

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: P209014

Luminaire Tested: **LDSQA6A55835D010TE LARH20SP 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209014
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26686)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A55835D010TE LARH20SP 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 20° SPOT, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4675.4 lumens
Efficiency: N/A
Efficacy: 76.9 lumens/watt
Spacing Criteria (0/90/45): 2.35 / 0.6 / 1.31
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

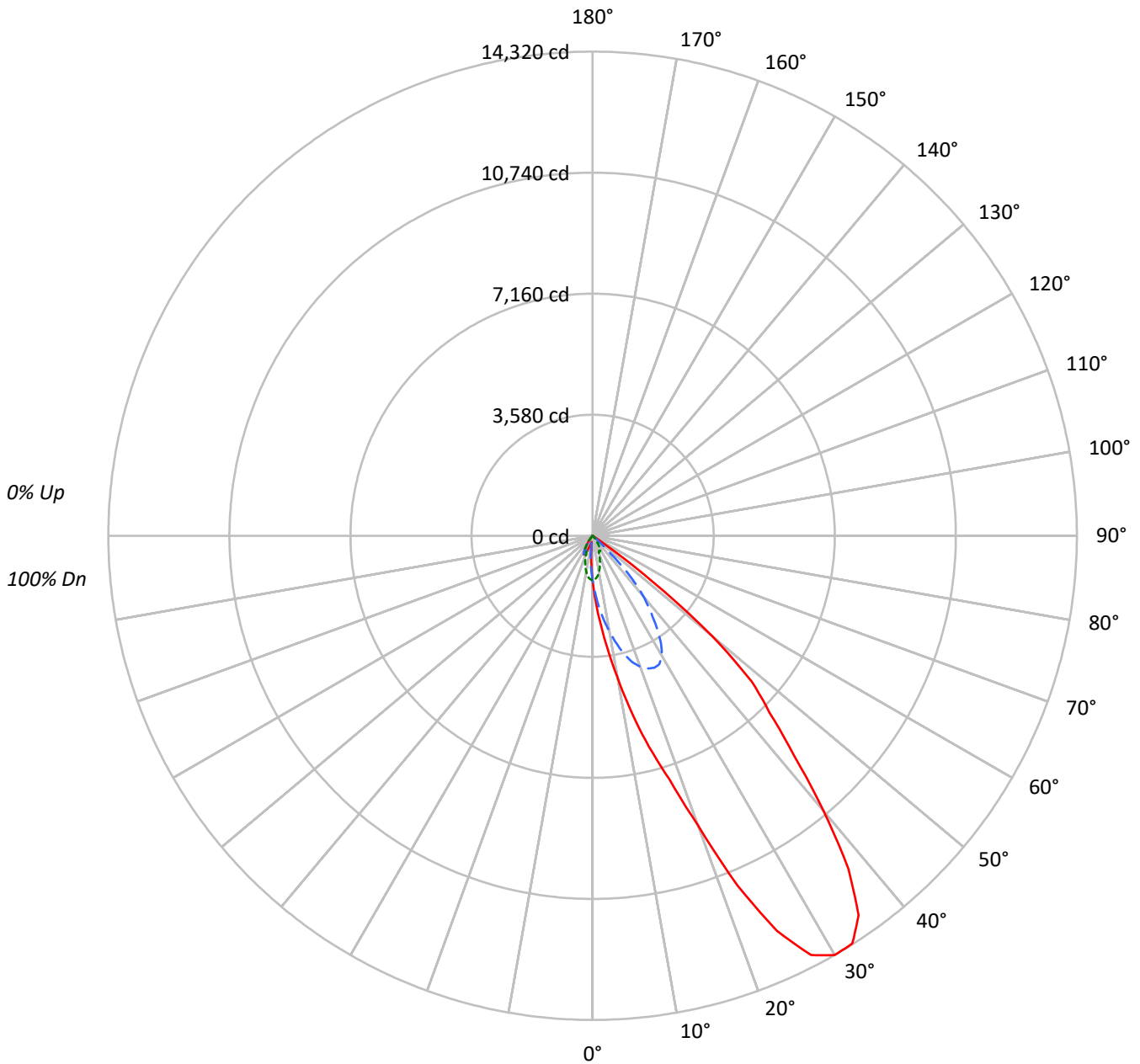
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209014

CATALOG NUMBER: LDSQA6A55835D010TE LARH20SP 6LSQA1H 30°

Luminous Intensity Polar Plot





TEST NUMBER: P209014

CATALOG NUMBER: LDSQA6A55835D010TE LARH20SP 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	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	105	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82																			
3	99	91	85	80	96	89	84	80	87	82	78	84	80	77	82	79	76	74																			
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68	66																			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	60																			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54																			
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49																			
8	70	59	51	46	69	58	51	46	57	50	46	56	50	46	54	49	46	44																			
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40																			
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	56829	56829	56829
5°	110116	54155	18265
10°	187086	47392	8202
15°	288290	37799	13042
20°	417332	24600	22685
25°	612299	23739	29169
30°	711944	22487	22352
35°	720604	11910	11816
40°	596612	4491	4957
45°	450591	1528	1808
50°	308281	563	563
55°	42877	488	68
60°	1119	482	0
65°	285	662	0
70°	113	818	0
75°	0	1081	0
80°	0	1835	223
85°	0	3656	0



TEST NUMBER: P209014

CATALOG NUMBER: LDSQA6A55835D010TE LARH20SP 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.5	3.0
10°-20°	585.3	12.5
20°-30°	1335.2	28.6
30°-40°	1545.2	33.0
40°-50°	931.9	19.9
50°-60°	126.6	2.7
60°-70°	4.1	0.1
70°-80°	4.4	0.1
80°-90°	4.1	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°	2059.0	44.0
0°-40°	3604.3	77.1
0°-60°	4662.7	99.7
0°-90°	4675.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4675.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1320	1320	1320	1320	1320	
5°	2548	2086	1253	686	423	297
15°	6468	3636	848	261	293	1915
25°	12889	4308	500	601	614	5833
35°	13710	3284	227	231	225	8262
45°	7400	894	25	31	30	5786
55°	571	6	6	5	1	1120
65°	3	4	6	4	0	4
75°	0	5	6	5	0	0
85°	0	5	7	5	0	0
90°	0	0	0	0	0	



TEST NUMBER: P209014

CATALOG NUMBER: LDSQA6A55835D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9
2.5°	1908.8	1891.1	1898.6	1879.1	1829.8	1819.6	1818.7	1805.7	1763.9	1731.4	1692.4
5°	2547.8	2546.9	2551.5	2509.7	2423.4	2396.4	2383.4	2351.8	2250.6	2172.6	2086.2
7.5°	3345.7	3340.1	3334.6	3258.4	3122.8	3070.8	3037.3	2923.1	2783.8	2645.4	2491.2
10°	4279.2	4276.4	4255.1	4121.3	3904.0	3808.3	3743.3	3562.1	3338.3	3141.4	2879.4
12.5°	5363.2	5338.1	5300.0	5104.0	4805.9	4701.8	4558.8	4271.8	3928.1	3626.2	3260.3
15°	6467.6	6431.3	6363.5	6111.8	5742.1	5564.7	5387.3	5009.3	4543.0	4104.6	3635.5
17.5°	7547.8	7507.9	7349.1	6921.8	6560.5	6344.0	6147.1	5627.9	5079.9	4516.1	3921.6
20°	9108.3	8963.4	8686.6	8013.2	7341.6	6951.5	6721.2	6172.2	5494.1	4837.4	4125.0
22.5°	11192.6	10871.2	10281.4	9187.2	8227.7	7664.9	7287.7	6557.7	5792.3	5047.4	4250.4
25°	12888.7	12742.9	12072.2	10515.5	9018.2	8355.0	7830.2	6864.2	6009.7	5187.6	4308.0
27.5°	13982.0	13945.7	13179.4	11615.3	9663.7	8793.4	8207.3	7066.7	6114.6	5217.3	4280.1
30°	14320.1	14376.7	13641.1	11988.7	9850.4	8881.7	8240.7	7069.5	6033.8	5082.7	4101.8
32.5°	14295.0	14297.8	13395.9	11666.3	9546.7	8625.3	7962.1	6834.5	5735.6	4745.5	3762.8
35°	13709.8	13565.8	12546.0	10676.2	8839.9	8027.1	7410.4	6379.3	5244.3	4238.3	3284.4
37.5°	12425.2	12236.7	11047.7	9408.3	8003.0	7251.5	6753.7	5782.1	4659.1	3696.8	2790.3
40°	10614.9	10347.4	9366.5	8229.6	7087.1	6522.4	6104.4	5114.2	4033.1	3165.5	2326.8
42.5°	8802.7	8671.7	8023.4	7099.2	6317.1	5785.8	5349.2	4414.8	3431.2	2641.6	1740.7
45°	7400.1	7287.7	6852.1	6242.8	5475.6	4990.7	4569.9	3685.7	2665.8	1772.2	894.5
47.5°	6378.4	6287.4	5870.3	5230.3	4388.8	3858.4	3424.7	2416.9	1510.3	765.4	223.9
50°	4602.4	4509.6	4100.9	3359.6	2599.8	2155.9	1843.8	1079.3	428.2	155.1	23.2
52.5°	2256.2	2180.0	1902.3	1423.9	955.8	687.3	502.5	202.5	49.2	16.7	11.1
55°	571.2	524.8	437.5	274.9	134.7	80.8	52.0	18.6	12.1	9.3	6.5
57.5°	32.5	31.6	28.8	21.4	15.8	13.9	12.1	9.3	6.5	5.6	4.6
60°	13.0	12.1	11.1	9.3	7.4	6.5	6.5	4.6	3.7	3.7	3.7
62.5°	5.6	5.6	5.6	4.6	3.7	3.7	3.7	2.8	3.7	3.7	3.7
65°	2.8	2.8	2.8	1.9	1.9	1.9	2.8	2.8	2.8	3.7	3.7
67.5°	1.9	0.9	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.7	3.7
70°	0.9	0.9	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.7	4.6
72.5°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.7	4.6
75°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	2.8	3.7	3.7	4.6
77.5°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	2.8	3.7	3.7	4.6
80°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	2.8	3.7	3.7	4.6
82.5°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.7	3.7	4.6
85°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.7	3.7	4.6
87.5°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.7	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: P209014

CATALOG NUMBER: LDSQA6A55835D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9
2.5°	1642.2	1608.8	1559.5	1527.0	1495.4	1465.7	1416.5	1388.6	1338.5	1292.0	1252.1
5°	1982.2	1898.6	1797.3	1710.9	1655.2	1600.4	1501.0	1427.6	1335.7	1253.0	1176.9
7.5°	2325.8	2178.2	2011.9	1869.8	1783.4	1698.9	1550.2	1431.4	1301.3	1183.4	1071.0
10°	2637.9	2415.9	2180.9	1977.5	1860.5	1750.9	1554.9	1397.0	1229.8	1084.0	942.8
12.5°	2927.7	2624.0	2317.5	2051.8	1906.9	1775.0	1535.4	1342.2	1143.4	970.6	806.2
15°	3186.0	2795.8	2416.9	2094.6	1924.6	1768.5	1489.9	1265.1	1041.2	848.0	640.0
17.5°	3381.9	2902.7	2460.5	2088.1	1893.0	1719.3	1411.9	1168.5	932.6	698.5	463.5
20°	3500.8	2948.2	2451.2	2037.9	1825.2	1641.3	1319.0	1063.5	801.6	536.9	408.7
22.5°	3551.0	2944.5	2407.6	1962.7	1741.6	1555.8	1229.8	961.4	664.1	485.8	426.3
25°	3559.3	2906.4	2346.3	1880.0	1658.9	1474.1	1139.7	845.3	576.8	499.7	477.4
27.5°	3495.3	2817.2	2231.1	1761.1	1542.8	1351.5	1005.0	671.6	541.5	497.9	512.7
30°	3305.8	2613.8	2027.7	1552.1	1341.3	1149.9	718.0	526.7	449.6	452.3	456.1
32.5°	2972.3	2275.7	1700.7	1246.5	1016.2	757.9	446.8	352.0	341.8	341.8	340.0
35°	2527.4	1862.3	1334.8	788.6	505.3	364.1	231.3	232.2	227.6	226.6	225.7
37.5°	2067.6	1469.4	845.3	326.0	219.2	152.3	136.5	138.4	136.5	139.3	137.5
40°	1630.1	907.5	308.4	104.0	77.1	74.3	76.2	78.0	78.0	79.9	79.9
42.5°	947.4	300.9	80.8	41.8	41.8	39.9	40.9	42.7	43.7	44.6	43.7
45°	281.4	62.2	26.0	23.2	23.2	22.3	22.3	23.2	24.2	25.1	25.1
47.5°	44.6	17.6	14.9	13.0	13.0	13.0	13.0	13.0	13.9	13.9	14.9
50°	13.9	11.1	9.3	8.4	8.4	7.4	7.4	8.4	8.4	8.4	9.3
52.5°	8.4	6.5	6.5	5.6	6.5	6.5	5.6	6.5	6.5	6.5	7.4
55°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	6.5	6.5	6.5
57.5°	4.6	4.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
60°	4.6	4.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	6.5
62.5°	4.6	4.6	5.6	5.6	5.6	5.6	5.6	5.6	6.5	6.5	6.5
65°	4.6	4.6	5.6	5.6	5.6	5.6	5.6	6.5	6.5	6.5	6.5
67.5°	4.6	5.6	5.6	5.6	5.6	6.5	6.5	6.5	6.5	6.5	6.5
70°	4.6	5.6	5.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
72.5°	4.6	5.6	5.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
75°	5.6	5.6	5.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	7.4
77.5°	5.6	5.6	6.5	6.5	6.5	6.5	6.5	6.5	7.4	7.4	7.4
80°	5.6	5.6	6.5	6.5	6.5	6.5	6.5	7.4	7.4	7.4	7.4
82.5°	5.6	5.6	6.5	6.5	6.5	6.5	6.5	7.4	7.4	7.4	7.4
85°	5.6	5.6	6.5	6.5	6.5	6.5	6.5	7.4	7.4	7.4	7.4
87.5°	5.6	5.6	6.5	6.5	6.5	6.5	6.5	7.4	7.4	7.4	7.4
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: P209014

CATALOG NUMBER: LDSQA6A55835D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9
2.5°	1217.7	1175.0	1154.6	1125.8	1105.3	1059.8	1041.2	1009.7	983.7	940.9	943.7
5°	1111.8	1031.0	976.2	933.5	903.8	831.3	783.0	731.9	685.5	627.9	606.5
7.5°	965.1	865.7	782.1	731.0	692.9	596.3	489.5	405.9	342.7	297.2	279.6
10°	818.3	689.2	556.4	477.4	422.6	329.7	282.4	260.1	239.6	214.6	197.8
12.5°	647.4	463.5	342.7	311.2	288.9	258.2	227.6	203.4	208.1	209.0	215.5
15°	442.1	333.5	295.4	274.0	249.9	232.2	242.4	248.9	261.0	261.9	270.3
17.5°	359.5	313.0	282.4	281.4	283.3	293.5	309.3	317.7	333.5	337.2	349.2
20°	359.5	332.5	358.5	358.5	363.2	377.1	397.5	409.6	427.3	433.8	448.6
22.5°	409.6	428.2	460.7	464.4	466.3	481.1	507.2	519.2	539.7	543.4	559.2
25°	499.7	516.4	546.2	548.9	549.9	561.0	580.5	587.0	601.0	593.5	602.8
27.5°	528.5	535.9	554.5	556.4	551.7	556.4	563.8	563.8	568.5	553.6	556.4
30°	464.4	466.3	475.6	476.5	466.3	468.1	469.1	468.1	467.2	451.4	451.4
32.5°	344.6	344.6	356.7	353.9	342.7	345.5	345.5	345.5	344.6	331.6	329.7
35°	228.5	229.4	239.6	237.8	229.4	231.3	231.3	234.1	231.3	223.9	222.0
37.5°	139.3	140.3	144.9	145.8	143.0	144.0	144.9	144.0	145.8	142.1	140.3
40°	80.8	82.7	86.4	87.3	86.4	86.4	87.3	88.2	92.0	87.3	85.5
42.5°	47.4	48.3	50.2	50.2	50.2	50.2	51.1	52.0	52.9	52.0	51.1
45°	26.9	27.9	28.8	28.8	29.7	28.8	29.7	29.7	30.7	29.7	29.7
47.5°	15.8	15.8	16.7	16.7	17.6	16.7	17.6	17.6	17.6	16.7	16.7
50°	9.3	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	9.3	9.3
52.5°	7.4	7.4	7.4	7.4	7.4	6.5	6.5	6.5	6.5	5.6	5.6
55°	6.5	6.5	6.5	6.5	6.5	6.5	5.6	4.6	4.6	3.7	3.7
57.5°	5.6	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	2.8	2.8
60°	6.5	6.5	6.5	6.5	5.6	5.6	5.6	4.6	3.7	2.8	2.8
62.5°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	2.8	2.8
65°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	2.8	2.8
67.5°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.6	3.7	3.7	2.8
70°	6.5	7.4	7.4	6.5	6.5	6.5	5.6	4.6	4.6	3.7	2.8
72.5°	6.5	7.4	7.4	6.5	6.5	6.5	5.6	4.6	4.6	3.7	2.8
75°	7.4	7.4	7.4	7.4	6.5	6.5	5.6	5.6	4.6	3.7	2.8
77.5°	7.4	7.4	7.4	7.4	6.5	6.5	5.6	5.6	4.6	3.7	2.8
80°	7.4	7.4	7.4	7.4	7.4	6.5	6.5	5.6	4.6	3.7	3.7
82.5°	7.4	7.4	7.4	7.4	7.4	6.5	6.5	5.6	4.6	3.7	3.7
85°	7.4	7.4	7.4	7.4	7.4	6.5	6.5	5.6	4.6	3.7	2.8
87.5°	7.4	7.4	7.4	7.4	6.5	6.5	5.6	5.6	4.6	3.7	2.8
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: P209014

CATALOG NUMBER: LDSQA6A55835D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9	1319.9
2.5°	909.3	888.0	878.7	893.6	886.1	863.8	868.5	854.5
5°	542.4	509.9	489.5	498.8	469.1	442.1	442.1	422.6
7.5°	261.9	251.7	246.1	248.0	241.5	233.1	228.5	228.5
10°	183.9	180.2	181.1	181.1	186.7	185.8	188.6	187.6
12.5°	218.3	220.1	221.1	224.8	229.4	229.4	232.2	230.4
15°	279.6	277.7	283.3	284.2	291.7	292.6	296.3	292.6
17.5°	355.7	359.5	365.0	364.1	379.0	379.9	379.9	379.0
20°	457.9	460.7	466.3	468.1	485.8	487.6	494.1	495.1
22.5°	569.4	569.4	572.2	575.9	592.6	593.5	596.3	596.3
25°	607.5	601.9	602.8	607.5	616.8	613.0	615.8	614.0
27.5°	558.2	549.9	548.0	554.5	561.0	550.8	554.5	554.5
30°	453.3	445.8	444.0	450.5	455.1	444.0	447.7	449.6
32.5°	331.6	327.0	326.0	330.7	334.4	325.1	328.8	331.6
35°	223.9	222.0	220.1	221.1	226.6	219.2	222.9	224.8
37.5°	142.1	138.4	139.3	141.2	144.9	140.3	144.0	144.0
40°	87.3	85.5	85.5	87.3	89.2	85.5	87.3	88.2
42.5°	51.1	51.1	51.1	52.0	52.9	51.1	51.1	52.0
45°	29.7	28.8	28.8	29.7	30.7	28.8	29.7	29.7
47.5°	16.7	15.8	15.8	16.7	16.7	15.8	16.7	16.7
50°	9.3	8.4	8.4	9.3	9.3	8.4	8.4	8.4
52.5°	4.6	4.6	4.6	4.6	4.6	4.6	3.7	3.7
55°	2.8	2.8	1.9	1.9	1.9	1.9	1.9	0.9
57.5°	1.9	1.9	0.9	0.9	0.9	0.9	0.0	0.0
60°	1.9	1.9	0.9	0.9	0.9	0.0	0.0	0.0
62.5°	1.9	1.9	0.9	0.9	0.9	0.0	0.0	0.0
65°	1.9	1.9	0.9	0.9	0.9	0.0	0.0	0.0
67.5°	1.9	1.9	0.9	0.9	0.9	0.0	0.0	0.0
70°	2.8	1.9	1.9	0.9	0.9	0.9	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	1.9	1.9	1.9	0.9	0.9	0.0	0.0
77.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.0
80°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.9
82.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.9
85°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.0
87.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.0
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)