

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: P209078

Luminaire Tested: **LDSQA6A55835D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209078
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: LDSQA6A55835D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5372.0 lumens
Efficiency: N/A
Efficacy: 88.4 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

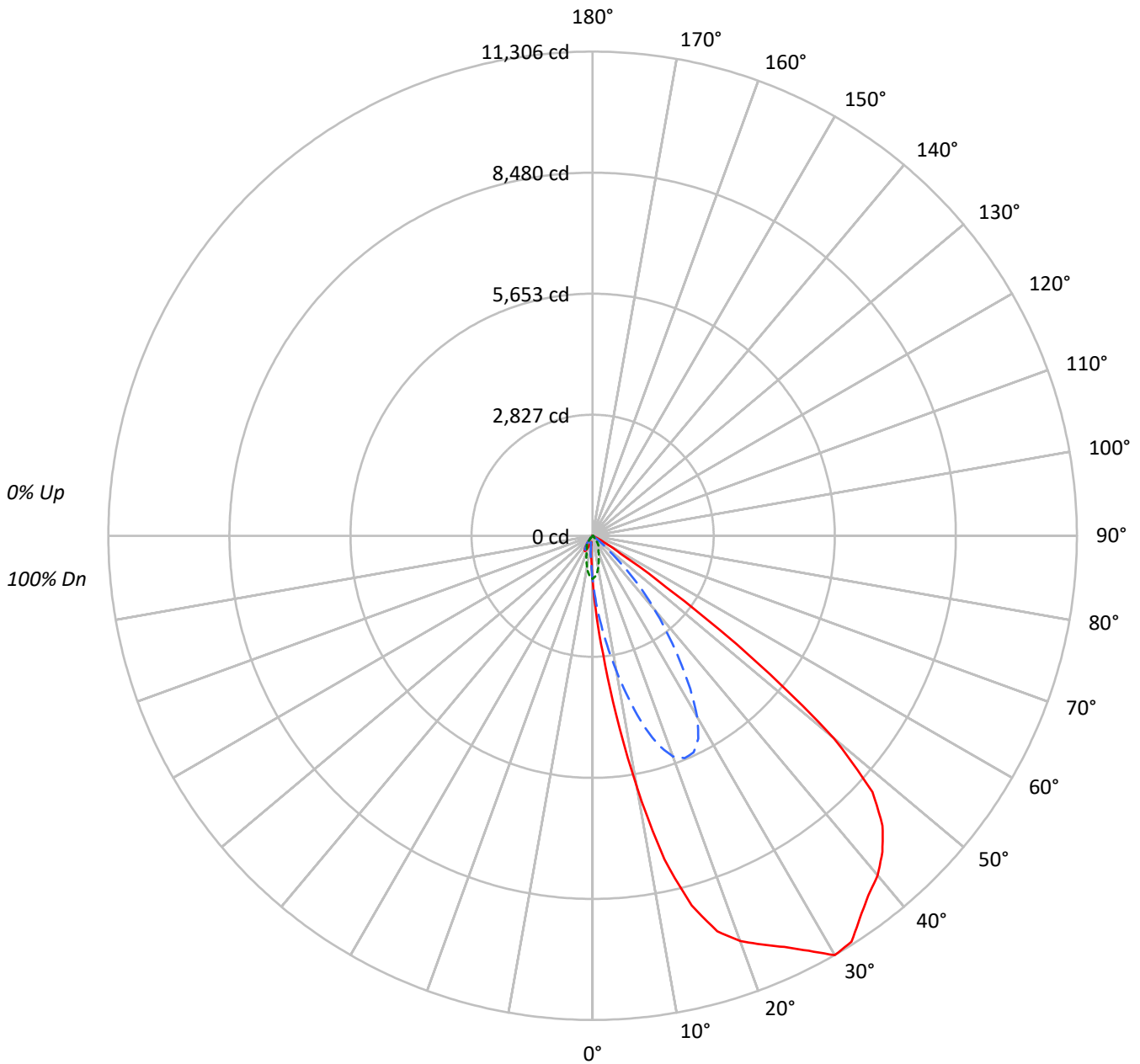
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	43348	43348	43348
5°	118981	39940	16298
10°	260732	32689	6213
15°	398264	24881	7288
20°	461428	18511	11322
25°	503357	15221	18266
30°	562094	13806	18654
35°	571898	9472	12788
40°	581948	4491	6475
45°	582893	1863	2825
50°	492778	810	871
55°	158680	555	143
60°	31508	637	0
65°	3219	754	0
70°	352	1057	0
75°	0	1397	0
80°	0	2306	223
85°	0	4594	445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.7	2.5
10°-20°	706.8	13.2
20°-30°	1353.4	25.2
30°-40°	1594.5	29.7
40°-50°	1252.4	23.3
50°-60°	305.2	5.7
60°-70°	13.1	0.2
70°-80°	4.9	0.1
80°-90°	4.9	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°	2196.9	40.9
0°-40°	3791.4	70.6
0°-60°	5349.0	99.6
0°-90°	5372.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5372.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1007	1007	1007	1007	1007	
5°	2753	1992	924	484	377	364
15°	8935	4589	558	160	164	2494
25°	10596	5580	320	335	384	4938
35°	10881	3528	180	232	243	6823
45°	9573	1090	31	43	46	7193
55°	2114	40	7	5	2	2516
65°	32	5	7	5	0	84
75°	0	5	8	6	0	0
85°	0	6	9	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°	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8
2.5°	1725.7	1721.9	1696.9	1720.1	1649.5	1646.7	1615.1	1601.2	1560.3	1521.3	1465.6
5°	2752.9	2692.5	2643.3	2645.1	2509.5	2484.5	2413.9	2342.4	2232.8	2130.6	1992.2
7.5°	4196.2	4124.7	4020.7	3977.0	3717.9	3641.7	3495.9	3305.5	3066.8	2829.0	2572.7
10°	5963.7	5974.8	5840.1	5715.7	5323.7	5169.6	4933.7	4558.4	4106.1	3659.4	3205.2
12.5°	7742.3	7734.8	7574.2	7385.6	6902.7	6685.3	6371.4	5903.3	5304.2	4611.4	3900.9
15°	8934.8	8987.8	8920.0	8769.5	8357.1	8108.2	7754.3	7119.1	6389.0	5547.6	4589.1
17.5°	9683.4	9733.6	9709.4	9591.5	9227.4	8961.7	8666.4	8146.3	7302.0	6244.2	5131.5
20°	10070.7	10149.6	10138.5	10010.3	9735.4	9515.3	9189.3	8707.3	7976.3	6728.0	5482.6
22.5°	10328.9	10389.3	10406.0	10261.1	9976.9	9767.9	9529.2	9040.7	8353.4	7023.4	5621.9
25°	10595.5	10702.3	10597.3	10419.0	10158.0	9957.4	9702.9	9234.8	8533.6	7144.1	5580.1
27.5°	10922.4	10973.5	10735.7	10573.2	10283.4	10066.1	9795.8	9347.2	8565.2	7047.5	5341.4
30°	11306.0	11094.2	10928.0	10605.7	10276.9	10065.1	9790.2	9276.6	8398.9	6727.1	4878.9
32.5°	11242.8	11048.7	10860.2	10519.3	10194.2	9984.3	9677.8	9041.6	8006.0	6191.2	4240.8
35°	10880.6	10922.4	10719.0	10436.6	10068.8	9852.4	9518.1	8707.3	7339.2	5451.9	3527.5
37.5°	10575.0	10667.0	10534.2	10273.2	9899.8	9607.2	9155.9	8170.4	6468.9	4513.8	2851.3
40°	10354.0	10383.7	10312.2	10019.6	9571.0	9148.4	8626.5	7206.4	5412.0	3543.3	2250.4
42.5°	10011.3	10090.2	9963.9	9644.4	8964.5	8486.2	7730.2	6092.8	4203.6	2706.4	1694.1
45°	9572.9	9648.1	9492.1	8960.8	8015.3	7314.1	6391.8	4750.7	3109.5	1995.0	1090.4
47.5°	8857.7	8904.2	8602.3	7867.6	6493.1	5832.7	4887.2	3312.0	2003.4	1115.5	530.3
50°	7356.8	7334.5	6712.3	5808.6	4342.9	3650.1	2908.9	1795.3	900.0	528.5	331.6
52.5°	4741.4	4690.3	4074.5	3252.6	2199.3	1678.3	1261.3	774.6	469.0	295.4	131.0
55°	2113.9	2094.4	1714.5	1331.9	900.0	774.6	591.6	379.9	249.8	103.1	39.9
57.5°	783.9	766.2	675.2	566.6	434.7	361.3	287.0	182.0	64.1	34.4	21.4
60°	365.9	365.0	321.4	264.7	183.9	139.3	80.8	42.7	26.9	18.6	12.1
62.5°	117.0	114.2	79.9	58.5	41.8	36.2	28.8	21.4	13.9	10.2	7.4
65°	31.6	31.6	28.8	24.1	19.5	16.7	13.9	10.2	6.5	5.6	4.6
67.5°	12.1	12.1	11.1	10.2	7.4	6.5	5.6	4.6	3.7	4.6	4.6
70°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.7	3.7	4.6
72.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	4.6
75°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	4.6
77.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	4.6
80°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.6	4.6
82.5°	0.0	0.0	0.9	1.9	1.9	1.9	2.8	3.7	3.7	4.6	5.6
85°	0.0	0.0	0.9	1.9	1.9	2.8	2.8	3.7	3.7	4.6	5.6
87.5°	0.0	0.0	0.9	1.9	1.9	2.8	2.8	3.7	3.7	4.6	5.6
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°	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8
2.5°	1424.7	1363.4	1278.9	1229.7	1217.6	1191.6	1146.1	1078.3	1022.6	968.7	937.1
5°	1875.2	1730.3	1567.8	1453.5	1407.1	1344.9	1234.3	1120.1	1015.2	924.1	852.6
7.5°	2352.6	2113.9	1851.0	1639.3	1563.1	1464.7	1284.5	1114.5	970.6	844.3	748.6
10°	2827.2	2442.7	2086.0	1779.5	1655.1	1521.3	1283.6	1063.4	894.4	747.7	641.8
12.5°	3301.8	2749.2	2258.8	1864.1	1702.4	1533.4	1245.5	985.4	797.8	648.3	547.0
15°	3740.2	2993.4	2375.8	1892.8	1697.8	1498.1	1168.4	890.7	696.6	558.2	464.4
17.5°	4067.1	3121.6	2402.7	1849.2	1624.4	1403.4	1050.4	779.2	600.0	478.3	382.7
20°	4227.8	3142.0	2338.7	1724.7	1498.1	1268.7	921.3	672.4	517.3	404.0	323.2
22.5°	4227.8	3045.5	2199.3	1568.7	1340.2	1113.6	796.9	584.2	452.3	352.0	284.2
25°	4067.1	2853.2	2012.7	1388.5	1166.5	960.4	689.2	518.3	402.2	320.4	263.8
27.5°	3755.0	2587.6	1773.0	1187.9	995.6	823.8	603.7	457.9	364.1	288.8	289.8
30°	3325.9	2261.6	1498.1	976.1	820.1	677.1	508.0	383.6	291.6	277.7	286.1
32.5°	2830.0	1871.5	1187.0	757.0	635.3	533.1	386.4	271.2	232.2	234.1	243.3
35°	2321.0	1473.0	893.5	561.0	472.7	386.4	253.6	178.3	176.5	180.2	186.7
37.5°	1832.5	1102.5	646.4	410.5	317.6	237.8	136.5	122.6	122.6	126.3	130.0
40°	1372.7	782.0	444.9	243.3	154.2	108.7	86.4	79.9	78.9	79.9	84.5
42.5°	942.7	495.0	264.7	97.5	74.3	63.2	54.8	50.2	49.2	50.2	52.9
45°	529.4	304.6	103.1	52.0	44.6	39.9	34.4	31.6	30.6	30.6	32.5
47.5°	331.6	120.7	46.4	32.5	27.9	26.0	22.3	20.4	19.5	19.5	20.4
50°	127.2	47.4	28.8	21.4	18.6	16.7	14.9	13.0	12.1	12.1	13.0
52.5°	43.7	27.9	18.6	13.9	12.1	11.1	9.3	8.4	8.4	8.4	8.4
55°	24.1	16.7	11.1	8.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
57.5°	14.9	10.2	7.4	6.5	6.5	6.5	6.5	6.5	6.5	7.4	7.4
60°	8.4	6.5	5.6	5.6	5.6	5.6	6.5	6.5	6.5	7.4	7.4
62.5°	5.6	5.6	5.6	5.6	5.6	5.6	6.5	6.5	7.4	7.4	7.4
65°	4.6	4.6	4.6	5.6	5.6	5.6	6.5	6.5	7.4	7.4	7.4
67.5°	4.6	4.6	5.6	5.6	5.6	6.5	6.5	7.4	7.4	7.4	7.4
70°	4.6	5.6	5.6	6.5	6.5	6.5	7.4	7.4	7.4	8.4	8.4
72.5°	4.6	5.6	5.6	6.5	6.5	6.5	7.4	7.4	8.4	8.4	8.4
75°	5.6	5.6	5.6	6.5	6.5	6.5	7.4	8.4	8.4	8.4	8.4
77.5°	5.6	5.6	6.5	6.5	6.5	7.4	7.4	8.4	8.4	8.4	8.4
80°	5.6	5.6	6.5	6.5	7.4	7.4	8.4	8.4	8.4	9.3	9.3
82.5°	5.6	5.6	6.5	7.4	7.4	7.4	8.4	8.4	9.3	9.3	9.3
85°	5.6	6.5	6.5	7.4	7.4	7.4	8.4	8.4	9.3	9.3	9.3
87.5°	5.6	6.5	6.5	7.4	7.4	7.4	8.4	8.4	9.3	9.3	9.3
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°	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8
2.5°	895.3	856.3	817.3	788.5	774.6	760.7	730.0	690.1	673.4	649.2	635.3
5°	780.2	714.2	662.2	627.9	607.4	580.5	545.2	506.2	483.9	458.8	442.1
7.5°	661.3	584.2	534.0	502.5	482.0	448.6	404.0	357.6	330.6	302.8	283.3
10°	557.3	483.9	427.2	391.0	365.0	326.0	281.4	248.9	225.7	201.5	182.0
12.5°	465.3	386.4	326.0	295.4	277.7	240.6	203.4	167.2	153.2	148.6	148.6
15°	377.1	305.6	254.5	228.5	209.9	170.0	162.5	160.7	159.7	158.8	160.7
17.5°	307.4	247.1	193.2	180.2	178.3	177.4	178.3	178.3	179.3	182.0	186.7
20°	258.2	202.5	198.8	199.7	199.7	203.4	208.0	211.8	215.5	220.1	228.5
22.5°	229.4	228.5	235.0	235.9	240.6	246.1	254.5	260.1	269.3	274.0	286.1
25°	264.7	271.2	283.3	287.0	294.4	303.7	316.7	324.1	335.3	340.9	354.8
27.5°	300.0	310.2	325.1	329.7	336.2	351.1	360.4	366.9	372.4	376.2	384.5
30°	297.2	306.5	321.4	322.3	331.6	341.8	347.4	352.9	356.6	355.7	360.4
32.5°	251.7	260.1	274.0	274.0	284.2	292.6	295.4	300.0	300.0	300.0	301.9
35°	193.2	198.8	208.0	210.8	219.2	224.8	226.6	232.2	232.2	230.3	230.3
37.5°	133.7	141.2	147.7	149.5	155.1	158.8	163.5	164.4	162.5	163.5	163.5
40°	87.3	91.9	96.6	97.5	102.2	105.0	109.6	109.6	110.5	109.6	111.5
42.5°	53.9	57.6	60.4	62.2	64.1	65.9	68.7	69.7	70.6	69.7	71.5
45°	33.4	35.3	37.2	38.1	39.0	39.9	42.7	42.7	42.7	42.7	43.7
47.5°	20.4	21.4	22.3	22.3	23.2	24.1	25.1	25.1	25.1	25.1	26.0
50°	12.1	13.0	13.0	13.0	13.9	13.9	14.9	14.9	14.9	13.9	14.9
52.5°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	7.4	8.4
55°	7.4	7.4	6.5	6.5	6.5	6.5	6.5	5.6	4.6	4.6	3.7
57.5°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.6	4.6	3.7	2.8
60°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	3.7	2.8
62.5°	7.4	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	3.7	2.8
65°	7.4	7.4	6.5	6.5	6.5	5.6	5.6	4.6	4.6	3.7	2.8
67.5°	7.4	7.4	7.4	6.5	7.4	6.5	5.6	5.6	4.6	3.7	3.7
70°	8.4	7.4	7.4	7.4	7.4	6.5	6.5	5.6	4.6	3.7	3.7
72.5°	8.4	8.4	7.4	7.4	7.4	6.5	6.5	5.6	4.6	4.6	3.7
75°	8.4	8.4	7.4	7.4	7.4	6.5	6.5	5.6	5.6	4.6	3.7
77.5°	8.4	8.4	8.4	7.4	7.4	7.4	6.5	6.5	5.6	4.6	3.7
80°	8.4	8.4	8.4	8.4	8.4	7.4	7.4	6.5	5.6	4.6	3.7
82.5°	9.3	8.4	8.4	8.4	8.4	7.4	7.4	6.5	5.6	4.6	4.6
85°	9.3	9.3	8.4	8.4	8.4	7.4	7.4	6.5	5.6	5.6	4.6
87.5°	9.3	8.4	8.4	8.4	8.4	7.4	7.4	6.5	5.6	4.6	4.6
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: P209078

CATALOG NUMBER: LDSQA6A55835D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8	1006.8
2.5°	621.4	613.9	613.9	600.9	599.1	588.8	597.2	591.6
5°	423.5	411.4	407.7	394.7	390.1	378.0	381.7	377.1
7.5°	266.6	254.5	250.8	241.5	235.9	226.6	227.5	224.8
10°	162.5	151.4	148.6	145.8	143.0	142.1	143.0	142.1
12.5°	147.7	146.7	144.9	145.8	144.0	144.9	145.8	144.9
15°	160.7	162.5	160.7	161.6	160.7	162.5	163.5	163.5
17.5°	188.5	192.3	190.4	193.2	192.3	196.9	196.9	196.9
20°	231.3	237.8	235.9	239.6	239.6	245.2	245.2	247.1
22.5°	290.7	299.1	298.1	306.5	304.6	311.1	311.1	313.0
25°	362.2	370.6	371.5	377.1	376.2	382.7	382.7	384.5
27.5°	391.9	396.6	395.7	398.4	399.4	403.1	405.9	404.0
30°	367.8	371.5	370.6	372.4	372.4	375.2	378.0	375.2
32.5°	309.3	312.1	312.1	315.8	313.0	313.9	318.6	315.8
35°	236.8	238.7	236.8	238.7	239.6	239.6	244.3	243.3
37.5°	169.0	170.0	170.0	172.8	170.0	170.0	174.6	175.5
40°	113.3	114.2	113.3	117.0	115.2	115.2	118.0	115.2
42.5°	72.4	73.4	72.4	75.2	73.4	75.2	76.2	77.1
45°	44.6	44.6	43.7	45.5	44.6	45.5	46.4	46.4
47.5°	26.0	26.0	25.1	26.9	26.0	26.0	26.0	26.9
50°	13.9	13.9	13.9	14.9	13.9	13.9	13.9	13.0
52.5°	7.4	7.4	6.5	7.4	6.5	6.5	6.5	6.5
55°	3.7	2.8	2.8	2.8	1.9	1.9	1.9	1.9
57.5°	2.8	1.9	1.9	0.9	0.9	0.9	0.0	0.0
60°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.8	1.9	1.9	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	2.8	1.9	1.9	0.9	0.9	0.0	0.0
77.5°	3.7	2.8	1.9	1.9	0.9	0.9	0.0	0.0
80°	3.7	2.8	1.9	1.9	1.9	0.9	0.9	0.9
82.5°	3.7	2.8	2.8	1.9	1.9	0.9	0.9	0.9
85°	3.7	2.8	2.8	1.9	1.9	0.9	0.9	0.9
87.5°	3.7	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



Report Generated By E9808895 / USPTCWHP6082093





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













(END OF REPORT)