1.6	0.8	0.8	0.0	0.0	0.0
72.5°	2.4	1.6	1.6	1.6	0.8	0.8	0.0	0.0
75°	2.4	2.4	1.6	1.6	0.8	0.8	0.0	0.0
77.5°	3.2	2.4	1.6	1.6	0.8	0.8	0.0	0.0
80°	3.2	2.4	1.6	1.6	1.6	0.8	0.8	0.8
82.5°	3.2	2.4	2.4	1.6	1.6	0.8	0.8	0.8
85°	3.2	2.4	2.4	1.6	1.6	0.8	0.8	0.8
87.5°	3.2	2.4	2.4	1.6	1.6	0.8	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)