

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: P209087

Luminaire Tested: **LDSQA6A65840D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209087  
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: LDSQA6A65840D010TE 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: 6499.9 lumens  
Efficiency: N/A  
Efficacy: 82.6 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

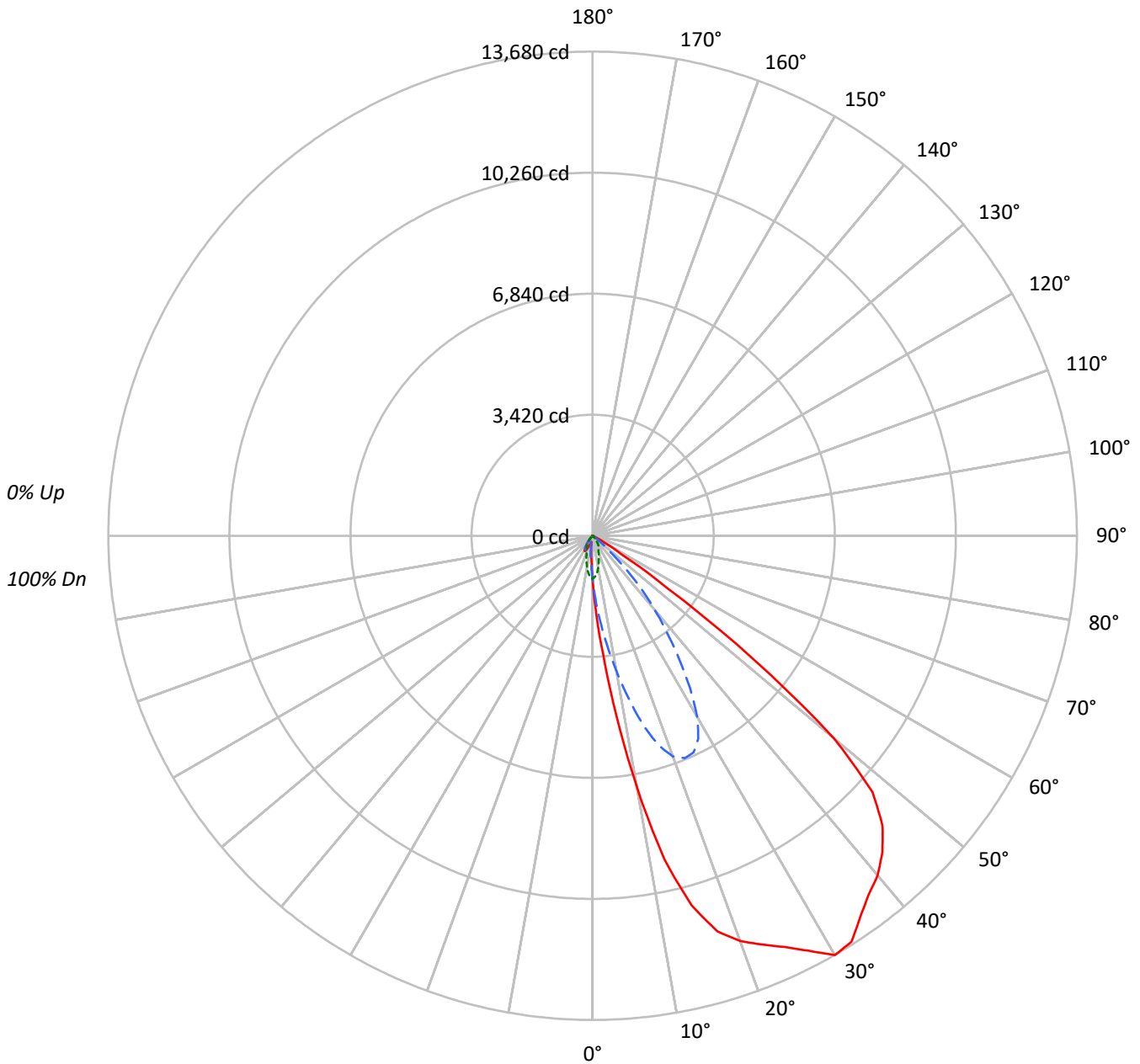
Input Watts (W): 78.67  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P209087

CATALOG NUMBER: LDSQA6A65840D010TE LARH40FL 6LSQA1H 30°

### Luminous Intensity Polar Plot





TEST NUMBER: P209087

CATALOG NUMBER: LDSQA6A65840D010TE LARH40FL 6LSQA1H 30°

**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°	52450	52450	52450
5°	143962	48329	19721
10°	315474	39553	7515
15°	481886	30106	8817
20°	558312	22396	13695
25°	609045	18418	22100
30°	680115	16705	22571
35°	691979	11458	15474
40°	704138	5429	7829
45°	705282	2259	3422
50°	596247	978	1052
55°	191994	676	165
60°	38130	775	0
65°	3892	917	0
70°	428	1271	0
75°	0	1680	0
80°	0	2777	273
85°	0	5533	543



TEST NUMBER: P209087

CATALOG NUMBER: LDSQA6A65840D010TE LARH40FL 6LSQA1H 30°

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	165.4	2.5
10°-20°	855.3	13.2
20°-30°	1637.5	25.2
30°-40°	1929.3	29.7
40°-50°	1515.4	23.3
50°-60°	369.3	5.7
60°-70°	15.8	0.2
70°-80°	6.0	0.1
80°-90°	5.9	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°	2658.2	40.9
0°-40°	4587.5	70.6
0°-60°	6472.1	99.6
0°-90°	6499.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6499.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1218	1218	1218	1218	1218	
5°	3331	2410	1118	586	456	440
15°	10811	5553	675	193	198	3018
25°	12820	6752	388	406	465	5975
35°	13165	4268	218	281	294	8255
45°	11583	1319	37	52	56	8703
55°	2558	48	9	6	2	3044
65°	38	6	9	6	0	101
75°	0	6	10	7	0	0
85°	0	7	11	7	1	0
90°	0	0	0	0	0	



TEST NUMBER: P209087

CATALOG NUMBER: LDSQA6A65840D010TE LARH40FL 6LSQA1H 30°

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2
2.5°	2088.0	2083.5	2053.2	2081.3	1995.8	1992.5	1954.3	1937.4	1888.0	1840.8	1773.3
5°	3330.9	3257.9	3198.3	3200.6	3036.5	3006.1	2920.7	2834.2	2701.6	2578.0	2410.5
7.5°	5077.3	4990.7	4864.9	4812.1	4498.5	4406.4	4229.9	3999.6	3710.8	3423.1	3112.9
10°	7215.8	7229.3	7066.4	6915.8	6441.6	6255.0	5969.6	5515.6	4968.3	4427.7	3878.2
12.5°	9367.9	9358.9	9164.5	8936.4	8352.0	8089.0	7709.2	7142.8	6418.0	5579.6	4719.9
15°	10810.8	10874.9	10792.9	10610.8	10111.9	9810.7	9382.5	8613.8	7730.5	6712.4	5552.6
17.5°	11716.6	11777.3	11748.1	11605.4	11164.8	10843.4	10486.1	9856.8	8835.2	7555.2	6208.9
20°	12185.2	12280.8	12267.3	12112.2	11779.6	11513.2	11118.8	10535.5	9651.1	8140.7	6633.7
22.5°	12497.7	12570.7	12590.9	12415.6	12071.7	11818.9	11530.1	10939.0	10107.4	8498.1	6802.3
25°	12820.2	12949.4	12822.4	12606.7	12290.9	12048.1	11740.2	11173.8	10325.4	8644.2	6751.7
27.5°	13215.8	13277.6	12989.9	12793.2	12442.6	12179.6	11852.6	11309.8	10363.6	8527.3	6462.9
30°	13679.9	13423.7	13222.5	12832.5	12434.7	12178.5	11845.9	11224.4	10162.4	8139.6	5903.3
32.5°	13603.5	13368.6	13140.5	12728.0	12334.7	12080.7	11709.9	10940.1	9687.1	7491.2	5131.2
35°	13165.2	13215.8	12969.6	12628.0	12183.0	11921.2	11516.6	10535.5	8880.2	6596.6	4268.2
37.5°	12795.5	12906.7	12746.0	12430.2	11978.5	11624.5	11078.3	9886.0	7827.2	5461.6	3450.0
40°	12528.0	12564.0	12477.4	12123.4	11580.6	11069.3	10437.8	8719.5	6548.3	4287.3	2722.9
42.5°	12113.3	12208.8	12056.0	11669.4	10846.8	10268.1	9353.3	7372.1	5086.3	3274.7	2049.8
45°	11582.9	11673.9	11485.1	10842.3	9698.3	8849.8	7733.9	5748.2	3762.4	2413.9	1319.3
47.5°	10717.6	10773.8	10408.5	9519.6	7856.4	7057.4	5913.4	4007.4	2424.0	1349.7	641.7
50°	8901.5	8874.6	8121.6	7028.2	5254.8	4416.5	3519.7	2172.3	1089.0	639.4	401.2
52.5°	5736.9	5675.1	4930.1	3935.5	2661.1	2030.7	1526.1	937.2	567.5	357.4	158.5
55°	2557.7	2534.1	2074.5	1611.5	1089.0	937.2	715.9	459.6	302.3	124.7	48.3
57.5°	948.5	927.1	817.0	685.5	525.9	437.2	347.3	220.3	77.5	41.6	25.8
60°	442.8	441.6	388.8	320.3	222.5	168.6	97.8	51.7	32.6	22.5	14.6
62.5°	141.6	138.2	96.6	70.8	50.6	43.8	34.8	25.8	16.9	12.4	9.0
65°	38.2	38.2	34.8	29.2	23.6	20.2	16.9	12.4	7.9	6.7	5.6
67.5°	14.6	14.6	13.5	12.4	9.0	7.9	6.7	5.6	4.5	5.6	5.6
70°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	4.5	4.5	5.6
72.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.4	3.4	4.5	5.6	5.6
75°	0.0	0.0	1.1	1.1	2.2	2.2	3.4	3.4	4.5	5.6	5.6
77.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.4	3.4	4.5	5.6	5.6
80°	0.0	0.0	1.1	1.1	2.2	2.2	3.4	3.4	4.5	5.6	5.6
82.5°	0.0	0.0	1.1	2.2	2.2	2.2	3.4	4.5	4.5	5.6	6.7
85°	0.0	0.0	1.1	2.2	2.2	3.4	3.4	4.5	4.5	5.6	6.7
87.5°	0.0	0.0	1.1	2.2	2.2	3.4	3.4	4.5	4.5	5.6	6.7
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: P209087

CATALOG NUMBER: LDSQA6A65840D010TE LARH40FL 6LSQA1H 30°

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2
2.5°	1723.9	1649.7	1547.5	1487.9	1473.3	1441.8	1386.8	1304.7	1237.3	1172.1	1133.9
5°	2268.9	2093.6	1897.0	1758.7	1702.5	1627.2	1493.5	1355.3	1228.3	1118.2	1031.6
7.5°	2846.6	2557.7	2239.7	1983.5	1891.3	1772.2	1554.2	1348.5	1174.4	1021.5	905.8
10°	3420.8	2955.6	2524.0	2153.2	2002.6	1840.8	1553.1	1286.7	1082.2	904.7	776.5
12.5°	3995.1	3326.4	2733.1	2255.4	2059.9	1855.4	1507.0	1192.3	965.3	784.4	661.9
15°	4525.5	3622.0	2874.7	2290.3	2054.3	1812.7	1413.7	1077.7	842.8	675.4	561.9
17.5°	4921.1	3777.1	2907.2	2237.5	1965.5	1698.0	1271.0	942.9	726.0	578.8	463.0
20°	5115.5	3801.8	2829.7	2086.9	1812.7	1535.1	1114.8	813.6	626.0	488.8	391.1
22.5°	5115.5	3684.9	2661.1	1898.1	1621.6	1347.4	964.2	706.9	547.3	425.9	343.9
25°	4921.1	3452.3	2435.3	1680.1	1411.5	1162.0	833.9	627.1	486.6	387.7	319.2
27.5°	4543.5	3130.9	2145.3	1437.3	1204.7	996.8	730.5	554.0	440.5	349.5	350.6
30°	4024.3	2736.4	1812.7	1181.1	992.3	819.2	614.7	464.1	352.9	336.0	346.1
32.5°	3424.2	2264.4	1436.2	915.9	768.7	645.1	467.5	328.1	280.9	283.2	294.4
35°	2808.3	1782.3	1081.1	678.8	572.0	467.5	306.8	215.8	213.5	218.0	225.9
37.5°	2217.2	1333.9	782.2	496.7	384.3	287.7	165.2	148.3	148.3	152.8	157.3
40°	1661.0	946.2	538.3	294.4	186.5	131.5	104.5	96.6	95.5	96.6	102.3
42.5°	1140.6	599.0	320.3	118.0	89.9	76.4	66.3	60.7	59.6	60.7	64.1
45°	640.6	368.6	124.7	62.9	53.9	48.3	41.6	38.2	37.1	37.1	39.3
47.5°	401.2	146.1	56.2	39.3	33.7	31.5	27.0	24.7	23.6	23.6	24.7
50°	154.0	57.3	34.8	25.8	22.5	20.2	18.0	15.7	14.6	14.6	15.7
52.5°	52.8	33.7	22.5	16.9	14.6	13.5	11.2	10.1	10.1	10.1	10.1
55°	29.2	20.2	13.5	10.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0
57.5°	18.0	12.4	9.0	7.9	7.9	7.9	7.9	7.9	7.9	9.0	9.0
60°	10.1	7.9	6.7	6.7	6.7	6.7	7.9	7.9	7.9	9.0	9.0
62.5°	6.7	6.7	6.7	6.7	6.7	6.7	7.9	7.9	9.0	9.0	9.0
65°	5.6	5.6	5.6	6.7	6.7	6.7	7.9	7.9	9.0	9.0	9.0
67.5°	5.6	5.6	6.7	6.7	6.7	7.9	7.9	9.0	9.0	9.0	9.0
70°	5.6	6.7	6.7	7.9	7.9	7.9	9.0	9.0	9.0	10.1	10.1
72.5°	5.6	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	10.1
75°	6.7	6.7	6.7	7.9	7.9	7.9	9.0	10.1	10.1	10.1	10.1
77.5°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	10.1	10.1
80°	6.7	6.7	7.9	7.9	9.0	9.0	10.1	10.1	10.1	11.2	11.2
82.5°	6.7	6.7	7.9	9.0	9.0	9.0	10.1	10.1	11.2	11.2	11.2
85°	6.7	7.9	7.9	9.0	9.0	9.0	10.1	10.1	11.2	11.2	11.2
87.5°	6.7	7.9	7.9	9.0	9.0	9.0	10.1	10.1	11.2	11.2	11.2
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: P209087

CATALOG NUMBER: LDSQA6A65840D010TE LARH40FL 6LSQA1H 30°

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2
2.5°	1083.3	1036.1	988.9	954.1	937.2	920.4	883.3	835.0	814.7	785.5	768.7
5°	944.0	864.2	801.3	759.7	735.0	702.4	659.7	612.5	585.5	555.2	534.9
7.5°	800.1	706.9	646.2	608.0	583.2	542.8	488.8	432.7	400.1	366.4	342.8
10°	674.3	585.5	516.9	473.1	441.6	394.4	340.5	301.2	273.1	243.9	220.3
12.5°	563.0	467.5	394.4	357.4	336.0	291.1	246.1	202.3	185.4	179.8	179.8
15°	456.3	369.7	307.9	276.5	254.0	205.7	196.7	194.4	193.3	192.2	194.4
17.5°	372.0	298.9	233.7	218.0	215.8	214.6	215.8	215.8	216.9	220.3	225.9
20°	312.4	245.0	240.5	241.6	241.6	246.1	251.7	256.2	260.7	266.3	276.5
22.5°	277.6	276.5	284.3	285.4	291.1	297.8	307.9	314.7	325.9	331.5	346.1
25°	320.3	328.1	342.8	347.3	356.2	367.5	383.2	392.2	405.7	412.4	429.3
27.5°	363.0	375.3	393.3	398.9	406.8	424.8	436.0	443.9	450.6	455.1	465.2
30°	359.6	370.9	388.8	390.0	401.2	413.6	420.3	427.0	431.5	430.4	436.0
32.5°	304.5	314.7	331.5	331.5	343.9	354.0	357.4	363.0	363.0	363.0	365.2
35°	233.7	240.5	251.7	255.1	265.2	272.0	274.2	280.9	280.9	278.7	278.7
37.5°	161.8	170.8	178.7	180.9	187.7	192.2	197.8	198.9	196.7	197.8	197.8
40°	105.6	111.3	116.9	118.0	123.6	127.0	132.6	132.6	133.7	132.6	134.9
42.5°	65.2	69.7	73.0	75.3	77.5	79.8	83.2	84.3	85.4	84.3	86.5
45°	40.5	42.7	45.0	46.1	47.2	48.3	51.7	51.7	51.7	51.7	52.8
47.5°	24.7	25.8	27.0	27.0	28.1	29.2	30.3	30.3	30.3	30.3	31.5
50°	14.6	15.7	15.7	15.7	16.9	16.9	18.0	18.0	18.0	16.9	18.0
52.5°	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	9.0	10.1
55°	9.0	9.0	7.9	7.9	7.9	7.9	7.9	6.7	5.6	5.6	4.5
57.5°	7.9	7.9	7.9	7.9	7.9	6.7	6.7	5.6	5.6	4.5	3.4
60°	7.9	7.9	7.9	7.9	7.9	6.7	6.7	5.6	4.5	4.5	3.4
62.5°	9.0	7.9	7.9	7.9	7.9	6.7	6.7	5.6	4.5	4.5	3.4
65°	9.0	9.0	7.9	7.9	7.9	6.7	6.7	5.6	5.6	4.5	3.4
67.5°	9.0	9.0	9.0	7.9	9.0	7.9	6.7	6.7	5.6	4.5	4.5
70°	10.1	9.0	9.0	9.0	9.0	7.9	7.9	6.7	5.6	4.5	4.5
72.5°	10.1	10.1	9.0	9.0	9.0	7.9	7.9	6.7	5.6	5.6	4.5
75°	10.1	10.1	9.0	9.0	9.0	7.9	7.9	6.7	6.7	5.6	4.5
77.5°	10.1	10.1	10.1	9.0	9.0	9.0	7.9	7.9	6.7	5.6	4.5
80°	10.1	10.1	10.1	10.1	10.1	9.0	9.0	7.9	6.7	5.6	4.5
82.5°	11.2	10.1	10.1	10.1	10.1	9.0	9.0	7.9	6.7	5.6	5.6
85°	11.2	11.2	10.1	10.1	10.1	9.0	9.0	7.9	6.7	6.7	5.6
87.5°	11.2	10.1	10.1	10.1	10.1	9.0	9.0	7.9	6.7	5.6	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





TEST NUMBER: P209087

CATALOG NUMBER: LDSQA6A65840D010TE LARH40FL 6LSQA1H 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2	1218.2
2.5°	751.8	742.8	742.8	727.1	724.8	712.5	722.6	715.9
5°	512.4	497.8	493.3	477.6	472.0	457.4	461.9	456.3
7.5°	322.5	307.9	303.4	292.2	285.4	274.2	275.3	272.0
10°	196.7	183.2	179.8	176.4	173.1	171.9	173.1	171.9
12.5°	178.7	177.6	175.3	176.4	174.2	175.3	176.4	175.3
15°	194.4	196.7	194.4	195.5	194.4	196.7	197.8	197.8
17.5°	228.1	232.6	230.4	233.7	232.6	238.2	238.2	238.2
20°	279.8	287.7	285.4	289.9	289.9	296.7	296.7	298.9
22.5°	351.7	361.9	360.7	370.9	368.6	376.5	376.5	378.7
25°	438.3	448.4	449.5	456.3	455.1	463.0	463.0	465.2
27.5°	474.2	479.9	478.7	482.1	483.2	487.7	491.1	488.8
30°	445.0	449.5	448.4	450.6	450.6	454.0	457.4	454.0
32.5°	374.2	377.6	377.6	382.1	378.7	379.8	385.5	382.1
35°	286.6	288.8	286.6	288.8	289.9	289.9	295.6	294.4
37.5°	204.5	205.7	205.7	209.0	205.7	205.7	211.3	212.4
40°	137.1	138.2	137.1	141.6	139.3	139.3	142.7	139.3
42.5°	87.7	88.8	87.7	91.0	88.8	91.0	92.2	93.3
45°	53.9	53.9	52.8	55.1	53.9	55.1	56.2	56.2
47.5°	31.5	31.5	30.3	32.6	31.5	31.5	31.5	32.6
50°	16.9	16.9	16.9	18.0	16.9	16.9	16.9	15.7
52.5°	9.0	9.0	7.9	9.0	7.9	7.9	7.9	7.9
55°	4.5	3.4	3.4	3.4	2.2	2.2	2.2	2.2
57.5°	3.4	2.2	2.2	1.1	1.1	1.1	0.0	0.0
60°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
62.5°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
65°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
67.5°	3.4	2.2	2.2	1.1	1.1	0.0	0.0	0.0
70°	3.4	2.2	2.2	1.1	1.1	0.0	0.0	0.0
72.5°	3.4	2.2	2.2	2.2	1.1	1.1	0.0	0.0
75°	3.4	3.4	2.2	2.2	1.1	1.1	0.0	0.0
77.5°	4.5	3.4	2.2	2.2	1.1	1.1	0.0	0.0
80°	4.5	3.4	2.2	2.2	2.2	1.1	1.1	1.1
82.5°	4.5	3.4	3.4	2.2	2.2	1.1	1.1	1.1
85°	4.5	3.4	3.4	2.2	2.2	1.1	1.1	1.1
87.5°	4.5	3.4	3.4	2.2	2.2	1.1	1.1	1.1
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)